Department of Defense
Fiscal Year (FY) 2016 President's Budget Submission

February 2015

Navy

Justification Book Volume 5 of 5

Research, Development, Test & Evaluation, Navy

Budget Activity 7

The estimated total cost for producing the Department of Navy budget justification material is approximately $1,436,000 for the 2015 fiscal year. This includes $74,000 in supplies and $1,362,000 in labor.

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Research, Development, Test and Evaluation, Navy

For expenses necessary for basic and applied scientific research, development, test and evaluation, including maintenance, rehabilitation, lease, and operation of facilities and equipment, $17,921,663,000, to remain available for obligation until September 30, 2016.

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Department of Defense
FY 2016 President's Budget
Exhibit R-1 FY 2016 President's Budget
Total Obligational Authority
(Dollars in Thousands)

09 Jan 2015

Summary Recap of Budget Activities	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Basic Research	604,155	650,153		650,153	586,928		586,928
Applied Research	844,152	869,912		869,912	864,570		864,570
Advanced Technology Development	622,947	635,203		635,203	662,864		662,864
Advanced Component Development & Prototypes	4,151,886	4,443,594		4,443,594	5,024,626		5,024,626
System Development & Demonstration	4,174,217	5,236,176	470	5,236,646	6,308,800		6,308,800
Management Support	1,153,417	972,892		972,892	955,955		955,955
Operational Systems Development	3,395,279	3,146,674	35,550	3,182,224	3,482,173	35,747	3,517,920
Total Research, Development, Test & Evaluation	14,946,053	15,954,604	36,020	15,990,624	17,885,916	35,747	17,921,663

Summary Recap of FYDP Programs							
Strategic Forces	139,615	142,745		142,745	174,014		174,014
General Purpose Forces	1,292,622	1,265,259	470	1,265,729	1,429,549		1,429,549
Intelligence and Communications	644,998	713,250	470	713,720	766,221		766,221
Research and Development	11,368,895	12,607,993		12,607,993	14,235,441		14,235,441
Central Supply and Maintenance	79,240	62,684		62,684	28,506		28,506
Administration and Associated Activities	1,209						
Classified Programs	1,419,474	1,162,673	35,080	1,197,753	1,252,185	35,747	1,287,932
Total Research, Development, Test & Evaluation	14,946,053	15,954,604	36,020	15,990,624	17,885,916	35,747	17,921,663

Department of the Navy
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Department of the Navy
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Total Obligational Authority
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Appropriation: 1319N Research, Development, Test & Eval, Navy

Line No	Program Element Number	Item	Act	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Sec
1	0601103N	University Research Initiatives	01	108,617	133,908		133,908	116,196		116,196	U
2	0601152N	In-House Laboratory Independent Research	01	18,135	19,142		19,142	19,126		19,126	U
3	0601153N	Defense Research Sciences	01	477,403	497,103		497,103	451,606		451,606	U
	Basic Research			604,155	650,153		650,153	586,928		586,928	
4	0602114N	Power Projection Applied Research	02	104,413	95,753		95,753	68,723		68,723	U
5	0602123N	Force Protection Applied Research	02	168,311	163,660		163,660	154,963		154,963	U
6	0602131M	Marine Corps Landing Force Technology	02	45,834	45,782		45,782	49,001		49,001	U
7	0602235N	Common Picture Applied Research	02	35,411	43,533		43,533	42,551		42,551	U
8	0602236N	Warfighter Sustainment Applied Research	02	49,083	46,923		46,923	45,056		45,056	U
9	0602271N	Electromagnetic Systems Applied Research	02	98,551	107,663		107,663	115,051		115,051	U
10	0602435N	Ocean Warfighting Environment Applied Research	02	43,698	65,388		65,388	42,252		42,252	U
11	0602651M	Joint Non-Lethal Weapons Applied Research	02	5,805	5,880		5,880	6,119		6,119	U
12	0602747N	Undersea Warfare Applied Research	02	99,302	86,880		86,880	123,750		123,750	U
13	0602750N	Future Naval Capabilities Applied Research	02	162,580	175,924		175,924	179,686		179,686	U
14	0602782N	Mine and Expeditionary Warfare Applied Research	02	31,164	32,526		32,526	37,418		37,418	U
	Applied Research			844,152	869,912		869,912	864,570		864,570	
15	0603114N	Power Projection Advanced Technology	03	67,601	37,734		37,734	37,093		37,093	U

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16	0603123N	Force Protection Advanced Technology	03	28,194	25,831		25,831	38,044		38,044	U
17	0603271N	Electromagnetic Systems Advanced Technology	03	53,519	64,574		64,574	34,899		34,899	U
18	0603640M	USMC Advanced Technology Demonstration (ATD)	03	128,772	128,320		128,320	137,562		137,562	U
19	0603651M	Joint Non-Lethal Weapons Technology Development	03	11,452	11,498		11,498	12,745		12,745	U
20	0603673N	Future Naval Capabilities Advanced Technology Development	03	241,652	260,847		260,847	258,860		258,860	U
21	0603680N	Manufacturing Technology Program	03					57,074		57,074	U
22	0603729N	Warfighter Protection Advanced Technology	03	40,260	40,538		40,538	4,807		4,807	U
23	0603747N	Undersea Warfare Advanced Technology	03		9,985		9,985	13,748		13,748	U
24	0603758N	Navy Warfighting Experiments and Demonstrations	03	49,581	53,876		53,876	66,041		66,041	U
25	0603782N	Mine and Expeditionary Warfare Advanced Technology	03	1,916	2,000		2,000	1,991		1,991	U
		Advanced Technology Development		622,947	635,203		635,203	662,864		662,864	
26	0603207N	Air/Ocean Tactical Applications	04	41,138	40,429		40,429	41,832		41,832	U
27	0603216N	Aviation Survivability	04	6,637	4,325		4,325	5,404		5,404	U
28	0603237N	Deployable Joint Command and Control	04	3,195	2,991		2,991	3,086		3,086	U
29	0603251N	Aircraft Systems	04	10,072	12,651		12,651	11,643		11,643	U
30	0603254N	ASW Systems Development	04	6,809	7,782		7,782	5,555		5,555	U
31	0603261N	Tactical Airborne Reconnaissance	04	5,257	5,270		5,270	3,087		3,087	U

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32	0603382N	Advanced Combat Systems Technology	04	1,510	1,639		1,639	1,636		1,636	U
33	0603502N	Surface and Shallow Water Mine Countermeasures	04	150,540	86,333		86,333	118,588		118,588	U
34	0603506N	Surface Ship Torpedo Defense	04	83,366	50,781		50,781	77,385		77,385	U
35	0603512N	Carrier Systems Development	04	78,928	5,959		5,959	8,348		8,348	U
36	0603525N	PILOT FISH	04	107,210	138,865		138,865	123,246		123,246	U
37	0603527N	RETRACT LARCH	04	11,797	25,365		25,365	28,819		28,819	U
38	0603536N	RETRACT JUNIPER	04	77,292	76,477		76,477	112,678		112,678	U
39	0603542N	Radiological Control	04	757	669		669	710		710	U
40	0603553N	Surface ASW	04	8,543	1,053		1,053	1,096		1,096	U
41	0603561N	Advanced Submarine System Development	04	832,736	67,551		67,551	87,160		87,160	U
42	0603562N	Submarine Tactical Warfare Systems	04	8,675	8,044		8,044	10,371		10,371	U
43	0603563N	Ship Concept Advanced Design	04	17,604	17,864		17,864	11,888		11,888	U
44	0603564N	Ship Preliminary Design & Feasibility Studies	04	37,380	1,773		1,773	4,332		4,332	U
45	0603570N	Advanced Nuclear Power Systems	04	428,933	499,961		499,961	482,040		482,040	U
46	0603573N	Advanced Surface Machinery Systems	04	17,551	21,026		21,026	25,904		25,904	U
47	0603576N	CHALK EAGLE	04	511,633	542,415		542,415	511,802		511,802	U
48	0603581N	Littoral Combat Ship (LCS)	04	256,456	86,705		86,705	118,416		118,416	U
49	0603582N	Combat System Integration	04	4,270	20,881		20,881	35,901		35,901	U
50	0603595N	Ohio Replacement	04		853,277		853,277	971,393		971,393	U
51	0603596N	LCS Mission Modules	04	105,682	176,948		176,948	206,149		206,149	U

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52	0603597N	Automated Test and Re-Test (ATRT)	04	9,639	8,115		8,115	8,000		8,000	U
53	0603609N	Conventional Munitions	04	8,380	7,603		7,603	7,678		7,678	U
54	0603611M	Marine Corps Assault Vehicles	04	34,956	105,749		105,749	219,082		219,082	U
55	0603635M	Marine Corps Ground Combat/Support System	04	1,362	1,342		1,342	623		623	U
56	0603654N	Joint Service Explosive Ordnance Development	04	34,773	21,384		21,384	18,260		18,260	U
57	0603658N	Cooperative Engagement	04	52,539	37,310		37,310	76,247		76,247	U
58	0603713N	Ocean Engineering Technology Development	04	7,530	6,264		6,264	4,520		4,520	U
59	0603721N	Environmental Protection	04	18,812	13,200		13,200	20,711		20,711	U
60	0603724N	Navy Energy Program	04	43,851	63,804		63,804	47,761		47,761	U
61	0603725N	Facilities Improvement	04	2,893	2,588		2,588	5,226		5,226	U
62	0603734N	CHALK CORAL	04	121,021	176,301		176,301	182,771		182,771	U
63	0603739N	Navy Logistic Productivity	04	3,715	3,473		3,473	3,866		3,866	U
64	0603746N	RETRACT MAPLE	04	293,872	376,028		376,028	360,065		360,065	U
65	0603748N	LINK PLUMERIA	04	153,214	260,096		260,096	237,416		237,416	U
66	0603751N	RETRACT ELM	04	56,519	42,233		42,233	37,944		37,944	U
67	0603764N	LINK EVERGREEN	04	54,613	46,504		46,504	47,312		47,312	U
68	0603787N	Special Processes	04	47,227	25,109		25,109	17,408		17,408	U
69	0603790N	NATO Research and Development	04	7,502	9,659		9,659	9,359		9,359	U
70	0603795N	Land Attack Technology	04		318		318	887		887	U
71	0603851M	Joint Non-Lethal Weapons Testing	04	39,470	35,627		35,627	29,448		29,448	U

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72	0603860N	Joint Precision Approach and Landing Systems - Dem/Val	04	126,802	41,886		41,886	91,479		91,479	U
73	0603925N	Directed Energy and Electric Weapon Systems	04	4,349	55,696		55,696	67,360		67,360	U
74	0604112N	Gerald R. Ford Class Nuclear Aircraft Carrier (CVN 78 - 80)	04		43,613		43,613	48,105		48,105	U
75	0604122N	Remote Minehunting System (RMS)	04		21,110		21,110	20,089		20,089	U
76	0604272N	Tactical Air Directional Infrared Countermeasures (TADIRCM)	04	24,562	5,556		5,556	18,969		18,969	U
77	0604279N	ASE Self-Protection Optimization	04	169	3,921		3,921	7,874		7,874	U
78	0604292N	MH-XX	04		3,055		3,055	5,298		5,298	U
79	0604454N	LX (R)	04		36,859		36,859	46,486		46,486	U
80	0604653N	Joint Counter Radio Controlled IED Electronic Warfare (JCREW)	04	15,582	15,197		15,197	3,817		3,817	U
81	0604659N	Precision Strike Weapons Development Program	04	2,191				9,595		9,595	U
82	0604707N	Space and Electronic Warfare (SEW) Architecture/Engineering Support	04	30,377	18,749		18,749	29,581		29,581	U
83	0604786N	Offensive Anti-Surface Warfare Weapon Development	04	86,683	181,939		181,939	285,849		285,849	U
84	0605812M	Joint Light Tactical Vehicle (JLTV) Engineering and Manufacturing Development Ph	04	50,251	9,445		9,445	36,656		36,656	U
85	0303354N	ASW Systems Development - MIP	04	4,908	6,495		6,495	9,835		9,835	U
86	0304270N	Electronic Warfare Development - MIP	04	153	332		332	580		580	U
		Advanced Component Development & Prototypes		4,151,886	4,443,594		4,443,594	5,024,626		5,024,626	

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87	0603208N	Training System Aircraft	05		25,153		25,153	21,708		21,708	U
88	0604212N	Other Helo Development	05	24,910	35,099		35,099	11,101		11,101	U
89	0604214N	AV-8B Aircraft - Eng Dev	05	30,291	25,372		25,372	39,878		39,878	U
90	0604215N	Standards Development	05	66,594	53,706		53,706	53,059		53,059	U
91	0604216N	Multi-Mission Helicopter Upgrade Development	05	20,365	11,434		11,434	21,358		21,358	U
92	0604218N	Air/Ocean Equipment Engineering	05	3,915	2,164		2,164	4,515		4,515	U
93	0604221N	P-3 Modernization Program	05	779	710		710	1,514		1,514	U
94	0604230N	Warfare Support System	05	9,630	9,094		9,094	5,875		5,875	U
95	0604231N	Tactical Command System	05	62,298	60,195		60,195	81,553		81,553	U
96	0604234N	Advanced Hawkeye	05	103,489	176,700		176,700	272,149		272,149	U
97	0604245N	H-1 Upgrades	05	48,994	44,115		44,115	27,235		27,235	U
98	0604261N	Acoustic Search Sensors	05	28,344	23,214		23,214	35,763		35,763	U
99	0604262N	V-22A	05	42,205	57,749		57,749	87,918		87,918	U
100	0604264N	Air Crew Systems Development	05	7,418	15,014		15,014	12,679		12,679	U
101	0604269N	EA-18	05	10,550	18,730		18,730	56,921		56,921	U
102	0604270N	Electronic Warfare Development	05	34,239	28,742		28,742	23,685		23,685	U
103	0604273N	Executive Helo Development	05	92,840	368,084		368,084	507,093		507,093	U
104	0604274N	Next Generation Jammer (NGJ)	05	153,552	230,713		230,713	411,767		411,767	U
105	0604280N	Joint Tactical Radio System - Navy (JTRS-Navy)	05	3,909	6,945		6,945	25,071		25,071	U
106	0604307N	Surface Combatant Combat System Engineering	05	249,940	179,112		179,112	443,433		443,433	U

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107	0604311N	LPD-17 Class Systems Integration	05	1,175	376		376	747		747	U
108	0604329N	Small Diameter Bomb (SDB)	05	24,215	56,286		56,286	97,002		97,002	U
109	0604366N	Standard Missile Improvements	05	60,933	36,698		36,698	129,649		129,649	U
110	0604373N	Airborne MCM	05	109,485	38,941		38,941	11,647		11,647	U
111	0604376M	Marine Air Ground Task Force (MAGTF) Electronic Warfare (EW) for Aviation	05	12,032	7,832		7,832	2,778		2,778	U
112	0604378N	Naval Integrated Fire Control - Counter Air Systems Engineering	05	20,937	15,263		15,263	23,695		23,695	U
113	0604404N	Unmanned Carrier Launched Airborne Surveillance and Strike (UCLASS) System	05	115,275	403,008		403,008	134,708		134,708	U
114	0604501N	Advanced Above Water Sensors	05	144,589	19,809		19,809	43,914		43,914	U
115	0604503N	SSN-688 and Trident Modernization	05	83,361	71,551		71,551	109,908		109,908	U
116	0604504N	Air Control	05	9,664	29,037		29,037	57,928		57,928	U
117	0604512N	Shipboard Aviation Systems	05	77,046	122,083		122,083	120,217		120,217	U
118	0604522N	Air and Missile Defense Radar (AMDR) System	05		129,706		129,706	241,754		241,754	U
119	0604558N	New Design SSN	05	60,843	87,695		87,695	122,556		122,556	U
120	0604562N	Submarine Tactical Warfare System	05	47,777	38,985		38,985	48,213		48,213	U
121	0604567N	Ship Contract Design/ Live Fire T&E	05	174,375	40,016		40,016	49,712		49,712	U
122	0604574N	Navy Tactical Computer Resources	05	3,582	3,935		3,935	4,096		4,096	U
123	0604580N	Virginia Payload Module (VPM)	05	57,282	120,602		120,602	167,719		167,719	U
124	0604601N	Mine Development	05	4,903	14,067		14,067	15,122		15,122	U

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Line No	Program Element Number	Item	Act	FY 2014 (Base & OCO)	FY 2015 Base Enacted	FY 2015 OCO Enacted	FY 2015 Total Enacted	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Sec
125	0604610N	Lightweight Torpedo Development	05	26,098	35,280		35,280	33,738		33,738	U
126	0604654N	Joint Service Explosive Ordnance Development	05	8,872	8,985		8,985	8,123		8,123	U
127	0604703N	Personnel, Training, Simulation, and Human Factors	05	4,233	7,669		7,669	7,686		7,686	U
128	0604727N	Joint Standoff Weapon Systems	05	434	4,400		4,400	405		405	U
129	0604755N	Ship Self Defense (Detect & Control)	05	98,382	56,884		56,884	153,836		153,836	U
130	0604756N	Ship Self Defense (Engage: Hard Kill)	05	42,551	96,937		96,937	99,619		99,619	U
131	0604757N	Ship Self Defense (Engage: Soft Kill/EW)	05	112,900	116,904		116,904	116,798		116,798	U
132	0604761N	Intelligence Engineering	05	1,984	200		200	4,353		4,353	U
133	0604771N	Medical Development	05	27,725	27,287		27,287	9,443		9,443	U
134	0604777N	Navigation/ID System	05	41,735	29,504		29,504	32,469		32,469	U
135	0604800M	Joint Strike Fighter (JSF) - EMD	05	410,080	499,048		499,048	537,901		537,901	U
136	0604800N	Joint Strike Fighter (JSF) - EMD	05	425,340	502,260		502,260	504,736		504,736	U
137	0604810M	Joint Strike Fighter Follow On Development - Marine Corps	05		10,399		10,399	59,265		59,265	U
138	0604810N	Joint Strike Fighter Follow On Development - Navy	05		10,622		10,622	47,579		47,579	U
139	0605013M	Information Technology Development	05	4,787	2,887		2,887	5,914		5,914	U
140	0605013N	Information Technology Development	05	51,746	66,317		66,317	89,711		89,711	U
141	0605212N	CH-53K RDTE	05	447,511	559,687		559,687	632,092		632,092	U
142	0605220N	Ship to Shore Connector (SSC)	05		42,778		42,778	7,778		7,778	U

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143	0605450N	Joint Air-to-Ground Missile (JAGM)	05	4,757	6,300		6,300	25,898		25,898	U
144	0605500N	Multi-mission Maritime Aircraft (MMA)	05	252,426	306,033		306,033	247,929		247,929	U
145	0204202N	DDG-1000	05	189,580	202,517		202,517	103,199		103,199	U
146	0304231N	Tactical Command System - MIP	05	2,140	1,011		1,011	998		998	U
147	0304785N	Tactical Cryptologic Systems	05	9,406	10,357	470	10,827	17,785		17,785	U
148	0305124N	Special Applications Program	05	9,794	23,975		23,975	35,905		35,905	U
		System Development & Demonstration		4,174,217	5,236,176	470	5,236,646	6,308,800		6,308,800	
149	0604256N	Threat Simulator Development	06	42,177	40,793		40,793	30,769		30,769	U
150	0604258N	Target Systems Development	06	70,263	66,718		66,718	112,606		112,606	U
151	0604759N	Major T&E Investment	06	37,974	123,993		123,993	61,234		61,234	U
152	0605126N	Joint Theater Air and Missile Defense Organization	06	1,322	4,960		4,960	6,995		6,995	U
153	0605152N	Studies and Analysis Support - Navy	06	5,453	3,484		3,484	4,011		4,011	U
154	0605154N	Center for Naval Analyses	06	44,928	44,696		44,696	48,563		48,563	U
155	0605285N	Next Generation Fighter	06		4,794		4,794	5,000		5,000	U
156	0605502N	Small Business Innovative Research	06	294,649							U
157	0605804N	Technical Information Services	06	1,046	876		876	925		925	U
158	0605853N	Management, Technical & International Support	06	81,918	87,038		87,038	78,143		78,143	U
159	0605856N	Strategic Technical Support	06	3,085	2,590		2,590	3,258		3,258	U
160	0605861N	RDT&E Science and Technology Management	06	71,998	73,033		73,033	76,948		76,948	U

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161	0605863N	RDT&E Ship and Aircraft Support	06	140,064	138,304		138,304	132,122		132,122	U
162	0605864N	Test and Evaluation Support	06	303,177	336,286		336,286	351,912		351,912	U
163	0605865N	Operational Test and Evaluation Capability	06	16,304	16,650		16,650	17,985		17,985	U
164	0605866N	Navy Space and Electronic Warfare (SEW) Support	06	3,885	2,503		2,503	5,316		5,316	U
165	0605867N	SEW Surveillance/Reconnaissance Support	06	7,134	8,325		8,325	6,519		6,519	U
166	0605873M	Marine Corps Program Wide Support	06	26,831	17,849		17,849	13,649		13,649	U
167	0909999N	Financing for Cancelled Account Adjustments	06	1,209							U
		Management Support		1,153,417	972,892		972,892	955,955		955,955	
169	0604227N	HARPOON Modifications	07	199							U
170	0604402N	Unmanned Combat Air Vehicle (UCAV) Advanced Component and Prototype Development	07	24,893	35,877		35,877				U
171	0604766M	Marine Corps Data Systems	07	34							U
172	0605525N	Carrier Onboard Delivery (COD) Follow On	07	1,230	8,873		8,873				U
173	0605555N	Strike Weapons Development	07	8,955							U
174	0101221N	Strategic Sub & Weapons System Support	07	86,197	94,525		94,525	107,039		107,039	U
175	0101224N	SSBN Security Technology Program	07	30,719	30,039		30,039	46,506		46,506	U
176	0101226N	Submarine Acoustic Warfare Development	07	1,430	4,509		4,509	3,900		3,900	U
177	0101402N	Navy Strategic Communications	07	21,269	13,672		13,672	16,569		16,569	U

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178	0203761N	Rapid Technology Transition (RTT)	07	8,561	8,480		8,480	18,632		18,632	U
179	0204136N	F/A-18 Squadrons	07	110,487	86,216		86,216	133,265		133,265	U
180	0204152N	E-2 Squadrons	07	1,903							U
181	0204163N	Fleet Telecommunications (Tactical)	07	22,576	27,039		27,039	62,867		62,867	U
182	0204228N	Surface Support	07	2,320	2,878		2,878	36,045		36,045	U
183	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	07	12,015	26,145		26,145	25,228		25,228	U
184	0204311N	Integrated Surveillance System	07	41,609	34,471		34,471	54,218		54,218	U
185	0204413N	Amphibious Tactical Support Units (Displacement Craft)	07	4,534	4,609		4,609	11,335		11,335	U
186	0204460M	Ground/Air Task Oriented Radar (G/ATOR)	07	74,432	99,082		99,082	80,129		80,129	U
187	0204571N	Consolidated Training Systems Development	07	38,444	37,922		37,922	39,087		39,087	U
188	0204574N	Cryptologic Direct Support	07	2,703	1,157	470	1,627	1,915		1,915	U
189	0204575N	Electronic Warfare (EW) Readiness Support	07	18,859	16,567		16,567	46,609		46,609	U
190	0205601N	HARM Improvement	07	13,581	17,420		17,420	52,708		52,708	U
191	0205604N	Tactical Data Links	07	162,499	121,680		121,680	149,997		149,997	U
192	0205620N	Surface ASW Combat System Integration	07	30,985	26,366		26,366	24,460		24,460	U
193	0205632N	MK-48 ADCAP	07	10,050	25,952		25,952	42,206		42,206	U
194	0205633N	Aviation Improvements	07	76,009	85,037		85,037	117,759		117,759	U
195	0205675N	Operational Nuclear Power Systems	07	116,928	104,023		104,023	101,323		101,323	U

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196	0206313M	Marine Corps Communications Systems	07	157,440	73,982		73,982	67,763		67,763	U
197	0206335M	Common Aviation Command and Control System (CAC2S)	07		32,495		32,495	13,431		13,431	U
198	0206623M	Marine Corps Ground Combat/ Supporting Arms Systems	07	116,944	52,377		52,377	56,769		56,769	U
199	0206624M	Marine Corps Combat Services Support	07	23,883	20,999		20,999	20,729		20,729	U
200	0206625M	USMC Intelligence/Electronic Warfare Systems (MIP)	07	35,213	14,170		14,170	13,152		13,152	U
201	0206629M	Amphibious Assault Vehicle	07		96,207		96,207	48,535		48,535	U
202	0207161N	Tactical AIM Missiles	07	17,518	37,258		37,258	76,016		76,016	U
203	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	2,575	10,210		10,210	32,172		32,172	U
204	0208058N	Joint High Speed Vessel (JHSV)	07	974							U
208	0303109N	Satellite Communications (SPACE)	07	63,642	41,729		41,729	53,239		53,239	U
209	0303138N	Consolidated Afloat Network Enterprise Services (CANES)	07	23,965	22,773		22,773	21,677		21,677	U
210	0303140N	Information Systems Security Program	07	25,604	23,016		23,016	28,102		28,102	U
211	0303150M	WWMCCS/Global Command and Control System	07					294		294	U
213	0305160N	Navy Meteorological and Ocean Sensors-Space (METOC)	07	726	359		359	599		599	U
214	0305192N	Military Intelligence Program (MIP) Activities	07	5,758	6,166		6,166	6,207		6,207	U
215	0305204N	Tactical Unmanned Aerial Vehicles	07	8,381	8,505		8,505	8,550		8,550	U
216	0305205N	UAS Integration and Interoperability	07					41,831		41,831	U

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217	0305208M	Distributed Common Ground/Surface Systems	07	5,207	11,606		11,606	1,105		1,105	U
218	0305208N	Distributed Common Ground/Surface Systems	07	17,718	18,146		18,146	33,149		33,149	U
219	0305220N	RQ-4 UAV	07	375,235	451,442		451,442	227,188		227,188	U
220	0305231N	MQ-8 UAV	07	41,713	43,294		43,294	52,770		52,770	U
221	0305232M	RQ-11 UAV	07		718		718	635		635	U
222	0305233N	RQ-7 UAV	07	710	851		851	688		688	U
223	0305234N	Small (Level 0) Tactical UAS (STUASL0)	07	5,033	4,813		4,813	4,647		4,647	U
224	0305239M	RQ-21A	07	11,122	8,192		8,192	6,435		6,435	U
225	0305241N	Multi-Intelligence Sensor Development	07	28,851	17,751		17,751	49,145		49,145	U
226	0305242M	Unmanned Aerial Systems (UAS) Payloads (MIP)	07		2,000		2,000	9,246		9,246	U
227	0305421N	RQ-4 Modernization	07		5,000		5,000	150,854		150,854	U
228	0308601N	Modeling and Simulation Support	07	4,932	4,719		4,719	4,757		4,757	U
229	0702207N	Depot Maintenance (Non-IF)	07	25,630	21,168		21,168	24,185		24,185	U
230	0708011N	Industrial Preparedness	07	48,795	37,169		37,169				U
231	0708730N	Maritime Technology (MARITECH)	07	4,815	4,347		4,347	4,321		4,321	U
9999	9999999999	Classified Programs		1,419,474	1,162,673	35,080	1,197,753	1,252,185	35,747	1,287,932	U
		Operational Systems Development		3,395,279	3,146,674	35,550	3,182,224	3,482,173	35,747	3,517,920	
Total Research, Development, Test & Eval, Navy				14,946,053	15,954,604	36,020	15,990,624	17,885,916	35,747	17,921,663	

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Special Applications Program	0305124N	148	05	Volume 3 - 1485
Standard Missile Improvements	0604366N	109	05	Volume 3 - 497

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Standards Development	0604215N	90	05	Volume 3 - 59
Strategic Sub & Wpns Sys Supt	0101221N	174	07	Volume 5 - 47
Strategic Technical Support	0605856N	159	06	Volume 4 - 179
Studies & Analysis Supt - Navy	0605152N	153	06	Volume 4 - 41
Submarine Acoustic War Dev	0101226N	176	07	Volume 5 - 75
Submarine Tactical Warfare Sys	0603562N	42	04	Volume 2 - 391
Submarine Tactical Warfare System	0604562N	120	05	Volume 3 - 795
Surface & Shallow Water MCM	0603502N	33	04	Volume 2 - 157
Surface ASW	0603553N	40	04	Volume 2 - 327
Surface ASW Cmbt Sys Integr	0205620N	192	07	Volume 5 - 415
Surface Combatant Cmbt Sys Eng	0604307N	106	05	Volume 3 - 439
Surface Ship Torpedo Defense	0603506N	34	04	Volume 2 - 253
Surface Support	0204228N	182	07	Volume 5 - 189
Tact Air Dir Infrared CM (TADIRCM)	0604272N	76	04	Volume 2 - 943
Tactical Aim Missiles	0207161N	202	07	Volume 5 - 905
Tactical Airborne Reconnaissance	0603261N	31	04	Volume 2 - 137
Tactical Command System	0604231N	95	05	Volume 3 - 175
Tactical Command System - MIP	0304231N	146	05	Volume 3 - 1457
Tactical Cryptologic Systems	0304785N	147	05	Volume 3 - 1465

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
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Tactical Unmanned Aer Vehicles	0305204N	215	07	Volume 5 - 1039
Target Systems Development	0604258N	150	06	Volume 4 - 13
Technical Information Services	0605804N	157	06	Volume 4 - 107
Test & Evaluation Support	0605864N	162	06	Volume 4 - 209
Threat Simulator Development	0604256N	149	06	Volume 4 - 1
Tomahawk Mssn Planning Ctr	0204229N	183	07	Volume 5 - 203
Training System Aircraft	0603208N	87	05	Volume 3 - 1
USMC Intelligence/Electronics Warfare Sys	0206625M	200	07	Volume 5 - 863
Undersea Warfare Advanced Tech	0603747N	23	03	Volume 1 - 465
Undersea Warfare Applied Res	0602747N	12	02	Volume 1 - 257
University Research Initiatives	0601103N	1	01	Volume 1 - 1
Unmanned Aerial Systems (UAS) Payloads	0305242M	226	07	Volume 5 - 1157
Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev	0604402N	170	07	Volume 5 - 7
V-22A	0604262N	99	05	Volume 3 - 313
WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	0303150M	211	07	Volume 5 - 1019
Warfare Support System	0604230N	94	05	Volume 3 - 151
Warfighter Protection Adv Tech	0603729N	22	03	Volume 1 - 459
Warfighter Sustainment Applied Res	0602236N	8	02	Volume 1 - 183

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Budget Activity 07: Operational Systems Development
Appropriation 1319: Research, Development, Test & Evaluation, Navy

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170	07	0604402N	Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev	Volume 5 - 7
171	07	0604766M	(U)MARINE CORPS DATA SYSTEMS	Volume 5 - 17
172	07	0605525N	(U)CARRIER ONBOARD DELIVERY (COD) FOLLOW ON	Volume 5 - 23
173	07	0605555N	(U)STRIKE WEAPONS DEVELOPMENT	Volume 5 - 29
174	07	0101221N	Strategic Sub & Wpns Sys Supt	Volume 5 - 47
175	07	0101224N	SSBN Security Tech Program	Volume 5 - 73
176	07	0101226N	Submarine Acoustic War Dev	Volume 5 - 75
177	07	0101402N	Navy Strategic Comms	Volume 5 - 85
178	07	0203761N	Rapid Technology Transition (RTT)	Volume 5 - 107
179	07	0204136N	F/A-18 Squadrons	Volume 5 - 125
180	07	0204152N	E-2 Squadrons	Volume 5 - 161
181	07	0204163N	Fleet Tactical Development	Volume 5 - 169
182	07	0204228N	Surface Support	Volume 5 - 189
183	07	0204229N	Tomahawk Mssn Planning Ctr	Volume 5 - 203

Budget Activity 07: Operational Systems Development
Appropriation 1319: Research, Development, Test & Evaluation, Navy

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185	07	0204413N	Amphibious Tactical Supt Units	Volume 5 - 239
186	07	0204460M	(U)Ground/Air Task Oriented Radar (G/ATOR)	Volume 5 - 255
187	07	0204571N	Consolidated Trng Sys Dev	Volume 5 - 267
188	07	0204574N	Cryptologic Direct Support	Volume 5 - 317
189	07	0204575N	Elect Warfare Readiness Supt	Volume 5 - 327
190	07	0205601N	Harm Improvement	Volume 5 - 347
191	07	0205604N	Tactical Data Links	Volume 5 - 369
192	07	0205620N	Surface ASW Cmbt Sys Integr	Volume 5 - 415
193	07	0205632N	MK-48 ADCAP	Volume 5 - 429
194	07	0205633N	Aviation Improvements	Volume 5 - 439
195	07	0205675N	Operational Nuclear Power Sys	Volume 5 - 497
196	07	0206313M	Marine Corps Comms Systems	Volume 5 - 499
197	07	0206335M	Common Aviation Command and Control System (CAC2S)	Volume 5 - 647
198	07	0206623M	MC Ground Cmbt Spt Arms Sys	Volume 5 - 659
199	07	0206624M	Marine Corps Cmbt Services Supt	Volume 5 - 791
200	07	0206625M	USMC Intelligence/Electronics Warfare Sys	Volume 5 - 863
201	07	0206629M	Amphibious Assault Vehicle	Volume 5 - 895

Budget Activity 07: Operational Systems Development
Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
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203	07	0207163N	AMRAAM	Volume 5 - 923
204	07	0208058N	Joint High Speed Vessel (JHSV)	Volume 5 - 933
208	07	0303109N	Satellite Communications (Space)	Volume 5 - 941
209	07	0303138N	Consolidated Afloat Network Ent Services(CANES)	Volume 5 - 969
210	07	0303140N	Information Sys Security Program	Volume 5 - 989
211	07	0303150M	WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	Volume 5 - 1019
213	07	0305160N	Navy Meteorological and Ocean Sensors-Space(METOC)	Volume 5 - 1025
214	07	0305192N	JT Military Intel Programs	Volume 5 - 1037
215	07	0305204N	Tactical Unmanned Aer Vehicles	Volume 5 - 1039
216	07	0305205N	(U)UAS Integration and Interoperability	Volume 5 - 1051
217	07	0305208M	(U)Distributed Common Ground/Surface Systems	Volume 5 - 1061
218	07	0305208N	Distributed Common Ground Sys	Volume 5 - 1073
219	07	0305220N	RQ-4 UAV	Volume 5 - 1097
220	07	0305231N	MQ-8 UAV	Volume 5 - 1109
221	07	0305232M	RQ-11 UAV	Volume 5 - 1121
222	07	0305233N	RQ-7 UAV	Volume 5 - 1127
223	07	0305234N	(U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)	Volume 5 - 1133

Budget Activity 07: Operational Systems Development
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225	07	0305241N	(U) MULTI-INTELLIGENCE SENSOR DEVELOPMENT	Volume 5 - 1153
226	07	0305242M	Unmanned Aerial Systems (UAS) Payloads	Volume 5 - 1157
227	07	0305421N	RQ-4 Modernization	Volume 5 - 1179
228	07	0308601N	Modeling & Simulation Support	Volume 5 - 1191
229	07	0702207N	Depot Maintenance (NON-IF)	Volume 5 - 1207
230	07	0708011N	Industrial Preparedness	Volume 5 - 1221
231	07	0708730N	Maritime Tech (MARITECH)	Volume 5 - 1239

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(U)Distributed Common Ground/Surface Systems	0305208M	217	07	Volume 5 - 1061
(U)Ground/Air Task Oriented Radar (G/ATOR)	0204460M	186	07	Volume 5 - 255
(U)MARINE CORPS DATA SYSTEMS	0604766M	171	07	Volume 5 - 17
(U)RQ-21A	0305239M	224	07	Volume 5 - 1143
(U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)	0305234N	223	07	Volume 5 - 1133
(U)STRIKE WEAPONS DEVELOPMENT	0605555N	173	07	Volume 5 - 29
(U)UAS Integration and Interoperability	0305205N	216	07	Volume 5 - 1051
AMRAAM	0207163N	203	07	Volume 5 - 923
Amphibious Assault Vehicle	0206629M	201	07	Volume 5 - 895
Amphibious Tactical Supt Units	0204413N	185	07	Volume 5 - 239
Aviation Improvements	0205633N	194	07	Volume 5 - 439
Common Aviation Command and Control System (CAC2S)	0206335M	197	07	Volume 5 - 647
Consolidated Afloat Network Ent Services(CANES)	0303138N	209	07	Volume 5 - 969
Consolidated Trng Sys Dev	0204571N	187	07	Volume 5 - 267
Cryptologic Direct Support	0204574N	188	07	Volume 5 - 317

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
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Distributed Common Ground Sys	0305208N	218	07	Volume 5 - 1073
E-2 Squadrons	0204152N	180	07	Volume 5 - 161
Elect Warfare Readiness Supt	0204575N	189	07	Volume 5 - 327
F/A-18 Squadrons	0204136N	179	07	Volume 5 - 125
Fleet Tactical Development	0204163N	181	07	Volume 5 - 169
Harm Improvement	0205601N	190	07	Volume 5 - 347
Harpoon Modifications	0604227N	169	07	Volume 5 - 1
Industrial Preparedness	0708011N	230	07	Volume 5 - 1221
Information Sys Security Program	0303140N	210	07	Volume 5 - 989
Integrated Surveillance System	0204311N	184	07	Volume 5 - 221
JT Military Intel Programs	0305192N	214	07	Volume 5 - 1037
Joint High Speed Vessel (JHSV)	0208058N	204	07	Volume 5 - 933
MC Ground Cmbt Spt Arms Sys	0206623M	198	07	Volume 5 - 659
MK-48 ADCAP	0205632N	193	07	Volume 5 - 429
MQ-8 UAV	0305231N	220	07	Volume 5 - 1109
Marine Corps Cmbt Services Supt	0206624M	199	07	Volume 5 - 791
Marine Corps Comms Systems	0206313M	196	07	Volume 5 - 499
Maritime Tech (MARITECH)	0708730N	231	07	Volume 5 - 1239

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Navy Meteorological and Ocean Sensors-Space(METOC)	0305160N	213	07	Volume 5 - 1025
Navy Strategic Comms	0101402N	177	07	Volume 5 - 85
Operational Nuclear Power Sys	0205675N	195	07	Volume 5 - 497
RQ-11 UAV	0305232M	221	07	Volume 5 - 1121
RQ-4 Modernization	0305421N	227	07	Volume 5 - 1179
RQ-4 UAV	0305220N	219	07	Volume 5 - 1097
RQ-7 UAV	0305233N	222	07	Volume 5 - 1127
Rapid Technology Transition (RTT)	0203761N	178	07	Volume 5 - 107
SSBN Security Tech Program	0101224N	175	07	Volume 5 - 73
Satellite Communications (Space)	0303109N	208	07	Volume 5 - 941
Strategic Sub & Wpns Sys Supt	0101221N	174	07	Volume 5 - 47
Submarine Acoustic War Dev	0101226N	176	07	Volume 5 - 75
Surface ASW Cmbt Sys Integr	0205620N	192	07	Volume 5 - 415
Surface Support	0204228N	182	07	Volume 5 - 189
Tactical Aim Missiles	0207161N	202	07	Volume 5 - 905
Tactical Data Links	0205604N	191	07	Volume 5 - 369
Tactical Unmanned Aer Vehicles	0305204N	215	07	Volume 5 - 1039
Tomahawk Mssn Planning Ctr	0204229N	183	07	Volume 5 - 203

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
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Unmanned Aerial Systems (UAS) Payloads	0305242M	226	07	Volume 5 - 1157
Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev	0604402N	170	07	Volume 5 - 7
WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	0303150M	211	07	Volume 5 - 1019

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0604227N *I Harpoon Modifications*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	0.000	0.199	-	-	-	-	-	-	-	-	-	0.199
1843: *Harpoon Block III*	0.000	0.199	-	-	-	-	-	-	-	-	-	0.199

A. Mission Description and Budget Item Justification

The MK607 containers are used to transport and store two (2) AGM-84 Harpoon missiles. Designed in the mid 1970s, it has an internal aluminum saddle, a steel cradle frame and fiberglass shell. Current design allows for moisture intrusion and provides marginal Insensitive Munitions (IM) performance.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	0.699	-	-	-	-
Current President's Budget	0.199	-	-	-	-
Total Adjustments	-0.500	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Congressional Rescission Adjustments	-0.500	-	-	-	-

Change Summary Explanation

IM Testing completion has moved from 2QTR 2014 to 3QTR 2015 for the program to complete Thermal Analysis of the MK-706 Air Harpoon Container.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0604227N / *Harpoon Modifications*	Project (Number/Name) 1843 / *Harpoon Block III*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1843: *Harpoon Block III*	-	0.199	-	-	-	-	-	-	-	-	-	0.199
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The MK607 containers are used to transport and store two (2) AGM-84 Harpoon missiles. Designed in the mid 1970s, it has an internal aluminum saddle, a steel cradle frame and fiberglass shell. Current design allows for moisture intrusion and provides marginal Insensitive Munitions (IM) performance.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Air Harpoon Container	0.199	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: The Air Harpoon shipping container is being redesigned because the current container, MK-607, has experienced numerous instances of moisture intrusion which has damaged missiles beyond economical repair. FY14 funds are required to address cracking encountered during the original design testing. Funds are required to complete IM test of redesigned container, and post-test assessment of MIL-STD-901d Ship Shock compliance. Recent conventional ordnance deficiency report provides increased emphasis on the need to complete. The new design for the container will finish qualification testing in FY-15 at the field activities.					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.199	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Following the completion of the qualification testing a Firm Fixed Price contract will be competed to procure 250 containers starting FY16.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0604227N / *Harpoon Modifications*	**Project (Number/Name)** 1843 / *Harpoon Block III*

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0604227N / *Harpoon Modifications*	Project (Number/Name) 1843 / *Harpoon Block III*	

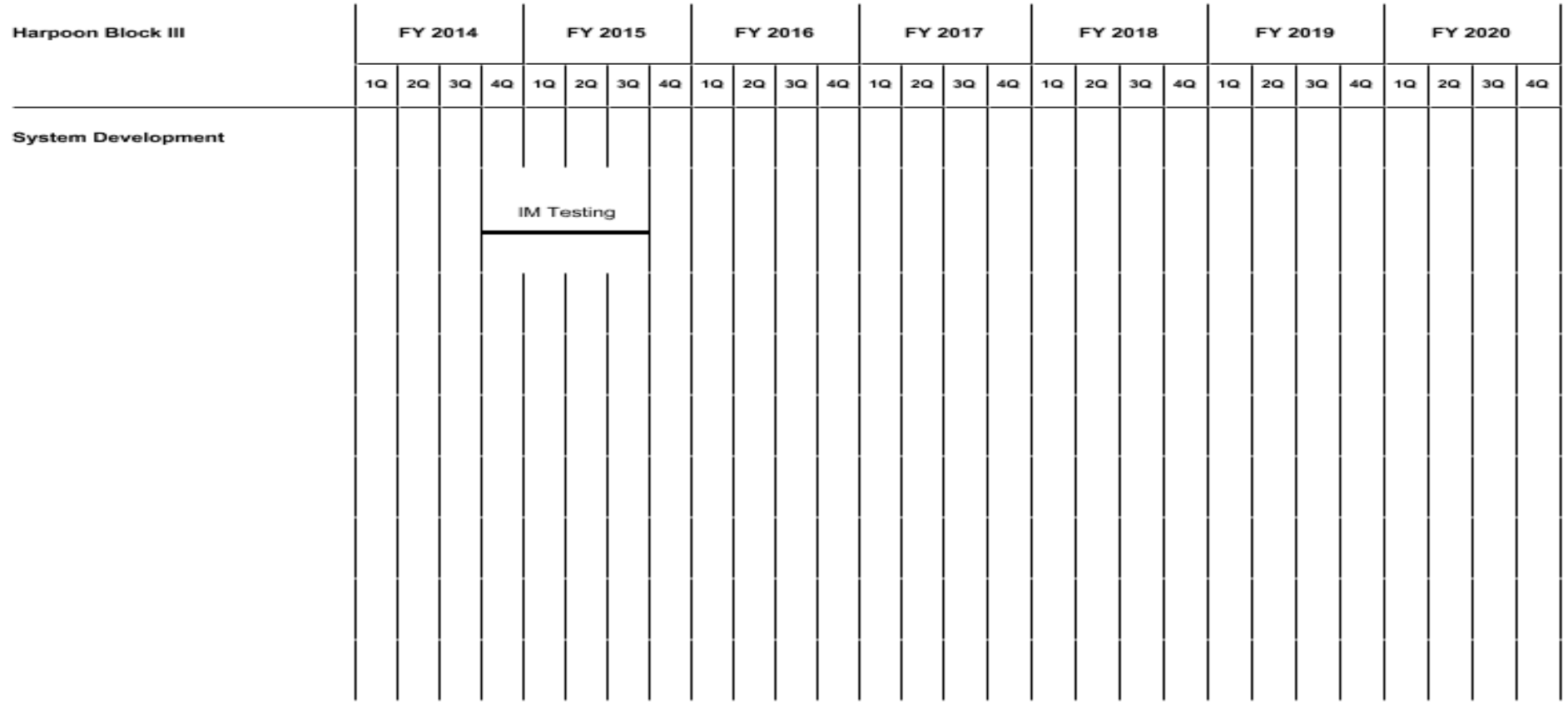
Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Support	WR	NAWCWD : CHINA LAKE	0.000	0.043	Jun 2014	-		-		-		-	-	0.043	-
Government Support	WR	NAWCAD : PATUXENT RIVER	0.000	-		-		-		-		-	-	-	-
Government Support	WR	NSWC : EARLE	0.000	0.156	Jun 2014	-		-		-		-	-	0.156	-
		Subtotal	0.000	0.199		-		-		-		-	-	0.199	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.199		-		-		-		-	-	0.199	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0604227N / *Harpoon Modifications*	**Project (Number/Name)** 1843 / *Harpoon Block III*



2016PB - 0604227N - 1843

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0604227N / *Harpoon Modifications*	**Project (Number/Name)** 1843 / *Harpoon Block III*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Harpoon Block III				
System Development: IM Testing	4	2014	3	2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy												Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0604402N *I Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	1,414.771	24.893	35.877	-	-	-	-	-	-	-	-	1,475.541
3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*	1,414.771	24.893	35.877	-	-	-	-	-	-	-	-	1,475.541
MDAP/MAIS Code: P388												

A. Mission Description and Budget Item Justification

The 2005 Quadrennial Defense Review published February 2006 and OSD Advanced Technology & Logistics Executive Committee Memorandum of February 2006 supported direction to restructure the Joint Unmanned Combat Air System (UCAS) program into a new Navy UCAS program. The Navy UCAS program will develop an unmanned, longer-range, carrier-based aircraft capable of being air-refueled to provide greater standoff capability, to expand payload and launch options, and to increase naval reach and persistence. The Navy was directed to demonstrate carrier operations, including Autonomous Aerial Refueling, of a Low Observable (LO) planform UCAS and to mature required technologies to a Technology Readiness Level-6; which, is required for a potential follow on acquisition program.

The Navy UCAS, designed for autonomous launch and recovery as well as operations in the Carrier Control Area, is comprised of an Air Vehicle Segment, a Mission Control Segment (MCS) and a government led Aircraft Carrier Integration Segment. The scope of the Navy UCAS effort includes design, development, integration, and validation of an unmanned, LO planform Air Vehicle Segment and MCS in the land-based and shipboard environments. Evaluations will be conducted to investigate MCS interfaces with shipboard systems such as Primary Flight Control displays, Landing Safety Officer displays, and Carrier Air Traffic Control Center stations.

The Navy UCAS program will be structured to match program resources to United States Navy objectives and constraints with the goals of identifying and maturing critical technologies and reducing the risk of carrier integration of a UCAS. Candidate Technology Maturation efforts include transformational communications, advanced integrated propulsion, aircraft carrier suitable materials, LO sensors and apertures, sense and avoid functionality (in an LO environment), autonomous operations (software algorithms and interfaces), and computer resource data storage and access systems. Modeling, simulation, analysis, industrial capability assessments, system/component development, and analysis of architectures and concept designs are being developed as a result of the demonstration. Maturation of candidate technologies support the evaluation of alternatives needed for a future milestone decision.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0604402N *I Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	20.961	35.949	-	-	-
Current President's Budget	24.893	35.877	-	-	-
Total Adjustments	3.932	-0.072	-	-	-
• Congressional General Reductions	-	-0.072			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	4.149	-			
• SBIR/STTR Transfer	-0.217	-			

Change Summary Explanation

Technical: N/A

Schedule: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0604402N / *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	Project (Number/Name) 3178 / *Unmanned Combat Air System CV-Demo (UCAS-D)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3178: *Unmanned Combat Air System CV-Demo (UCAS-D)*	1,414.771	24.893	35.877	-	-	-	-	-	-	-	-	1,475.541
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

FY14 program plan reflects Chief of Naval Operations and Secretary of Navy direction to continue the program to include additional test and at-sea periods. FY15 funding continues demonstration and integration efforts as directed by Chief of Naval Operations and Secretary of Navy.

A. Mission Description and Budget Item Justification

The Navy Unmanned Combat Air System (UCAS), designed for autonomous launch and recovery as well as operations in the Carrier Control Area, is comprised of an Air Vehicle Segment, a Mission Control Segment (MCS) and a government led Aircraft Carrier Integration Segment. The scope of the Navy UCAS effort includes design, development, integration, and validation of an unmanned, Low Observable (LO) planform Air Vehicle Segment and MCS in the land-based and shipboard environments. Evaluations will be conducted to investigate MCS interfaces with shipboard systems such as Primary Flight Control displays, Landing Safety Officer (LSO) displays, and Carrier Air Traffic Control Center (CATCC) stations.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	16.355	30.486	-	-	-
Articles:	-	-	-	-	-
Description: The primary effort in the Navy UCAS program is design, development, integration and validation of Air Vehicle Segment, MCS and government led Aircraft Carrier Segment leading to a Carrier demonstration of an unmanned, LO planform UCAS system, and development of internal/external interface documents. In addition, design and development of hardware/software to support Autonomous Aerial Refueling (AAR) will be conducted. Shipboard evaluation of the Navy UCAS includes integration of the Navy UCAS with shipboard systems such as Primary Flight Control displays, LSO displays and CATCC stations.					
FY 2014 Accomplishments: Continued AAR integration efforts. Continue Navy UCAS demonstration activities to include additional test and at-sea period.					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0604402N / *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	**Project (Number/Name)** 3178 / *Unmanned Combat Air System CV-Demo (UCAS-D)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue demonstration and integration efforts as directed by Chief of Naval Operations and Secretary of the Navy. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Test and Evaluation Support	5.833	4.020	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued Navy UCAS demonstration activities to include additional test and at-sea period. ***FY 2015 Plans:*** Continue UCAS Demonstration objectives as directed by Chief of Naval Operations and Secretary of the Navy. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Management	2.705	1.371	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Government management, engineering, and logistics support. ***FY 2015 Plans:*** Government management, engineering, and logistics support. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	24.893	35.877	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0604402N / *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	**Project (Number/Name)** 3178 / *Unmanned Combat Air System CV-Demo (UCAS-D)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

In the 2005 Quadrennial Defense Review, the Navy was directed to restructure the Joint Unmanned Combat Air System (UCAS) program and develop an unmanned, longer-range carrier-based aircraft capable of being air-refueled to provide greater aircraft carrier standoff capability, to expand payload and launch options, and to increase naval reach and persistence. The primary goal is risk reduction for carrier integration while developing the critical data necessary to support a potential follow on acquisition milestone decision. The Navy UCAS effort will focus on designing, developing, and evaluating the core capabilities which safely demonstrate carrier interoperability. Currently, primary hardware development for the Navy UCAS effort is being performed under a Federal Acquisition Regulation based, cost plus incentive fee-type contract competitively awarded to a single contractor.

E. Performance Metrics

Complete airworthiness and envelope expansion testing. Conduct shore-based carrier suitability testing. Conduct F/A-18D surrogate aircraft testing with Nimitz class aircraft carrier. Conduct at sea flight test of X-47B air vehicles. Demonstrate Autonomous Aerial Refueling.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0604402N / *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	Project (Number/Name) 3178 / *Unmanned Combat Air System CV-Demo (UCAS-D)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Aviation/ Ship Integration	C/CPFF	Rockwell/AFRL : Rome, NY	11.128	0.624	Nov 2013	0.104	Mar 2015	-		-		-	-	11.856	11.856
Aviation/Ship Integration	WR	NAWCAD : MD	100.424	10.350	Nov 2013	5.216	Nov 2014	-		-		-	-	115.990	-
Aviation/Ship Integration	C/CPIF	Various : Various	5.985	0.152	Jan 2014	-		-		-		-	-	6.137	6.137
Air Vehicle Integration	C/CPIF	Northrop Grumman Corporation : CA	43.035	3.635	Jun 2014	16.401	Nov 2014	-		-		-	-	63.071	63.071
Systems Engineering	WR	NAWCAD : MD	62.466	1.188	Nov 2013	8.603	Nov 2014	-		-		-	-	72.257	-
Product Development	Various	Various : Various	116.830	0.406	Dec 2013	0.162	Dec 2014	-		-		-	-	117.398	-
Prior year Prod Dev cost no longer funded in the FYDP	Various	Various : Various	927.628	-		-		-		-		-	-	927.628	-
		Subtotal	1,267.496	16.355		30.486		-		-		-	-	1,314.337	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Support cost no longer funded in the FYDP	Various	Various : Various	20.861	-		-		-		-		-	-	20.861	-
		Subtotal	20.861	-		-		-		-		-	-	20.861	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD : MD	43.904	5.542	Nov 2013	3.887	Nov 2014	-		-		-	-	53.333	-
Test & Evaluation	Various	Various : Various	1.474	0.291	Nov 2013	0.133	Nov 2014	-		-		-	-	1.898	-
Prior year T&E cost no longer funded in the FYDP	Various	Various : Various	10.297	-		-		-		-		-	-	10.297	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0604402N / *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	**Project (Number/Name)** 3178 / *Unmanned Combat Air System CV-Demo (UCAS-D)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	55.675	5.833		4.020		-		-		-	-	65.528	-

Management Services ($ in Millions)

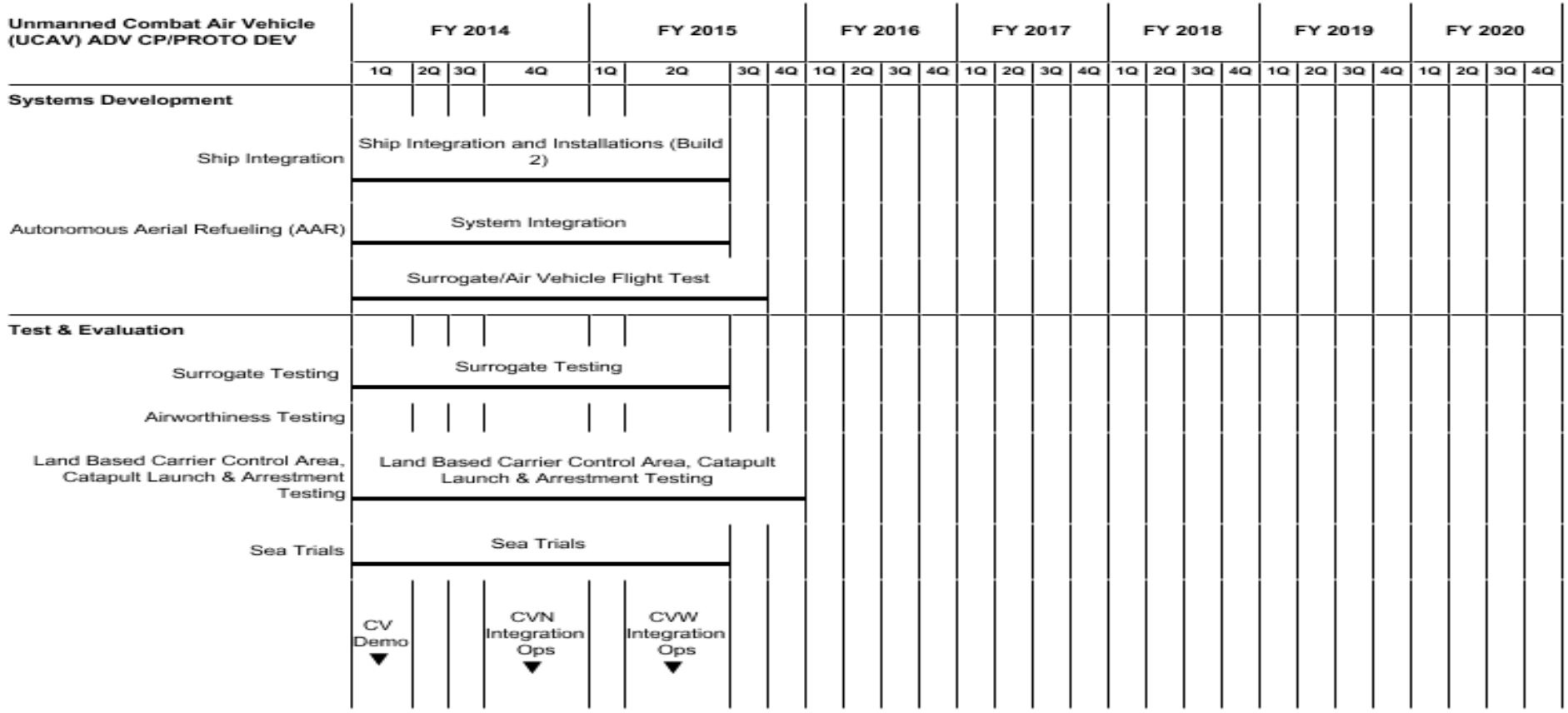
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor SEPM Support	C/CPIF	Various : Various	24.583	0.988	Jan 2014	0.310	Jan 2015	-		-		-	-	25.881	25.881
Government Engineering Support	WR	NAWCAD : MD	25.164	1.467	Nov 2013	0.911	Nov 2014	-		-		-	-	27.542	-
Program Management Support	WR	NAWCAD : MD	18.246	0.250	Nov 2013	0.150	Nov 2014	-		-		-	-	18.646	-
Prior Year Mgmt cost no longer funded in the FYDP	Various	Various : Various	2.746	-		-		-		-		-	-	2.746	-
		Subtotal	70.739	2.705		1.371		-		-		-	-	74.815	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,414.771	24.893		35.877		-		-		-	-	1,475.541	-

Remarks

FY14 program plan reflects Chief of Naval Operations and Secretary of Navy direction to continue the program to include additional test and at-sea periods. FY15 funding continues demonstration and integration efforts as directed by Chief of Naval Operations and Secretary of Navy.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0604402N / *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	**Project (Number/Name)** 3178 / *Unmanned Combat Air System CV-Demo (UCAS-D)*



2016PB - 0604402N - 3178

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0604402N / *Unmanned Combat Air Veh(UCAV) Adv Cp/Proto Dev*	**Project (Number/Name)** 3178 / *Unmanned Combat Air System CV-Demo (UCAS-D)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Unmanned Combat Air Vehicle (UCAV) ADV CP/PROTO DEV				
Systems Development: Ship Integration: Build 2	1	2014	2	2015
Systems Development: Autonomous Aerial Refueling (AAR): System Integration - AAR	1	2014	2	2015
Systems Development: Autonomous Aerial Refueling (AAR): Surrogate/Air Vehicle Flight Test - AAR	1	2014	3	2015
Test & Evaluation: Surrogate Testing: Surrogate Testing	1	2014	2	2015
Test & Evaluation: Land Based Carrier Control Area, Catapult Launch & Arrestment Testing: Land Based Carrier Control Area, Catapult Launch & Arrestment Testing	1	2014	4	2015
Test & Evaluation: Sea Trials: Sea Trials	1	2014	2	2015
Test & Evaluation: Sea Trials: CV Demonstration	1	2014	1	2014
Test & Evaluation: Sea Trials: CVN Integration Ops	4	2014	4	2014
Test & Evaluation: Sea Trials: CVW Integration Ops	2	2015	2	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0604766M *I (U)MARINE CORPS DATA SYSTEMS*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	0.034	-	-	-	-	-	-	-	-	-	0.034
4043: *Global Force Mgmt - DI (GFM-DI) for Total Force Struct Mgmt Sys (TFSMS)*	0.000	0.034	-	-	-	-	-	-	-	-	-	0.034

A. Mission Description and Budget Item Justification

PE 0604766M reflects a portion of the Global Force Management-Data Initiative (GFM-DI) advocated by the Vice-Chairman, Joint Chiefs of Staff (VCJCS). Funding enhancements support GFM-DI implementation of the Force Management and Adaptive Planning Processes by FY13, and Financial, Health Records, and Information Assurance by FY16.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	0.035	0.215	-	-	-
Current President's Budget	0.034	-	-	-	-
Total Adjustments	-0.001	-0.215	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.215			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.001	-			

Change Summary Explanation

This PE does not have RDT&E funding beyond FY14.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0604766M / *(U)MARINE CORPS DATA SYSTEMS*	Project (Number/Name) 4043 / *Global Force Mgmt - DI (GFM-DI) for Total Force Struct Mgmt Sys (TFSMS)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
4043: *Global Force Mgmt - DI (GFM-DI) for Total Force Struct Mgmt Sys (TFSMS)*	-	0.034	-	-	-	-	-	-	-	-	-	0.034
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Total Force Structure Management System (TFSMS) is the Marine Corps authoritative data source for force structure data and the provider of the Marine Corps Tables of Organization and Equipment. TFSMS defines present and future Marine Corps force structure, establishes the Marine Corps baseline for readiness reporting, justifies resource requirements and allocation, and enables Marine Corps compliance with the Joint Staff and Office of the Secretary Defense initiative to standardize force structure representation by providing the Marine Corps Global Force Management (GFM) Organizational Server. This program does not have RDT&E funding beyond FY14.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Total Force Structure Management System (TFSMS)	0.034	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated Engineering Change Proposals (ECPs).					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.034	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/4630: *TFSMS*	0.486	-	3.920	-	3.920	-	-	-	-	Continuing	Continuing
• PMC/4617: *TFSMS*	0.641	-	-	-	-	-	-	-	-	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0604766M / *(U)MARINE CORPS DATA SYSTEMS*	**Project (Number/Name)** 4043 / *Global Force Mgmt - DI (GFM-DI) for Total Force Struct Mgmt Sys (TFSMS)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

Total Force Structure Management System (TFSMS) is an evolutionary acquisition (EA) program currently comprised of two blocks/increments. TFSMS is a web-based application built upon an Oracle/Cognos infrastructure and currently residing on the G-6 Data Center in Marine Corps Base, Quantico. TFSMS currently has over 14,000 users. Block 1 is defined by a Capabilities Production Document (CPD) that was approved by the Marine Corps Requirements Oversight Council (MROC) 9 Apr 2008. TFSMS Block 1 Full Operational Capability (FOC) was met by completing development, testing and fielding of a transactional user web-based training capability to replace the current interim Instructor-led training which consists of a two-day Equipment Class and a two-day Structure Class taught locally twice each month. Increment II CDD was approved by the MROC 20 Nov 2009 (DM 07-2010). CPD was approved by MROC 3 Jul 2012 (DM 51-2012). Increment II capabilities include civilian billets, improved AAO calculations, and fielding plan capability; providing the Marine Corps with the ability to have a consolidated force structure picture.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0604766M / *(U)MARINE CORPS DATA SYSTEMS*	Project (Number/Name) 4043 / *Global Force Mgmt - DI (GFM-DI) for Total Force Struct Mgmt Sys (TFSMS)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TFSMS System Integrator Dev	C/FFP	TBD : TBD	0.000	0.034	May 2015	-		-		-		-	-	0.034	-
		Subtotal	0.000	0.034		-		-		-		-	-	0.034	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.034		-		-		-		-	-	0.034	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0604766M / *(U)MARINE CORPS DATA SYSTEMS*	**Project (Number/Name)** 4043 / *Global Force Mgmt - DI (GFM-DI) for Total Force Struct Mgmt Sys (TFSMS)*

Total Force Structure Management System (TFSMS)

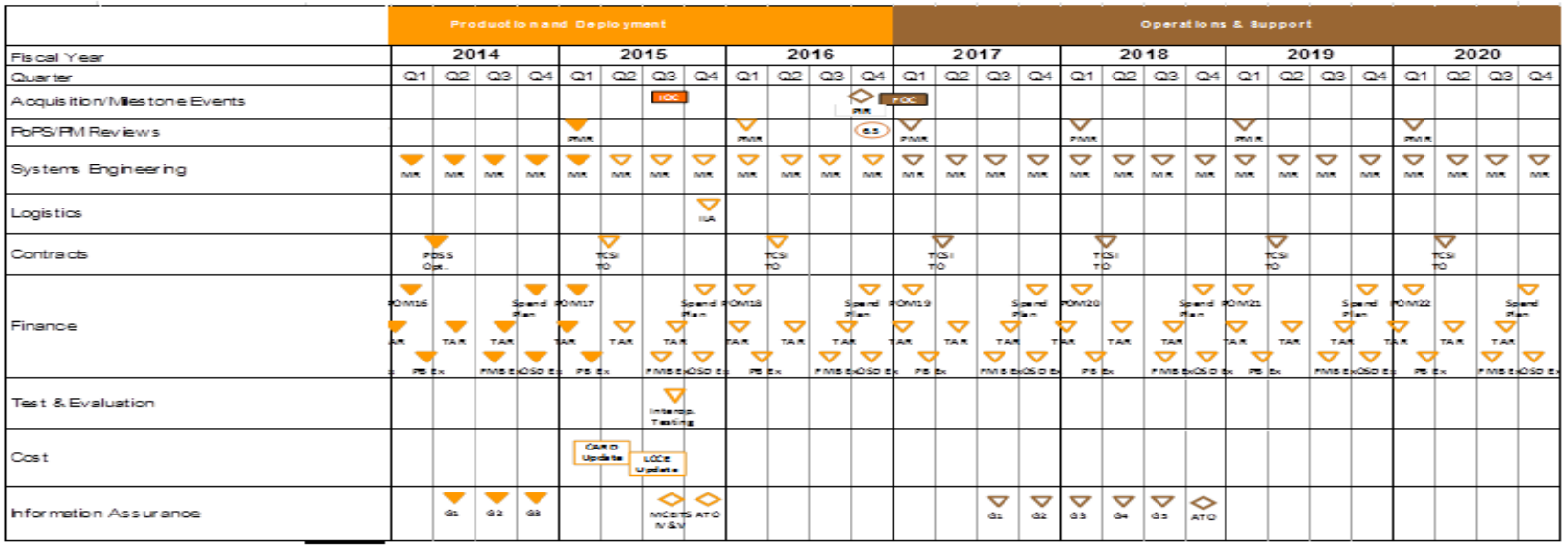


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0604766M / *(U)MARINE CORPS DATA SYSTEMS*	**Project (Number/Name)** 4043 / *Global Force Mgmt - DI (GFM-DI) for Total Force Struct Mgmt Sys (TFSMS)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4043				
TFSMS IOC	3	2015	3	2015
TFSMS PIR	4	2016	4	2016
TFSMS FOC	4	2016	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy												Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0605525N *I (U)CARRIER ONBOARD DELIVERY (COD) FOLLOW ON*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	1.230	8.873	-	-	-	-	-	-	-	-	10.103
3339: *Carrier Onboard Deliver Recapitalization*	0.000	1.230	8.873	-	-	-	-	-	-	-	-	10.103

A. Mission Description and Budget Item Justification

Funding supports the Engineering Analysis for development of an Engineering Change Proposal to modify an MV-22 into the C/MV-22 configuration to perform the COD mission. The Engineering Analysis will provide a proposed solution(s) to add (1) external conformal fuel tanks to provide the capability to meet the range requirements that the COD mission demands (2) an HF radio to transmit/receive beyond line of sight over water and (3) a Public Address system for use while transporting passengers.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	1.230	8.873	19.274	-	19.274
Current President's Budget	1.230	8.873	-	-	-
Total Adjustments	-	-	-19.274	-	-19.274
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-19.274	-	-19.274

Change Summary Explanation

Technical: Not applicable.
Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0605525N / *(U)CARRIER ONBOARD DELIVERY (COD) FOLLOW ON*	Project (Number/Name) 3339 / *Carrier Onboard Deliver Recapitalization*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3339: *Carrier Onboard Deliver Recapitalization*	-	1.230	8.873	-	-	-	-	-	-	-	-	10.103
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Funding supports the Engineering Analysis for development of an Engineering Change Proposal to modify a MV-22 into the C/MV-22 configuration to perform the COD mission. The Engineering Analysis will provide a proposed solution(s) to add (1) external conformal fuel tanks to provide the capability to meet the range requirements that the COD mission demands (2) an HF radio to transmit/receive beyond line of sight over water and (3) a Public Address system for use while transporting passengers.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Carrier Onboard Delivery Recapitalization	1.230	8.873	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Developed the foundations for the Doctrine, Organization, Training, material, Leadership, Personnel and Facilities (DOTmLPF) document that will result in the Doctrine Change Request for the COD platform. Developed the acquisition strategies for COD Recapitalization platform.					
FY 2015 Plans: Award the Engineering Analysis effort to provide the proposed solution(s) for the C/MV-22 to perform the COD Mission.					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	1.230	8.873	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605525N / *(U)CARRIER ONBOARD DELIVERY (COD) FOLLOW ON*	**Project (Number/Name)** 3339 / *Carrier Onboard Deliver Recapitalization*

D. Acquisition Strategy

The Government will issue a Basic Ordering Agreement (BOA) order to the Contractor.

E. Performance Metrics

Award the BOA order 2nd QTR FY15 and contractor will deliver solution(s) no later than end of 4th QTR 15.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605525N / *(U)CARRIER ONBOARD DELIVERY (COD) FOLLOW ON*	**Project (Number/Name)** 3339 / *Carrier Onboard Deliver Recapitalization*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
C/MV-22 Hardware Development	SS/CPFF	Bell Boeing : Ridley Park, PA	0.000	-		7.520	Jan 2015	-		-		-	-	7.520	7.520
		Subtotal	0.000	-		7.520		-		-		-	-	7.520	7.520

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD : Pax River, MD	0.000	1.000	Nov 2013	1.100	Nov 2014	-		-		-	-	2.100	-
Program Management Support	Various	NAWCAD : Pax River, MD	0.000	0.230	Nov 2013	0.253	Nov 2014	-		-		-	-	0.483	-
		Subtotal	0.000	1.230		1.353		-		-		-	-	2.583	-

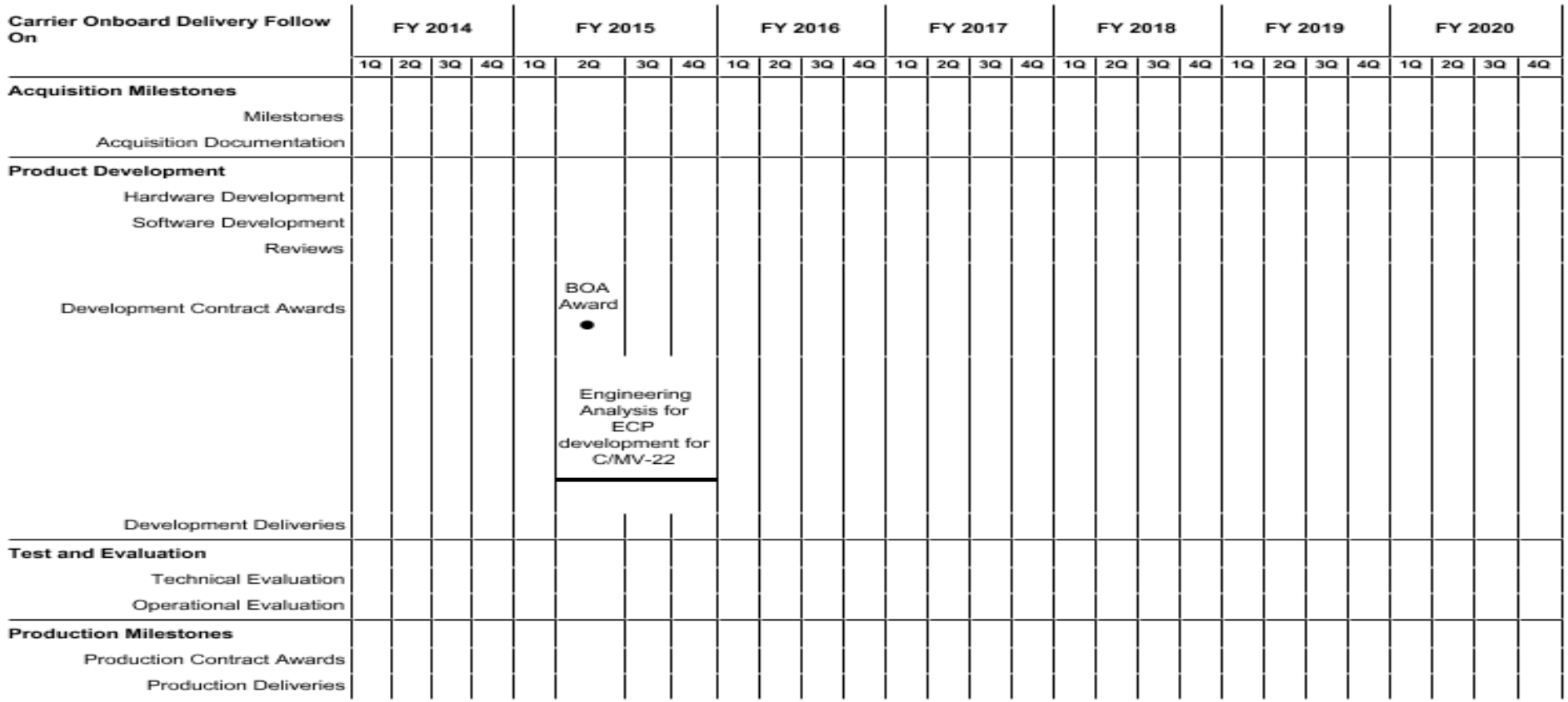
Remarks

FY14 funding will be used to prepare acquisition documentation.

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	1.230		8.873		-		-		-	-	10.103	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605525N / *(U)CARRIER ONBOARD DELIVERY (COD) FOLLOW ON*	**Project (Number/Name)** 3339 / *Carrier Onboard Deliver Recapitalization*



2016PB - 0605525N - 3339

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605525N / *(U)CARRIER ONBOARD DELIVERY (COD) FOLLOW ON*	**Project (Number/Name)** 3339 / *Carrier Onboard Deliver Recapitalization*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Carrier Onboard Delivery Follow On				
Product Development: Development Contract Awards: Basic Ordering Agreement Award	2	2015	2	2015
Product Development: Development Contract Awards: Engineering Analysis for ECP development for C/MV-22	2	2015	4	2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0605555N *I (U)STRIKE WEAPONS DEVELOPMENT*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	0.000	8.955	-	-	-	-	-	-	-	-	-	8.955
3212: *MEDUSA JCTD*	0.000	2.000	-	-	-	-	-	-	-	-	-	2.000
3412: *Hellfire-R Integration*	0.000	2.955	-	-	-	-	-	-	-	-	-	2.955
9999: *Congressional Adds*	0.000	4.000	-	-	-	-	-	-	-	-	-	4.000

Note

Beginning in FY 2014, 3212 MEDUSA Joint Capability Technology Demonstration (JCTD) was transferred from 0205601N/Harm Improvement.

A. Mission Description and Budget Item Justification

Research, Development, Test and Evaluation funding for Strike Weapons to be employed from a multitude of fixed and rotary wing aircraft in support of offensive and defensive land and sea based targets across multiple mission areas. Specific efforts include Advanced Precision Kill Weapons System (APKWS), MEDUSA JCTD, support the feasibility of a new air to ground missile for F-18 and Hellfire-R Integration. This will include High Powered Radio Frequency (HPRF) and High Energy Laser (HEL) as well as Rockets Improvement Program and future Program of Record forward firing weapons.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full-rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	13.757	-	-	-	-
Current President's Budget	8.955	-	-	-	-
Total Adjustments	-4.802	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.757	-			
• SBIR/STTR Transfer	-0.045	-			
• Rate/Misc Adjustments	-	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)

	FY 2014	FY 2015
Project: 9999: *Congressional Adds*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0605555N *I (U)STRIKE WEAPONS DEVELOPMENT*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2014	FY 2015
Congressional Add: *F/A-18 Missile Flt Testing - Cong*	4.000	-
Congressional Add Subtotals for Project: 9999	4.000	-
Congressional Add Totals for all Projects	4.000	-

Change Summary Explanation

Technical: N/A

Schedule: The schedule for project 3412 has changed due to the Navy no longer investing in Hellfire-R as the focus shifts to the integration and fielding of the Joint Air Ground Missile (JAGM). System Qualification Testing, Operational Live Fire Testing, and the All-Up-Round Low Rate Initial Production 1 for the Hellfire-R variant have been removed. The KC-130J Harvest Hercules Airborne Weapons Kit (HAWK) Developmental/Operation Testing has moved from starting in 4Q14 to 3Q15 due to contract delays in the KC-130J Harvest HAWK Plus program.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	Project (Number/Name) 3212 / *MEDUSA JCTD*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3212: *MEDUSA JCTD*	-	2.000	-	-	-	-	-	-	-	-	-	2.000
Quantity of RDT&E Articles		5	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The MEDUSA Joint Capability Technology Demonstration (JCTD) demonstrated the Low Cost Guided Imaging Rockets (LOGIR) technology developed at the Naval Air Warfare Center Weapons Division, China Lake on the MH-60S. LOGIR was to initially provide "fire and forget" capability to 2.75-inch rockets in support of Sea Shield Pillar. LOGIR provides increased platform lethality against Fast Attack Craft (FAC)/Fast Inshore Attack Craft (FIAC) threat, a low-cost imaging infraRed precision guidance section for the existing 2.75-inch unguided rockets and maximum precision kills per sortie with minimum collateral damage, increased efficiency and increased standoff distance. Initial program documentation (i.e. performance specifications, Capabilities Development Document) was developed within the scope of the JCTD.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Digital Rocket Launcher	2.000	-	-	-	-
Articles:	5	-	-	-	-
FY 2014 Accomplishments: FY14 funding was used to cover the operational testing and completion of Quick Reaction Assessment (QRA) for the Digital Rocket Launcher (DRL) which provides 2.75-inch rocket capability on MH-60R/S in support of Sea Shield Pillar, and increases lethality against FAC/FIAC threat.					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	2.000	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	**Project (Number/Name)** 3212 / *MEDUSA JCTD*

D. Acquisition Strategy

The MEDUSA Joint Capability Technology Demonstration was performed in FY09 through FY12. The Digital Rocket Launcher (DRL) is a Rapid Deployment Capability that achieved Early Operational Capability on MH-60S in 2QTR FY14. Ongoing development and test activities support DRL Early Operational Capability on MH-60R in 2QTR FY15.

E. Performance Metrics

Successful development and test of all up round DRL system, including warhead, rocket motor and guidance system for Fast Attack Craft/Fast Inshore Attack Craft.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	**Project (Number/Name)** 3212 / *MEDUSA JCTD*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Launcher Prototype	SS/FFP	Arnold Defense : St. Louis, MO	0.000	0.820	May 2014	-		-		-		-	-	0.820	0.820
		Subtotal	0.000	0.820		-		-		-		-	-	0.820	0.820

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Launcher Support	Various	NAWCAD : Lakehurst, NJ	0.000	0.160	Mar 2014	-		-		-		-	-	0.160	-
		Subtotal	0.000	0.160		-		-		-		-	-	0.160	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test	WR	NAWCWD : China Lake, CA	0.000	0.170	Feb 2014	-		-		-		-	-	0.170	-
Operational Test	WR	NSWC IHD : Indian Head, MD	0.000	0.850	Oct 2014	-		-		-		-	-	0.850	-
		Subtotal	0.000	1.020		-		-		-		-	-	1.020	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	2.000		-		-		-		-	-	2.000	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	**Project (Number/Name)** 3212 / *MEDUSA JCTD*

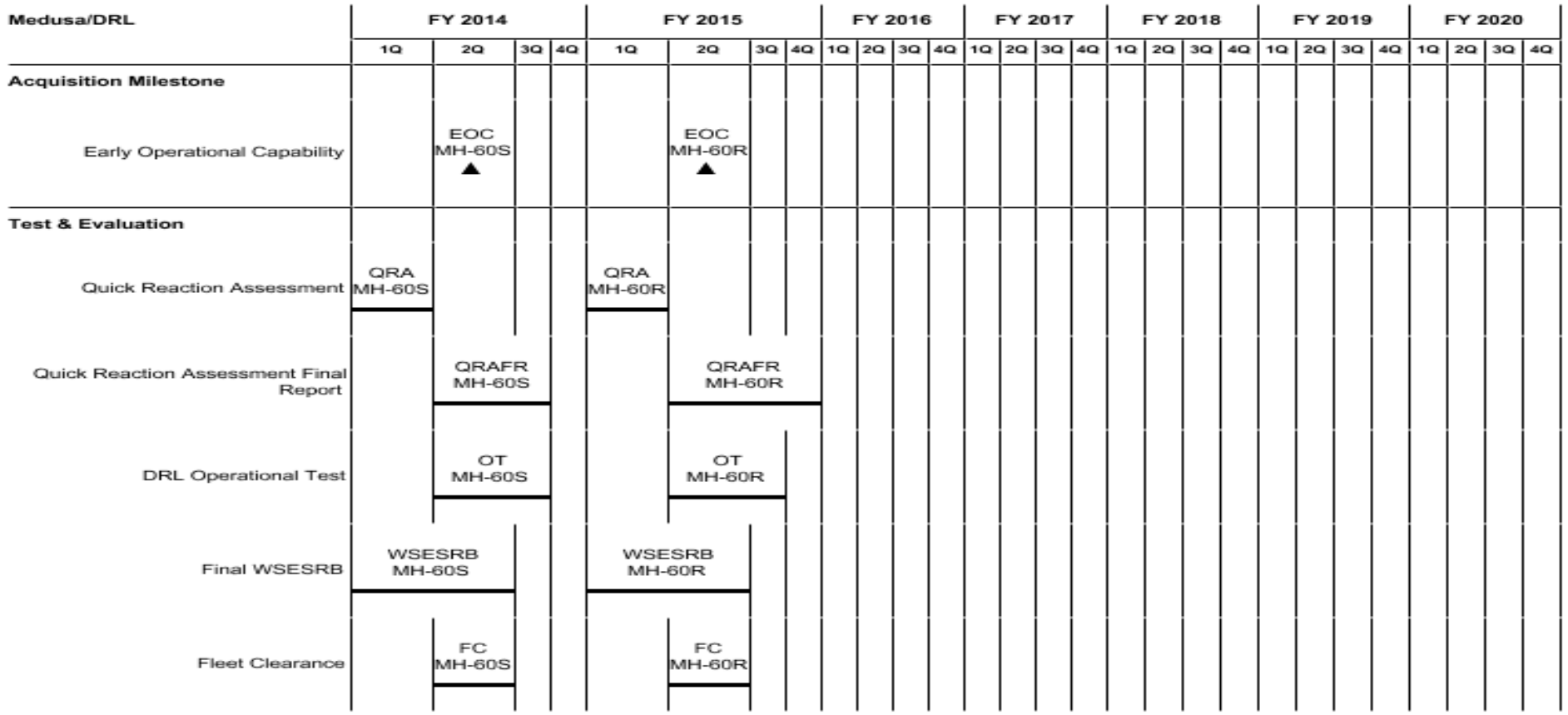


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	**Project (Number/Name)** 3212 / *MEDUSA JCTD*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Medusa/DRL				
Acquisition Milestone: Early Operational Capability: Early Operational Capabillity (MH-60S)	2	2014	2	2014
Acquisition Milestone: Early Operational Capability: Early Operational Capabillity (MH-60R)	2	2015	2	2015
Test & Evaluation: Quick Reaction Assessment: Quick Reaction Assessment (MH-60S)	1	2014	1	2014
Test & Evaluation: Quick Reaction Assessment: Quick Reaction Assessment (MH-60R)	1	2015	1	2015
Test & Evaluation: Quick Reaction Assessment Final Report: Quick Reaction Assessment Final Report (MH-60S)	2	2014	3	2014
Test & Evaluation: Quick Reaction Assessment Final Report: Quick Reaction Assessment Final Report (MH-60R)	2	2015	4	2015
Test & Evaluation: DRL Operational Test: DRL Operational Test (MH60S)	2	2014	3	2014
Test & Evaluation: DRL Operational Test: DRL Operational Test (MH-60R)	2	2015	3	2015
Test & Evaluation: Final WSESRB: Final WSESRB (MH-60S)	1	2014	2	2014
Test & Evaluation: Final WSESRB: Final WSESRB (MH-60R)	1	2015	2	2015
Test & Evaluation: Fleet Clearance: Fleet Clearance (MH-60S)	2	2014	2	2014
Test & Evaluation: Fleet Clearance: Fleet Clearance (MH-60R)	2	2015	2	2015

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	Project (Number/Name) 3412 / *Hellfire-R Integration*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3412: *Hellfire-R Integration*	-	2.955	-	-	-	-	-	-	-	-	-	2.955
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Air-to-Ground Missile (AGM)-114P4/P4A/N4 missiles are part of an Engineering Change Proposal (ECP) to the fielded AGM-114K, K2, K2A, P, P2, P2A, M and N missiles. Unlike earlier versions of the Hellfire missile, the P4 family of missiles can be launched from RW and FW platforms. The P4 family of missiles will significantly increase the inventory of missiles available for the KC-130J Harvest Hercules Airborne Weapons Kit (HAWK). Additionally, the AGM-114N4 will give the Harvest HAWK platform a thermobaric warhead capability, which it previously did not have.

Research, Development Test and Evaluation (RDT&E) funding will support aircraft airworthiness certification through missile firings to verify the upgraded missile will comply with Safe Separation requirements for the AH-1Z and KC-130J.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Test and Evaluation	2.955	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: FY14 funding supported aircraft airworthiness certification through missile firings to comply with Safe Separation requirements for the AH-1Z and KC-130J.					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	2.955	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN/2254: *HELLFIRE*	27.350	-	-	-	-	-	-	-	-	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	**Project (Number/Name)** 3412 / *Hellfire-R Integration*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

Department of Navy has decided Hellfire inventory is sufficient until the transisiton to Joint Air-to-Ground Missile (JAGM) is complete.

E. Performance Metrics

FY14 funding supported aircraft airworthiness certification through missile firings to comply with Safe Separation requirements for the AH-1Z and KC-130J.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	Project (Number/Name) 3412 / *Hellfire-R Integration*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCWD : China Lake, CA	0.000	-		-		-		-		-	-	-	-
Systems Engineering	WR	NAWCAD : Patuxent River, MD	0.000	-		-		-		-		-	-	-	-
		Subtotal	0.000	-		-		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	WR	NAWCWD : China Lake, CA	0.000	1.000	Oct 2014	-		-		-		-	-	1.000	-
Operational Test & Evaluation	WR	NAWCAD : Patuxent River, MD	0.000	1.955	Oct 2014	-		-		-		-	-	1.955	-
		Subtotal	0.000	2.955		-		-		-		-	-	2.955	-

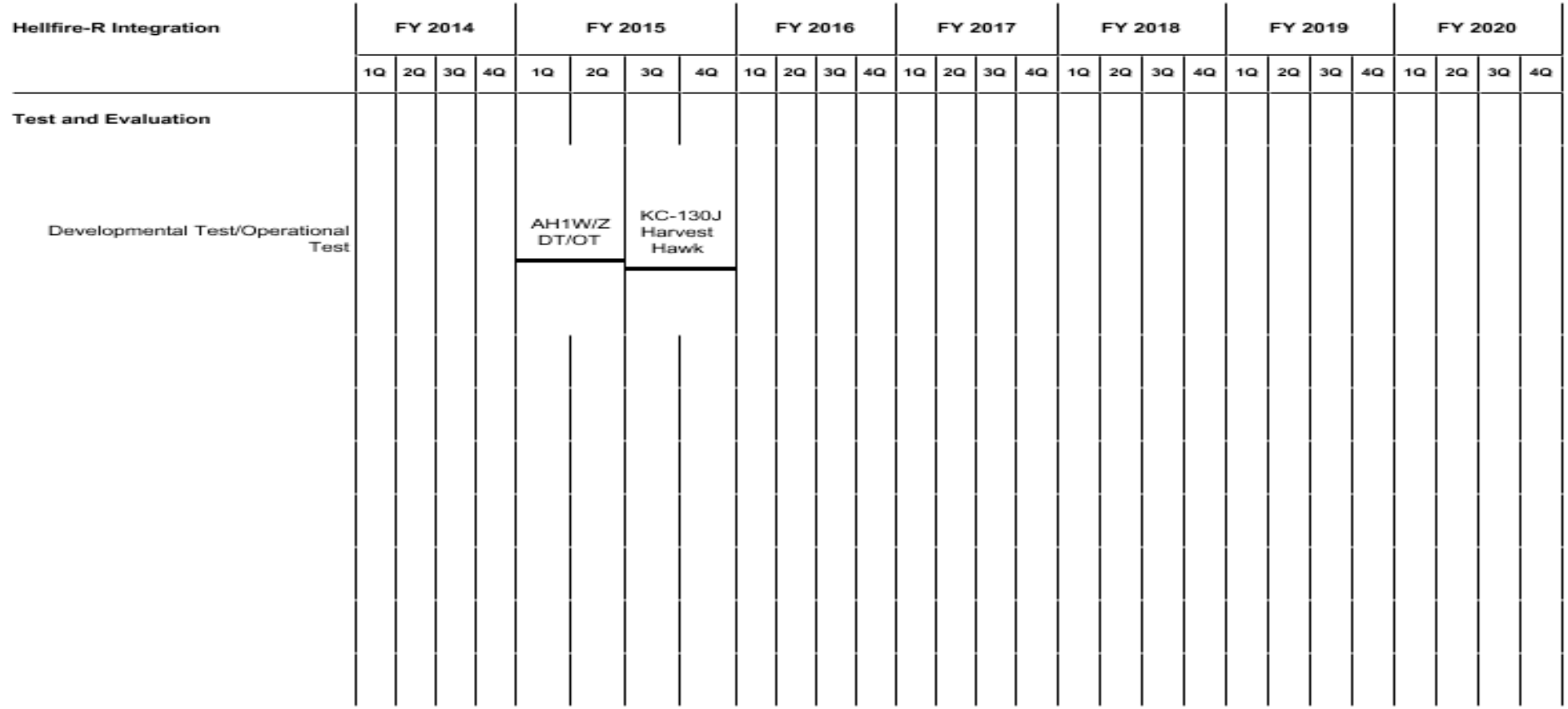
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Various	0.000	-		-		-		-		-	-	-	-
		Subtotal	0.000	-		-		-		-		-	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	2.955		-		-		-		-	-	2.955	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	**Project (Number/Name)** 3412 / *Hellfire-R Integration*



2016PB - 0605555N - 3412

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	**Project (Number/Name)** 3412 / *Hellfire-R Integration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Hellfire-R Integration				
Test and Evaluation: Developmental Test/Operational Test: AH1W/Z DT/OT	1	2015	2	2015
Test and Evaluation: Developmental Test/Operational Test: KC-130J Harvest Hawk	3	2015	4	2015

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
9999: *Congressional Adds*	-	4.000	-	-	-	-	-	-	-	-	-	4.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Research, Development, Test and Evaluation (RDT&E) funding will support the feasibility of a new air-to-ground missile for F/A-18.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015
Congressional Add: F/A-18 Missile Flt Testing - Cong	4.000	-
FY 2014 Accomplishments: Conducted feasibility analysis and tests for new air-to-ground missile.		
FY 2015 Plans: N/A		
Congressional Adds Subtotals	4.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Congressional add.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	Project (Number/Name) 9999 / *Congressional Adds*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering	WR	NAWC WD : China Lake, CA	0.000	0.200	Apr 2014	-		-		-		-	-	0.200	-
		Subtotal	0.000	0.200		-		-		-		-	-	0.200	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analysis	WR	NAWC WD : China Lake, CA	0.000	0.700	Sep 2014	-		-		-		-	-	0.700	-
		Subtotal	0.000	0.700		-		-		-		-	-	0.700	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	SS/CPFF	Various : Various	0.000	1.900	Sep 2014	-		-		-		-	-	1.900	1.900
Test Articles	SS/CPFF	Various : Various	0.000	0.800	Sep 2014	-		-		-		-	-	0.800	0.800
		Subtotal	0.000	2.700		-		-		-		-	-	2.700	2.700

Management Services ($ in Millions)

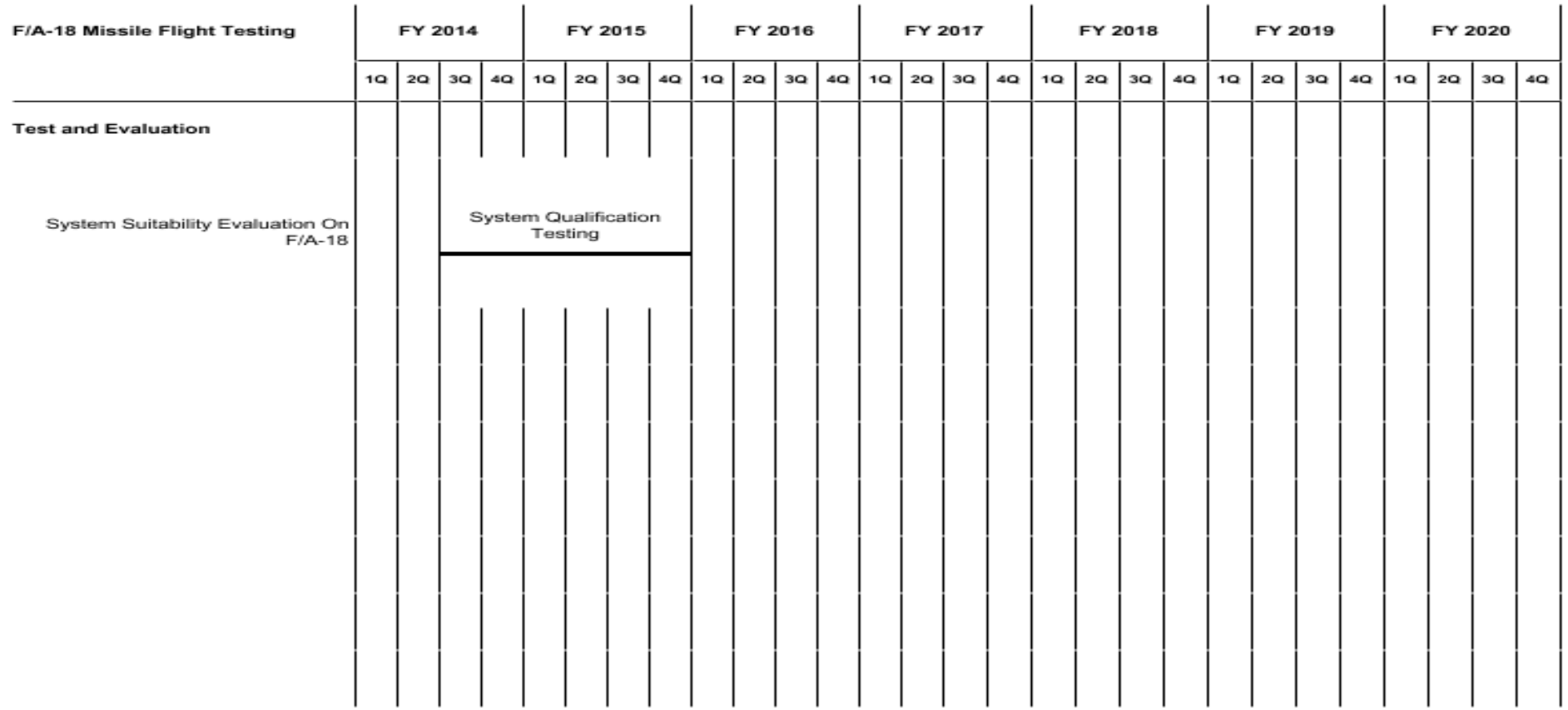
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWC WD : China Lake, CA	0.000	0.100	Apr 2014	-		-		-		-	-	0.100	-
Program Management Support	WR	NAWC AD : Patuxent River, MD	0.000	0.300	Apr 2014	-		-		-		-	-	0.300	-
		Subtotal	0.000	0.400		-		-		-		-	-	0.400	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	Project (Number/Name) 9999 / *Congressional Adds*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	4.000		-		-		-		-	-	4.000	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	**Project (Number/Name)** 9999 / *Congressional Adds*



2016PB - 0605555N - 9999

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0605555N / *(U)STRIKE WEAPONS DEVELOPMENT*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
F/A-18 Missile Flight Testing				
Test and Evaluation: System Suitability Evaluation On F/A-18: System Suitability Evaluation On F/A-18	3	2014	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0101221N *I Strategic Sub & Wpns Sys Supt*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	786.117	86.197	94.525	107.039	-	107.039	129.957	130.431	82.845	84.290	Continuing	Continuing
0951: *Joint Warhead Fuze Sustainment Program*	133.370	83.751	84.962	95.400	-	95.400	113.938	110.608	64.964	66.351	Continuing	Continuing
2228: *Technical Applications Programs*	633.772	-	-	9.000	-	9.000	13.300	17.024	15.024	15.025	Continuing	Continuing
3097: *W78/88-1 Life Extension Program*	0.000	-	7.000	-	-	-	-	-	-	-	-	7.000
3158: *Integrated Nuclear Weapons Security Sys Dev*	18.975	2.446	2.563	2.639	-	2.639	2.719	2.799	2.857	2.914	Continuing	Continuing
MDAP/MAIS Code: **Other MDAP/MAIS Code(s):** 178												

A. Mission Description and Budget Item Justification

The Joint Warhead Fuze Sustainment Program (0951) is an effort to develop advanced components to improve the reliability, safety, and security of Arming, Fuzing and Firing (AF&F) systems for nuclear reentry systems. The current effort is focused on supporting the alteration of the AF&F system for the MK5/W88 system which will be five years beyond its design life at the scheduled deployment of the AF&F alteration. This effort also supports future utilization of the developed components by the US Air Force and United Kingdom.

The Technology Applications Program (2228) supports the TRIDENT II (D5) Submarine Launched Ballistic Missile (SLBM) that provides the U.S. a weapon system with greater accuracy and payload capability as compared to the TRIDENT I (C4) system. TRIDENT II enhances U.S. strategic deterrence providing a survivable, sea-based system capable of engaging the full spectrum of potential targets with fewer submarines. Efforts in FY16 will be the commencement of Multi-Star Enhanced Prelaunch (MEP) and the development of a Systems Engineering Modeling and Simulation capability. MEP will demonstrate the ability to use two stellar sightings to formulate the in-flight correction (rather than one) which may in the future provide relief to the strict tolerance requirements of the strategic navigator on the current OHIO class submarines and the OHIO Class Replacement program. The Systems Engineering Modeling and Simulation capability will assess overall performance of the Strategic Weapon System which today requires extensive test flights and unique special tests that can only be conducted on operational SSBN platforms. This capability will provide visibility into technical margin across the deployed system to reduce reliance on operational SSBN assets for flight / special test evolutions and enable low cost/ risk trade space exploration for future lifecycle cost savings initiatives.

The W78/88-1 Life Extension Program (3097) is an effort to conduct the Navy portion of a Department of Defense/Department of Energy (DOD/DOE) Nuclear Weapons Council initiated Phase 6.2/6.2A investigation of design options and associated feasibility and cost study for a life extension of the Air Force W78 Reentry Vehicle and Navy W88 Reentry Body. The study will evaluate options and select a preferred solution(s) for a common Nuclear Explosive Package (NEP), including improved safety

capabilities, which could be integrated into both the W78 and W88 platforms. In addition, the study will conduct a cost study for a refurbishment life extension of the current W88 design.

The Integrated Nuclear Weapons Security System (INWSS) (3158) efforts support the Nuclear Weapons Security program and SSBN Escort mission. The policies and requirements regarding the safeguard of nuclear weapons within the Department of Defense is established by DoD S5210.41M. Within the Department of the Navy, nuclear weapons are limited to TRIDENT Fleet Ballistic Missiles (FBM), either deployed aboard TRIDENT submarines or located landside at Naval Submarine Base, Kings Bay, or Naval Submarine Base, Bangor where missiles are first assembled as well as repaired. The Chief of Naval Operations (CNO) has assigned the Strategic Systems Programs (SSP), the FBM program manager, with mission responsibility for the safeguard of FBM nuclear technologies. This budget supports efforts directed at improving the current technological baseline through a series of studies. These efforts will improve countermeasure technologies to address detection, delay and denial.

FY15 Congressional add for Missile Component Development.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	98.057	96.943	107.800	-	107.800
Current President's Budget	86.197	94.525	107.039	-	107.039
Total Adjustments	-11.860	-2.418	-0.761	-	-0.761
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-12.418			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-9.375	-			
• SBIR/STTR Transfer	-2.485	-			
• Rate/Misc Adjustments	-	-	-0.761	-	-0.761

Change Summary Explanation

Funding reduced in FY 2015 ($12.418M) for underexecution in the Joint Warhead Fuze program. Funding increased $10M in FY 2015 for Missile Component Development.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0101221N / *Strategic Sub & Wpns Sys Supt*				Project (Number/Name) 0951 / *Joint Warhead Fuze Sustainment Program*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
0951: *Joint Warhead Fuze Sustainment Program*	133.370	83.751	84.962	95.400	-	95.400	113.938	110.608	64.964	66.351	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: 178

A. Mission Description and Budget Item Justification

The Joint Warhead Fuze Sustainment Program is an effort to develop advanced components to improve the reliability, safety, and security of AF&F systems for nuclear reentry systems. The current effort is focused on supporting the alteration of the AF&F system for the MK5/W88 system which will be five years beyond its design life at the scheduled deployment of the AF&F alteration. This effort also supports future utilization of the developed components by the US Air Force and United Kingdom.

FY15 Congressional add for Missile Component Development.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: TRIDENT II	83.751	74.962	95.400	-	95.400
Articles:	-	-	-	-	-
Description: Identify, prioritize, develop, proof, and demonstrate advanced technologies that will be leveraged and incorporated into future AF&Fs.					
FY 2014 Accomplishments: Continue development, proofing, demonstration, and technology maturation of identified advanced technologies for future AF&Fs Support engineer working groups. Continue AF&F sub-assembly design demonstrations Continue development of advanced safety and surety architecture solutions. Continue detailed design Conduct performance assessment of tested designs (FCET 50 completed) Conduct production engineering Support Critical Radar Arming and Firing Test (CRAFT) Develop and implement software changes due to AF&F					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 0951 / *Joint Warhead Fuze Sustainment Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue development, proofing, demonstration, and technology maturation of identified advanced technologies for future AF&Fs Support engineer working groups. Continue AF&F sub-assembly design demonstrations Continue development of advanced safety and surety architecture solutions. Continue detailed design Continue to develop and implement software changes due to AF&F Conduct performance assessment of tested designs Conduct production engineering Initial pre-production line development and initial builds Procure material for qualification testing; Commercial-Off-The-Shelf (COTS) qualification testing ***FY 2016 Base Plans:*** Continue development, proofing, demonstration of identified advanced technologies for future AF&Fs Support engineer working groups and program reviews. Continue AF&F sub-assembly design demonstrations Continue development of advanced safety and surety architecture solutions. Continue detailed design Continue to develop and implement software changes due to AF&F Conduct performance assessment of tested designs Conduct production engineering Begin missile integration of the Mk5A Alt 370 fuze development, and perform pre-flight test and analysis Design, develop and qualify production tools and processes, testers, gauges, AF&F simulators and trainers ***FY 2016 OCO Plans:*** N/A					
Title: Missile Component Development	-	10.000	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 0951 / *Joint Warhead Fuze Sustainment Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Congressional add for missile component development					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	83.751	84.962	95.400	-	95.400

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTEN/3219: *SBSD Nuclear Technology Development*	296.050	369.964	422.661	-	422.661	411.598	401.698	291.302	278.600	Continuing	Continuing
• RDTEN/3220: *Advanced Submarine System Development*	760.100	816.800	971.400	-	971.400	712.400	766.500	484.900	206.000	-	4,718.100
• SCN/1045: *OHIO Replacement Program*	-	-	-	-	-	777.793	791.793	2,771.344	1,316.280	Continuing	Continuing
• RDTEN/3237: *Launch Test Facility*	-	36.470	-	-	-	-	-	-	-	-	36.470
• MILCON/0805376N: *Ohio Replacement Power and Propultion Facility*	-	23.985	-	-	-	-	-	-	-	-	23.985
• MILCON/0901211N: *MCON Design Funds*	-	0.364	-	-	-	-	-	-	-	-	0.364
• OPN/5358: *SWS Modernization Funds*	224.484	201.832	240.694	-	240.694	200.789	222.157	227.140	231.945	Continuing	Continuing
• WPN/1250: *TRIDENT II Mods*	1,130.079	1,175.455	1,099.640	-	1,099.640	1,142.004	1,151.852	1,194.240	1,249.313	Continuing	Continuing
• OMN/12D2: *Fleet Ballistic Missile*	968.966	1,001.297	1,034.760	-	1,034.760	1,051.946	1,067.652	1,092.294	1,117.407	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 0951 / *Joint Warhead Fuze Sustainment Program*

D. Acquisition Strategy

Contracts will continue to be awarded to those sources who were engaged in the Mk4LE Reentry Body development program and are currently engaged in the production and/or operational support of the deployed Mk4LE Reentry Body on the basis of Other Than Full and Open Competition pursuant to the authority of 10 U.S.C. 2304 (c) (1) and (3) implemented by FAR 6.302.-1, 3, 4

E. Performance Metrics

Not applicable

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 0951 / *Joint Warhead Fuze Sustainment Program*

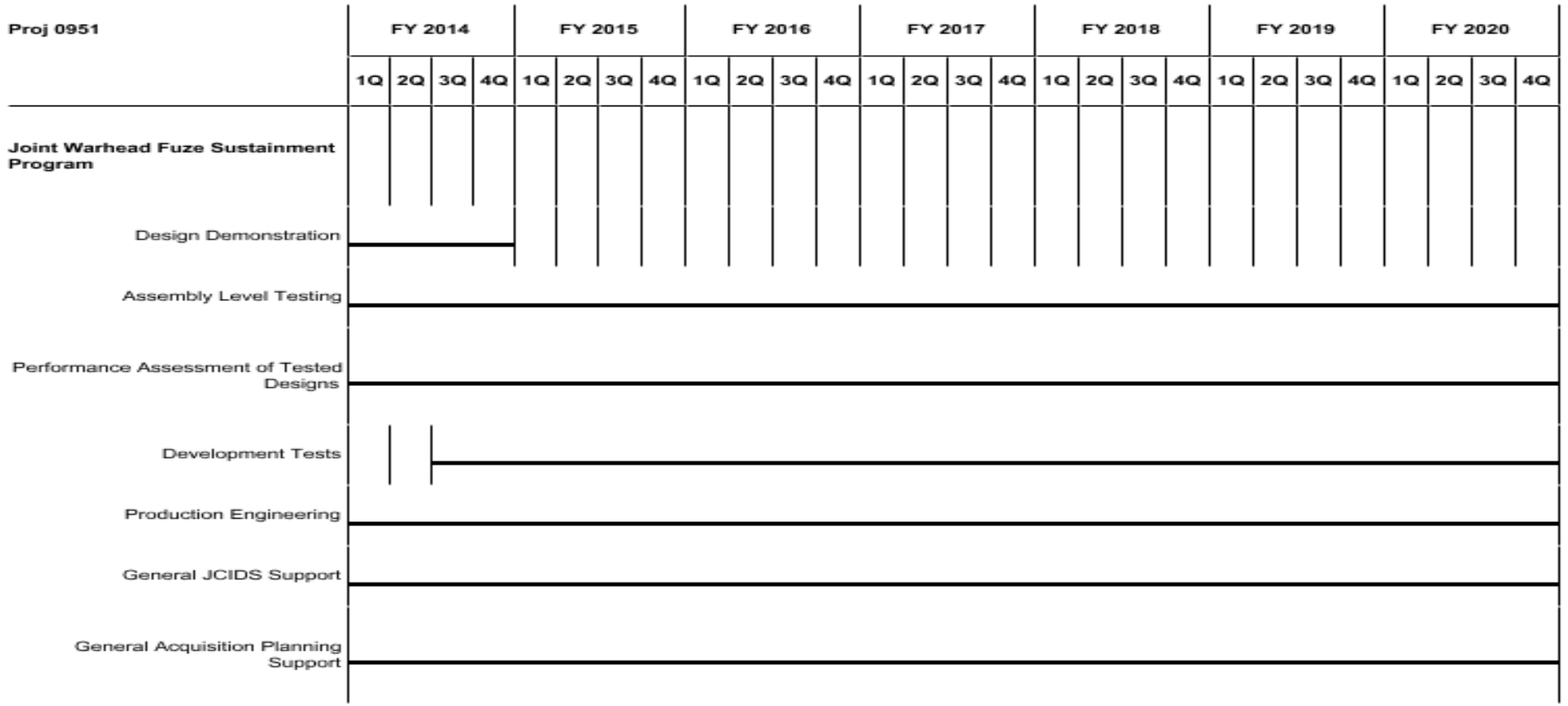
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Warhead Fuze Sustainment DOE	MIPR	DOE : NM	120.550	69.523	Nov 2013	59.710	Jan 2015	79.044	Nov 2015	-		79.044	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment ITT	SS/CPFF	ITT : VA	5.687	1.993	Nov 2013	3.000	Nov 2014	4.000	Nov 2015	-		4.000	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment LMMS	SS/CPFF	LMMS : CA	6.500	6.500	Nov 2013	6.600	Nov 2014	5.900	Nov 2015	-		5.900	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment	WR	NSWC Dahlgren : VA	0.633	5.461	Oct 2013	5.144	Oct 2014	5.278	Oct 2015	-		5.278	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment	SS/CPFF	BAE : Not Specified	0.000	0.219	Dec 2013	0.185	Dec 2014	0.291	Dec 2015	-		0.291	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment	SS/CPIF	APL : Not Specified	0.000	0.025	Dec 2013	0.323	Dec 2014	0.437	Dec 2015	-		0.437	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment	C/BA	GDAIS : Not Specified	0.000	0.030	Nov 2013	-	Jan 2015	0.150	Nov 2015	-		0.150	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment	WR	CNSW : Not Specified	0.000	-		-		0.200	Oct 2015	-		0.200	-	0.200	-
Joint Warhead Fuze Sustainment	WR	NCCC : Not Specified	0.000	-		-		0.100	Oct 2015	-		0.100	-	0.100	-
Congressional Add *Missile Component Development	TBD	TBD : Not Specified	0.000	-		10.000	Feb 2015	-		-		-	-	10.000	-
		Subtotal	133.370	83.751		84.962		95.400		-		95.400	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	133.370	83.751		84.962		95.400		-		95.400	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 0951 / *Joint Warhead Fuze Sustainment Program*



2016DON - 0101221N - 0951

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 0951 / *Joint Warhead Fuze Sustainment Program*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0951				
Joint Warhead Fuze Sustainment Program: Design Demonstration:	1	2014	4	2014
Joint Warhead Fuze Sustainment Program: Assembly Level Testing:	1	2014	4	2020
Joint Warhead Fuze Sustainment Program: Performance Assessment of Tested Designs:	1	2014	4	2020
Joint Warhead Fuze Sustainment Program: Development Tests:	3	2014	4	2020
Joint Warhead Fuze Sustainment Program: Production Engineering:	1	2014	4	2020
Joint Warhead Fuze Sustainment Program: General JCIDS Support:	1	2014	4	2020
Joint Warhead Fuze Sustainment Program: General Acquisition Planning Support:	1	2014	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101221N / *Strategic Sub & Wpns Sys Supt*	Project (Number/Name) 2228 / *Technical Applications Programs*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2228: *Technical Applications Programs*	633.772	-	-	9.000	-	9.000	13.300	17.024	15.024	15.025	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In FY16 the Multi-Star Enhanced Prelaunch (MEP) program will commence. This system leverages the capability of the D5 Life Extension Guidance (Mk6 Mod1) to sight two stars vice one combined with the interface updates to the Fire Control and Navigation. Allowing for in-flight correction, the potential to operate in environments where GPS is denied, and may provide future relief to the strict tolerance requirements of the strategic navigator on the current OHIO class submarines and the OHIO Class Replacement program. The Systems Engineering Modeling and Simulation capability will consist of three elements: Model Based Design, Strategic Weapon System (SWS) Integrated Modeling and Simulation/Common Architecture & Framework, and SWS Enhancement Ground Test. This effort will provide the capability to comprehensively evaluate and test the integrated SWS within representative operational environments, providing unprecedented visibility across the SWS and system performance characterization equivalent to flight testing. This capability will enable trade space analysis to identify technical margin, subsystem interactions, and lifecycle affordability opportunities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Multi-Star Enhanced Prelaunch (MEP)	-	-	9.000	-	9.000
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: N/A					
FY 2016 Base Plans: Define interface specifications between Navigation, Fire Control and Guidance subsystems for executing MEP algorithm Begin early software engineering development					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	-	9.000	-	9.000

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 2228 / *Technical Applications Programs*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Contracts will continue to be awarded to those sources who were engaged in program and are currently engaged in the production and/or operational support on the basis of Other Than Full and Open Competition pursuant to the authority of 10 U.S.C. 2304 (c) (1) and (3) implemented by FAR 6.302.-1, 3, 4

E. Performance Metrics

Not applicable

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 2228 / *Technical Applications Programs*

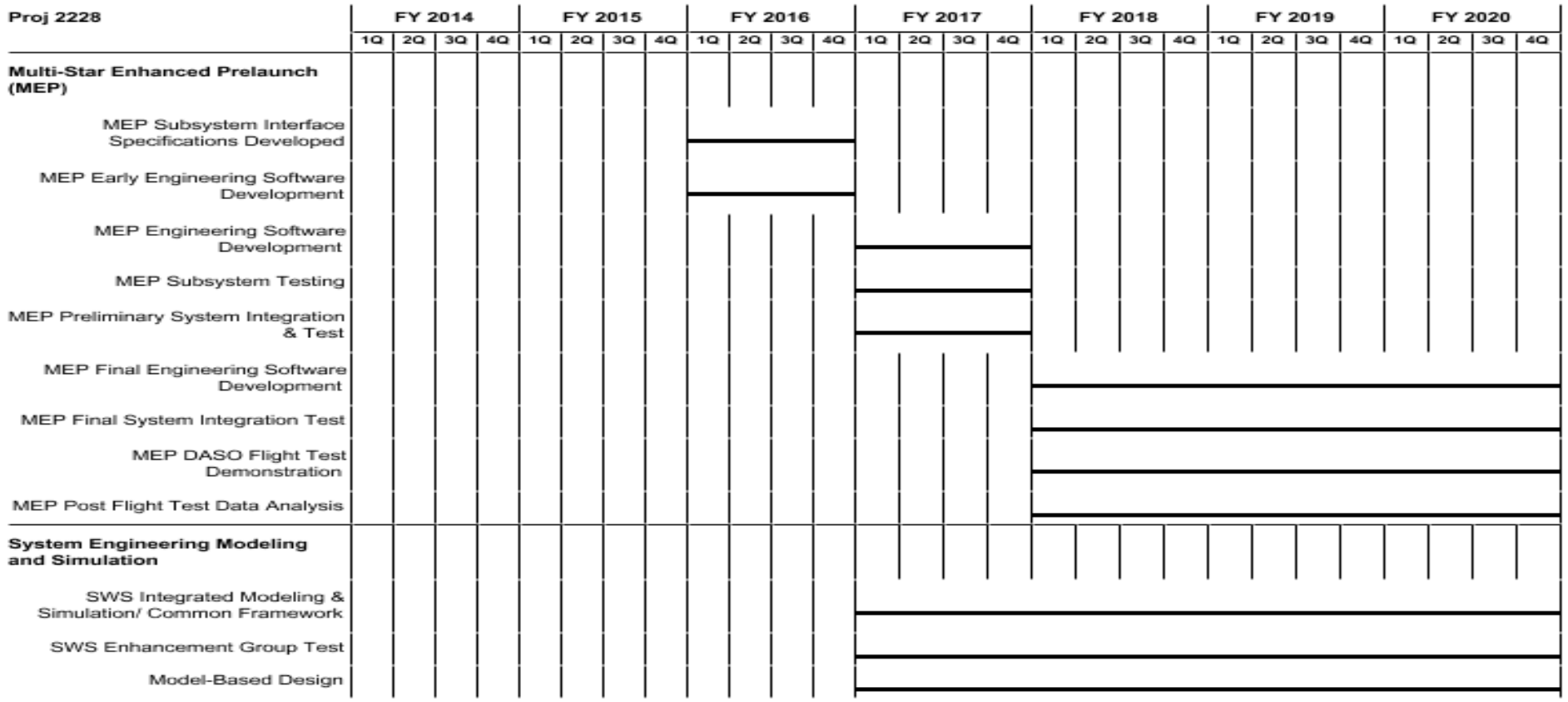
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Applications LMSS	SS/CPFF	LMSS : CA	160.450	-		-		0.500	Oct 2015	-		0.500	Continuing	Continuing	Continuing
Technology Applications NSWC	WR	NSWC : VA	92.504	-		-		0.750	Oct 2015	-		0.750	-	93.254	-
Technology Applications DOE	MIPR	DOE : NM	33.717	-		-		-		-		-	-	33.717	-
Technology Applications ITT	SS/CPFF	ITT : CO	12.194	-		-		-		-		-	-	12.194	-
Technology Applications CSDL	SS/CPFF	CSDL : MA	313.522	-		-		7.500	Oct 2015	-		7.500	-	321.022	-
Technology Applications AERO	SS/CPFF	AERO : CA	3.068	-		-		-		-		-	-	3.068	-
Technology Applications VAR	Various	Various : Various	18.317	-		-		-		-		-	-	18.317	-
Technology Applications GD-AIS	SS/CPFF	GDAIS : MA	0.000	-		-		0.250	Oct 2015	-		0.250	-	0.250	-
		Subtotal	633.772	-		-		9.000		-		9.000	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	633.772	-		-		9.000		-		9.000	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 2228 / *Technical Applications Programs*



2016PB - 0101221N - 2228

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 2228 / *Technical Applications Programs*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2228				
Multi-Star Enhanced Prelaunch (MEP): MEP Subsystem Interface Specifications Developed:	1	2016	4	2016
Multi-Star Enhanced Prelaunch (MEP): MEP Early Engineering Software Development:	1	2016	4	2016
Multi-Star Enhanced Prelaunch (MEP): MEP Engineering Software Development:	1	2017	4	2017
Multi-Star Enhanced Prelaunch (MEP): MEP Subsystem Testing:	1	2017	4	2017
Multi-Star Enhanced Prelaunch (MEP): MEP Preliminary System Integration & Test:	1	2017	4	2017
Multi-Star Enhanced Prelaunch (MEP): MEP Final Engineering Software Development:	1	2018	4	2020
Multi-Star Enhanced Prelaunch (MEP): MEP Final System Integration Test:	1	2018	4	2020
Multi-Star Enhanced Prelaunch (MEP): MEP DASO Flight Test Demonstration:	1	2018	4	2020
Multi-Star Enhanced Prelaunch (MEP): MEP Post Flight Test Data Analysis:	1	2018	4	2020
System Engineering Modeling and Simulation: SWS Integrated Modeling & Simulation/ Common Framework:	1	2017	4	2020
System Engineering Modeling and Simulation: SWS Enhancement Group Test:	1	2017	4	2020
System Engineering Modeling and Simulation: Model-Based Design:	1	2017	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101221N / *Strategic Sub & Wpns Sys Supt*	Project (Number/Name) 3097 / *W78/88-1 Life Extension Program*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3097: *W78/88-1 Life Extension Program*	-	-	7.000	-	-	-	-	-	-	-	-	7.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The W78/88-1 Life Extension Program (3097) is an effort to conduct the Navy portion of a DoD/DOE Nuclear Weapons Council initiated Phase 6.2/6.2A investigation of design options and associated feasibility and cost study for a life extension of the Air Force W78 Reentry Vehicle and Navy W88 Reentry Body. The study will evaluate options and select a preferred solution(s) for a common NEP, including improved safety capabilities, which could be integrated into both the W78 and W88 platforms. In addition the study will conduct a cost study for a refurbishment life extension of the current W88 design.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: W78/88-1 Life Extension Program	-	7.000	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: This program has been deferred.					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	7.000	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 3097 / *W78/88-1 Life Extension Program*

D. Acquisition Strategy

Contracts will be awarded to those sources who were engaged in the W78/88-1 Life Extension Program and are currently engaged in the production and/or operational support of the deployed W78/88-1 Systems on the basis of Other Than Full and Open Competition pursuant to the authority of 10 U.S.C. 2304 (c) (1) and (3) implemented by FAR 6.302.-1, 3, 4

E. Performance Metrics

Not applicable

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 3097 / *W78/88-1 Life Extension Program*

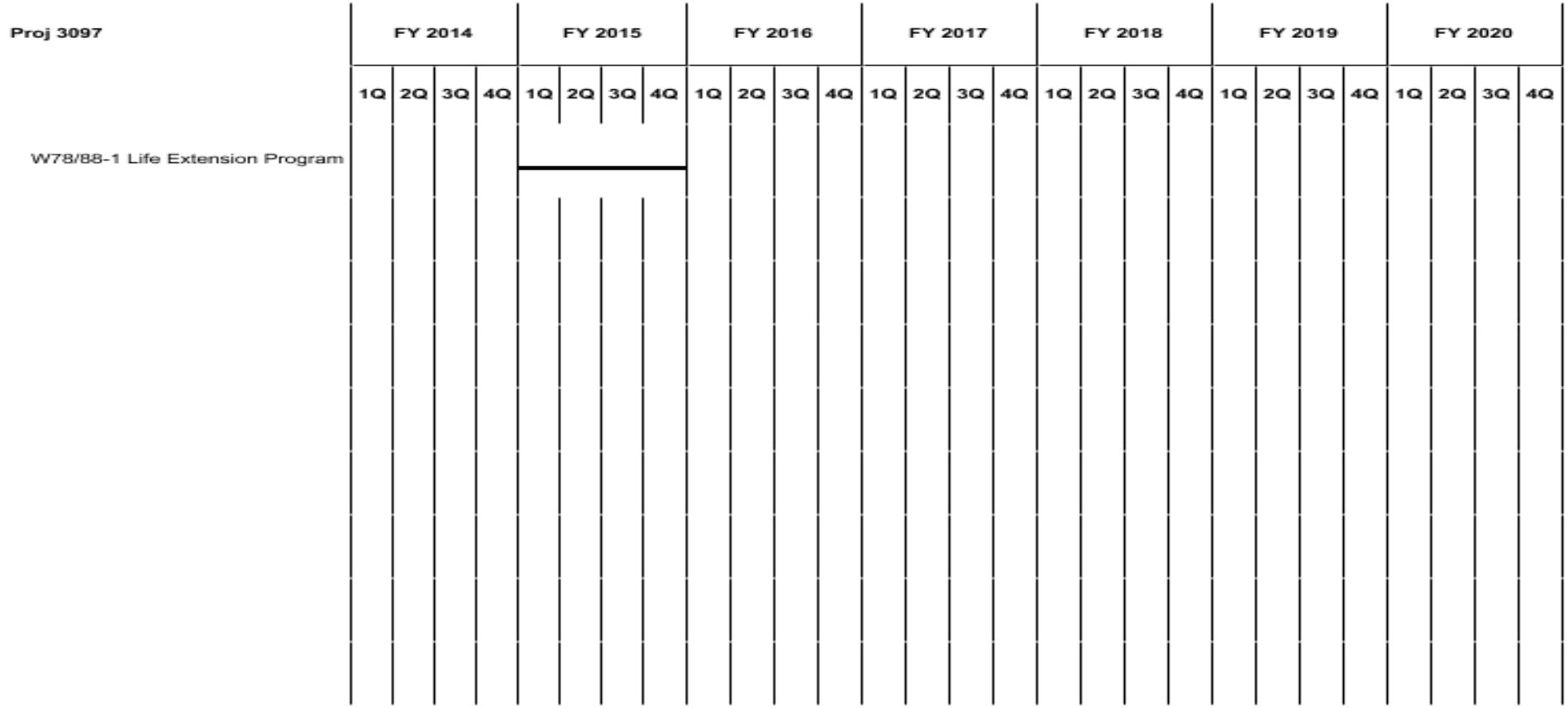
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TBD	TBD	TBD : TBD	0.000	-	Nov 2013	7.000	Mar 2015	-		-		-	-	7.000	-
		Subtotal	0.000	-		7.000		-		-		-	-	7.000	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		7.000		-		-		-	-	7.000	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 3097 / *W78/88-1 Life Extension Program*



2016DON - 0101221N - 3097

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 3097 / *W78/88-1 Life Extension Program*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3097				
W78/88-1 Life Extension Program: W78/88-1 Study	1	2015	4	2015

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101221N / *Strategic Sub & Wpns Sys Supt*	Project (Number/Name) 3158 / *Integrated Nuclear Weapons Security Sys Dev*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3158: *Integrated Nuclear Weapons Security Sys Dev*	18.975	2.446	2.563	2.639	-	2.639	2.719	2.799	2.857	2.914	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Enhanced Special Weapons effort supports the Nuclear Weapons Security program and SSBN Escort mission. The policies and requirements regarding the safeguard of nuclear weapons within the Department of Defense is established by DoD S5210.41M. Within the Department of the Navy, nuclear weapons are limited to TRIDENT Fleet Ballistic Missiles (FBM), either deployed aboard TRIDENT submarines or located landside at Naval Submarine Base, Kings Bay or Naval Submarine Base, Bangor where missiles are first assembled as well as repaired. The CNO has assigned SSP, the FBM program manager, with mission responsibility for the safeguard of FBM nuclear assets. More specifically, the mission includes landside and pier operations as well as transits to and from the dive point, each of which present challenges to personnel as well as existing technologies. This budget supports efforts directed at improving the current technological baseline through a series of studies focusing on land and in transit requirements. Collectively, these efforts will improve countermeasure technologies addressing detection, delay and denial.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Integrated Nuclear Weapons Security Sys Dev	2.446	2.563	2.639	-	2.639
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Continue development of advanced technologies for Site-Wide Nuclear Weapons Security Systems including a secure wireless command network and enhanced automated security systems. - Continue development of advanced technologies for Limited Area/Convoy Route Nuclear Weapons Security Systems including extended perimeter detection, vehicle barrier systems at entry control points, and enhanced tracking capabilities. - Continue Multi Purpose Receiver Array: Enhances waterside detection of swimmers/divers by developing passive acoustic hydrophone arrays for open circuit diver detection. - Continue Multi-Static/Bi-Static Sensor Development: Enhances waterside detection of swimmers/divers by integrating passive hydrophone arrays with current active elements to increase capability of detection without adding any new active elements. - Continue Autonomous Reacquisition and Classification: Enhances the Marine Mammal System (MMS) by developing localization buoys for use with the MK6 Mod 2 System. Localization buoys will direct the dolphin to areas for a more efficient swimmer/diver assessment process.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 3158 / *Integrated Nuclear Weapons Security Sys Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Continue Human Systems Interface: Analyze Watchstander Operations to identify inefficiencies, define operational needs, design the next generation system concept to meet current and future needs.					
FY 2015 Plans: - Sensor development for: Land Water Interface project (LWI), underwater Sonar Track Association Research (STAR), Waterside Detection System (WDS) - Development of technologies: for refresh of electronic systems in the Waterfront Restricted Area (WRA), increase detection and tracking capabilities, and to reduce manpower by automating processed and enhancing security technologies. - Enhance the Marine Mammal System (MMS) - Continue Multi-Static/Bi-Static Sensor Development: Enhances waterside detection of swimmers/divers by integrating passive hydrophone arrays with current active elements to increase capability of detection without adding any new active elements. - Wide Area/Extended Detection: Development of technologies to increase detection, localization, classification, and tracking capabilities beyond the perimeter of the limited area, waterfront restricted area, along the convoy route and transit route. This effort includes technologies to detect intruders in difficult environments such as dense foliage, marsh, fog and heavy rain. - Continue research and development efforts towards the improvement of countermeasures technologies addressing detection, delay and denial.					
FY 2016 Base Plans: - WDS Upstream Data Fusion: Development of software and hardware to fuse low level sensor data from multiple WDS sensors to increase capability for tracking and classification of current sensors. - NWS Technology Refresh: Development of technologies for refresh of electronic security systems for the Limited Area and Electronic Harbor Security System in the Waterfront Restricted Area (WRA). This includes electronic hardware and algorithms. - Continue Wide Area/Extended Detection: Development of technologies to increase detection, localization, classification, and tracking capabilities beyond the perimeter of the limited area, waterfront restricted area, along the convoy route and transit route. This effort includes technologies to detect intruders in difficult environments such as dense foliage, marsh, fog and heavy rain. - FOPEN Sensor Transition: OSD(NM) is funding evaluation and demonstration of a variety of FOPEN Sensors. This effort will fund in situ demonstration as well as necessary transition planning and development to facilitate transition of down selected sensors for incorporation into NWS POR.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 3158 / *Integrated Nuclear Weapons Security Sys Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Continue research and development efforts towards the improvement of countermeasures technologies addressing detection, delay and denial. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	2.446	2.563	2.639	-	2.639

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/Various-2: *OPN (Nuclear Weapons Security)*	43.914	126.429	33.253	-	33.253	38.825	27.873	29.544	52.307	Continuing	Continuing
• OMN/11D2D-3: *Fleet Ballistic Missile (Nuclear Weapons Security)*	93.871	83.319	75.723	-	75.723	81.537	91.182	84.189	85.584	Continuing	Continuing
• OMN/11D2D-5: *Fleet Ballistic Missile (Transit/Escort)*	116.000	82.207	95.658	-	95.658	83.558	85.948	95.176	97.107	Continuing	Continuing
• MCN/Various-1: *MILCON (CNI) (Nuclear Weapons Security)*	-	20.638	34.177	-	34.177	-	-	-	-	-	98.657

Remarks

D. Acquisition Strategy

Procurements are being executed through a combination of private contractors (large and small business), government Centers of Excellence (COEs), other government agencies and the Naval Submarine Bases, Kitsap and Kings Bay. Contract awards are based upon "best value" determinations, and where practical will be performance based or include incentive provisions.

E. Performance Metrics

Not applicable

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101221N / *Strategic Sub & Wpns Sys Supt*	Project (Number/Name) 3158 / *Integrated Nuclear Weapons Security Sys Dev*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Nuclear Weapons Security Sys Dev	WR	NFESC : CA	2.347	-	Dec 2013	0.353	Dec 2014	-		-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	CNWS : CA	0.404	-		-		-		-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	JHU APL : MD	3.162	0.275	Oct 2013	0.183	Nov 2014	0.275	Nov 2015	-		0.275	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	SNWS : CA	4.252	-	Dec 2013	0.306	Dec 2014	-		-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NSWC : VA	2.877	-	Oct 2013	0.191	Oct 2014	0.607	Oct 2015	-		0.607	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	JRC : VA	1.612	0.275	Oct 2013	0.502	Oct 2014	0.275	Oct 2015	-		0.275	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NUWC : RI	0.870	0.023	Oct 2013	0.049	Dec 2014	0.636	Dec 2015	-		0.636	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NEDU : FL	0.383	-		-		-		-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	LMSS : CA	1.001	-	Dec 2013	0.180	Dec 2014	0.846	Oct 2015	-		0.846	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	MIPR	DOEI : ID	0.180	-		-		-		-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	MIPR	DOE : NM	0.425	-		-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 3158 / *Integrated Nuclear Weapons Security Sys Dev*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	ARL : TX	0.932	0.500	Oct 2013	0.448	Oct 2014	-		-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NUWD : WA	0.530	-	Oct 2013	0.351	Dec 2014	-		-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	C/BA	NRL : DC	0.000	0.628	Feb 2014	-		-		-		-	-	0.628	-
Integrated Nuclear Weapons Security Sys Dev	C/BA	DRAPER : DC	0.000	0.355	Apr 2014	-		-		-		-	-	0.355	-
Integrated Nuclear Weapons Security Sys Dev	C/BA	SPAWAR : DC	0.000	0.390	Feb 2014	-		-		-		-	-	0.390	-
		Subtotal	18.975	2.446		2.563		2.639		-		2.639	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	18.975	2.446		2.563		2.639		-		2.639	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 3158 / *Integrated Nuclear Weapons Security Sys Dev*

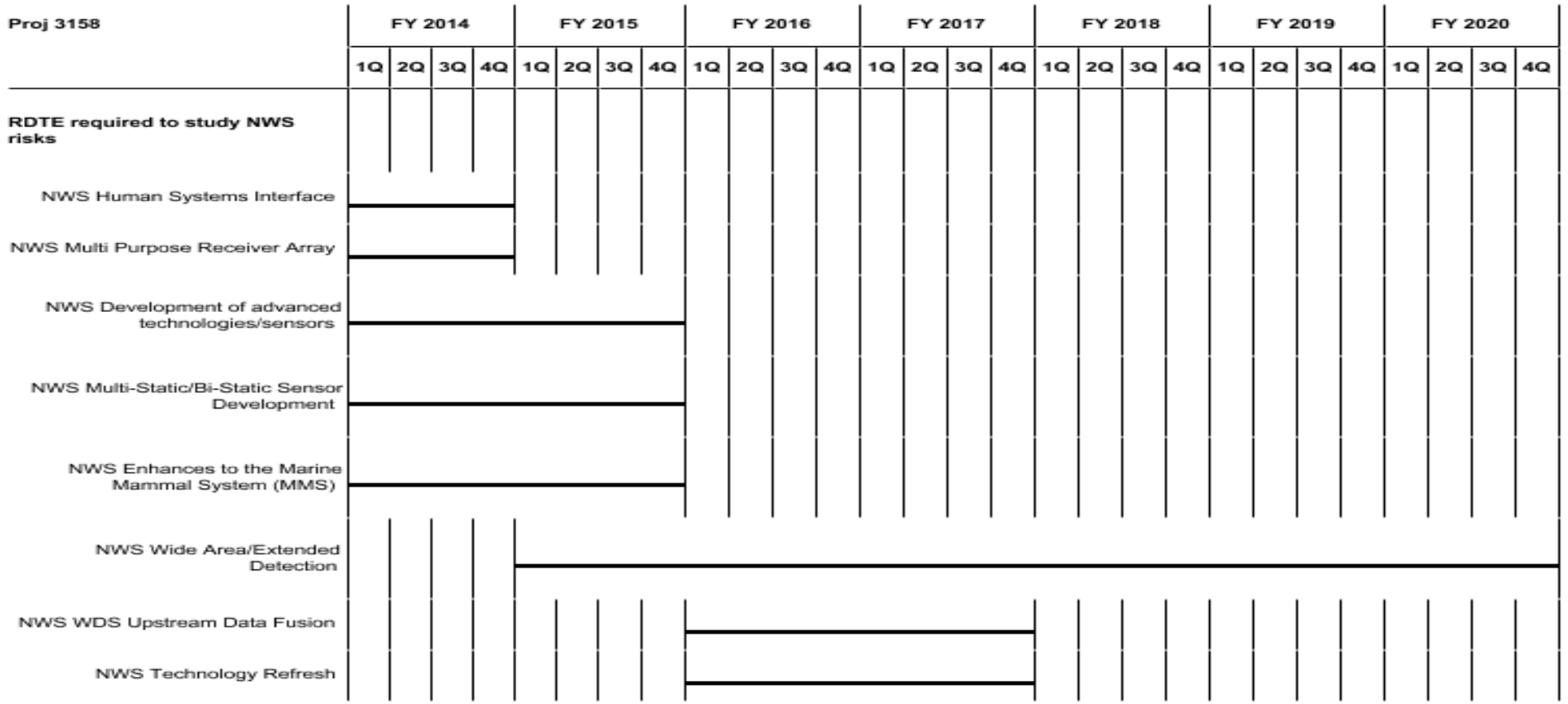


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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101221N / *Strategic Sub & Wpns Sys Supt*	**Project (Number/Name)** 3158 / *Integrated Nuclear Weapons Security Sys Dev*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3158				
RDTE required to study NWS risks: NWS Human Systems Interface:	1	2014	4	2014
RDTE required to study NWS risks: NWS Multi Purpose Receiver Array:	1	2014	4	2014
RDTE required to study NWS risks: NWS Development of advanced technologies/ sensors:	1	2014	4	2015
RDTE required to study NWS risks: NWS Multi-Static/Bi-Static Sensor Development:	1	2014	4	2015
RDTE required to study NWS risks: NWS Enhances to the Marine Mammal System (MMS):	1	2014	4	2015
RDTE required to study NWS risks: NWS Wide Area/Extended Detection:	1	2015	4	2020
RDTE required to study NWS risks: NWS WDS Upstream Data Fusion:	1	2016	4	2017
RDTE required to study NWS risks: NWS Technology Refresh:	1	2016	4	2017

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0101224N *I SSBN Security Tech Program*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	30.719	30.039	46.506	-	46.506	35.797	36.540	37.417	38.198	Continuing	Continuing
0092: *SSBN Security*	0.000	30.719	30.039	46.506	-	46.506	35.797	36.540	37.417	38.198	Continuing	Continuing

A. Mission Description and Budget Item Justification

The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	31.755	30.057	29.180	-	29.180
Current President's Budget	30.719	30.039	46.506	-	46.506
Total Adjustments	-1.036	-0.018	17.326	-	17.326
• Congressional General Reductions	-	-0.018			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.036	-			
• Program Adjustments	-	-	17.700	-	17.700
• Rate/Misc Adjustments	-	-	-0.374	-	-0.374

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0101226N *I Submarine Acoustic War Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	32.275	1.430	4.509	3.900	-	3.900	5.969	6.005	7.364	7.571	Continuing	Continuing
1265: *Sub Defensive Warfare*	32.275	1.430	4.509	3.900	-	3.900	5.969	6.005	7.364	7.571	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project supports the Submarine Acoustic Warfare System (SAWS) program to maintain and improve the survivability of all U.S. Submarine classes in response to torpedo attack. This program funds:

1. The Next Generation Countermeasure (NGCM) program, (ACAT III) currently in Engineering and Manufacturing Development (E&MD). The key new capabilities NGCM brings are: adaptive countermeasure (ACM) technology with full duplex capability and mobility packaged in a three inch diameter body. Milestone C is nominally 2020.

2. The Torpedo Defense Working Group (TDWG). A working group comprised of fleet, resource sponsor, and acquisition community representatives to assess countermeasure effectiveness against fleet threats, both known and projected, with associated studies, models, and simulations.

3. The Technical Direction Agent and In-Service Engineering Agent hardware and software development support for Acoustic Devices Countermeasure (ADC) (ADC MK 2, 3 & 4, NAE Beacon) as well as Countermeasures Set, Acoustic (CSA) MK 2, MK 3, MK 4 systems and Acoustic Augmentation Support Systems (AASS) in the Acoustic Augmentation Support Program (AASP), including component level technical insertion.

4. Research and development of new technologies and capabilities developed under the Future Naval Capabilities (FNC), Small Business and Innovative Research (SBIR), and other Research, Development, Test & Evaluation (RDT&E) initiatives. New and emerging hardware and software are evaluated in representative acoustic environments, against projected threats through both digital and hardware-in-the-loop simulations, to determine their effectiveness and how that improves submarine survivability. The technology is then incorporated into the appropriate countermeasure.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*			R-1 Program Element (Number/Name) PE 0101226N *I Submarine Acoustic War Dev*		
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	1.464	4.509	3.925	-	3.925
Current President's Budget	1.430	4.509	3.900	-	3.900
Total Adjustments	-0.034	-	-0.025	-	-0.025
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.034	-			
• Program Adjustments	-	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.025	-	-0.025

Change Summary Explanation

Technical: Not applicable.

Schedule: The NGCM program restructure occurred in FY14. The Navy has made the decision to let the two existing development contracts expire. A single new development contract resulting in both fully functional EDM and LRIP quantities will be awarded in FY17. The developmental effort in FY15 and FY16 will include Modeling and Simulation (M&S), Torpedo Threat Integration for high fidelity NGCM countermeasure logic, Concepts Of Operations (CONOPS) for fleet tactics, Test and Evaluation Master Plan (TEMP), Tactical Decision Aid (TACDA) start, Program Life-Cycle Cost Estimate (PLCCE) and acquisition documentation including the RFP for the new developmental contract. The TDWG and Weapons Analysis Facility (WAF) efforts were increased to restore efforts to provide more valid and current submarine survivability assessments.

Financial: Miscellaneous rate adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101226N / *Submarine Acoustic War Dev*	Project (Number/Name) 1265 / *Sub Defensive Warfare*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1265: *Sub Defensive Warfare*	32.275	1.430	4.509	3.900	-	3.900	5.969	6.005	7.364	7.571	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project supports the Submarine Acoustic Warfare System (SAWS) program to maintain and improve the survivability of all U.S. Submarine classes in response to torpedo attack. This program funds:

1. The Next Generation Countermeasure (NGCM) program, (ACAT III) currently in Engineering and Manufacturing Development (E&MD). The key new capabilities NGCM brings are: adaptive countermeasure (ACM) technology with full duplex capability and mobility packaged in a three inch diameter body. Milestone C is nominally 2020.

2. The Torpedo Defense Working Group (TDWG). A working group comprised of fleet, resource sponsor, and acquisition community representatives to assess countermeasure effectiveness against fleet threats, both known and projected, with associated studies, models, and simulations.

3. The Technical Direction Agent and In-Service Engineering Agent hardware and software development support for Acoustic Devices Countermeasure (ADC) (ADC MK 2, 3 & 4, NAE Beacon) as well as Countermeasures Set, Acoustic (CSA) MK 2, MK 3, MK 4 systems and Acoustic Augmentation Support Systems (AASS) in the Acoustic Augmentation Support Program (AASP), including component level technical insertion.

4. Research and development of new technologies and capabilities developed under the Future Naval Capabilities (FNC), Small Business and Innovative Research (SBIR), and other Research, Development, Test & Evaluation (RDT&E) initiatives. New and emerging hardware and software are evaluated in representative acoustic environments, against projected threats through both digital and hardware-in-the-loop simulations, to determine their effectiveness and how that improves submarine survivability. The technology is then incorporated into the appropriate countermeasure.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Sub Acoustic Warfare	1.430	4.509	3.900	-	3.900
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Continued contractor testing of NGCM subsystems. - Continued NGCM restructure. - Conducted TDWG review and started vulnerability assessment process.					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101226N / *Submarine Acoustic War Dev*	**Project (Number/Name)** 1265 / *Sub Defensive Warfare*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Prepare for the NGCM developmental contract solicitation. - Start NGCM TEMP. - Start Modeling and Simulation development /assessment for known Torpedo Threats. - Continue NGCM TEMP, SAMP, PLCCE, and acquisition documentation. - Begin development of Concept of Operation and Tactical Decision Aid for Fleet Tactics. - Begin SABOT development for External Launch. - Conduct assessment of threat by TDWG and WAF with updated vulnerability assessment. ***FY 2016 Base Plans:*** - Continue NGCM TEMP - Continue preparing for the NGCM developmental contract. - Continued Modeling and Simulation for known Torpedo Threats - Continued development of Required Program Documentation - Continued development of Concept of Operations and Tactical Decision Aid for Fleet Tactics - Continued SABOT development for External Launch - Conduct review TDWG and WAF with updated reliability assessment. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.430	4.509	3.900	-	3.900

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/221000/221005: *Submarine Acoustic Warfare*	20.937	24.221	21.234	-	21.234	21.534	20.646	22.137	23.931	Continuing	Continuing

Remarks

D. Acquisition Strategy

Submarine Acoustic Warfare System (SAWS) develops Undersea Defensive Warfare technologies to improve the survivability of all U.S. Submarine classes. The integration of technology into the Next Generation Countermeasure (NGCM) and the NGCM-Capable CSA MK 3/4 system will continue through FY22. The NGCM development will be awarded 1st quarter FY17, through a full and open competition for a Cost Plus Fixed Fee (CPFF), System Development Demonstration (SDD), Engineering Development Models (EDM), Technical Data Package (TDP) and Low Rate Initial Production (LRIP) contract. NGCM contractor's subsystem testing will

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101226N / *Submarine Acoustic War Dev*	**Project (Number/Name)** 1265 / *Sub Defensive Warfare*

occur in FY18 through FY19 and Navy Development Testing (DT) will be in FY18-20, with Operational Testing (OT) in FY20-21. Milestone C is nominally in 2020, IOC nominally in 2022, and the production contract nominally in FY22.

E. Performance Metrics

Progress Reviews
Execution Reporting and Reviews
Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101226N / *Submarine Acoustic War Dev*	Project (Number/Name) 1265 / *Sub Defensive Warfare*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
WAF ANALYSIS TDWG	WR	NUWC : NEWPORT, RI	11.241	0.151	Feb 2014	0.259	Dec 2014	0.275	Dec 2015	-		0.275	Continuing	Continuing	Continuing
NGCM SYSYTEM ENGINEERING	WR	NUWC : NEWPORT, RI	8.121	0.253	Feb 2014	0.150	Dec 2014	0.600	Dec 2015	-		0.600	Continuing	Continuing	Continuing
NGCM DEVELOPMENT 1	C/CPAF	Argon ST : Fairfax, VA	5.357	0.400	Jan 2014	1.900	Jan 2015	-		-		-	Continuing	Continuing	Continuing
NGCM DEVELOPMENT 2	C/CPAF	Ultra : Braintree, MA	5.084	0.400	Jan 2014	1.900	Jan 2015	-		-		-	Continuing	Continuing	Continuing
CSA MK5 SYSTEM ENGINEERING	WR	NUWC : KEYPORT, WA	0.935	0.096	Dec 2014	-		0.500	Dec 2015	-		0.500	Continuing	Continuing	Continuing
Modeling And Simulation	WR	NUWC : NEWPORT, RI	0.000	-		-		1.225	Dec 2015	-		1.225	-	1.225	-
Tactical Decision Aid	WR	NUWC : NEWPORT, RI	0.000	-		-		0.600	Dec 2015	-		0.600	-	0.600	-
Sabot Development	WR	NUWC : NEWPORT, RI	0.000	-		-		0.400	Dec 2015	-		0.400	-	0.400	-
		Subtotal	30.738	1.300		4.209		3.600		-		3.600	-	-	-

Management Services ($ in Millions)

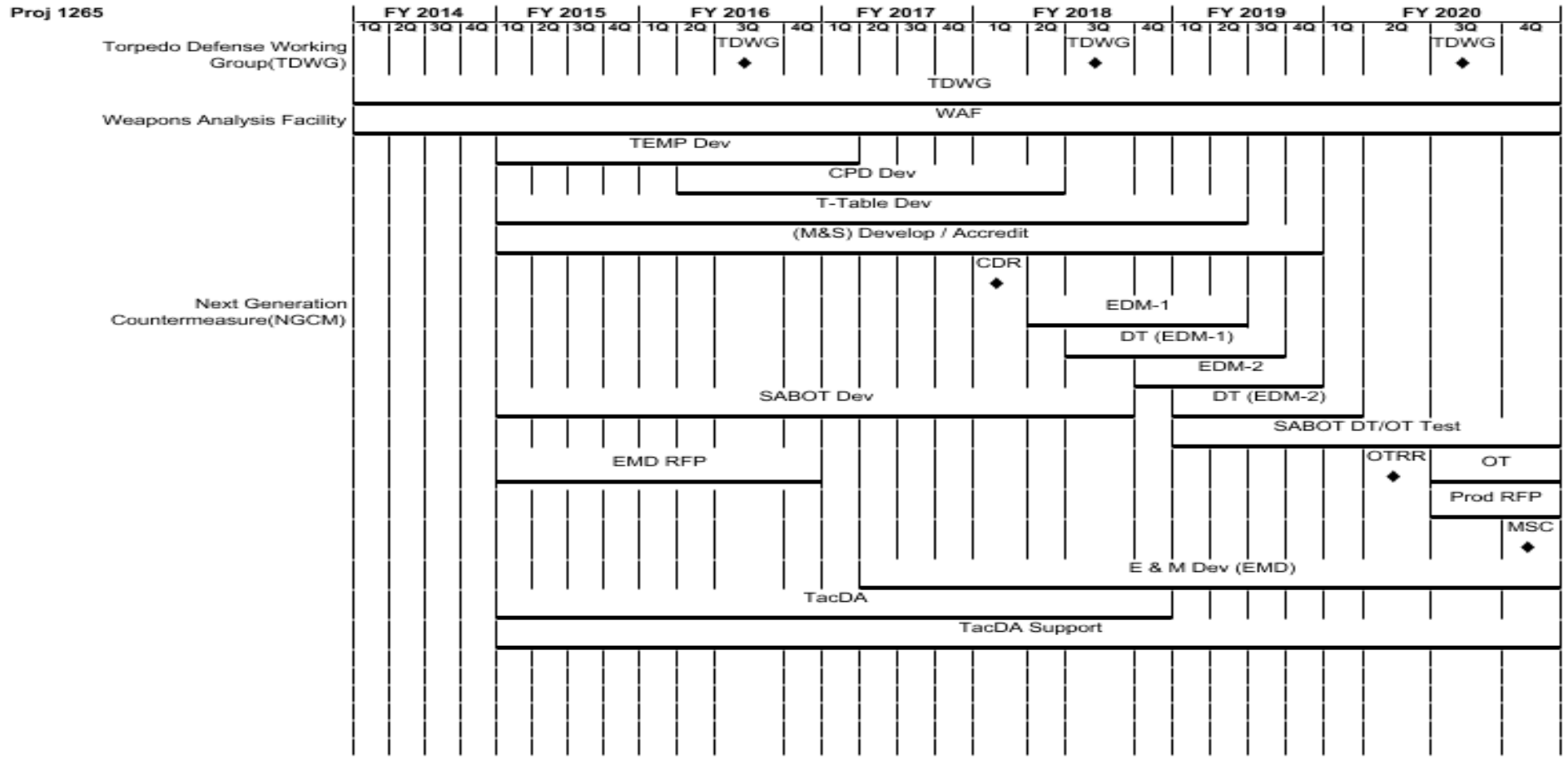
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TRAVEL	WR	NAVSEA : Washington, DC	0.516	0.030	Oct 2013	0.010	Oct 2014	0.040	Oct 2015	-		0.040	Continuing	Continuing	Continuing
PROGRAM MANAGEMENT SUPPORT	C/CPAF	TECH MARINE : Washington, DC	0.900	-		-		-		-		-	-	0.900	-
PROGRAM MANAGEMENT SUPPORT	C/CPAF	BOOZ ALLEN : Washington, DC	0.121	0.100	Dec 2013	0.290	Dec 2014	0.260	Dec 2015	-		0.260	Continuing	Continuing	Continuing
		Subtotal	1.537	0.130		0.300		0.300		-		0.300	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101226N / *Submarine Acoustic War Dev*	Project (Number/Name) 1265 / *Sub Defensive Warfare*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	32.275	1.430		4.509		3.900		-		3.900	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101226N / *Submarine Acoustic War Dev*	**Project (Number/Name)** 1265 / *Sub Defensive Warfare*



2016PB - 0101226N - 1265

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101226N / *Submarine Acoustic War Dev*	**Project (Number/Name)** 1265 / *Sub Defensive Warfare*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1265				
Torpedo Defense Working Group(TDWG): FY16 TDWG	3	2016	3	2016
Torpedo Defense Working Group(TDWG): FY18 TDWG	3	2018	3	2018
Torpedo Defense Working Group(TDWG): FY20 TDWG	3	2020	3	2020
Torpedo Defense Working Group(TDWG): TDWG Modeling & Simulation (M&S)	1	2014	4	2020
Weapons Analysis Facility: COUNTERMEASURE (CM) EFFECTIVENESS/WEAPON ANALYSIS FACILITY (WAF) VULNERABILITY	1	2014	4	2020
Weapons Analysis Facility: TEMP Development	1	2015	1	2017
Weapons Analysis Facility: CPD Development	2	2016	2	2018
Weapons Analysis Facility: T-Table Development	1	2015	2	2019
Weapons Analysis Facility: (M&S) Develop / Accredit	1	2015	4	2019
Weapons Analysis Facility: CDR	1	2018	1	2018
Next Generation Countermeasure(NGCM): EDM-1	2	2018	2	2019
Next Generation Countermeasure(NGCM): DT (EDM-1)	3	2018	3	2019
Next Generation Countermeasure(NGCM): EDM-2	4	2018	4	2019
Next Generation Countermeasure(NGCM): DT (EDM-2)	1	2019	1	2020
Next Generation Countermeasure(NGCM): SABOT Development	1	2015	3	2018
Next Generation Countermeasure(NGCM): SABOT DT/OT Test	1	2019	4	2020
Next Generation Countermeasure(NGCM): OTRR	2	2020	2	2020
Next Generation Countermeasure(NGCM): OT	3	2020	4	2020
Next Generation Countermeasure(NGCM): EMD RFP	1	2015	4	2016
Next Generation Countermeasure(NGCM): Prod RFP	3	2020	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101226N / *Submarine Acoustic War Dev*	**Project (Number/Name)** 1265 / *Sub Defensive Warfare*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Next Generation Countermeasure(NGCM): MSC	4	2020	4	2020
Next Generation Countermeasure(NGCM): Engineering & Manufacturing Development (EMD)	2	2017	4	2020
Next Generation Countermeasure(NGCM): Tactical Decision Aid (TacDA)	1	2015	4	2018
Next Generation Countermeasure(NGCM): TacDA Support	1	2015	4	2020

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0101402N *I Navy Strategic Comms*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	420.420	21.269	13.672	16.569	-	16.569	16.502	14.373	17.772	17.959	Continuing	Continuing
1083: *Shore To Ship Com System*	149.910	21.269	13.176	15.772	-	15.772	15.696	13.558	16.945	17.121	Continuing	Continuing
3002: *Navy Strategic Comm Project*	270.510	-	0.496	0.797	-	0.797	0.806	0.815	0.827	0.838	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Shore to Ship Communication System develops communication elements which support the Navy's Nuclear Command, Control, and Communications (NC3) requirements, providing various communications infrastructure and elements from the regional Submarine Operating Authority (SUBOPAUTH) to the deployed strategic platform (fleet ballistic missile submarines). This portfolio of programs designs and develops shore-to-ship transmit and receive communications systems (i.e., Fixed Submarine Broadcast System (FSBS) and SUBOPAUTH Command, Control, and Communications (C3) Systems) in support of communications with all submarine types (i.e., SSN, SSGN, and SSBN).

The Navy Strategic Communications Project responds to emerging E-6B Airborne Strategic Command, Control and Communications capability requirements by performing technical evaluations, modeling and simulation, investigative ground and flight testing, enhanced software modifications and development of configuration modifications. The E-6B is a manned airborne platform that provides survivable, endurable and reliable Command, Control and Communications capability in support of the President, Secretary of Defense and United States strategic and non-strategic forces. These efforts support follow-on aircraft modification procurements necessary to ensure interoperability in information-assured network-centric strategic environments.

B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	21.723	13.676	13.174	-	13.174
Current President's Budget	21.269	13.672	16.569	-	16.569
Total Adjustments	-0.454	-0.004	3.395	-	3.395
• Congressional General Reductions	-	-0.004			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.454	-			
• Program Adjustments	-	-	4.303	-	4.303
• Rate/Misc Adjustments	-	-	-0.908	-	-0.908

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0101402N *I Navy Strategic Comms*

Change Summary Explanation

The FY 2016 funding request was reduced by $549 thousand to account for the availability of prior year execution balances.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101402N / *Navy Strategic Comms*	Project (Number/Name) 1083 / *Shore To Ship Com System*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1083: *Shore To Ship Com System*	149.910	21.269	13.176	15.772	-	15.772	15.696	13.558	16.945	17.121	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Shore to Ship Communication System develops communication elements which provide Nuclear Command, Control and Communications (NC3) from originator to execution platforms. This portfolio of programs provides design and developments for shore-to-ship transmit and receive communications systems.

The Low Band Universal Communications System (LBUCS) is a modernization program that will upgrade the low-power transmit and receive subsystems of the Fixed Submarine Broadcast System (FSBS) which are approaching their operational end of life. LBUCS will ensure operational capability through the Very Low Frequency (VLF) architecture by providing system life extension and flexibility of submarine broadcast traffic to submarines operating in a stealth posture. The flexibility includes enhanced throughput and anti-jam capability, ensuring more operational products are delivered to a submarine without risking mast exposure. The flexibility further includes a simplified shore architecture to maintain capability while maximizing use of shore nodes. LBUCS also provides an upgrade to the VLF receive system, with all interoperable waveforms, to ensure continued compliance with Nuclear Command and Control System Technical Performance Criteria (NTPC).

The Strategic Communications Assessment Program/Continued Evaluation Program (SCAP/CEP) provides continuous assessment of the effectiveness of the Navy NC3 network and analysis of system performance in various mission locations.

The High Voltage Improvement Program (HVIP) develops technologies to improve the high voltage insulators, bushings, antenna and transmitter components used in the high-power Low Frequency/Very Low Frequency (LF/VLF) transmit systems of the Fixed Submarine Broadcast System (FSBS).

The Broadcast Control Authority (BCA) develops information assurance solutions for the BCA and Submarine Operating Authority (SUBOPAUTH) wide area network are part of this program to mitigate vulnerability concerns.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Low Band Universal Communication System (LBUCS)	16.321	8.227	8.719	-	8.719
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Completed LBUCS Transmit Engineering Design Model (EDM) Developmental Testing (DT) and Operational Assessment (OA). -Completed statutory and regulatory acquisition documentation for LBUCS Milestone C, including the Capability Production Document (CPD).					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101402N / *Navy Strategic Comms*	**Project (Number/Name)** 1083 / *Shore To Ship Com System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Completed LBUCS Milestone C approval. -Completed LBUCS Receive Preliminary Design Review (PDR). -Continued Phase I Submarine Operating Authority (SUBOPAUTH) Wide Area Network (SWAN) Information Assurance (IA) upgrade development. -Continued LBUCS Receive development. -Continued development of a new Very Low Frequency (VLF) mode, which will be incorporated into the LBUCS Receive development effort. -Commenced statutory and regulatory acquisition documentation in preparation for LBUCS Receive deployment. -Commenced development of LBUCS Receive Engineering Development Model (EDM). ***FY 2015 Plans:*** -Complete Phase I SWAN IA upgrade development. -Complete Critical Design Review (CDR). -Continue LBUCS Receive development including Engineering Development Model (EDM). -Continue statutory and regulatory acquisition documentation in preparation for LBUCS Receive deployment. -Continue development of a new Very Low Frequency (VLF) Mode which will be incorporated into the LBUCS Receive development effort. -Commence LBUCS Receive DT/OA. -Commence and complete LBUCS Transmit EDM Developmental Testing with completed LRIP unit (DT-C1). ***FY 2016 Base Plans:*** -Complete development of a new Very Low Frequency (VLF) Mode which will be incorporated into the LBUCS Receive development effort. -Complete LBUCS Receive development. -Complete development of LBUCS Receive Engineering Development Model (EDM). -Complete statutory and regulatory acquisition documentation in preparation for LBUCS Receive deployment. -Continue LBUCS Receive DT/OA. -Commence research and development of a comprehensive modernization and standardization effort for the Submarine Operating Authority (SUBOPAUTH) command, control and communications (C3) architecture, to include Phase II SWAN IA upgrade. -Commence LBUCS Receive testing of Engineering Development Model (EDM). ***FY 2016 OCO Plans:*** N/A					
Title: Strategic Communications Assessment Program (SCAP)/Continuing Evaluation Program (CEP)	3.811	3.439	4.648	-	4.648

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101402N / *Navy Strategic Comms*	**Project (Number/Name)** 1083 / *Shore To Ship Com System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued mission analysis of Ship Submersible Ballistic Nuclear (SSBN) Emergency Action Message (EAM) reception for SSBN patrols. -Continued development of automated data collection and analysis tools to reduce latency time between missions and results availability. -Continued reporting on performance, adherence to delivery time requirements and shortfalls. ***FY 2015 Plans:*** -Continue mission analysis of SSBN EAM reception for SSBN patrols. -Continue development of automated data collection and analysis tools to reduce latency time between missions and results availability. -Continue reports on performance, adherence to delivery time requirements and shortfalls. ***FY 2016 Base Plans:*** -Complete development of automated data collection and analysis tools to reduce latency time between missions and results availability. -Complete reports on performance, adherence to delivery time requirements and shortfalls. -Continue mission analysis of SSBN EAM reception for SSBN patrols. -Commence development of the Navy's Nuclear Command, Control, and Communications (NC3) Monitoring System. ***FY 2016 OCO Plans:*** N/A					
Title: High Voltage Improvement Program (HVIP)	0.835	1.132	1.077	-	1.077
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Commenced examination of innovative lighting methods for high voltage Very Low Frequency (VLF)/Low Frequency (LF) towers. -Commenced analysis of sulfur hexaflouride (SF6) breakdown in high voltage fields. ***FY 2015 Plans:*** -Complete examination of innovative lighting methods for high voltage VLF/LF towers. -Complete analysis of SF6 breakdown in high voltage fields.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101402N / *Navy Strategic Comms*	**Project (Number/Name)** 1083 / *Shore To Ship Com System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Commence examination of methods for reducing risk of fire or damage by detection of partial discharge in Helix Houses. ***FY 2016 Base Plans:*** -Continue examination of methods for reducing risk of fire or damage by detection of partial discharge in Helix Houses. -Commence analysis of High Voltage Test Facility (HVTF) improvement to reduce sparking and increase operational voltage output to 300kV. -Commence analysis of VLF/LF Tower environmental degradation life span. -Commence analysis of underground magnetic antennas and VLF jamming capability. -Commence testing of operational scale tuning reactor. ***FY 2016 OCO Plans:*** N/A					
Title: Broadcast Control Authority (BCA)	0.302	0.378	1.328	-	1.328
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued development of Submarine Operating Authority (SUBOPAUTH) communications tools including: File Repository, Operation Schedule (OpSked) Editor, Submarine Notes (SubNotes) Editor, and Web Off The Air Monitor (WebOTAM). -Continued systems engineering support for Information Assurance (IA) improvements. ***FY 2015 Plans:*** -Complete development of SUBOPAUTH communications tools including: File Repository, OpSked Editor, SubNote Editor, and WebOTAM. -Continue systems engineering support for IA improvements. ***FY 2016 Base Plans:*** -Continue systems engineering support for IA improvements. -Commence research and development to replace the legacy operational serial/Asynchronous Transfer Mode (ATM) network infrastructure systems with a modernized IP-based, defense in-depth networking infrastructure for the submarine Broadcast Control Authorities. ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101402N / *Navy Strategic Comms*	Project (Number/Name) 1083 / *Shore To Ship Com System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Accomplishments/Planned Programs Subtotals	21.269	13.176	15.772	-	15.772

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/3107: *Submarine Broadcast*	7.856	11.057	20.691	-	20.691	24.805	29.165	28.770	29.539	Continuing	Continuing

Remarks

D. Acquisition Strategy

Low Band Universal Communications System (LBUCS): LBUCS is the modernization program that will upgrade the Transmit and Receive subsystems of the Fixed Submarine Broadcast System which are approaching their operational end of life. The development of LBUCS Receive continues in FY16.

E. Performance Metrics

LBUCS Transmit FY16: Achieve full rate production (FRP) for LBUCS Transmit
LBUCS Receive FY16: Complete Program Review and DT-D1/OA testing of Engineering Development Model (EDM).

Strategic Communications Assessment Program (SCAP)/Continuing Evaluation Program (CEP) FY16: Delivery of Submersible Ballistic Nuclear Submarine (SSBN) patrol reports.

High Voltage Improvement (HVIP) Program FY16: Commence analysis of High Voltage Test Facility (HVTF) improvement, VLF/LF Tower environmental degradation life span, underground magnetic antennas, and VLF jamming capability; Commence testing of operational scale tuning reactor.

Broadcast Control Authority (BCA) FY16: Commence research and development to replace the legacy operational serial/Asynchronous Transfer Mode (ATM) network infrastructure systems with a modernized IP-based, defense in-depth networking infrastructure for the submarine Broadcast Control Authorities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101402N / *Navy Strategic Comms*	Project (Number/Name) 1083 / *Shore To Ship Com System*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	SSC PAC : San Diego, CA	9.004	0.565	Nov 2013	0.208	Nov 2014	-		-		-	Continuing	Continuing	Continuing
Software Development	WR	SSC PAC : San Diego, CA	12.580	0.213	Nov 2013	0.213	Nov 2014	-		-		-	Continuing	Continuing	Continuing
LBUCS: Systems Engineering	WR	SSC LANT : Charleston, SC	5.895	3.228	Nov 2013	-		0.854	Nov 2015	-		0.854	Continuing	Continuing	Continuing
LBUCS: Primary Hardware Development	C/CPIF	SAIC : San Diego, CA	13.275	1.920	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
LBUCS: Primary Hardware Development	WR	SSC LANT : Charleston, SC	0.000	-		-		0.367	Nov 2015	-		0.367	Continuing	Continuing	Continuing
LBUCS: Systems Engineering	WR	SSC PAC : San Diego, CA	0.000	1.430	Nov 2013	0.430	Nov 2014	0.839	Nov 2015	-		0.839	Continuing	Continuing	Continuing
LBUCS: Software Development	WR	SSC PAC : San Diego, CA	0.000	4.024	Nov 2013	0.553	Nov 2014	0.555	Nov 2015	-		0.555	Continuing	Continuing	Continuing
LBUCS: Software Development (DC)	C/IDIQ	SSC PAC : San Diego, CA	0.000	-		1.023	Nov 2014	0.942	Nov 2015	-		0.942	Continuing	Continuing	Continuing
Systems Engineering	WR	SSC PAC : San Diego, CA	50.733	-		-		-		-		-	-	50.733	-
Shore to Ship: Ancillary Hardware	WR	SSC PAC : San Diego, CA	0.147	-		-		-		-		-	-	0.147	-
Shore to Ship: Engineering	WR	SSC PAC : San Diego, CA	0.222	-		-		-		-		-	-	0.222	-
		Subtotal	91.856	11.380		2.427		3.557		-		3.557	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition/Program Development	WR	SSC PAC : San Diego, CA	2.467	0.379	Nov 2013	0.354	Nov 2014	0.204	Nov 2015	-		0.204	Continuing	Continuing	Continuing
LBUCS: Information Assurance	C/CPFF	Merdan Group : San Diego, CA	0.797	0.386	Nov 2013	0.123	Nov 2014	0.127	Nov 2015	-		0.127	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101402N / *Navy Strategic Comms*	Project (Number/Name) 1083 / *Shore To Ship Com System*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LBUCS: Information Assurance	WR	SSC PAC : San Diego, CA	0.454	0.454	Nov 2013	0.425	Nov 2014	0.234	Nov 2015	-		0.234	Continuing	Continuing	Continuing
LBUCS: Acquisition/ Program Development	C/CPFF	CSA : San Diego, CA	2.077	0.800	Nov 2013	0.679	Nov 2014	0.690	Nov 2015	-		0.690	Continuing	Continuing	Continuing
LBUCS: Systems Engineering	C/CPFF	FSI : San Diego, CA	0.789	0.412	Nov 2013	0.329	Nov 2014	0.334	Nov 2015	-		0.334	Continuing	Continuing	Continuing
Shore to Ship: Broadcast Control Authority	C/CPFF	FSI : San Diego, CA	0.000	0.302	Nov 2013	0.378	Nov 2014	1.328	Nov 2015	-		1.328	Continuing	Continuing	Continuing
LBUCS: Logistics Support	C/CPFF	CSA : San Diego, CA	0.000	0.419	Nov 2013	0.603	Nov 2014	0.607	Nov 2015	-		0.607	Continuing	Continuing	Continuing
LBUCS: Cost Estimating	C/CPFF	TASC : San Diego, CA	0.000	0.165	Nov 2013	0.165	Nov 2014	0.216	Nov 2015	-		0.216	Continuing	Continuing	Continuing
Shore to Ship: High Voltage Improvement Program (HVIP) Studies and Design	WR	SSC PAC : San Diego, CA	2.018	0.835	Nov 2013	1.132	Nov 2014	1.077	Nov 2015	-		1.077	Continuing	Continuing	Continuing
Shore to Ship: Software Support	WR	SSC PAC : San Diego, CA	0.994	-		-		-		-		-	-	0.994	-
Shore to Ship: Broadcast Control Authority	C/CPFF	Predicate Logic : San Diego, CA	1.194	-		-		-		-		-	-	1.194	-
LBUCS: Logistics Support	C/CPFF	Cambridge International : San Diego, CA	0.409	-		-		-		-		-	-	0.409	-
LBUCS: Technical Documentaion	C/CPFF	ANSOL : San Diego, CA	0.626	-		-		-		-		-	-	0.626	-
LBUCS: Cost Estimating	C/CPFF	Booz Allen Hamilton : San Diego, CA	0.653	-		-		-		-		-	-	0.653	-
LBUCS: Logistic Support	C/CPFF	TCI : San Diego, CA	1.716	-		-		-		-		-	-	1.716	-
		Subtotal	14.194	4.152		4.188		4.817		-		4.817	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101402N / *Navy Strategic Comms*	Project (Number/Name) 1083 / *Shore To Ship Com System*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SCAP/CEP: Strategic OP Systems Performance Evaluation	C/CPFF	APL/JHU : Baltimore, MD	29.973	3.811	May 2014	3.439	May 2015	4.648	May 2016	-		4.648	Continuing	Continuing	Continuing
LBUCS: System Testing	WR	COTF : Norfolk, VA	0.832	0.312	Nov 2013	0.520	Nov 2014	0.525	Nov 2015	-		0.525	Continuing	Continuing	Continuing
LBUCS: System Testing	WR	SSC PAC : San Diego, CA	1.183	0.737	Nov 2013	1.385	Nov 2014	1.247	Nov 2015	-		1.247	Continuing	Continuing	Continuing
LBUCS: System Testing	WR	JITC : Fort Huachuca, AZ	0.000	-		0.203	Nov 2014	0.207	Nov 2015	-		0.207	Continuing	Continuing	Continuing
LBUCS: Hardware Support for Testing	WR	TBD : TBD	0.000	-		0.054	Nov 2014	0.058	Nov 2015	-		0.058	Continuing	Continuing	Continuing
		Subtotal	31.988	4.860		5.601		6.685		-		6.685	-	-	-

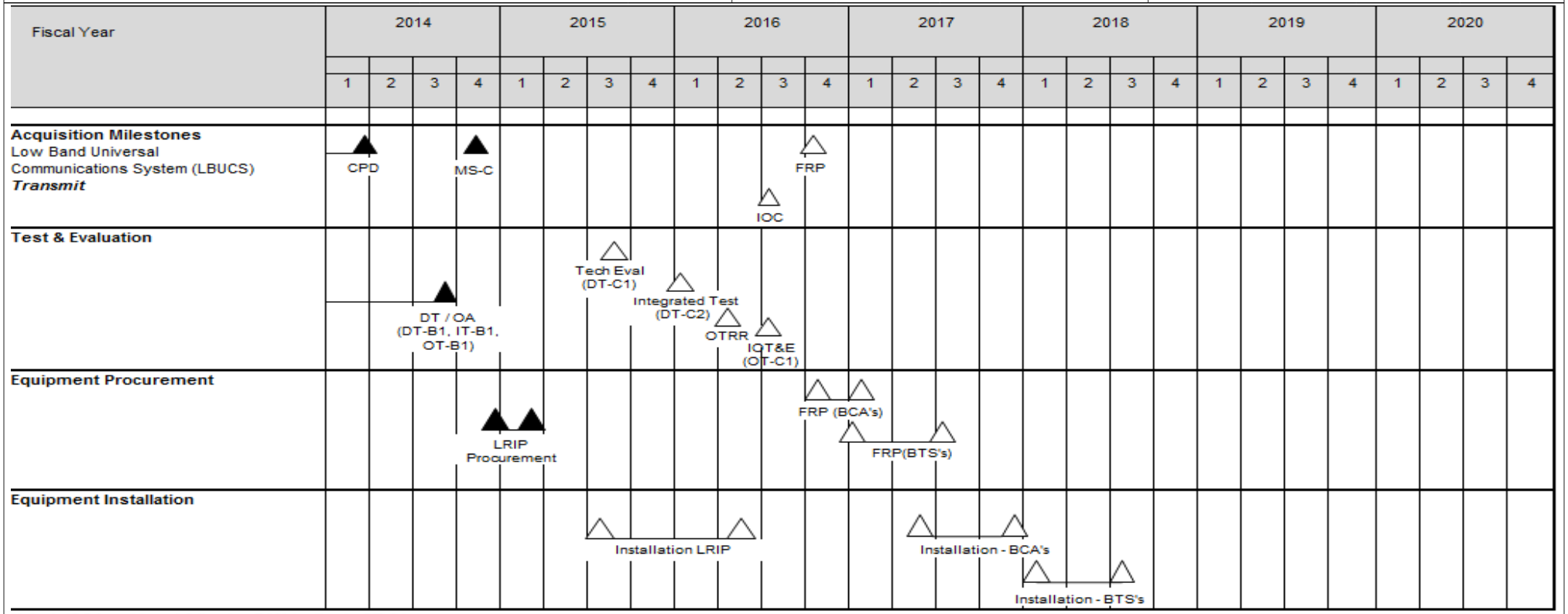
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LBUCS: Program Management	WR	SSC PAC : San Diego, CA	8.169	0.559	Nov 2013	0.635	Nov 2014	0.386	Nov 2015	-		0.386	Continuing	Continuing	Continuing
Contractor Engineering Support	MIPR	MITRE : San Diego, CA	3.287	0.318	Nov 2013	0.325	Nov 2014	0.327	Nov 2015	-		0.327	Continuing	Continuing	Continuing
LBUCS: Travel	WR	SSC PAC : San Diego, CA	0.416	-		-		-		-		-	-	0.416	-
		Subtotal	11.872	0.877		0.960		0.713		-		0.713	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	149.910	21.269		13.176		15.772		-		15.772	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		**Date:** February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101402N / *Navy Strategic Comms*	**Project (Number/Name)** 1083 / *Shore To Ship Com System*

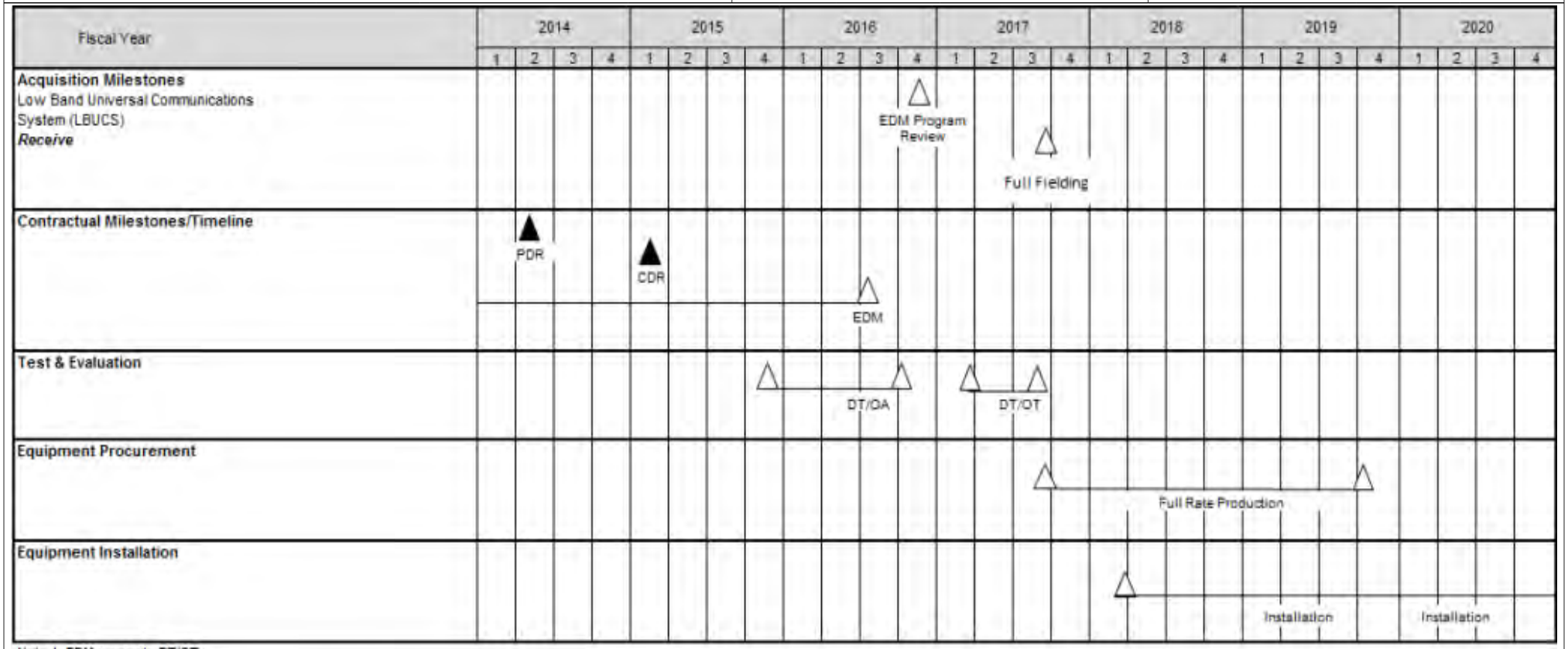


Note 1: IOC is achieved following EAM testing in OT-C1

Acronym Legend:

BCA: Broadcast Control Authority
BTS: Broadcast Transmit Station
CPD: Capability Production Document
DT: Developmental Testing
FRP: Full Rate Production
IOC: Initial Operational Capability
IOT&E: Initial Operational Test and Evaluation
LRIP: Low-Rate Initial Production
MS-C: Milestone C
OT: Operational Testing
OTRR: Operational Test Readiness Review
Tech Eval: Technical Evaluation

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101402N / *Navy Strategic Comms*	**Project (Number/Name)** 1083 / *Shore To Ship Com System*



Note 1: EDM supports DT/OT

Acronym Legend:

CDR: Critical Design Review
DT: Developmental Testing
EDM: Engineering Development Model
OA: Operational Assessment
OT: Operational Testing
PDR: Preliminary Design Review

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101402N / *Navy Strategic Comms*	**Project (Number/Name)** 1083 / *Shore To Ship Com System*

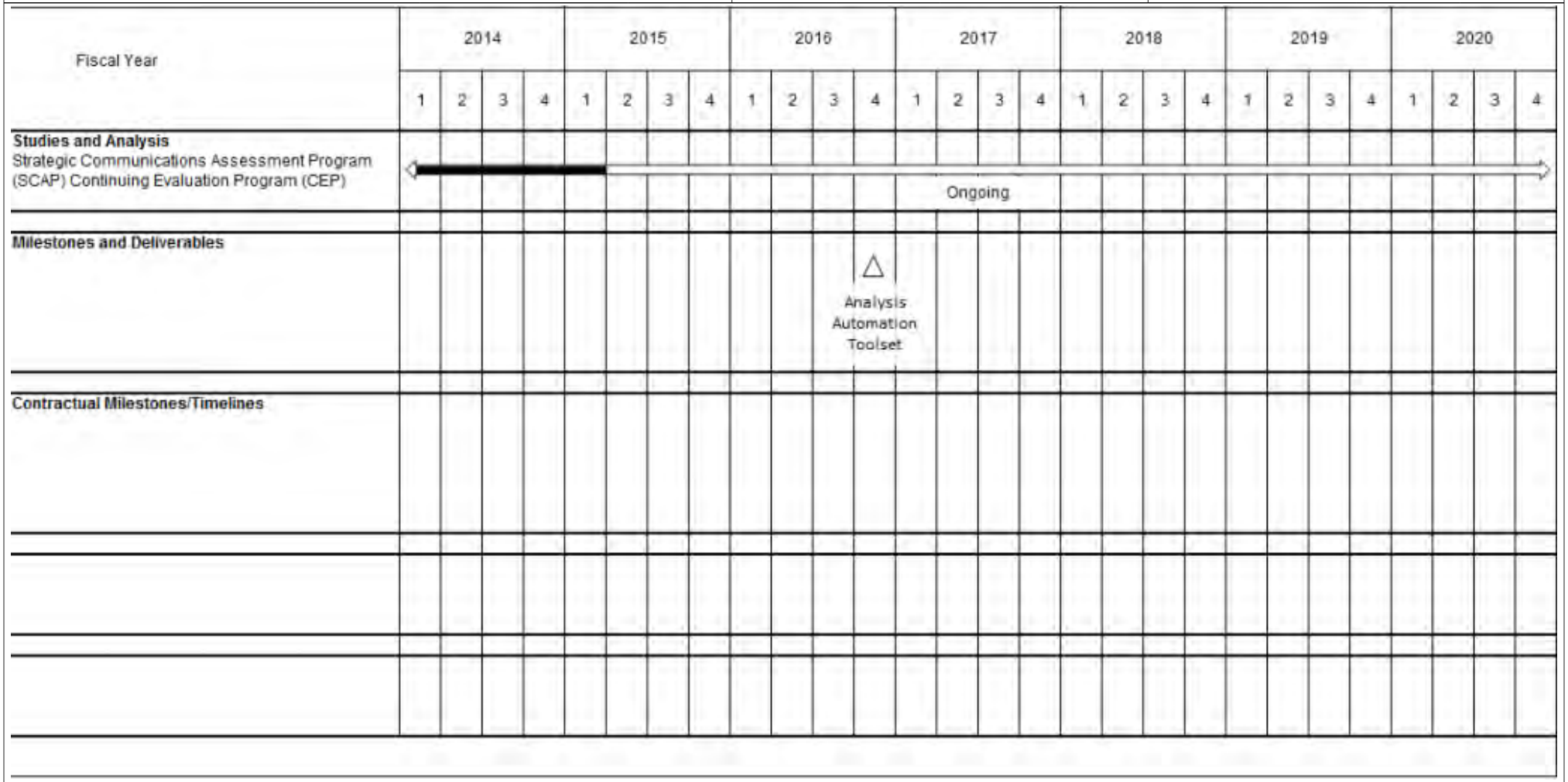


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101402N / *Navy Strategic Comms*	**Project (Number/Name)** 1083 / *Shore To Ship Com System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1083				
LBUCS: Developmental Test/Operational Assesment (DT/OA) - Transmit	1	2014	3	2014
LBUCS: Capability Production Document (CPD) - Transmit	1	2014	1	2014
LBUCS: Milestone-C (MS-C) - Transmit	4	2014	4	2014
LBUCS: Low Rate Initial Production (LRIP) Procurement - Transmit	4	2014	1	2015
LBUCS: LRIP Installation - Transmit	3	2015	2	2016
LBUCS: Developmental Test (DT-C1)/Technical Evaluation - Transmit	3	2015	3	2015
LBUCS: Integrated Test (DT-C2) - Transmit	4	2015	1	2016
LBUCS: Operational Test Readiness Review (OTRR) - Transmit	2	2016	2	2016
LBUCS: Operational Test (OT-C1) - Transmit	3	2016	3	2016
LBUCS: Initial Operational Capability (IOC) - Transmit	3	2016	3	2016
LBUCS: Full Rate Production Milestone (FRP) - Transmit	4	2016	4	2016
LBUCS: Broadcast Control Authority (BCA) Full Rate Production (FRP) Procurement - Transmit	4	2016	1	2017
LBUCS: Broadcast Transmitter Station (BTS) Full Rate Production (FRP) Procurement - Transmit	1	2017	3	2017
LBUCS: Installation Broadcast Control Authority (BCA) - Transmit	2	2017	4	2017
LBUCS: Installation Broadcast Transmitter Station (BTS) - Transmit	1	2018	3	2018
LBUCS: Engineering Design Model (EDM) - Receive	1	2014	3	2016
LBUCS: Production Design Review (PDR) - Receive	2	2014	2	2014
LBUCS: Critical Design Review (CDR) - Receive	1	2015	1	2015
LBUCS: Developmental Test/Operational Assesment (DT/OA) - Receive	4	2015	4	2016
LBUCS: EDM Program Review - Receive	4	2016	4	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101402N / *Navy Strategic Comms*	**Project (Number/Name)** 1083 / *Shore To Ship Com System*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
LBUCS: Developmental Testing/Operational Testing (DT/OT) - Receive	1	2017	3	2017
LBUCS: Full Fielding Program Review - Receive	4	2017	4	2017
LBUCS: Full Rate Production (FRP) Procurement - Receive	3	2017	4	2019
LBUCS: Installation - Receive	1	2018	4	2020
CEP: Studies and Analysis	1	2014	4	2020
CEP: Analysis Automation	4	2016	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101402N / *Navy Strategic Comms*	Project (Number/Name) 3002 / *Navy Strategic Comm Project*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3002: *Navy Strategic Comm Project*	270.510	-	0.496	0.797	-	0.797	0.806	0.815	0.827	0.838	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The E-6 is a manned airborne platform that provides survivable, endurable and reliable Command, Control and Communications capability in support of the President, Secretary of Defense and United States strategic and non-strategic forces. In order to respond effectively to emerging capability requirements, continued effort is needed to perform technical evaluations, modeling and simulation, investigative ground and flight testing, enhanced software modifications and development of configuration modifications. Funding has been added starting in FY15 for advanced development engineering and analysis of hardware/software required to optimize E-6 systems for interoperability in a network-centric strategic environment.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Studies & Analysis	-	0.496	0.797	-	0.797
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: Perform and conduct advanced simulations, integrations and demonstrations using E-6B Systems Integration Laboratory and contractor assets of newly developed commercial technology to address system obsolescence and potential upgrades to ensure survivability and reliability of the E-6B platform.					
FY 2016 Base Plans: Perform and conduct advanced simulations, integrations and demonstrations using E-6B Systems Integration Laboratory and contractor assets of newly developed commercial technology to address system obsolescence and potential upgrades to ensure survivability and reliability of the E-6B platform.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	0.496	0.797	-	0.797

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101402N / *Navy Strategic Comms*	**Project (Number/Name)** 3002 / *Navy Strategic Comm Project*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN 056400: *E-6 A/B Series*	157.528	202.129	185.253	-	185.253	204.195	205.694	205.845	149.319	268.442	2,349.713

Remarks

D. Acquisition Strategy

Advanced development engineering and analysis of hardware/software required to optimize E-6 systems for interoperability in a network-centric strategic environment.

E. Performance Metrics

Mission Systems Evaluation; Technical Analysis 1st Qtr FY16, Design Analysis 2nd Qtr FY16, SIL Test and Reporting 4th Qtr FY16.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101402N / *Navy Strategic Comms*	Project (Number/Name) 3002 / *Navy Strategic Comm Project*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development Block I*	C/CPIF	Rockwell Collins : Cedar Rapids, IA	142.880	-		-		-		-		-	-	142.880	142.880
Award Fees	C/CPAF	Rockwell Collins : Cedar Rapids, IA	3.751	-		-		-		-		-	-	3.751	3.751
Primary Hardware Development Block IA ECP**	C/CPIF	Rockwell Collins : Cedar Rapids, IA	42.447	-		-		-		-		-	-	42.447	42.447
Ancillary Hardware Development	C/CPIF	Rockwell Collins : Cedar Rapids, IA	4.933	-		-		-		-		-	-	4.933	4.933
Training Development WST	C/CPIF	Rockwell Collins : Cedar Rapids, IA	1.213	-		-		-		-		-	-	1.213	1.213
		Subtotal	195.224	-		-		-		-		-	-	195.224	195.224

Remarks

* The Rockwell Collins Primary Hardware Development Block I contract was converted from a Competitively Awarded/Cost plus Award Fee to a Cost Plus Incentive Fee beginning in FY07.

** The Rockwell Collins Primary Hardware Development Block IA Engineering Change Proposal (ECP) contract was definitized in July 2010.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analyses	Various	Various: : Not Specified	4.477	-		0.200	Jan 2015	0.349	Nov 2015	-		0.349	Continuing	Continuing	Continuing
		Subtotal	4.477	-		0.200		0.349		-		0.349	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD : Patuxent River, MD	0.668	-		-		-		-		-	-	0.668	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0101402N / *Navy Strategic Comms*	Project (Number/Name) 3002 / *Navy Strategic Comm Project*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	WR	NAWCAD : Patuxent River, MD	2.148	-		-		-		-		-	-	2.148	-
Other Support	WR	NAVAIR HQ : Patuxent River, MD	3.645	-		-		-		-		-	-	3.645	-
		Subtotal	6.461	-		-		-		-		-	-	6.461	-

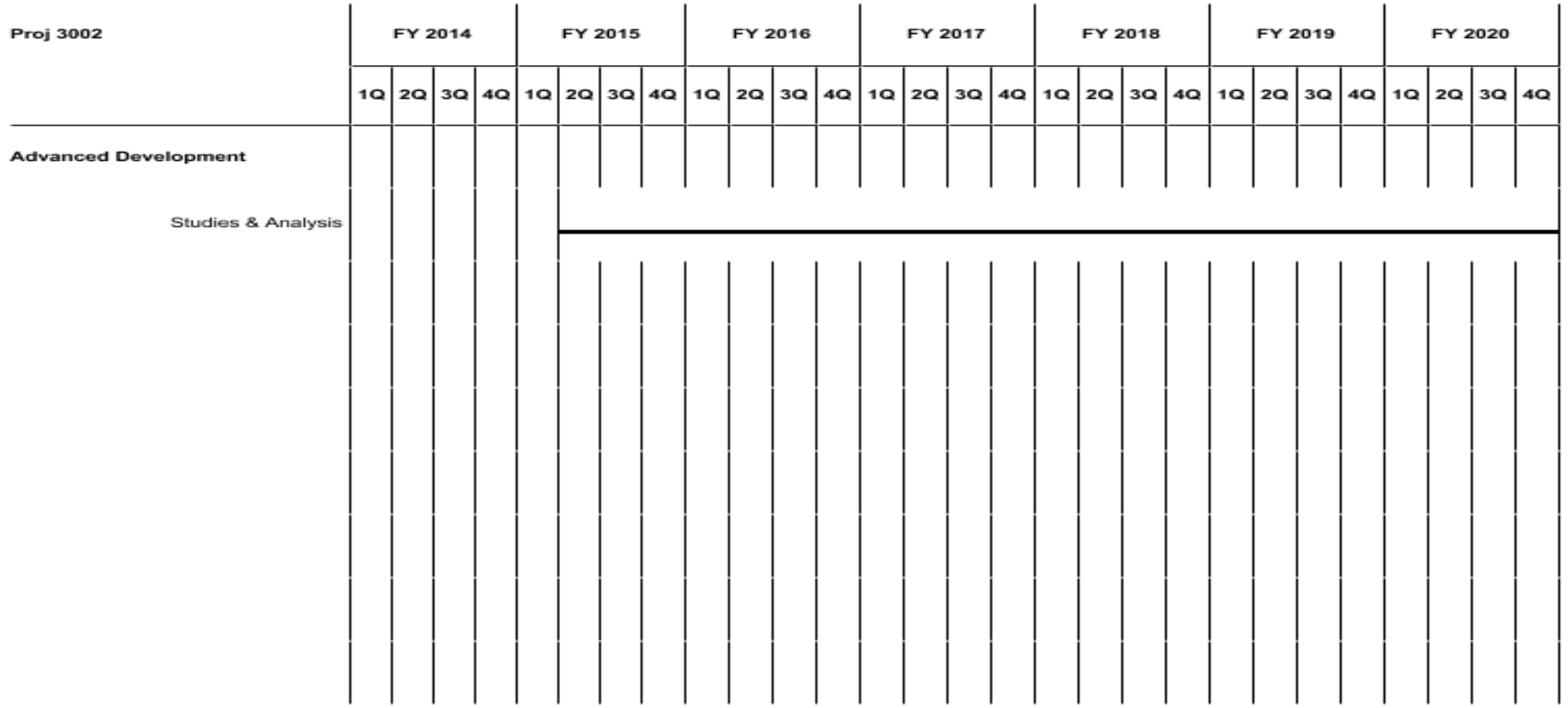
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various : Not Specified	13.850	-		0.123	Feb 2015	0.125	Nov 2015	-		0.125	Continuing	Continuing	Continuing
Governmental Support	Various	Various : Not Specified	37.728	-		0.123	Feb 2015	0.123	Nov 2015	-		0.123	Continuing	Continuing	Continuing
Program Management Support	Various	Various : Not Specified	10.598	-		-		-		-		-	-	10.598	-
Travel	WR	NAVAIR HQ : Patuxent River, MD	2.172	-		0.050	Dec 2014	0.200	Nov 2015	-		0.200	Continuing	Continuing	Continuing
		Subtotal	64.348	-		0.296		0.448		-		0.448	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	270.510	-		0.496		0.797		-		0.797	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101402N / *Navy Strategic Comms*	**Project (Number/Name)** 3002 / *Navy Strategic Comm Project*



2016DON - 0101402N - 3002

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0101402N / *Navy Strategic Comms*	**Project (Number/Name)** 3002 / *Navy Strategic Comm Project*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3002				
Advanced Development: Studies & Analysis: Studies & Analysis	2	2015	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0203761N *I Rapid Technology Transition (RTT)*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	34.278	8.561	8.480	18.632	-	18.632	19.867	20.178	20.381	21.176	Continuing	Continuing
3173: *Technology Insertion Program for Savings (TIPS)*	23.389	8.436	8.480	18.632	-	18.632	19.867	20.178	20.381	21.176	Continuing	Continuing
3174: *Rapid Development and Deployment (RDD)*	10.889	0.125	-	-	-	-	-	-	-	-	-	11.014

A. Mission Description and Budget Item Justification

MISSION:

The Technology Insertion Program for Savings (TIPS) transitions technology from any source, including those not traditionally associated with defense technology. An effective and robust integration of commercial and military technologies can reduce costs by keeping pace with the fast moving changes in technologies and operational needs. The TIPS program is structured to bring transition deals to closure quickly, and to provide execution year funding for a quick start, bridging the gap until the program of record can fund the completion of the technology insertion.

The mission of the TIPS program is to increase the rate that new cutting edge technologies are inserted into DON acquisition programs in order to significantly reduce operations and maintenance support costs. Opportunities occur when a sufficiently mature technology is identified that can meet a particular need on a timetable which matches that of an acquisition program, and is supported by a business case which justifies the associated cost and schedule risk. The combination of circumstances which create such opportunities can appear, and disappear, well inside the Program Objectives Memorandum (POM) cycle. This program is designed to be proactive in identifying opportunities and to work with resource sponsors, fleet and force users, and Program Managers (PMs) in constructing viable technology transition deals, one at a time. To ensure the widest possible awareness of emergent commercial technology opportunities, this program interacts with the industry and coordinates closely with Program Executive Offices (PEOs) and Program Managers (PMs) to maintain awareness of insertion opportunities. Utilizing existing authorities, TIPS applies execution year funds where necessary to "jump-start" transitions so they can be inserted and validated leading directly to deployment and/or demonstrations of high risk/high payoff technologies. This Program Element is the only Navy program that addresses current opportunities to reduce operations and support (O&S) cost drivers within a 18-24 month period. As such, planning and initiation are accomplished within the same fiscal year, which causes a non-traditional financial execution profile for the program. The program therefore does not meet traditional expenditure benchmarks for the first year of execution, but rapidly recovers in the second year.

Funding increases to TIPS reflect emphasis on increasing the number of projects that reduce operations and support costs, since the number of projects funded is directly proportional to the cost benefits provided to DoN, and demand continues to grow as operations and sustainment budgets experience increased downward pressure.

The RDD program provides for the rapid development and fielding of prototype solutions to meet urgent operational needs. The RDD process applies when existing DON processes cannot meet urgent operational needs. Overseas Contingency Operations (OCO) have generated rapidly evolving military needs that require responsive materiel solutions.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*			R-1 Program Element (Number/Name) PE 0203761N *I Rapid Technology Transition (RTT)*		
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	8.561	12.480	26.096	-	26.096
Current President's Budget	8.561	8.480	18.632	-	18.632
Total Adjustments	-	-4.000	-7.464	-	-7.464
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-0.039	-	-0.039
• Rate/Misc Adjustments	-	-	-7.425	-	-7.425

Change Summary Explanation

The FY 2016 funding request was reduced by -$0.5 million to account for the availability of prior year execution balances

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0203761N / *Rapid Technology Transition (RTT)*	Project (Number/Name) 3173 / *Technology Insertion Program for Savings (TIPS)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3173: *Technology Insertion Program for Savings (TIPS)*	23.389	8.436	8.480	18.632	-	18.632	19.867	20.178	20.381	21.176	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of the Technology Insertion Program for Savings (TIPS) is to fund smart solutions for rapid insertion of new technologies that are inserted into DON acquisition programs in order to reduce operations and maintenance support costs across DoN acquisition programs. The TIPS program is structured to quickly transition applicable commercial off-the- shelf solutions and late-stage development technologies from any source, to meet emerging opportunities that lead to cost efficiencies in operations, maintenance, support, training, and/or logistics, and is supported by a business case that justifies all associated costs and schedule risks while demonstarting a positive return on investment (ROI) that is quantifiable and clearly explained given realistic assumptions. TIPS provides execution year funding for a rapid start, bridging the gap until the program of record can fund the completion of the technology insertion.

Funding increase from FY15 through FY16 provides continuity for executing efforts already committed in FY14 and FY15, ensuring benefits are realized once efforts have transitioned, and allows insertion of 6 new opportunities to meet increasing demand.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: TECHNOLOGY INSERTION PROGRAM FOR SAVINGS (TIPS)	8.436	8.480	18.632	-	18.632
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					
Completed Composite Patch Technology. Completed Global Ammunition Strategic Positioning Model (GASPM). Completed Backscatter X-ray for F-18 Depot Level Structural Inspection. Completed Revolutionary Low FOD Drogue. Name & ROI% (5 Years) - Composite Patch - Global Ammunistion Strategic Positioning Model (GASP) - ROI% 714 - Backscatter Array for F-18 Depot Level Structural Inspection - ROI%501 - Revolutionary Low Foreign Object Damage (FOD) Drogue - ROI% 140 - Naval Superstructure Cracking Due to Aluminum Sensitization - ROI% 3767					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0203761N / *Rapid Technology Transition (RTT)*	**Project (Number/Name)** 3173 / *Technology Insertion Program for Savings (TIPS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue efforts from FY 2014 unless otherwise noted as complete. Initiate 6-8 new TIPS projects to improve naval warfighter capabilities. Projects Planning to Complete in FY2015: Name & ROI (Percent) - Alpha Act - ROI% 984 - Improved Low Cost Gyro Stabilized Heading Sensor - ROI% 465 - Transportation Exploitation Tool 2 (TET2) - ROI% 601 - SPAWAR Quick Reference Guide - ROI% 1151 - Framework for Accessing Cost & Technology (FACT) for C4I - ROI% 331 Projects Executing in FY2015: Name & ROI (Percent) - LCS Class 1 Stern Tube Seal Design Improvements - ROI% 7540 - Advanced Buoyant Cable Antenna (ABCA) - ROI% 38 - Lot Serial Number Accuracy (LSNA) - ROI% 360 - Virginia Class TEMPALT Electronics Rack - ROI% 961 - Interactive Structural Analysis Environment & Management System - ROI% 11809 - Submarine Combat System Architecture Modernization - ROI% 1408 - Autonomous Target Acquisition Weapon Image Source Expansion - ROI% 469 - Remote Minehunting System Cable Maintenance Winch - ROI% 367 - Modified Induction Heat Tecnology for Reduced Cost Removal of Special Hull Treatment - ROI% 754 - Intermediary Application for Key Mgt Infrastructure - ROI%690 - V-22 Windscreen Durability Improvements - ROI% 303 FY 2015 Projects Starting: Name & ROI% (5 Years) - Navy Nuclear Command, Control, & Comms Emergency Action Message Enhanced Technology (NEET) - ROI % 438					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0203761N / *Rapid Technology Transition (RTT)*	**Project (Number/Name)** 3173 / *Technology Insertion Program for Savings (TIPS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Framework for Accessing Cost & Technology for Rapid Tech Insertion - ROI% 229 - Transition of Single Vacuum Debulk Repair Technology - ROI% 139 - Virtualization in Submarine Warfare Federated Tactical System (V-SWFTS) - ROI% 4254 - Close-In Weapon System Upgrades for CCA & Gyro - ROI% 710 - Flexible Signals Exploitation Utilizing a Framework Platform - ROI% 1120 - Radar Technology Engineering Upgrades A, B, & C -(A) ROI% 313 -(B) ROI% 120 -(C) ROI% 92 ***FY 2016 Base Plans:*** Continue efforts from FY 2015 unless otherwise noted as complete. Initiate 8-10 new TIPS projects to further reduce maintenance & operational support costs across Naval acquisition programs. FY 2016 Projects Starting: - Close-In Weapon System Upgrades for CCA & Gyro - ROI% 710 - Close-In Weapon System Upgrades for Stabilization Motor Upgrades - ROI% 650 - Framework for Accessing Cost & Technology for Rapid Tech Insertion - ROI% 229 - Flexible Signals Exploitation Utilizing a Framework Platform - ROI% 1120 FY2016 Future Cost Savings Opportunities: Name & ROI % (5 Years) - Universal Naval Aluminum Degree of Sensitization (DoS) Probe - ROI% 7227 - Aegis Weapon System (AWS) Big Data mining & Prognostics -ROI% 783 - Low Cost Enabling Minehunting Sonar Waveform Generator - ROI% 2487 - Stress Wave Analysis - ROI% 2089 - CANES Rapid Installation Key Enabling Technologies - ROI% 431 - Multiband Broadband Antenna for Navy Ships - ROI% 674 - Joint Air Logisitcs Information System Decision Support Tool - ROI% 1691 - Tacticial Receive Segment - ROI% 523					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0203761N / *Rapid Technology Transition (RTT)*	**Project (Number/Name)** 3173 / *Technology Insertion Program for Savings (TIPS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Energy Absorbing Aerial Refueling Hose - ROI% 4842 - Interactive Culturally Accurate AvataR - ROI% 429 - Personal Property Transportation Audit Systems - ROI% 225 ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	8.436	8.480	18.632	-	18.632

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Utilize existing authorities on a case-specific basis to exploit rapid technology transition opportunities.

E. Performance Metrics

The TIPS program will initiate new projects each year that provide for new, innovative, and potentially disruptive technology being inserted into DON acquisition programs. The TIPS projects will have a greater than 70% success rate of insertion and fielding of technology into DON warfighting systems and/or operations and support cost efforts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0203761N / *Rapid Technology Transition (RTT)*	Project (Number/Name) 3173 / *Technology Insertion Program for Savings (TIPS)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Tactical Environment & Role-player Station (TERS)	C/BPA	NAWCTSD : Orlando, FL	1.752	-		-		-		-		-	-	1.752	-
Naval Advanced Amorphous Coating (NAAC) for High Wear Decks	MIPR	EXCET/NRL : NRL	0.650	-		-		-		-		-	-	0.650	-
Transportation Exploitation Tool (TET)	C/CPFF	Alion Science and Technology : VA	1.650	-		-		-		-		-	-	1.650	-
H-1 Combining Gearbox Chaffing Repair via Low Pressure Cold Spray	Various	Various : Various	1.700	-		-		-		-		-	-	1.700	-
ZnBr Flow Battery Energy Storage System	MIPR	NAVFAC ESC : Port Hueneme	1.664	-		-		-		-		-	-	1.664	-
V22 Windscreen Durability	C/BA	Various : Various	0.000	-		-	Oct 2014	-		-		-	-	-	-
Backscatter X-ray for F-18 Depot Level Structural Inspection	C/BA	Various : Various	2.050	-		-		-		-		-	-	2.050	-
Composite Patch Technologies for Aluminum Structures	C/BA	Various : Various	2.194	-		-		-		-		-	-	2.194	-
Global Ammunition Strategic Positioning Model (GASPM)	C/BA	Various : Various	2.100	-		-		-		-		-	-	2.100	-
Revolutionary (Low FOD) Drogue	C/BA	Various : Various	2.000	-		-		-		-		-	-	2.000	-
LCS 1 Class Stern Tube	C/FFP	NSWC : Carderock, MD	0.721	-		0.853	Oct 2014	0.374	Oct 2015	-		0.374	-	1.948	-
AlphaAct	C/CPFF	Redstone Arsenal : Huntsville, AL	0.900	1.100	Dec 2013	-		-		-		-	-	2.000	-
Improved Low Cost Gyro	WR	NUWC : Newport, RI	0.530	0.500	Dec 2013	-		-		-		-	-	1.030	-
Advance Capability Bouyant Cable Antenna	C/FFP	NUWC : Newport, RI	0.847	0.770	Dec 2013	0.293	Oct 2014	-		-		-	-	1.910	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0203761N / *Rapid Technology Transition (RTT)*	Project (Number/Name) 3173 / *Technology Insertion Program for Savings (TIPS)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Lot Serial Number Accuracy	C/CPFF	NAVSUP : Mechanicsburg, PA	0.808	-		0.829	Oct 2014	-		-		-	-	1.637	-
Transportation Exploitation Tool (TET 2)	C/CPFF	NAVFAC EXWC : Port Hueneme, CA	0.600	1.400	May 2014	-		-		-		-	-	2.000	-
VCS TEMPALT Electronics Rack	WR	NUWC : Newport, RI	0.850	0.350	Dec 2013	0.300	Oct 2014	-		-		-	-	1.500	-
SPAWAR Quick Reference Guides	C/IDIQ	SPAWAR : San Diego, CA	0.150	-		-		-		-		-	-	0.150	-
FACT for C4I	Various	GTRI : Various	0.377	0.433	May 2014	-		-		-		-	-	0.810	-
Interactive Structural Analysis Environment & Management System	C/BOA	ESRD : St.Louis, MO	0.000	0.600	Apr 2014	0.605	Oct 2014	0.795	Oct 2015	-		0.795	-	2.000	-
Submarine Combat System Architecture Modernization	C/CPIF	General Dynamics : Pittsfield, MA	0.000	0.616	Apr 2014	0.607	Oct 2014	0.627	Oct 2015	-		0.627	-	1.850	-
Autonomous Target Acquisition Weapon Image Source Expansion	Various	Various : Various	0.000	0.700	Apr 2014	0.560	Oct 2014	0.240	Oct 2015	-		0.240	-	1.500	-
Remote Minehunting System Cable Maintenance Winch	C/IDIQ	NAVSEA PMS 403 : Washington DC	0.000	0.500	Apr 2014	0.700	Oct 2014	0.300	Oct 2015	-		0.300	-	1.500	-
Modified Induction Heat Technology for Reduced Cost Removal of SHT	WR	NRL : Washington DC	0.000	0.400	Apr 2014	0.150	Oct 2014	-		-		-	-	0.550	-
Intermediary Application for Key Management Infrastructure	WR	SPAWAR : San Diego, CA	0.000	0.055	Oct 2013	0.445	Oct 2014	1.500	Oct 2015	-		1.500	-	2.000	-
Navy Nuclear Command, Control & Comms Emergency Action Message Enhanced Technology (NEET)	WR	SSC PAC : San Diego, CA	0.000	-		0.800	Oct 2014	1.200	Oct 2015	-		1.200	-	2.000	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0203761N / *Rapid Technology Transition (RTT)*	**Project (Number/Name)** 3173 / *Technology Insertion Program for Savings (TIPS)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Transition of Single Vacuum Debulk Repair Technology	WR	Various : Various locations	0.000	-		0.175	Oct 2014	0.825	Oct 2015	-		0.825	-	1.000	-
Virtualization in Submarine Warfare Federated Tactical System	C/CPFF	Progeny Systems : Manassas, VA	0.000	-		0.330	Oct 2014	1.670	Oct 2015	-		1.670	-	2.000	-
Radar Technology Engineering Upgrades	Various	Various(Gov/ Contract mix) : Various locations	0.000	-		0.264	Oct 2014	1.061	Oct 2015	-		1.061	-	1.325	-
Close-In Weapon System Upgrades for CCA & Gyro	TBD	TBD : TBD	0.000	-		-	Oct 2014	2.000	Oct 2015	-		2.000	-	2.000	-
Close-In Weapon System Upgrades for Stabilization Motor	TBD	TBD : TBD	0.000	-		-	Oct 2014	1.725	Oct 2015	-		1.725	-	1.725	-
Framework for Accessing Cost & Technology for Rapid Tech Insertion	TBD	TBD : TBD	0.000	-		-	Oct 2014	2.000	Oct 2015	-		2.000	-	2.000	-
Flexible Signals Exploitation Utilizing a Framework Platform	TBD	TBD : TBD	0.000	-		-	Oct 2014	1.000	Oct 2015	-		1.000	-	1.000	-
Future Naval Cost Savings Opportunities	Various	TBD : TBD	0.000	-		-	Oct 2014	1.315	Oct 2015	-		1.315	-	1.315	-
		Subtotal	21.543	7.424		6.911		16.632		-		16.632	-	52.510	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	Various	Various : Various	1.846	1.012	Oct 2013	1.569	Oct 2014	2.000	Oct 2015	-		2.000	Continuing	Continuing	Continuing
		Subtotal	1.846	1.012		1.569		2.000		-		2.000	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0203761N / *Rapid Technology Transition (RTT)*	Project (Number/Name) 3173 / *Technology Insertion Program for Savings (TIPS)*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	23.389	8.436		8.480		18.632		-		18.632	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0203761N / *Rapid Technology Transition (RTT)*	**Project (Number/Name)** 3173 / *Technology Insertion Program for Savings (TIPS)*

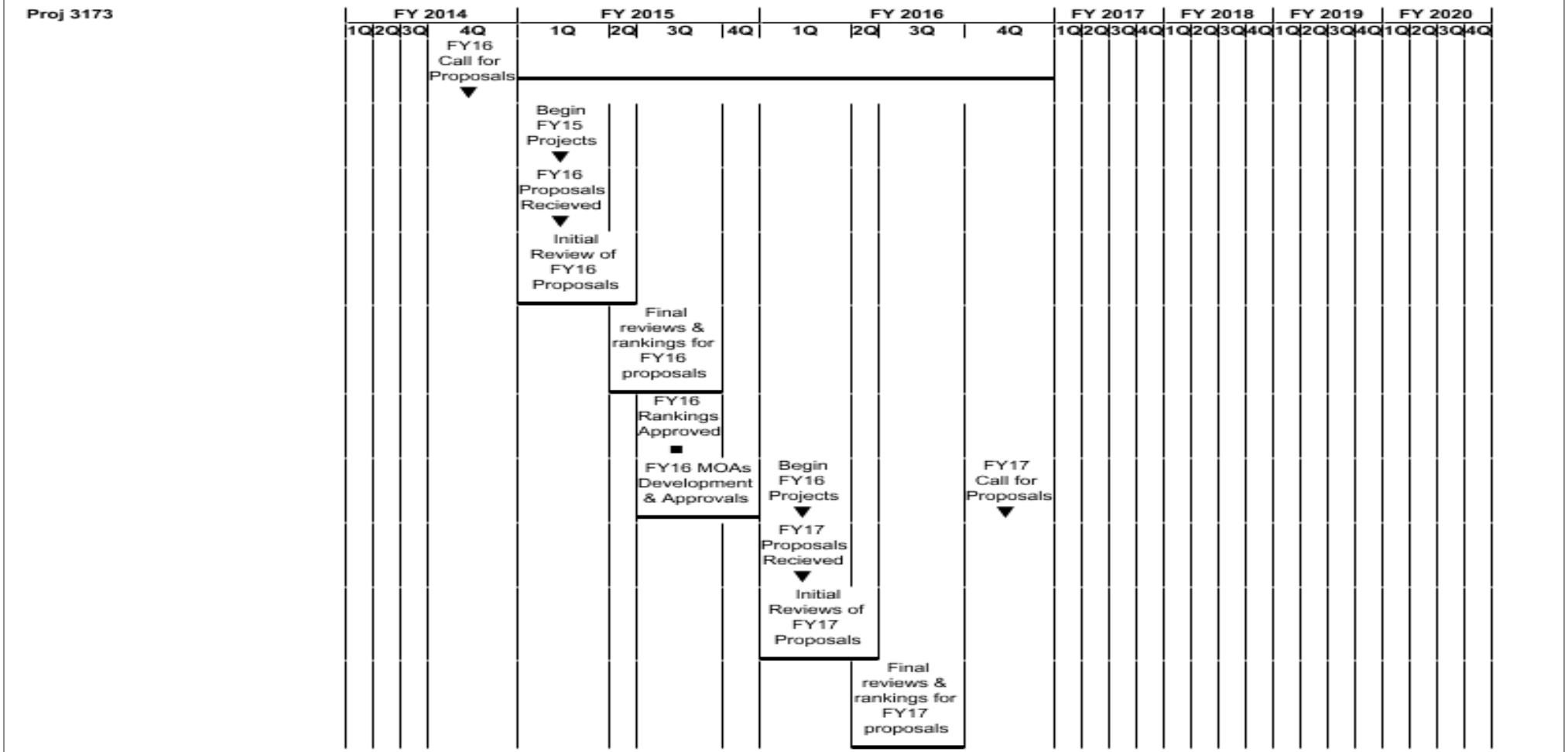

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0203761N / *Rapid Technology Transition (RTT)*	**Project (Number/Name)** 3173 / *Technology Insertion Program for Savings (TIPS)*

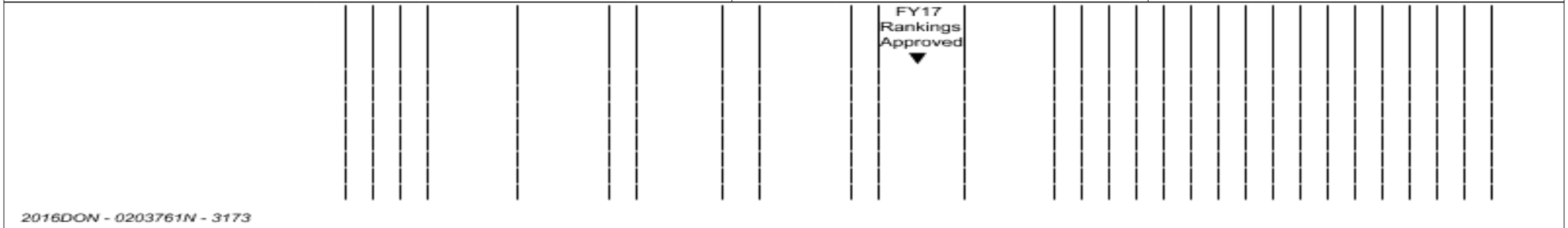

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0203761N / *Rapid Technology Transition (RTT)*	**Project (Number/Name)** 3173 / *Technology Insertion Program for Savings (TIPS)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3173				
Oversee Execution of Projects	1	2015	4	2016
FY16 Call for Proposals	4	2014	4	2014
Begin Selected FY15 Projects	1	2015	1	2015
FY16 Proposals Recieved	1	2015	1	2015
FY16 Initial Review of Proposals	1	2015	2	2015
TIPS WG conducts final reviews and ranking	2	2015	3	2015
Dir. of Technology approves FY16 rankings	3	2015	3	2015
FY16 MOAs drafted, Staffed and approved	3	2015	4	2015
FY17 Call for Proposals	4	2016	4	2016
Begin Selected FY16 Projects	1	2016	1	2016
FY17 Proposals Recieved	1	2016	1	2016
FY17 Initial Reviews of Proposals	1	2016	2	2016
FY17 TIPS WG conducts final reviews and ranking	2	2016	3	2016
Dir of Technology approves FY17 rankings	3	2016	3	2016

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0203761N / *Rapid Technology Transition (RTT)*				Project (Number/Name) 3174 / *Rapid Development and Deployment (RDD)*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
3174: *Rapid Development and Deployment (RDD)*	10.889	0.125	-	-	-	-	-	-	-	-	-	11.014
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Rapid Development and Deployment (RDD) provides an environment and process for rapid development and fielding of prototype solutions to meet urgent operational needs. The RDD process applies when existing DON processes cannot meet urgent operational needs. Overseas Contingency Operations (OCO) have generated rapidly evolving military needs that require responsive materiel solutions. RDD is a fast track process for application, by exception, to Navy and USMC capability needs and materiel solutions that meet the following criteria: (1) Need identified during active or incipient combat or contingency operation, or (2) Need derived from combat survivability of the warfighter or impacts the success of the mission. RDD initiates projects to deliver prototype solutions that are not readily available off-the-shelf and that can be developed, integrated with other components and systems (as necessary), tested, and fielded within 270 days of need approval. RDD provides startup funds to initiate projects that meet the above criteria while other funding is made available within the year of execution. RDD provides an environment and process for rapid development and fielding of prototype solutions to meet urgent operational needs.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: RAPID DEVELOPMENT AND DEPLOYMENT (RDD)	0.125	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Complete shutdown of the RDD program office and integrate functions into ONR Technology Transition Office.					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.125	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0203761N / *Rapid Technology Transition (RTT)*	**Project (Number/Name)** 3174 / *Rapid Development and Deployment (RDD)*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

For RDD requirements that meet the selection criteria, the virtual Rapid Development and Deployment Office (RDDO) is used to initiate projects. The RDDO is a virtual organization operating across Naval Laboratories and Warfare Centers, with interfaces and/or contractual agreements with other Military Services, Industry, Academia and the National Laboratory community. The RDDO will bring together, on demand, multi-disciplinary teams to develop and deliver rapid, innovative solutions. The RDDO will maintain visibility of available and emerging technologies from all sources that may serve as enablers to the success of RDD initiatives. The RDDO will review Urgent Combat Needs, identify and evaluate alternative solutions and provide recommendations. The RDDO will include a rapid acquisition channel, consistent with all applicable procurement regulations, for access to industry products and services as needed. For approved projects, the RDDO will select appropriate technologies, and develop, integrate, test, and deliver fieldable prototypes with the essential logistics for use by the warfighter. End users will be involved throughout the process as part of the virtual team.

E. Performance Metrics

The RDD program goal is to respond to urgent operational needs within 30 days and provide for rapid development and fielding of prototype solutions within 270 - 360 days.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0203761N / *Rapid Technology Transition (RTT)*	**Project (Number/Name)** 3174 / *Rapid Development and Deployment (RDD)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MV-22 Traffic Collision Avoidance System (TCAS)	C/CPFF	NAVAIR : Patuxent River, MD	2.950	-		-		-		-		-	-	2.950	-
V-22 Windscreen Durability Improvements	Various	Various : Various	1.788	-		-		-		-		-	-	1.788	-
Program Shut Down	Various	Various : Various	0.000	0.125	Dec 2013	-		-		-		-	-	0.125	-
BTR Scan Eagle UUNS	Various	Various : Various	1.482	-		-		-		-		-	-	1.482	-
		Subtotal	6.220	0.125		-		-		-		-	-	6.345	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Rapid Development and Deployment Office	WR	Various : Various	4.669	-		-		-		-		-	-	4.669	-
		Subtotal	4.669	-		-		-		-		-	-	4.669	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.889	0.125		-		-		-		-	-	11.014	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0203761N / *Rapid Technology Transition (RTT)*	**Project (Number/Name)** 3174 / *Rapid Development and Deployment (RDD)*

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 3174																												
Complete Shut Down of Program	■																											

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0203761N / *Rapid Technology Transition (RTT)*	**Project (Number/Name)** 3174 / *Rapid Development and Deployment (RDD)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3174				
Complete Shut Down of Program	1	2014	1	2014

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204136N *I F/A-18 Squadrons*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	4,712.891	110.487	86.216	133.265	-	133.265	233.175	185.194	166.243	116.013	Continuing	Continuing
1662: *F/A-18 Improvement*	4,006.957	107.472	83.152	118.243	-	118.243	233.175	185.194	166.243	116.013	Continuing	Continuing
2065: *F/A-18 Radar Upgrade*	705.934	3.015	3.064	15.022	-	15.022	-	-	-	-	-	727.035

A. Mission Description and Budget Item Justification

The F/A-18 is required to perform multiple missions. Capabilities of the F/A-18 weapon system and ancillary equipment can be upgraded to accommodate and incorporate new or enhanced weapons as well as advances in technology to respond effectively to emerging future threats. Continued F/A-18 E/F and EA-18G "Flight Plan" spiral capability development is critical to the baseline of the Super Hornet next generation mission system capability and maintaining tactical relevance in support of Navy Aviation Plan 2030. Development continues for a platform solution to threat Advanced Electronic Attack and Counter-Electronic Attack (CEA). F/A-18 solutions to CEA include upgrades to existing sensors such as F/A-18 Radar Upgrade, Infrared Search and Track Block I, and development of a fused picture between these sensors, such as Multi-Sensor Integration Phase III (the phases of Multi-Sensor Integration are being rolled up under the title of Multi-System Integration in FY15, programmatic name change only). Additionally, continued advanced development engineering for improvements in reliability and maintainability are required to ensure maximum benefit is achieved through reduced cost of ownership and to provide enhanced availability.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	112.618	76.216	56.193	-	56.193
Current President's Budget	110.487	86.216	133.265	-	133.265
Total Adjustments	-2.131	10.000	77.072	-	77.072
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.130	-			
• Program Adjustments	-	-	76.500	-	76.500
• Rate/Misc Adjustments	-0.001	-	0.572	-	0.572

Change Summary Explanation

The FY 2016 funding request was reduced by $5.442 million to account for the availability of prior year execution balances.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204136N *I F/A-18 Squadrons*

Technical:
1662: Not Applicable

2065: Not Applicable

Schedule:
1662: The System Configuration Set (SCS) schedule has had multiple changes due to issues discovered during developmental and operational test requiring additional development time. Schedule changes affect the software development efforts for the Infra-Red Search and Track (IRST), Sensor Integration, Multi-Sensor Integration (MSI) Phase II, MSI Phase III. Some specific changes include the IRST Milestone C review to 1st quarter FY2015, IOC moved to 3rd quarter of FY2018, and Full Rate Production (FRP) moved to 3rd quarter FY2017.

2065: The SCS schedule has had multiple changes due to issues discovered during developmental and operational test requiring additional development time. Schedule changes affect the software efforts for RADAR.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 1662 / *F/A-18 Improvement*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1662: *F/A-18 Improvement*	4,006.957	107.472	83.152	118.243	-	118.243	233.175	185.194	166.243	116.013	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Multi-Sensor Integration Phases II and III efforts are continued but renamed Multi-System Integration since FY15.

A. Mission Description and Budget Item Justification

F/A-18 Improvement (1662): The F/A-18 is a multi-mission strike fighter aircraft that is used in Air-to-Air, strike, surveillance, reconnaissance and tanking roles through selected use of external equipment (fuel tanks, tactical and reconnaissance pods, and various ordnance launching racks). Additional capabilities are required for interoperability in a network-centric tactical environment. In order to respond effectively to emerging future threats, F/A-18 aircraft capabilities are being expanded and upgraded to incorporate new/enhanced weapons systems and avionics including Dual Mode Weapons, a Counter-Electronic Attack, Infra-red Search and Track integrated with the Active Electronically Scanned Array Radar to provide Narrow Band High Gain Electronic Attack, Distributed Targeting precision strike capability through a Distributed Targeting System, and Sensor Integration through Multi-Sensor Integration Phase I/II/III capability which is renamed beginning in FY15 as Multi-System Integration. Continued advanced development engineering and analysis of hardware/software is required to successfully optimize fleet F/A-18 weapon systems for interoperability in a network centric tactical environment (such as Naval Integrated Fire Control-Counter Air), to include: enhanced software capabilities, potential new hardware development, enhanced existing hardware, and enhanced network centric capabilities. Additionally, continued effort is needed to perform technical evaluations, modeling and simulations, investigative flight testing, enhanced software modifications based on reported fleet deficiencies and beginning in FY14 the development and testing of design modifications to address obsolescence issues with the F/A-18 weapon system and ancillary equipment. Funding has been added starting in FY 2012 for the Automatic Ground Collision Avoidance System/Automated Terrain Avoidance and Warning System which will integrate currently implemented manual methodologies to provide not only aural and visual cues/advisories but also automatic initiation of aircraft recovery and subsequent return of control to the pilot following recovery. This funding line continues F/A-18E/F "Flight Plan" spiral capability development, to include Multi-Sensor Integration Phase II and Phase III capability (programmatic name change began in FY15 to Multi-System Integration) and further Flight Plan Engineering and System Configuration Set development and integration. This budget continues funding for F/A-18A-F Test Wing Maintenance support, funds development efforts needed for integration of air launched laser guided rockets on F/A-18 A+/C/D and the development and testing required for the integration of the Small Diameter Bomb II and Joint Miniature Munitions-Bomb Rack Unit on the F/A-18E/F Super Hornet.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Electro-Optical Infra-Red Search and Track (IRST) Phase I	57.717	40.157	43.365	-	43.365
Articles:	-	-	-	-	-
Description: Technology development and engineering and manufacturing development of an IRST sensor for the F/A-18 E/F.					
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continued Engineering and Development Phase and Integration Testing-C Flight Test. ***FY 2015 Plans:*** Complete Engineering and Development Phase (hardware and software) to include Engineering Development Model conversion. Conduct Integrated Baseline Review 2 and Operational Testing Readiness Review. Complete Integration Testing and start production on LRIP-1 (APN funded). Completed Milestone C Review. ***FY 2016 Base Plans:*** Continue Engineering and Development Phase (hardware and software) to include completion of Engineering Development Model conversion for Block I and Block II. Begin additional development efforts for fleet required Long Wave Infrared Search and Track (LWIRST). Conduct Integrated Baseline Review 2 and Operational Test Readiness Review. Complete Integration Testing and start production on LRIP-2 (APN funded). ***FY 2016 OCO Plans:*** N/A					
Title: Sensor Integration - Air to Air, Air to Ground and Maritime Multi-Sensor Integration Phase II	10.195	-	-	-	-
Articles:	-	-	-	-	-
Description: Funding will be used to expand track and correlation support from emitting targets and tracks to improve lethality against stationary or moving targets. The H10E effort is currently in the requirements definition/ allocation phase, with expected fleet introduction in FY 2014. ***FY 2014 Accomplishments:*** Complete Multi-Sensor Integration Phase II development with Fleet Release of System Configuration Set H10E. Effort includes software development and testing inclusive of Wingman Compatibility improvements such as Unique Identification, Enhanced Interference Blanking Unit and other software updates affecting the Integrated Defensive Counter Measures suite of electronic warfare hardware. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Sensor Integration - Counter Electronic Attack / Multi-Sensor Integration Phase III	14.470	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
Description: Multi-Sensor Integration Phase III utilizes previous Multi-Sensor Integration upgrades and combines them in H12 System Configuration Set with display improvements to enhance Air to Air & Counter Electronic Attack sensor integration. Multi-Sensor Integration Phase III capability focuses are: Display firmware upgrade (allows existing processors to be fully utilized) coupled with display symbology/Crew Vehicle Interface improvements, and Air to Air Mission Tactical Picture improvements. Multi-Sensor Integration Phase III capability is common to the F/A-18E/F and EA-18G. ***FY 2014 Accomplishments:*** Continued Multi-Sensor Integration system software design and development, main focus of funded effort is in the H12 System Configuration Set for display improvements and other updates affecting air to air and Counter Electronic Attack sensor integration; development and testing inclusive of Wingman Compatibility improvements such as Unique Identification, Enhanced Interference Blanking Unit and other software updates affecting the Integrated Defensive Counter Measures suite of electronic warfare hardware. Begin integration and testing efforts. ***FY 2015 Plans:*** Multi-Sensor Integration has been programmatically renamed as Multi-System Integration beginning in FY15, prior year efforts are continued in FY15 under the Multi-System Integration project. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Multi-System Integration	-	14.486	38.131	-	38.131
Articles:	-	-	-	-	-
Description: Multi-System Integration was a programmatic name change in FY15 which replaced the previously funded Multi-Sensor Integration Phase III. Multi-System Integration migrates from the previous Multi-Sensor Integration Phased approach and allows for insertion of new technologies and requirements to keep pace with rapidly evolving warfighter demands. Also, includes a naming convention change in regards to System Configuration Set (SCS) builds 27, 29 & 31. Initially all "X" labeled builds to include Block I Super Hornets, now 27, 29, & 31 will no longer include Super Hornets thus going back to a "C" SCS label designation to include only legacy A-D aircraft.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** Multi-System Integration will continue efforts begun with Multi-Sensor Integration Phase III including system software design and development. Primary efforts will be software driven through the development, integration and testing of System Configuration Sets H12 and H14. Decision Superiority gaps in Air Warfare will be addressed through the ongoing integration of weapons and sensors combined with display improvements to enhance air-to-surface, air-to-air and Counter Electronic Attack sensor integration. Upgrades to display firmware, display symbology, Crew Vehicle Interface improvements and air-to-air Mission Tactical Picture improvements. Development and Integration of Precision Approach Landing Capability with Civilian Interoperability functionality implemented through a combined hardware and software solution utilizing a Civilian Instrument Landing System and Space Based Augmentation System including a Multi-Mode Receiver and Space Based Augmentation System enabled GPS receiver. Continued updates to Wingman Compatability improvements such as Unique Identification and Enhanced Interference Blanking Unit and continued updates to Integrated Defensive Counter Measures suite of electronic warfare hardware. ***FY 2016 Base Plans:*** Multi-System Integration will continue efforts begun with Multi-Sensor Integration Phase III including system software design and development. Primary efforts will be software driven through the development, integration and testing of System Configuration Sets H12, H14 and H16. Decision Superiority gaps in Air Warfare will be addressed through the ongoing integration of weapons and sensors combined with display improvements to enhance air-to-surface, air-to-air and Counter Electronic Attack sensor integration. Upgrades to display firmware, display symbology, Crew Vehicle Interface improvements and air-to-air Mission Tactical Picture improvements. Development and Integration of Precision Approach Landing Capability with Civilian Interoperability functionality implemented through a combined hardware and software solution utilizing a Civilian Instrument Landing System and Space Based Augmentation System including a Multi-Mode Receiver and Space Based Augmentation System enabled GPS receiver. Continued updates to Wingman Compatability improvements such as Unique Identification and Enhanced Interference Blanking Unit and continued updates to Integrated Defensive Counter Measures suite of electronic warfare hardware. ***FY 2016 OCO Plans:*** N/A					
Title: Flight Plan Engineering / System Configuration Set Development and Integration	6.165	10.409	29.201	-	29.201
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: Continued F/A-18 E/F and EA-18G "Flight Plan" spiral capability development is critical to the baseline of the Super Hornet next generation mission system capability. Funding will support the development, test and integration efforts required to maintain tactical relevance in support of Navy Aviation Plan 2030.					
FY 2014 Accomplishments: Flight Plan Engineering efforts to include F/A-18E/F improvements necessary for Super Hornet relevance and tactical supremacy; Navy Integrated Fire Control-Counter Air system configuration set requirements to support Navy Integrated Air and Missile Defense capability requirements and enhance F/A-18 Cooperative Engagement Capability. Funding will also continue System Configuration Sets for Higher Order Language H block development and test tasking.					
FY 2015 Plans: Continue Flight Plan Engineering efforts to include F/A-18E/F improvements necessary for Super Hornet relevance and tactical supremacy; Navy Integrated Fire Control-Counter Air system configuration set requirements to support Navy Integrated Air and Missile Defense capability requirements and enhance F/A-18 Cooperative Engagement Capability. Funding supports development (hardware and software), test and integration efforts for Flight Plan requirements such as Distributed Targeting Processor-Networked to include Aided Target Recognition, Stationary Target Recognition, Maritime Multiple Target Track and Engagement, Multi-Level Security, Strike Accelerator and Advanced Tactical Data Link; Display Improvements for enhanced sensor integration; Tactical Targeting Network Technology internet protocol capability; and Precision Approach and Landing Capability.					
FY 2016 Base Plans: Continue Flight Plan Engineering efforts to include F/A-18E/F improvements necessary for Super Hornet relevance and tactical supremacy; Navy Integrated Fire Control-Counter Air system configuration set requirements to support Navy Integrated Air and Missile Defense capability requirements and enhance F/A-18 Cooperative Engagement Capability. Funding supports development (hardware and software), test and integration efforts for Flight Plan requirements such as Distributed Targeting Processor-Networked to include Aided Target Recognition, Stationary Target Recognition, Maritime Multiple Target Track and Engagement, Multi-Level Security, Strike Accelerator and Advanced Tactical Data Link; Display Improvements for enhanced sensor integration; Tactical Targeting Network Technology internet protocol capability; Flight Path Control (Magic Carpet); and Precision Approach and Landing Capability, in support of Integrated Capability Package 2 and 3.					
FY 2016 OCO Plans:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: Test Wing Maintenance Conversion	6.500	8.000	6.846	-	6.846
Articles:	-	-	-	-	-
Description: Funding supports maintenance of aircraft at NAVAIR Test Wing used to support Program Office objectives. ***FY 2014 Accomplishments:*** Performed aircraft maintenance on Test Wing Aircraft. Decrease in planned flight testing over FY13 as a result of reduced budget authority and planned efforts. ***FY 2015 Plans:*** Perform aircraft maintenance on Test Wing aircraft. FY15 restores Test Wing funding to previously planned levels. ***FY 2016 Base Plans:*** Perform aircraft maintenance on Test Wing aircraft. ***FY 2016 OCO Plans:*** N/A					
Title: Flight Plan Engineering/Brimstone (Cong add)	-	10.000	-	-	-
Articles:	-	-	-	-	-
Description: This funding is for Brimstone weapon system qualification for the F/A-18 aircraft. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** Conduct missile and launcher subsystem qualification efforts, characterization of system performance and airworthiness analyses with Boeing Aircraft Company (BAC). Conduct qualification testing which will culminate in the delivery of specific reports of test results for each test effort and in the delivery of BAC analyses for weapon/launcher interfaces with the F/A-18. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: Automatic Ground Collision Avoidance System /Automated Terrain Avoidance and Warning System	5.223	-	-	-	-
Articles:	-	-	-	-	-
Description: Automatic Ground Collision Avoidance System /Automated Terrain Avoidance and Warning System will preserve force structure by reducing attrition of pilots and aircraft that result from Controlled Flight into Terrain (CFIT). CFIT occurs at greater rates on fighter attack aircraft and is a leading cause of loss of life and loss of combat capability within the DoD aviation community. At full implementation, Automatic Ground Collision Avoidance System /Automated Terrain Avoidance and Warning System will integrate currently implemented manual methodologies to provide not only aural and visual cues/advisories, but also automatic initiation of aircraft recovery and subsequent return of control to the pilot following recovery. Funding supports Automatic Ground Collision Avoidance System/Automated Terrain Avoidance and Warning System studies, analysis and functional requirements; communication, navigation and identification related development and integration efforts. ***FY 2014 Accomplishments:*** Continued Automatic Ground Collision Avoidance System/Automated Terrain Avoidance and Warning System software development and design. Continue communications, navigation and identification equipment (hardware and software) development, integration, test and evaluation. Reduced budget authority causing suspension of planned flight test events. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Small Diameter Bomb II Integration	7.102	-	-	-	-
Articles:	-	-	-	-	-
Description: The F/A-18E/F Super Hornet is an objective platform for employment of the Small Diameter Bomb II (SDB II) and the Joint Miniature Munitions Bomb Rack Unit (JMM BRU). This program funds the hardware and software design, early development, integration and testing required to successfully integrate SDB II/JMM BRU					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
on the F/A-18E/F. SDB II is being developed by the USAF. Beginning FY15 funding will be in PE 0604329N PU 1663 to continue efforts. ***FY 2014 Accomplishments:*** System Specification and design efforts, Joint Miniature Munitions Bomb Rack Unit (JMM BRU) technical development and integration efforts. System Configuration Set software development and integration. Ground and Flight testing, procurement of JMM BRU prototypes. ***FY 2015 Plans:*** Funding moved to PE 0604329N Small Diameter Bomb (SDB) ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: F/A-18 Obsolescence Redesign	0.100	0.100	0.700	-	0.700
Articles:	-	-	-	-	-
Description: Develop and test modifications to address obsolescence issues. ***FY 2014 Accomplishments:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 weapon system and ancillary equipment obsolescence issues. ***FY 2015 Plans:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 weapon system and ancillary equipment obsolescence issues. ***FY 2016 Base Plans:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 weapon system and ancillary equipment obsolescence issues. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	107.472	83.152	118.243	-	118.243

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN/0145: *F/A-18E/F*	180.056	-	-	-	-	-	-	-	-	-	44,435.723
• APN/0145C: *F/A-18EF AP*	27.335	-	-	-	-	-	-	-	-	-	1,641.555
• APN/0143: *EA-18G*	1,893.918	1,503.547	-	-	-	-	-	-	-	-	15,140.710
• APN/05250: *F-18 SERIES MOD*	755.974	705.830	978.756	8.000	986.756	1,066.037	1,189.911	1,369.316	1,451.845	6,339.287	19,840.342
• RDTEN/3063: *EA-18G DEVELOPMENT*	10.550	18.730	56.921	-	56.921	47.261	104.359	56.413	40.591	Continuing	Continuing

Remarks

D. Acquisition Strategy

The F/A-18 Improvement program consists of extensive spiral development efforts mapped out in the capability-based approach F/A-18 E/F "Flight Plan." These efforts are critical to the baseline of the Super Hornet next generation mission system capability and maintaining tactical relevance in support of Navy Aviation Plan 2030. The major programs within the F/A-18 Improvement project are based on six Weapon System Capabilities: Distributed Targeting Air to Ground and Maritime, Distributed Targeting Air to Air, Net Centric Operations/Battle Space Management, Sensor Integration, Air to Ground and Maritime Attack, and Air to Air Attack. The major efforts included in this project are: Dual Mode Weapons integration; an Infra-Red Search and Track; Distributed Targeting capability through a Distributed Targeting System; Multi-Sensor Integration Phase I, Phase II and Phase III capability (programmatic name change to Multi-System Integration began in FY15); continued advanced development and F/A-18E/F Flight Plan engineering and analysis; continued enhanced software capabilities development; and engineering support to perform technical evaluations, modeling and simulations, and investigative flight testing.

- Infra-Red Search and Track (IRST). The IRST Block I program is a Navy program in the Engineering Manufacturing and Development (EMD) phase. A Block I system will be developed by the Navy that will meet requirements for a Counter-Electronic Attack capability. This capability will reach Initial Operational Capability (IOC) in FY 2018.
- Sensor Integration. Sensor Integration development is provided on a sole source cost plus fixed fee contract on a Research and Development Basic Ordering Agreement to Raytheon and Boeing.
- Integration of Automatic Ground Collision Avoidance System/Automated Terrain Avoidance and Warning System is envisioned to only require changes to the software System Configuration Set. Studies and analyses are needed to identify the appropriate implementation method.
- Integration of Small Diamter Bomb Increment II and the Joint Miniature Munitions Bomb Rack Unit is software driven with ground and flight test requirements.

E. Performance Metrics

IRST Program achieved MS B on 17 June 2011, achieved MS C on 02 December 2014, and scheduled for IOC in 3rd Quarter of FY2018.

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AGCAS/ATAWS (Automatic Ground Collision Avoidance System/Automated Terrain Avoidance and Warning System) Systems Engineering	WR	NAWCAD : Pax River, MD	3.053	2.200	Dec 2013	-		-		-		-	-	5.253	-
IRST - Primary Hardware Development Infra-Red Search and Track (IRST)	C/CPIF	Boeing : St. Louis, MO	131.748	22.964	Nov 2013	9.479	Nov 2014	24.748	Nov 2015	-		24.748	-	188.939	188.939
Flight Plan/SCS Development(Magic Carpet)	C/CPIF	GE : Various	0.000	-		-		5.000	Mar 2016	-		5.000	-	5.000	5.000
Flight Plan/SCS Development	WR	NAWCAD : Pax River, MD	0.000	-		4.331	Nov 2014	1.820	Nov 2015	-		1.820	-	6.151	-
Flight Plan/Brimstone	Various	Various : Various	0.000	-		10.000	Aug 2015	-		-		-	-	10.000	-
Flight Plan/SCS Development (Magic Carpet)	C/CPIF	Boeing : St. Louis, MO	0.000	-		-		14.421	Dec 2015	-		14.421	-	14.421	14.421
Multi System Integration - Develop Sensor Integration	Various	Various : Various	0.000	-		-		1.500	Feb 2016	-		1.500	Continuing	Continuing	Continuing
Prior Year Prod Dev cost no longer funded in FYDP	Various	Various : Various	575.234	-		-		-		-		-	-	575.234	-
		Subtotal	710.035	25.164		23.810		47.489		-		47.489	-	-	-

Remarks

Started in FY15 all Sensor Integration (SSG/SEI, IDECM, HGESM) and Multi-Sensor Integration Phases are executed as part of the Multi-System Integration project as a programmatic name change. Flight Plan/SCS started in FY15 in support of Integrated Capability Packages(ICP) 2 and 3 Counter-Electronic Attack (CEA) requirements. FY15 Congressional add for Brimstone Dual mode.

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IRST - Software (S/W) Development	WR	NAWCWD : China Lake, CA	1.575	0.889	Dec 2013	8.916	Dec 2014	1.370	Dec 2015	-		1.370	Continuing	Continuing	Continuing
IRST - Development Support	WR	NAWCWD : China Lake, CA	6.018	0.504	Dec 2013	0.372	Dec 2014	0.332	Dec 2015	-		0.332	Continuing	Continuing	Continuing
IRST - Development Support	WR	NAWCAD : Pax River, MD	10.569	2.500	Dec 2013	2.798	Dec 2014	2.100	Dec 2015	-		2.100	Continuing	Continuing	Continuing
IRST - Development Support	WR	NAWCAD : Lakehurst, NJ	1.349	0.814	Dec 2013	0.844	Dec 2014	0.707	Dec 2015	-		0.707	Continuing	Continuing	Continuing
IRST - Development Support	WR	FRC Southeast : Jacksonville, FL	3.851	0.972	Dec 2013	1.038	Dec 2014	0.503	Dec 2015	-		0.503	Continuing	Continuing	Continuing
MSI PH II Development Support	Various	NAWCWD : China Lake, CA	13.141	5.111	Dec 2013	-		-		-		-	-	18.252	-
MSI PH II Development Support	SS/IDIQ	Boeing : St. Louis, MO	0.000	0.918	Dec 2013	-		-		-		-	-	0.918	0.918
AGCAS/ATAWS Development Support	WR	NAWCWD : China Lake, CA	0.761	3.120	Dec 2013	-		-		-		-	-	3.881	-
MSI PH III Development Support - Sensor Integration Counter-Digital Radio Frequency Memory	WR	NAWCWD : China Lake, CA	5.208	5.534	Dec 2013	-		-		-		-	-	10.742	-
MSI PH III Development Support - Sensor Integration Counter-Digital Radio Frequency Memory	SS/IDIQ	Boeing : St. Louis, MO	2.645	7.049	Dec 2013	-		-		-		-	-	9.694	9.694
Multi-System Integration Development Support	WR	NAWCAD : Pax River, MD	0.000	-		3.250	Dec 2014	2.113	Dec 2015	-		2.113	Continuing	Continuing	Continuing
Multi-System Integration Development Support	WR	NAWCWD : China Lake, CA	0.000	-		3.775	Dec 2014	17.733	Dec 2015	-		17.733	Continuing	Continuing	Continuing
Multi-System Integration Development Support	SS/IDIQ	Boeing : St. Louis, MO	0.000	-		4.500	Dec 2014	11.620	Dec 2015	-		11.620	-	16.120	16.120
Multi-System Integration Development Support	WR	NSMA : Arlington, VA	0.000	-		2.300	Mar 2015	2.300	Mar 2016	-		2.300	Continuing	Continuing	Continuing

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Flight Plan/System Configuration Set Development & Integration	WR	NAWCAD : Pax River, MD	0.000	2.165	Nov 2014	-		0.898	Nov 2015	-		0.898	Continuing	Continuing	Continuing
SDB II / JMM BRU - Development Support	WR	NAWCAD : Pax River, MD	0.000	1.600	Mar 2014	-		-		-		-	-	1.600	-
SDB II / JMM BRU - Development Support	WR	NAWCWD : China Lake, CA	0.000	1.424	Mar 2014	-		-		-		-	-	1.424	-
SDB II / JMM BRU - Software Development Support	WR	NAWCWD : China Lake, CA	0.000	1.000	Mar 2014	-		-		-		-	-	1.000	-
SDB II / JMM BRU - Contractor Development Support	SS/IDIQ	Raytheon : Tucson, AZ	0.000	1.000	May 2014	-		-		-		-	-	1.000	1.000
Obsolescence Redesign	Various	Various : Various	0.000	0.100	Aug 2014	0.100	Jun 2015	0.700	Jun 2016	-		0.700	Continuing	Continuing	Continuing
Prior Year Support costs no longer funded in FYDP	Various	Various : Various	2,974.084	-		-		-		-		-	-	2,974.084	-
		Subtotal	3,019.201	34.700		27.893		40.376		-		40.376	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IRST - Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Pax River, MD	5.986	9.557	Dec 2013	1.090	Dec 2014	1.100	Dec 2015	-		1.100	Continuing	Continuing	Continuing
IRST - DT&E	WR	NAWCWD : China Lake, CA	2.303	10.935	Dec 2013	6.262	Dec 2014	3.500	Dec 2015	-		3.500	Continuing	Continuing	Continuing
IRST - Operational Test & Evaluation (OT&E)	WR	OPTEVFOR : VX-9	0.683	0.317	Dec 2013	4.817	Dec 2014	4.940	Dec 2015	-		4.940	Continuing	Continuing	Continuing
MSI PH II OT&E	WR	OPTEVFOR : Norfolk, VA	0.593	4.151	Dec 2013	-		-		-		-	-	4.744	-
Multi-System Integration	WR	OPTEVFOR : Norfolk, VA	0.000	-		2.250	Dec 2014	0.800	Dec 2015	-		0.800	Continuing	Continuing	Continuing

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SDB II / JMM BRU - DT&E	WR	NAWCAD : Pax River, MD	0.000	1.000	Mar 2014	-		-		-		-	-	1.000	-
SDB II / JMM BRU - DT&E	WR	NAWCWD : China Lake, CA	0.000	0.675	Mar 2014	-		-		-		-	-	0.675	-
Flight Plan/SCS Test & Evaluation	WR	NAWCAD : Pax River, MD	0.000	-		-		1.000	Nov 2015	-		1.000	-	1.000	-
AIM-120 Test Assets	MIPR	USAF : Eglin AFB, FL	0.000	2.000	Dec 2014	-		2.000	Dec 2015	-		2.000	Continuing	Continuing	Continuing
Prior Year T&E costs no longer funded in FYDP	Various	Various : Various	128.916	-		-		-		-		-	-	128.916	-
		Subtotal	138.481	28.635		14.419		13.340		-		13.340	-	-	-

Remarks

Test Assets (AIM-120, SDB II and JMM BRU) procured as live fire test assets in support of F/A-18E/F Improvements programs (IRST, MSI (SCS block builds)) and weapons integration efforts specific to the F/A-18.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mgmt Support - MISC	Various	NAWCAD : Pax River, MD	9.893	2.212	Dec 2013	2.100	Dec 2014	2.100	Dec 2015	-		2.100	Continuing	Continuing	Continuing
Seaport CSS - Program Management Support	C/CPFF	Wyle Lab : Pax River, MD	14.186	3.696	Dec 2013	3.442	Dec 2014	3.442	Dec 2015	-		3.442	-	24.766	24.766
Travel	Various	NAVAIR : Pax River, MD	4.473	0.450	Nov 2013	0.250	Nov 2014	0.250	Nov 2015	-		0.250	Continuing	Continuing	Continuing
Government Engineering Support	Various	Various : Various	5.730	2.472	Dec 2013	-		-		-		-	Continuing	Continuing	Continuing
Test Wing Maintenance Conversion	WR	NAWCAD : Pax River, MD	23.587	3.108	Dec 2013	3.469	Dec 2014	3.423	Dec 2015	-		3.423	Continuing	Continuing	Continuing
Test Wing Maintenance Conversion	WR	NAWCWD : China Lake, CA	24.587	3.035	Dec 2013	3.469	Dec 2014	3.423	Dec 2015	-		3.423	Continuing	Continuing	Continuing

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Flight Plan / System Configuration Set Development & Integration	WR	NAWCAD : Pax River, MD	0.000	2.000	Dec 2013	2.150	Dec 2014	2.200	Dec 2015	-		2.200	Continuing	Continuing	Continuing
Flight Plan / System Configuration Set Development & Integration	WR	NAWCWD : China Lake, CA	0.000	2.000	Dec 2013	2.150	Dec 2014	2.200	Dec 2015	-		2.200	Continuing	Continuing	Continuing
Prior Year Mgmt costs no longer funded in FYDP	Various	Various : Various	56.784	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	139.240	18.973		17.030		17.038		-		17.038	-	-	-

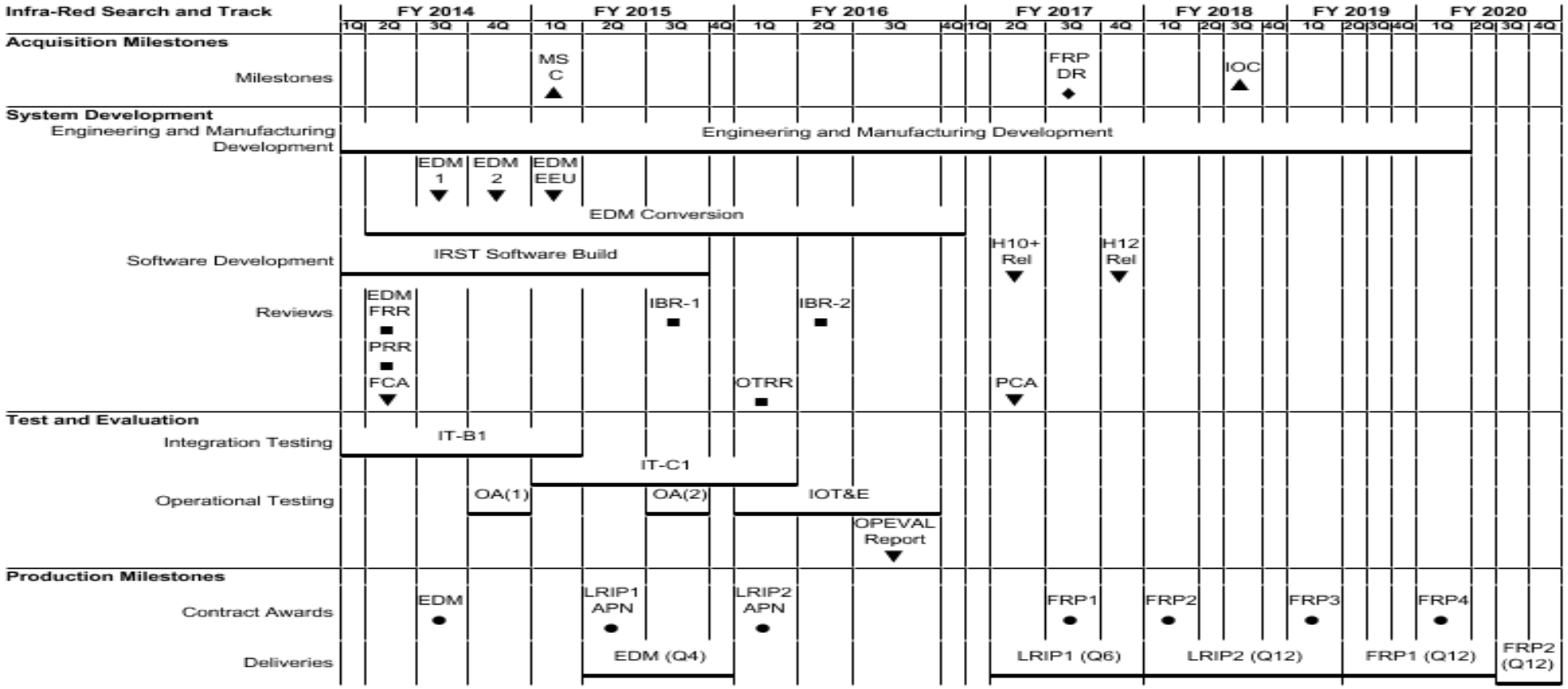
Remarks

In FY14 the Flight Plan Engineering efforts at Pax River and China Lake rolled up under the Flight Plan / System Configuration Set Development & Integration program.

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4,006.957	107.472		83.152		118.243		-		118.243	-	-	-

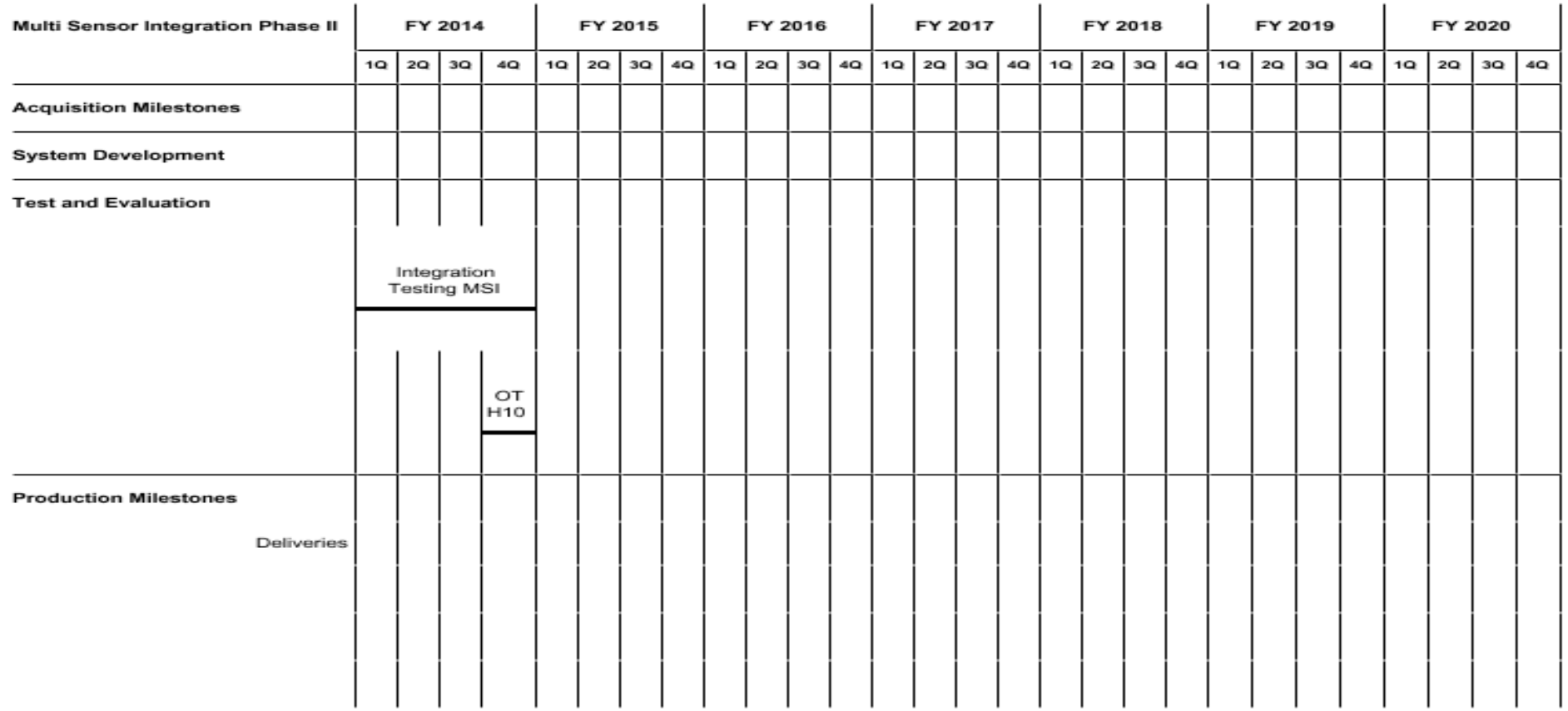
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



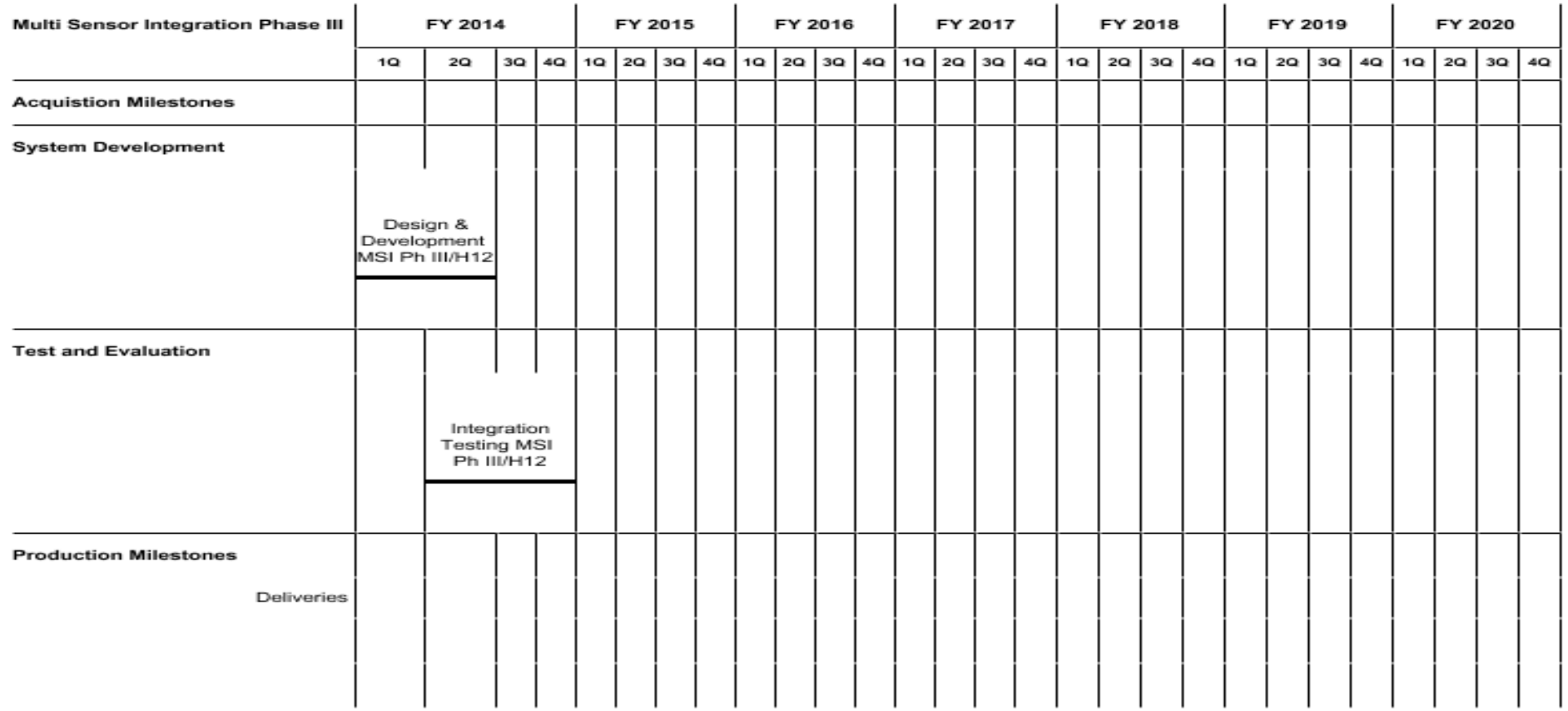
2016PB - 0204136N - 1662

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



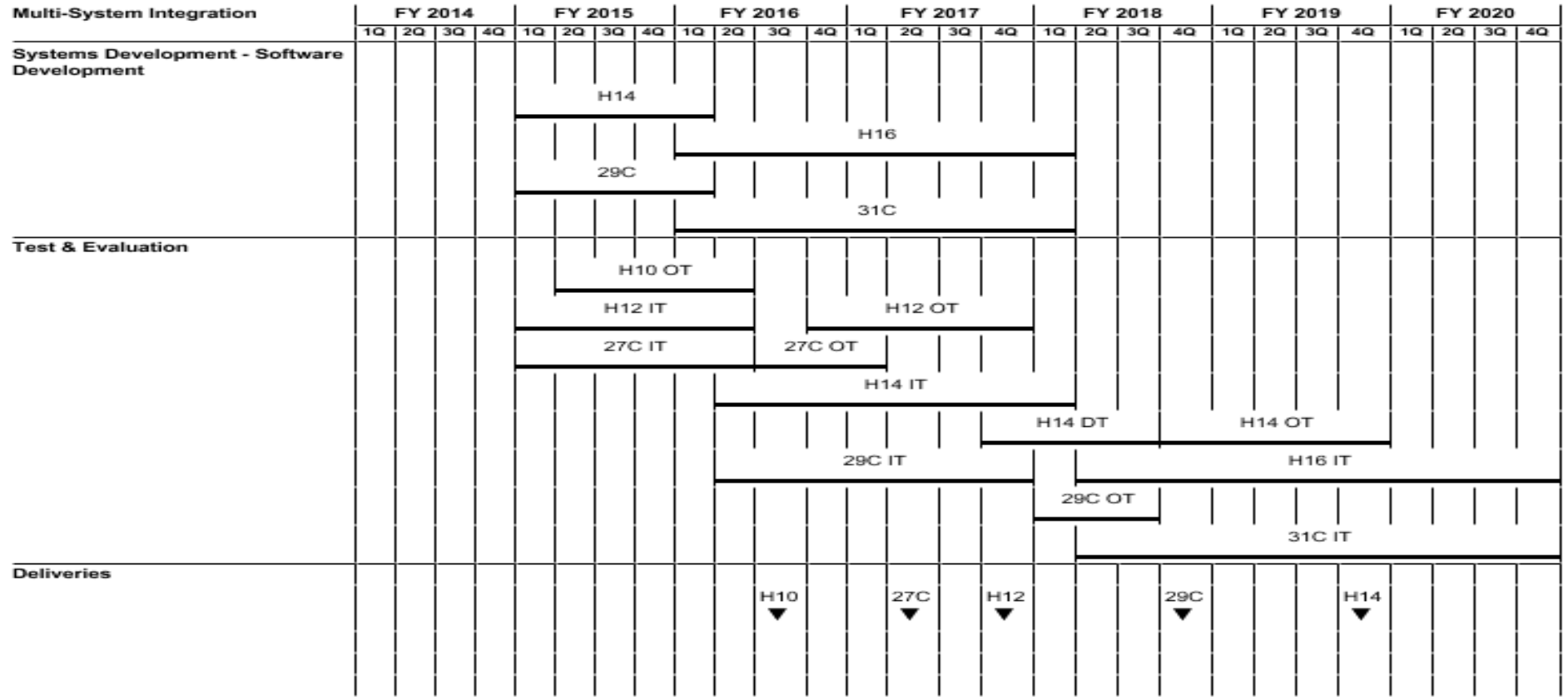
2016PB - 0204136N - 1662

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



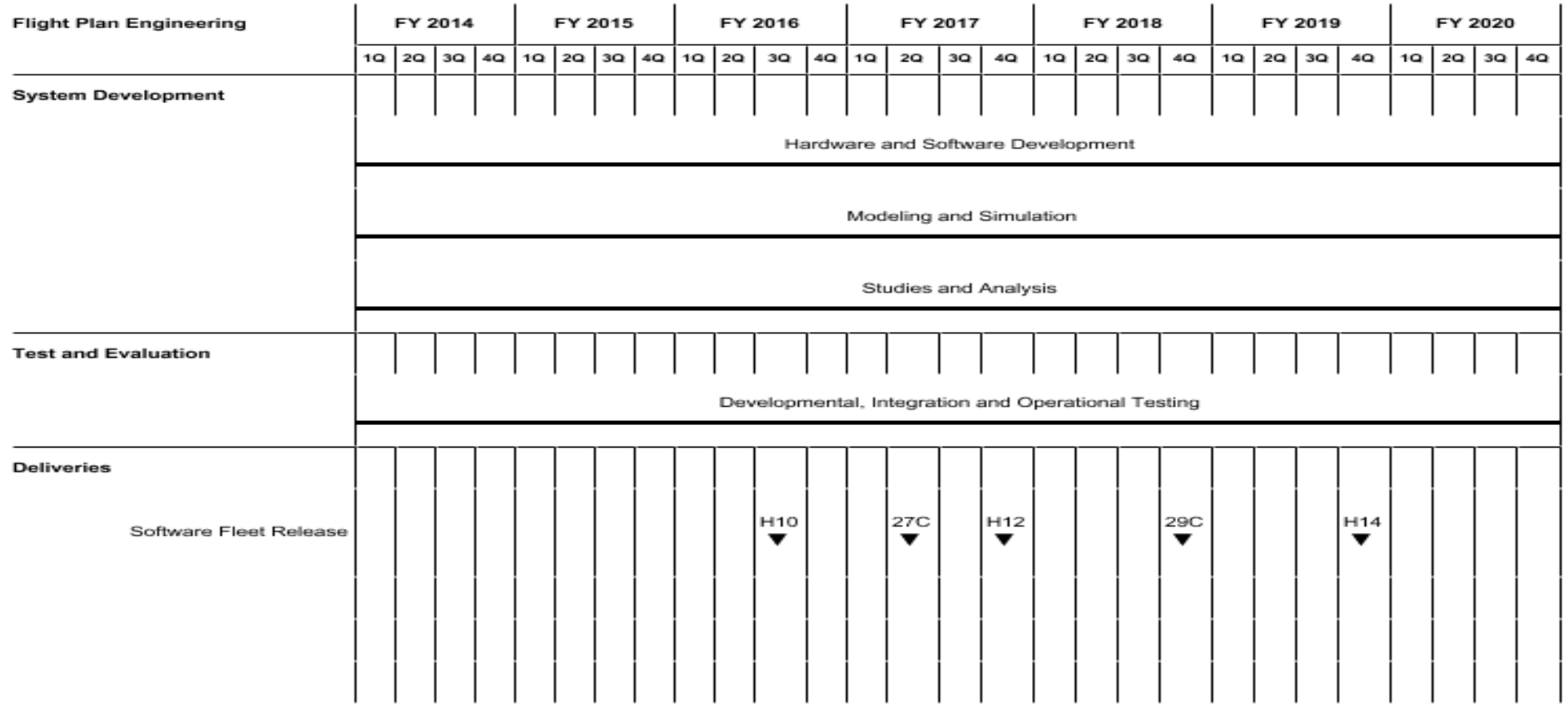
2016PB - 0204136N - 1662 Multi Sensor Integration Phase III has been programmatically renamed as Multi-System Integration beginning in FY 2015.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



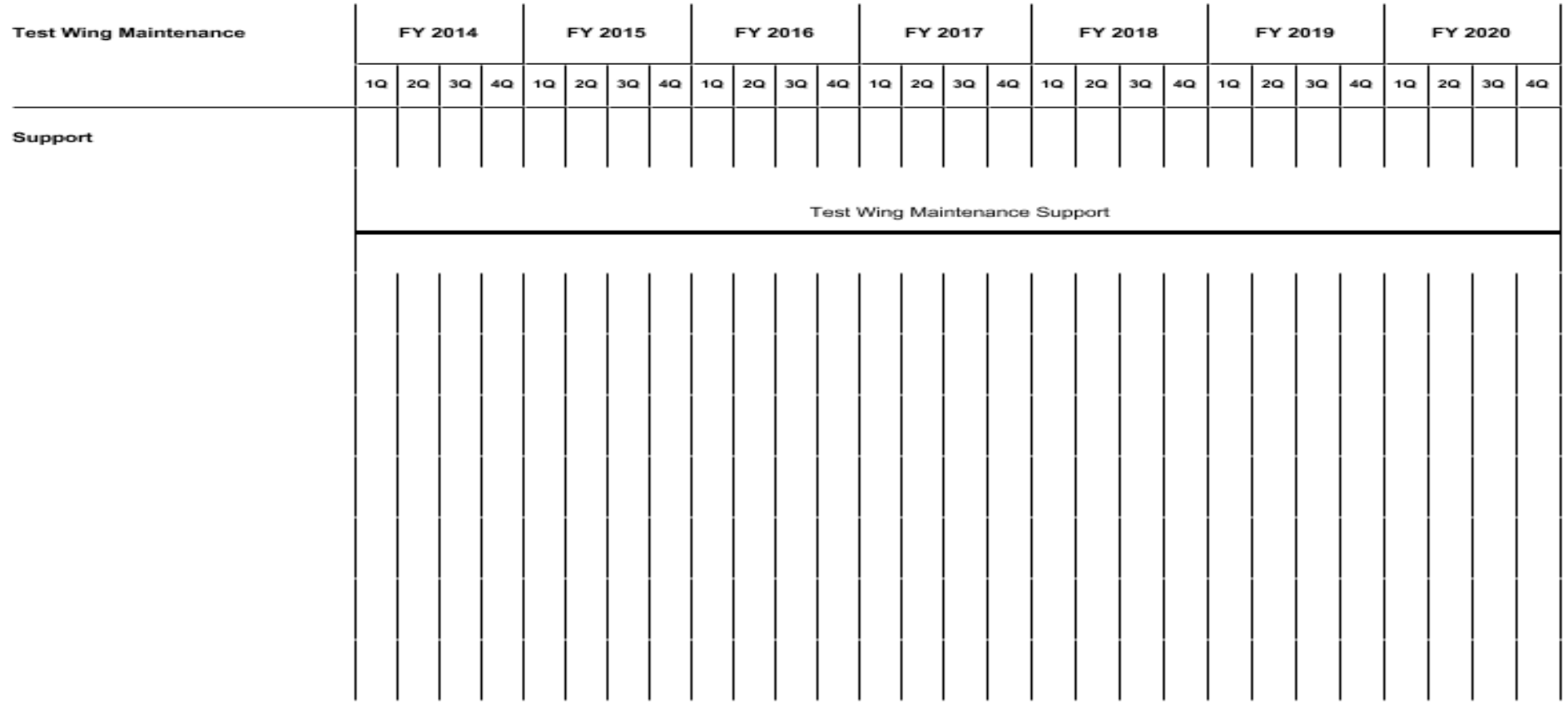
2016PB - 0204136N - 1662 Multi Sensor Integration Phase III has been programmatically renamed as Multi-System Integration beginning in FY 2015.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



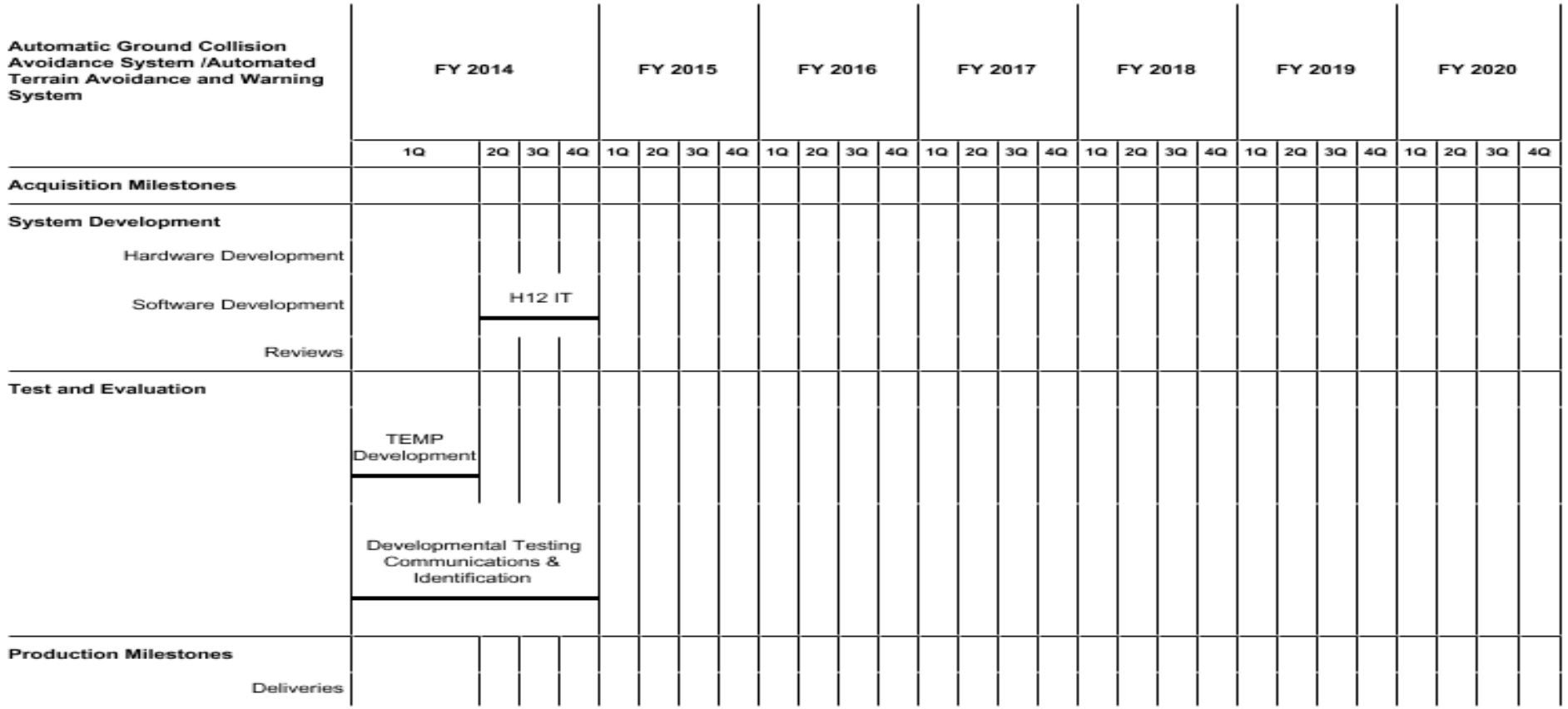
2016PB - 0204136N - 1662

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



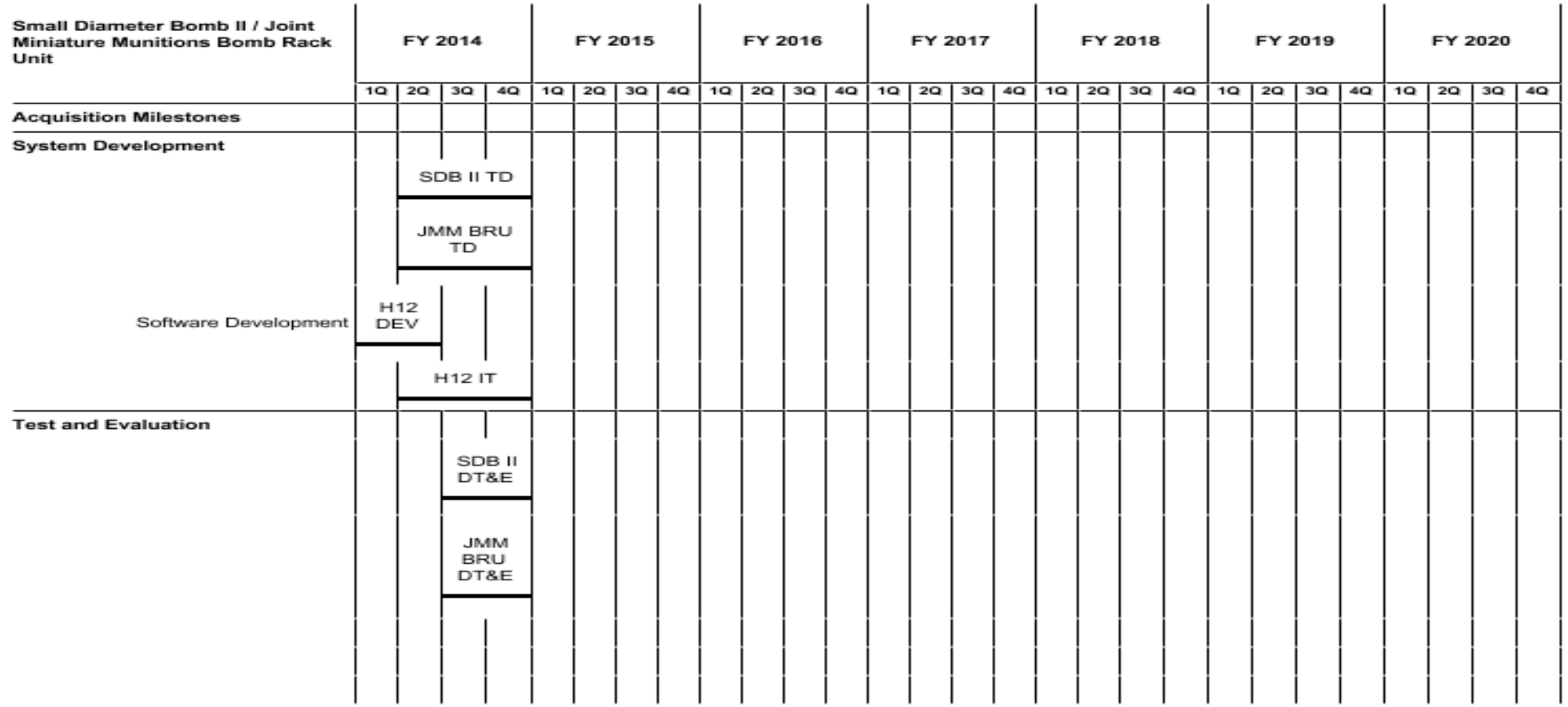
2016PB - 0204136N - 1662

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



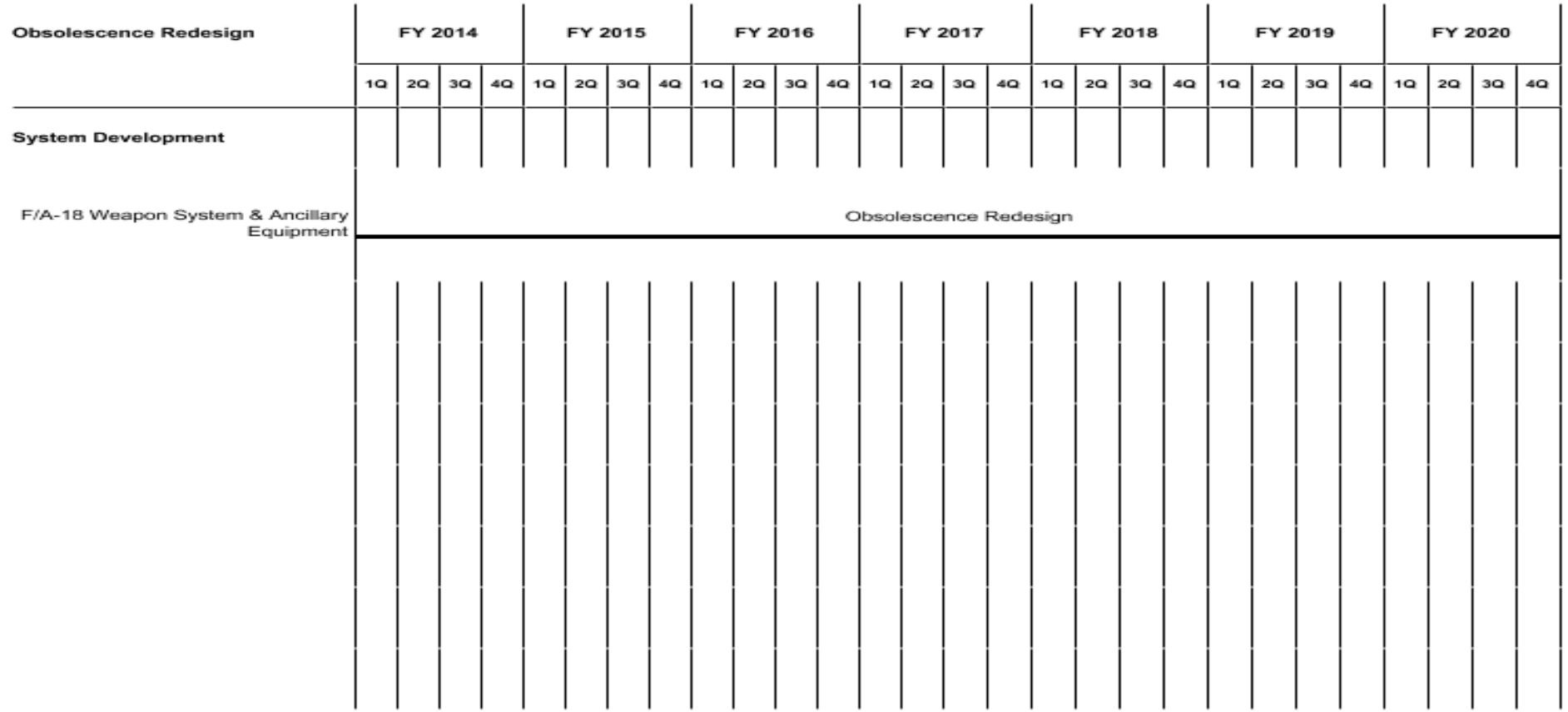
2016PB - 0204136N - 1662

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



2016PB - 0204136N - 1662

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



2016PB - 0204136N - 1662

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Infra-Red Search and Track				
Acquisition Milestones: Milestones: Full Rate Production Decision Review (FRP DR)	3	2017	3	2017
Acquisition Milestones: Milestones: Milestone C (MS C)	1	2015	1	2015
Acquisition Milestones: Milestones: Initial Operational Capability (IOC)	3	2018	3	2018
System Development: Engineering and Manufacturing Development: Engineering and Manufacturing Development	1	2014	1	2020
System Development: Engineering and Manufacturing Development: Eng Dev Model (EDM) IRST Delivery - Lab/IT&E (Unit 1) Block 1	3	2014	3	2014
System Development: Engineering and Manufacturing Development: Eng Dev Model (EDM) IRST Delivery - Lab/IT&E (Unit 2) Block 1	4	2014	4	2014
System Development: Engineering and Manufacturing Development: Eng Dev Model (EDM) IRST Delivery - (Environmental Evaluation Unit-EEU)	1	2015	1	2015
System Development: Engineering and Manufacturing Development: EDM Conversion	2	2014	4	2016
System Development: Software Development: H10+ Fleet Release	2	2017	2	2017
System Development: Software Development: H12 Fleet Release	4	2017	4	2017
System Development: Software Development: IRST Software Build	1	2014	3	2015
System Development: Reviews: Integrated Baseline Review (IBR) - 1	3	2015	3	2015
System Development: Reviews: Integrated Baseline Review (IBR) - 2	2	2016	2	2016
System Development: Reviews: Fleet Readiness Review Engineering Development Model (EDM FRR)	2	2014	2	2014
System Development: Reviews: Preproduction Readiness Review (PRR)	2	2014	2	2014
System Development: Reviews: Functional Configuration Audit (FCA)	2	2014	2	2014
System Development: Reviews: Operational Testing Readiness Review (OTRR)	1	2016	1	2016
System Development: Reviews: Physical Configuration Audit (PCA)	2	2017	2	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluation: Integration Testing: Integration Testing (IT-B1)	1	2014	1	2015
Test and Evaluation: Integration Testing: Integration Testing (IT-C1)	1	2015	1	2016
Test and Evaluation: Operational Testing: Operational Assessment (OA) 1	4	2014	4	2014
Test and Evaluation: Operational Testing: Operational Assessment (OA) 2	3	2015	3	2015
Test and Evaluation: Operational Testing: Integrated Operational Test & Evaluation (IOT&E)	1	2016	3	2016
Test and Evaluation: Operational Testing: OPEVAL Report	3	2016	3	2016
Production Milestones: Contract Awards: EDM	3	2014	3	2014
Production Milestones: Contract Awards: LRIP 1 APN	2	2015	2	2015
Production Milestones: Contract Awards: LRIP 2 APN	1	2016	1	2016
Production Milestones: Contract Awards: FRP I Start	3	2017	3	2017
Production Milestones: Contract Awards: FRP 2 Start	1	2018	1	2018
Production Milestones: Contract Awards: FRP 3 Start	1	2019	1	2019
Production Milestones: Contract Awards: FRP 4 Start	1	2020	1	2020
Production Milestones: Deliveries: Productionized EDM (Qty 4)	2	2015	4	2015
Production Milestones: Deliveries: LRIP 1 (Lot 1 - Qty 6)	2	2017	4	2017
Production Milestones: Deliveries: LRIP 2 (Lot 2 - Qty 12)	1	2018	1	2019
Production Milestones: Deliveries: FRP 1 (Lot 3 - Qty 12)	2	2019	2	2020
Production Milestones: Deliveries: FRP 2 (Lot 4 - Qty 12)	3	2020	4	2020
Multi Sensor Integration Phase II				
Test and Evaluation: Integration Testing MSI	1	2014	4	2014
Test and Evaluation: Operational Testing H10	4	2014	4	2014
Multi Sensor Integration Phase III				
System Development: Design & Development MSI Ph III/H12	1	2014	2	2014
Test and Evaluation: Integration Testing MSI Ph III/H12	2	2014	4	2014
Multi-System Integration				

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Development - Software Development: H14 Software Development	1	2015	1	2016
Systems Development - Software Development: H16 Software Development	1	2016	1	2018
Systems Development - Software Development: 29C Software Development	1	2015	1	2016
Systems Development - Software Development: 31C Software Development	1	2016	1	2018
Test & Evaluation: H10 Operational Testing	2	2015	2	2016
Test & Evaluation: H12 Integration Testing	1	2015	2	2016
Test & Evaluation: H12 Operational Testing	4	2016	4	2017
Test & Evaluation: 27C Integration Testing	1	2015	2	2016
Test & Evaluation: 27C Operational Testing	3	2016	1	2017
Test & Evaluation: H14 Integration Testing	2	2016	1	2018
Test & Evaluation: H14 Developmental Testing	4	2017	3	2018
Test & Evaluation: H14 Operational Testing	4	2018	4	2019
Test & Evaluation: H16 Integration Testing	2	2018	4	2020
Test & Evaluation: 29C Integration Testing	2	2016	4	2017
Test & Evaluation: 29C Operational Testing	1	2018	3	2018
Test & Evaluation: 31C Integration Testing	2	2018	4	2020
Deliveries: H10 Fleet Release	3	2016	3	2016
Deliveries: H12 Fleet Release	4	2017	4	2017
Deliveries: 27C Fleet Release	2	2017	2	2017
Deliveries: 29C Fleet Release	4	2018	4	2018
Deliveries: H14 Fleet Release	4	2019	4	2019
Flight Plan Engineering				
System Development: Hardware and Software Development	1	2014	4	2020
System Development: Modeling and Simulation	1	2014	4	2020
System Development: Studies and Analysis	1	2014	4	2020
Test and Evaluation: Developmental, Integration and Operational Testing	1	2014	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Deliveries: Software Fleet Release: H10 Fleet Release	3	2016	3	2016
Deliveries: Software Fleet Release: H12 Fleet Release	4	2017	4	2017
Deliveries: Software Fleet Release: 27C Fleet Release	2	2017	2	2017
Deliveries: Software Fleet Release: 29C Fleet Release	4	2018	4	2018
Deliveries: Software Fleet Release: H14 Fleet Release	4	2019	4	2019
Test Wing Maintenance				
Support: Test Wing Maintenance Support	1	2014	4	2020
Automatic Ground Collision Avoidance System /Automated Terrain Avoidance and Warning System				
System Development: Software Development: H12 Integration Testing	2	2014	4	2014
Test and Evaluation: TEMP Development	1	2014	1	2014
Test and Evaluation: Developmental Testing Communications & Identification	1	2014	4	2014
Small Diameter Bomb II / Joint Miniature Munitions Bomb Rack Unit				
System Development: SDB II Tech Development	2	2014	4	2014
System Development: JMM BRU Tech Development	2	2014	4	2014
System Development: Software Development: H12 Software Development	1	2014	2	2014
System Development: Software Development: H12 Integration Testing	2	2014	4	2014
Test and Evaluation: SDB II Integration DT&E	3	2014	4	2014
Test and Evaluation: JMM BRU Integration DT&E	3	2014	4	2014
Obsolescence Redesign				
System Development: F/A-18 Weapon System & Ancillary Equipment: Obsolescence Redesign Development & Testing	1	2014	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 2065 / *F/A-18 Radar Upgrade*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2065: *F/A-18 Radar Upgrade*	705.934	3.015	3.064	15.022	-	15.022	-	-	-	-	-	727.035
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

F/A-18 Radio Detection and Ranging (RADAR) Upgrade: The F/A-18 RADAR Upgrade, Active Electronically Scanned Array (AESA) development program, which began in FY 1999, is the last of three pre-planned upgrades to the F/A-18 Type/Model/Series RADAR. The AESA system corrects operational test deficiencies noted in the AN/APG-73. It provides multi-target tracking, Synthetic Aperture RADAR (SAR) imagery, SAR Target Location Error (TLE), and improved spotlight map resolution. In addition, it provides greater lethality than previous F/A-18 RADARs by allowing full tactical support of existing and planned air-to-air (A/A) and air-to-ground (A/G) weapons and it significantly increases A/A and A/G detection and tracking ranges. The AESA system provides greater survivability through self-protection and standoff jamming capabilities, while its greater range allows for reduced detection by enemy RADAR. This budget continues spiral capability development of AESA with increased efforts to address Phase II Operational Requirements Document requirements such as Counter-Electronic Attack 1 (CEA 1) against multiple Radio Frequency Emitters, AESA Multi-Jammer Electronic Protection, Precision TLE Improvement, Monopulse and 5th/6th Channel development and Air Combat Maneuvering/Short Range Search and Track development and includes upgrades to RADAR Instrumentation, test and evaluation assets and threat assets, and upgraded modeling and simulation of both clean and Electronic Attack threat environments. Budget also supports development and testing of design modifications to address obsolescence issues with APG-65, APG-73 and APG-79 RADAR systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Distributed Targeting - CEA 1 Software Development, Developmental Testing, Operational Testing, & Integration	2.955	3.004	14.954	-	14.954
Articles:	-	-	-	-	-
Description: Funding being utilized to support software (SW) capabilities development, integration and associated testing.					
FY 2014 Accomplishments: Continue hardware (HW) and SW development, integration and testing of instrumentation required to support AESA RADAR spiral capability upgrades.					
FY 2015 Plans: Continue HW and SW development, integration and testing of instrumentation required to support AESA RADAR spiral capability upgrades. Funds program management and engineering support required for the APG-65/73-79 RADAR systems.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2065 / *F/A-18 Radar Upgrade*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue SW development, integration and testing of instrumentation required to support AESA RADAR spiral capability upgrades. Funds program management and engineering support required for the APG-65/73-79 RADAR systems. ***FY 2016 OCO Plans:*** N/A					
Title: F/A-18 RADAR Obsolescence Redesign	0.060	0.060	0.068	-	0.068
Articles:	-	-	-	-	-
Description: Develop and test design modifications to address obsolescence issues. ***FY 2014 Accomplishments:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 Radio Detection and Ranging (RADAR) system obsolescence issues. ***FY 2015 Plans:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 RADAR system obsolescence issues. ***FY 2016 Base Plans:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 RADAR system obsolescence issues. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.015	3.064	15.022	-	15.022

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN/0145: *F/A-18E/F*	180.056	-	-	-	-	-	-	-	-	-	44,435.723
• APN/0145C: *F/A-18E/F AP*	27.355	-	-	-	-	-	-	-	-	-	1,641.575
• APN/0143: *EA-18G*	1,839.918	1,503.547	-	-	-	-	-	-	-	-	15,086.710
• APN/05250: *F-18 Series Mod (OSIP 002-07)*	186.941	79.222	102.496	-	102.496	237.154	243.756	229.280	161.537	159.960	2,031.428

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2065 / *F/A-18 Radar Upgrade*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

The Active Electronically Scanned Array program continues developmental efforts following a successful Full Rate Production milestone decision, after completing a two-phase Acquisition approach during the FY1999 through FY2007 timeframe. This strategy continues utilization of reform initiatives such as: early partnering with industry; leveraging industry investment; optimizing use of Commercial Off-The Shelf software and Non-Developmental Item; using Cost as an Independent Variable; and Electronic Data Deliverables. Basic Ordering Agreement orders for Request for Proposal developments are in place for Boeing, the airframe prime manufacturer/ integrator, and Raytheon, the Radio Detection and Ranging manufacturer, for focused risk reduction and sustainment of prior developmental activities.

E. Performance Metrics

Execute the system engineering process for software delivery and support the design and development of Electronic Protection, air to air, and air to ground capabilities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 2065 / *F/A-18 Radar Upgrade*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCAD : Pax River, MD	2.983	0.929	Nov 2013	0.984	Nov 2014	1.004	Nov 2015	-		1.004	4.000	9.900	-
CEA 1 - Development/ Integration Counter Electronic Attack #1 (CEA 1)	Various	NSMA : Arlington, VA	71.021	-		-		11.329	Dec 2015	-		11.329	31.700	114.050	-
Prior Year Prod Dev cost no longer funded in FYDP	Various	Various : Various	468.195	-		-		-		-		-	-	468.195	-
		Subtotal	542.199	0.929		0.984		12.333		-		12.333	35.700	592.145	-

Remarks

FY2016 funding increased in support of Integrated Capability Package (ICP)-3 Counter-Electronic Attack (CEA)development in support of Combatant Commander requirements.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development (Instrumentation)	WR	NAWCWD : China Lake, CA	38.645	0.386	Dec 2013	0.352	Dec 2014	0.500	Dec 2015	-		0.500	2.000	41.883	-
Obsolescence Redesign	Various	Various : Various	0.000	0.060	Aug 2014	0.060	Jun 2015	0.068	Mar 2016	-		0.068	1.200	1.388	-
Prior Year Support cost no longer funded in the FYDP	Various	Various : Various	2.027	-		-		-		-		-	-	2.027	-
		Subtotal	40.672	0.446		0.412		0.568		-		0.568	3.200	45.298	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
H12 Operational Test	WR	NAWCWD : China Lake, CA	0.000	-		-		0.300	Dec 2015	-		0.300	0.300	0.600	-
Prior Year T&E cost no longer funded in FYDP	Various	Various : Various	110.808	-		-		-		-		-	-	110.808	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 2065 / *F/A-18 Radar Upgrade*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	110.808	-		-		0.300		-		0.300	0.300	111.408	-

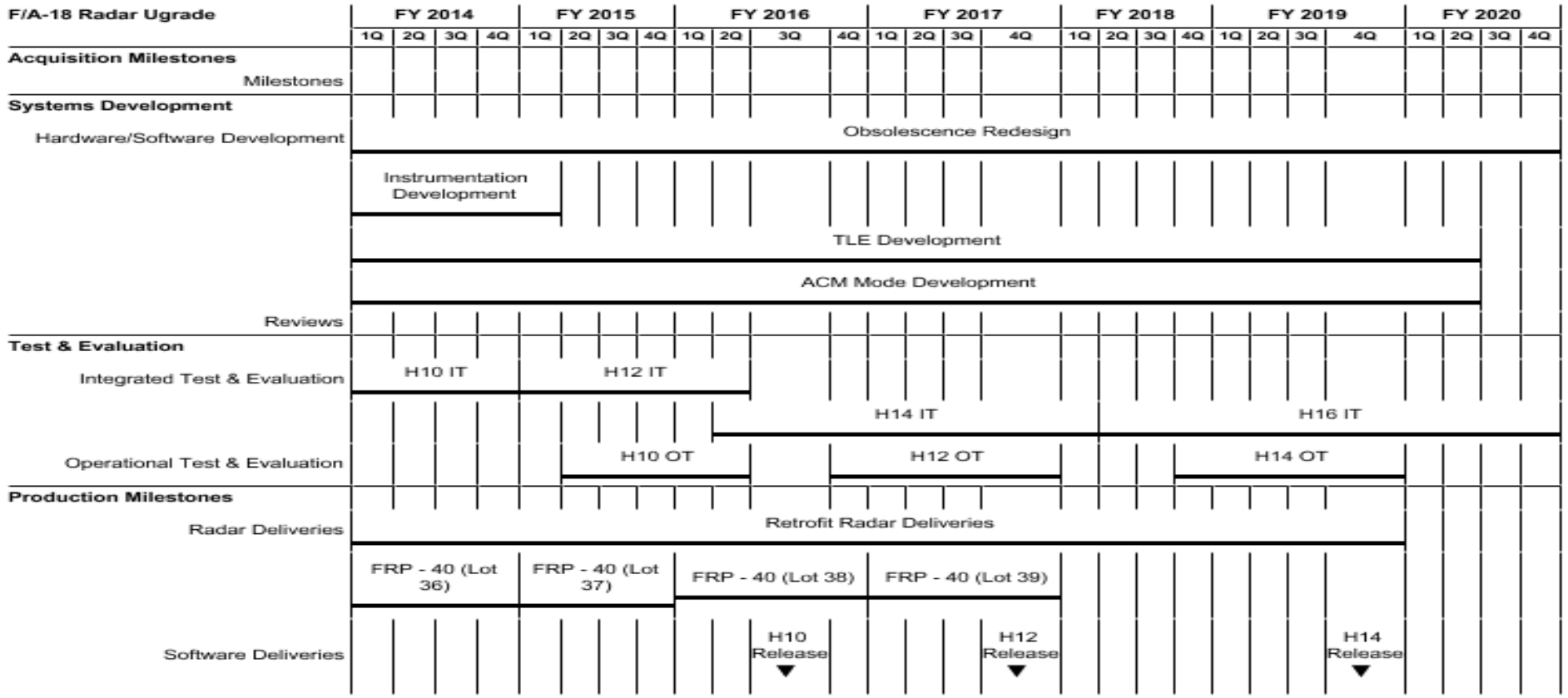
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support (Seaport CSS)	C/CPFF	Wyle : Pax River, MD	6.966	0.534	Dec 2013	0.543	Dec 2014	0.543	Dec 2015	-		0.543	-	8.586	8.586
Contractor Engineering Support	Various	Various : Various	2.370	0.351	Nov 2013	0.357	Nov 2014	0.500	Dec 2015	-		0.500	-	3.578	-
Program Management Support	WR	NAWCAD : Pax River, MD	1.679	0.710	Nov 2013	0.723	Nov 2014	0.723	Dec 2015	-		0.723	0.800	4.635	-
Travel	Various	NAVAIR : Pax River, MD	1.240	0.045	Oct 2013	0.045	Oct 2014	0.055	Nov 2015	-		0.055	-	1.385	-
		Subtotal	12.255	1.640		1.668		1.821		-		1.821	0.800	18.184	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	705.934	3.015		3.064		15.022		-		15.022	40.000	767.035	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2065 / *F/A-18 Radar Upgrade*



2016PB - 0204136N - 2065

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2065 / *F/A-18 Radar Upgrade*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
F/A-18 Radar Ugrade				
Systems Development: Hardware/Software Development: Obsolescence Redesign Development & Testing	1	2014	4	2020
Systems Development: Hardware/Software Development: Instrumentation Development	1	2014	1	2015
Systems Development: Hardware/Software Development: TLE Development	1	2014	2	2020
Systems Development: Hardware/Software Development: ACM Mode Development	1	2014	2	2020
Test & Evaluation: Integrated Test & Evaluation: H10 Integration Testing	1	2014	4	2014
Test & Evaluation: Integrated Test & Evaluation: H12 Integration Testing	1	2015	2	2016
Test & Evaluation: Integrated Test & Evaluation: H14 Integration Testing	2	2016	1	2018
Test & Evaluation: Integrated Test & Evaluation: H16 Integration Testing	2	2018	4	2020
Test & Evaluation: Operational Test & Evaluation: H10 Operational Testing	2	2015	2	2016
Test & Evaluation: Operational Test & Evaluation: H12 Operational Testing	4	2016	4	2017
Test & Evaluation: Operational Test & Evaluation: H14 Operational Testing	4	2018	4	2019
Production Milestones: Radar Deliveries: Retrofit Radar Deliveries	1	2014	4	2019
Production Milestones: Radar Deliveries: FRP Deliveries B - 40 (Lot 36)	1	2014	4	2014
Production Milestones: Radar Deliveries: FRP Deliveries B - 40 (Lot 37)	1	2015	4	2015
Production Milestones: Radar Deliveries: FRP Deliveries B - 40 (Lot 38)	1	2016	4	2016
Production Milestones: Radar Deliveries: FRP Deliveries B - 40 (Lot 39)	1	2017	4	2017
Production Milestones: Software Deliveries: H10 FLEET RELEASE	3	2016	3	2016
Production Milestones: Software Deliveries: H12 FLEET RELEASE	4	2017	4	2017
Production Milestones: Software Deliveries: H14 FLEET RELEASE	4	2019	4	2019

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0204152N *I E-2 Squadrons*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	192.943	1.903	-	-	-	-	-	-	-	-	-	194.846
0463: *E2C Improvements*	192.943	1.903	-	-	-	-	-	-	-	-	-	194.846

A. Mission Description and Budget Item Justification

E-2 Improvements (0463) provides for incorporation of technologies for the evolution of E-2 Battle Management and Command and Control capabilities in support of naval warfare command and control requirements. It funds digital IP radio efforts as a surrogate to the Joint Tactical Radio System, machine-to-machine digital data communications, Advanced Digital Networking System, cooperative and non-cooperative identification, and open architecture hardware and software computing environments. These efforts have laid the foundation for growth to provide additional functional capabilities satisfying evolving operational requirements, e.g., Airborne Networking, Joint Sensor Netting and Track Management, Tactical Decision Aids, Advanced communications, and permits the evolutionary growth of a Combat Identification and Theater Air and Missile Defense Capability.

Link-16/Cooperative Engagement Capability Interoperability Program funding is to address the most severe data link related interoperability issues. This will significantly improve the quality of the tactical surveillance picture, reduce the possibility of leakers, mitigate Blue on Blue engagements, and mis-identification of tracks. Provides stable sensor fusion foundation to support sensor/weapon coordination requirements.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	1.971	-	-	-	-
Current President's Budget	1.903	-	-	-	-
Total Adjustments	-0.068	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.068	-			

Change Summary Explanation

Technical: Not Applicable

Schedule: Software Development has experienced delays due to aircraft availability.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204152N / *E-2 Squadrons*	Project (Number/Name) 0463 / *E2C Improvements*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0463: *E2C Improvements*	192.943	1.903	-	-	-	-	-	-	-	-	-	194.846
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

E-2 Improvements (0463) provides for incorporation of technologies for the evolution of E-2 Battle Management and Command and Control capabilities in support of naval warfare command and control requirements. It funds digital IP radio efforts as a surrogate to the Joint Tactical Radio System, machine-to-machine digital data communications, Advanced Digital Networking System, cooperative and non-cooperative identification, and open architecture hardware and software computing environments. These efforts have laid the foundation for growth to provide additional functional capabilities satisfying evolving operational requirements, e.g., Airborne Networking, Joint Sensor Netting and Track Management, Tactical Decision Aids, Advanced communications, and permits the evolutionary growth of a Combat Identification and Theater Air and Missile Defense Capability.

Link-16/Cooperative Engagement Capability Interoperability Program funding is to address the most severe data link related interoperability issues. This will significantly improve the quality of the tactical surveillance picture, reduce the possibility of leakers, mitigate Blue on Blue engagements, and mid-identification of tracks. Provides stable sensor fusion foundation to support sensor/weapon coordination requirements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Link-16/Cooperative Engagement Capability (CEC) Interoperability	1.903	-	-	-	-
Articles:	-	-	-	-	-
Description: Link-16/Cooperative Engagement Capability provides design, implementation, test and analysis of Link-16/CEC related interoperability issues.					
FY 2014 Accomplishments: Funding provides Technical Evaluation and Certification Testing into the E-2C Aircraft.					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	1.903	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204152N / *E-2 Squadrons*	**Project (Number/Name)** 0463 / *E2C Improvements*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN/0544: *E-2 Series* *Includes OSIP 5-01,* *012-10, 005-11 and 001-17*	19.957	8.432	6.094	-	6.094	10.453	8.638	6.806	6.055	25.169	1,494.054

Remarks

D. Acquisition Strategy

Link-16/Cooperative Engagement Capability strategy will be exercised under a Joint Interoperability Decision.

E. Performance Metrics

Successfully complete Design Development for the Link-16/Cooperative Engagement Capability Interoperability program.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204152N / *E-2 Squadrons*	Project (Number/Name) 0463 / *E2C Improvements*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Yr Costs No longer funded in FYDP	Various	Various : Various	33.583	-		-		-		-		-	-	33.583	-
Primary Hardware Development	SS/CPAF	Northrop Gruman Corp (NGC) : Bethpage, NY	0.350	-		-		-		-		-	-	0.350	0.350
		Subtotal	33.933	-		-		-		-		-	-	33.933	-

Remarks

Totals may not add due to rounding.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various : Various	1.280	-		-		-		-		-	-	1.280	-
Software Development4	WR	NAWCAD : Pax River, MD	2.164	0.306	Nov 2013	-		-		-		-	-	2.470	-
Engineering & Technical Services (ETS)	Various	Various : Various	13.050	0.371	Nov 2013	-		-		-		-	-	13.421	-
Government Engineering Support2	Various	Various : Various	14.494	0.047	Nov 2013	-		-		-		-	-	14.541	-
Government Engineering Support3	WR	NAWCAD : Pax River, MD	14.886	0.229	Nov 2013	-		-		-		-	-	15.115	-
Integrated Logistics Support	Various	Various : Various	2.345	-		-		-		-		-	-	2.345	-
Prior Year Costs No Longer Funded in FYDP	Various	Various : Various	57.399	-		-		-		-		-	-	57.399	-
		Subtotal	105.618	0.953		-		-		-		-	-	106.571	-

Remarks

Totals may not add due to rounding.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204152N / *E-2 Squadrons*	Project (Number/Name) 0463 / *E2C Improvements*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental T & E 2	Various	Various : Various	7.057	-		-		-		-		-	-	7.057	-
Developmental T & E3	WR	NAWCAD : Pax River, MD	15.963	0.481	Nov 2013	-		-		-		-	-	16.444	-
Developmental T&E ETS 4	Various	Various : Various	1.666	-		-		-		-		-	-	1.666	-
Prior Year Costs No Longer Funded in FYDP	Various	Various : Various	7.377	-		-		-		-		-	-	7.377	-
		Subtotal	32.063	0.481		-		-		-		-	-	32.544	-

Remarks

Totals may not add due to rounding.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support-MSS4	C/CPFF	Imagine One : Colonial Beach, VA	0.000	0.462	Dec 2013	-		-		-		-	-	0.462	0.044
Government Engineering Support	WR	NAWCAD : Pax River, MD	4.662	-		-		-		-		-	-	4.662	-
Program Management Support1	Various	Various : Various	6.148	-		-		-		-		-	-	6.148	-
Program Management Support-MSS2	C/CPFF	Wyle Labs : Huntsville, AL	0.938	-		-		-		-		-	-	0.938	0.938
Program Management Support MSS 3	Various	Various : Various	5.890	-		-		-		-		-	-	5.890	-
Travel	Various	Various : Various	0.407	0.007	Oct 2013	-		-		-		-	-	0.414	-
Prior Year Costs No Longer Funded in FYDP	Various	Various : Various	3.284	-		-		-		-		-	-	3.284	-
		Subtotal	21.329	0.469		-		-		-		-	-	21.798	-

Remarks

Totals may not add due to rounding.

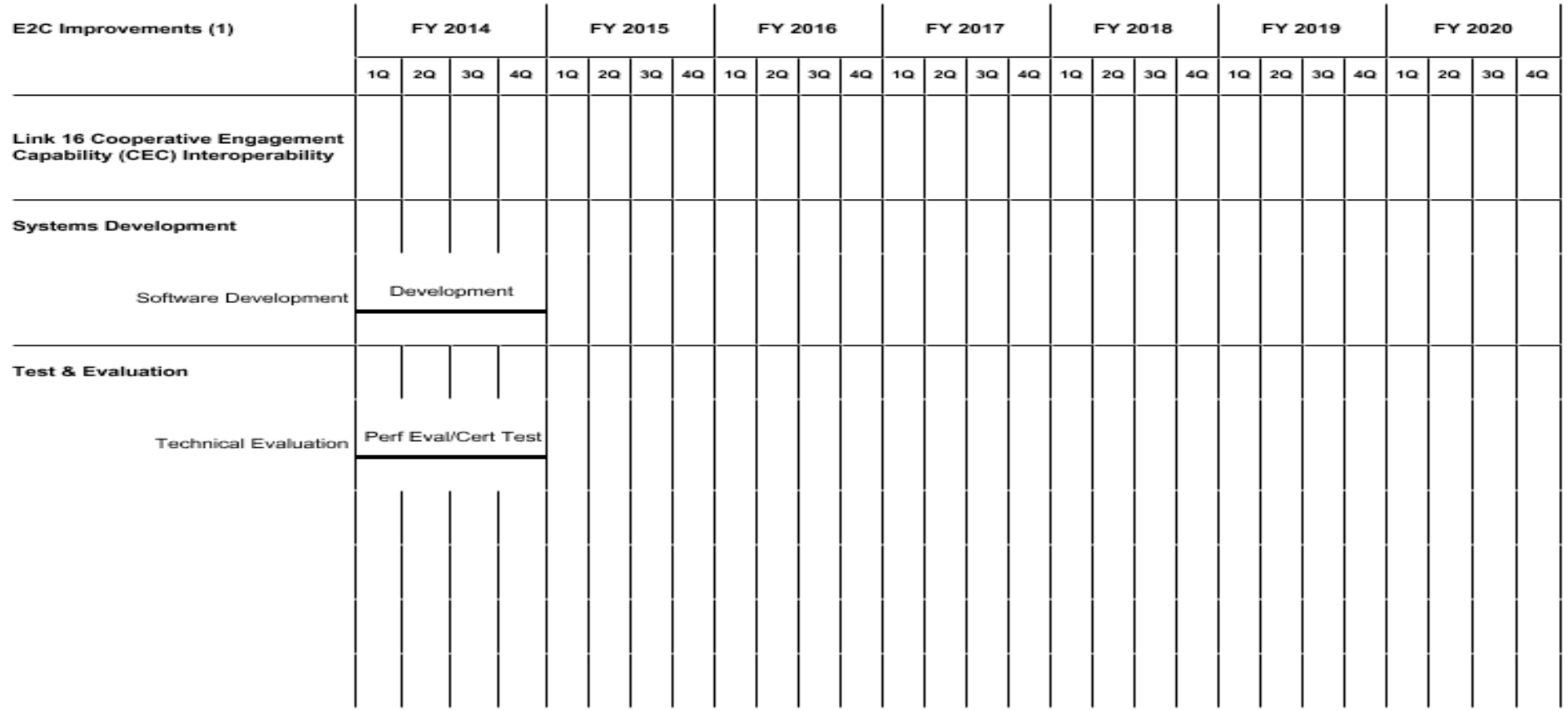
Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204152N / *E-2 Squadrons*	Project (Number/Name) 0463 / *E2C Improvements*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	192.943	1.903		-		-		-		-	-	194.846	-

Remarks

Totals may not add due to rounding.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204152N / *E-2 Squadrons*	**Project (Number/Name)** 0463 / *E2C Improvements*



2016PB - 0204152N - 0463

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204152N / *E-2 Squadrons*	**Project (Number/Name)** 0463 / *E2C Improvements*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
E2C Improvements (1)				
Systems Development: Software Development: Link-16/CEC Interoperability - Development	1	2014	4	2014
Test & Evaluation: Technical Evaluation: Link-16/CEC Interoperability - Performance Evaluation/Certification Test	1	2014	4	2014

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0204163N *I Fleet Tactical Development*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	111.577	22.576	27.039	62.867	-	62.867	51.221	8.827	2.816	2.904	Continuing	Continuing
0725: *Communication Automation*	111.577	22.576	27.039	62.867	-	62.867	51.221	8.827	2.816	2.904	Continuing	Continuing

Note

Automated Digital Network System (ADNS) - Prior to FY13 funding resides in PE 0204163N. FY13-15 funding resides in PE 0303138N. FY16-20 funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

A. Mission Description and Budget Item Justification

The Communications Automation Program - This project is a continuing program that provides for automation and communications upgrades for fleet tactical users. It includes Battle Force Tactical Network (BFTN), Joint Aerial Layer Network-Maritime (JALN-M), Automated Digital Network System (ADNS) and High Frequency Internet Protocol/Sub Network Relay.

The Battle Force Tactical Network (BFTN) on each surface, subsurface, air, or fixed US Navy platform utilizes previously installed/existing Line of Sight (LOS)/Extended Line of Sight (ELOS) radios (a.k.a. Radio Frequency (RF)) to create a secure gateway that inter-connects all users into a common RF Tactical Network (a.k.a. wireless). This Network separately supports US-Only and NATO Allied/Coalition users' tactical data information exchanges on each platform (node) between and/or across separately dispersed RF Networks even if Satellite Communications (SATCOM) channels to shore are lost during an Assured C2 and Anti-Access/Area Denial (A2/AD) event.

Joint Aerial Layer Network-Maritime (JALN-M) is the Navy implementation of the JALN-M architecture which provides assured communications in any environment, especially Anti-Access/Area Denial (A2/AD). With disruption or loss of Space tier communications, JALN-M establishes and/or restores connectivity with the High Capacity Backbone (HCB) tier, the Distribution Access Range Extension (DARE) tier, and the Transition tier in accordance with the JALN-M Initial Capabilities Document (ICD) and the JALN-M Analysis of Alternatives (AoA) Final Report. JALN-M is a robust, assured communications capability providing joint connectivity via the HCB and Navy platform connectivity via a pseudo satellite DARE capability. JALN-M will use the Extended Data Rate (XDR) waveform (Navy Multiband Terminal (NMT)) for intra-battle group DARE communications, a Common Data Link (CDL) waveform for the HCB cross-link capability, and will leverage enhanced Ultra High Frequency/High Frequency (UHF/HF) waveforms for coalition connectivity. Furthermore, Positioning, Navigation, and Timing (PNT) efforts related to the JALN-M Pod will develop a prototype PNT subsystem that will be integrated into the JALN-M Pod, and will provide position and timing data to other Pod subsystems, both with and without Global Positioning System (GPS) connectivity. Because the Pod is being designed to operate in an A2/AD environment, the Pod HCB and XDR (NMT) subsystems need to be provided with PNT data in the absence of GPS, and the assured PNT subsystem will provide that data.

ADNS is the method by which Tactical Navy units transfer Internet Protocol (IP) data to Navy and Department of Defense communities on the Global Information Grid (GIG). ADNS is the gateway to technical Wide Area Network (WAN) afloat for Internet Protocol network operations, supporting information dissemination and external

connectivity. ADNS allows services and applications to interconnect to the Defense Information Systems Network (DISN) ashore via multiple Radio Frequency (RF) resources and pier connectivity.

FY16 BFTN efforts will focus on the completion of the development of the engineering changes and resolve any developmental issues that are realized as part of the Integrated Test/Operational Test (IT/OT).

FY16 efforts will focus on the continued design, development, integration and test of the Joint Aerial Layer Network-Maritime (JALN-M) end-to-end system.

In FY 2016, ADNS RDT&E investment will continue to support Interface Design Development (IDD) and integration with network applications, development of Line-Of-Sight (LOS) link, DISN integration, and development of Cipher-Text (CT) piers. Study efforts will continue with the intention of integrating ADNS into the JALN-M system. JALN-M is the Navy implementation that provides network connectivity in areas that have limited or denied Satellite Communications (SATCOM). Also in FY 2016, Post Implementation Review (PIR) will begin in support of INC III Submarines. ADNS system development will include addressing network management, intra and inter domain routing, Quality of Service (QoS), and Concept of Operations discussions. Two new efforts will commence using emerging technologies: 1) Network-Based Cyber Security and 2) Virtualization to increase performance of the Navy's ADNS routing and transport architecture.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	23.422	27.281	33.316	-	33.316
Current President's Budget	22.576	27.039	62.867	-	62.867
Total Adjustments	-0.846	-0.242	29.551	-	29.551
• Congressional General Reductions	-	-0.242			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.846	-			
• Program Adjustments	-	-	-4.716	-	-4.716
• Rate/Misc Adjustments	-	-	34.267	-	34.267

Change Summary Explanation

Automated Digital Network System (ADNS) - Prior to FY13 funding resides in PE 0204163N. FY13-15 funding resides in PE 0303138N. FY16-20 funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) Transparency compliance.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy									Date: February 2015			
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204163N / *Fleet Tactical Development*				Project (Number/Name) 0725 / *Communication Automation*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
0725: *Communication Automation*	111.577	22.576	27.039	62.867	-	62.867	51.221	8.827	2.816	2.904	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Automated Digital Network System (ADNS) - Prior to FY13 funding resides in PE 0204163N. FY13-15 funding resides in PE 0303138N. FY16-20 funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

A. Mission Description and Budget Item Justification

The Battle Force Tactical Network (BFTN) on each surface, subsurface, air, or fixed US Navy platform uses previously installed/existing Line of Sight (LOS)/ Extended Line of Sight (ELOS) radios (a.k.a. Radio Frequency (RF)) to create a secure gateway that inter-connects all users into a common RF Tactical Network (a.k.a. wireless). BFTN enables war-fighters to digitally communicate NATO Allied/Coalition and US-Only information necessary to execute and plan in a real-time operational environment without relying on ashore application server interaction. This RF Network separately supports US-Only Carrier and Expeditionary Strike Group Commanders and maintains the digital communication ability to execute and plan with other U.S. ships, submarines or aircraft, as well as with NATO Allied/Coalition networks; even if Satellite Communication (SATCOM) channels to shore are lost.

In a satellite-denied event, adversaries covertly jam or disable communications necessary to Fleet protection and tactical operation. BFTN enhanced engineering changes will facilitate automation for operators ease of use, communications relays and application of network aware link establishment (NA-ALE) within/across battle groups. The BFTN engineering change will also enable size, weight and power (SWAP) modification of the existing BFTN Fly Away Kit for use in small platforms (i.e. surface, subsurface and manned/unmanned air platforms) which will also extend BFTN Ultra High Frequency/High Frequency (UHF/HF) link ranges. As a result, BFTN service levels can be extended for theatre of operations sufficient to thwart contested SATCOM connectivity to shore servers. Engineering studies and related test activities will commence FY14 to support the ultimate goal of development and implementation of an engineering change for increased BFTN network data rates and link ranges (1.92Mbps - Ultra High Frequency (UHF) at 20nm or greater and 128Kbps - High Frequency (HF) at 200nm or greater), using either a single channel or quadrupling of system channel quantities for improved service, increased network performance and jam resistance in a satellite degraded/denied environment. Design enhancements will enable the BFTN network to self-assemble Transmission Control Protocol/Internet Protocol (TCP/IP) delivery circuits, adapt to user proximity changes due to maneuvers or operational demands and self-heal those data delivery circuits, if they are degraded or forcefully taken from afloat forces. These engineering changes will enhance ease of operators' use and mitigate obsolescence and end of life impacts associated with steady progression of network technology and architectures.

FY16 BFTN efforts will support the development of the engineering changes and will be used to resolve any developmental issues that are discovered as part of the Integrated Test/Operation Test (IOT&E). These efforts include completing the system integration package for BFTN engineering changes as back-fit and forward-fit configuration with associated engineering drawings, logistics and training. These efforts also include completing the active anti jam sub-system Propagation Aware Automated Link Establishment/Automated Link Establishment Controller (PAALE/ALEC) and field test for hands-free automation, implementing component miniaturization to fit ships/subs and manned/unmanned aircraft; and development and certification of digital multi-coupler which allows up to 4 radios to share a single

antenna reducing top-side footprint. In addition, these efforts include shore integration of BFTN Global Information Grid Entry Point (non permanent change) with cooperation of USN and USAF. Final lab testing of ADNS to/from BFTN to validate internet-working end to end compatibility. Complete certification of engineering changes at Common Submarine Radio Room, land- based submarine radio room and BFTN land-based test station.

Joint Aerial Layer Network-Maritime (JALN-M) is the Navy implementation of the JALN-M architecture which provides assured communications in any environment, especially Anti-Access Area Denial (A2AD). With disruption or loss of Space tier communications, JALN-M establishes and/or restores connectivity with the High Capacity Backbone (HCB) tier, the Distribution Access Range Extension (DARE) tier, and the Transition tier in accordance with the JALN-M Initial Capabilities Document (ICD) and the JALN-M Analysis of Alternatives (AoA) Final Report. JALN-M is a robust, assured communications capability providing joint connectivity via the HCB and Navy platform connectivity via a pseudo satellite DARE capability. JALN-M will use the Extended Data Rate (XDR) waveform (Navy Multiband Terminal (NMT)) for intra-battle group DARE communications, a Common Data Link (CDL) waveform for the HCB cross-link capability, and will leverage enhanced Ultra High Frequency/High Frequency (UHF/HF) waveforms for coalition connectivity. Furthermore, Positioning, Navigation, and Timing (PNT) efforts related to the JALN-M Pod will develop a prototype PNT subsystem that will be integrated into the JALN-M Pod, and will provide position and timing data to other Pod subsystems, both with and without Global Positioning System (GPS) connectivity. Because the Pod is being designed to operate in an A2AD environment, the Pod HCB and XDR (NMT) subsystems need to be provided with PNT data in the absence of GPS, and the assured PNT subsystem will provide that data.

FY16 efforts will focus on the continued design, development, integration and test of the JALN-M end-to-end system.

Automated Digital Network System (ADNS) provides routing, switching, baseband, configuration and monitoring capabilities for interconnecting naval, coalition and joint enclaves worldwide. ADNS utilizes off the shelf equipment and network protocols as specified by the Joint Technical Architecture. ADNS Increment (INC) II provides capabilities of network to Satellite Communications (SATCOM), load balancing, radio frequency restoral, Quality of Service (QoS) to include application prioritization, traffic management, compression and enhancements designed to maximize use of "effective" available bandwidth for surface, shore, and airborne platforms. ADNS INC III combines all Navy Tactical Voice, Secure Communications Interoperability Protocol (SCIP) Inter-Working Function, Video, and data requirements into a converged IP data stream. ADNS INC III supports higher bandwidth satellites, providing up to 25 mega bytes per second (Mbps) of throughput on Unit Level ships and up to 50 Mbps on Force Level ships. INC III architecture also incorporates an IPv4/IPv6 dual stack and Cipher-Text (CT) security architecture to align to the Global Information Grid (GIG) in order to mesh Navy Tactical surface, subsurface, and airborne platforms into a single IP environments with gateway functions to coalition and joint networks, in addition to greater security utilizing the High Assurance Internet Protocol Encryptor (HAIPE) devices. ADNS will serve as the Navy tactical interface for IP Networking for the JALN-M system. ADNS will investigate emerging technologies to integrate with additional Department of Defense C4I Programs to improve inter-strike group networking and extend the network to the tactical edge.

In FY 2016, ADNS RDT&E investment will continue to support Interface Design Development (IDD) and integration with network applications, development of Line-Of-Sight (LOS) link, DISN integration, and development of CT piers. Study efforts will continue with the intention of integrating ADNS into the Joint Aerial Layer Network - Maritime (JALN-M) system. JALN-M is the Navy implementation that provides network connectivity in areas that have limited or denied SATCOM. Also in FY 2016, Post Implementation Review (PIR) will begin in support of INC III Submarines. ADNS system development will include addressing network management, intra and inter domain routing, QoS, and Concept of Operations discussions. Two new efforts will commence using emerging technologies: 1) Network-Based Cyber Security and 2) Virtualization to increase performance of the Navy's ADNS routing and transport architecture.

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Battle Force Tactical Network (BFTN)	3.500	7.752	13.028	-	13.028
Articles:	-	-	-	-	-

Description: Overall program efforts include investigation of emerging technologies through study, development and associated testing for feasibility of program insertion.

FY 2014 Accomplishments:
Continued support to the Integrated Test/Operational Test (IT/OT) event in support of a Full Rate Production decision. Submitted RFP for BFTN Engineering Change RDT&E contract with RFP release estimated Q4FY14. Initiated the development of acquisition and system engineering documentation, initiated efforts in planning and management of BFTN acquisition plans, logistics, milestones and schedule to support efforts toward the award of BFTN engineering change contract. Supported demonstration and operational tests and studies of BFTN engineering change design i.e., jamming resistance. Reconfigured BFTN laboratory to support individual component and improved system performance test and evaluation. Supported channel allocation/ saturation studies; designed specifications for High Frequency (HF) and Ultra High Frequency (UHF) radio wideband modification kit and radio feasibility studies; planned for environmental and shock/vibe testing; and developmental and demonstration test activities.

FY 2015 Plans:
Continue to support the IT/OT event in support of a full rate production decision. Continue to develop engineering documentation, initiate efforts in management of plans, logistics, currently fielded systems and develop solutions for end of life issues, obsolescence, and increase system ease of use for operators. Develop engineering documentation, initiate efforts in management of plans, logistics, and milestones and schedule to support efforts toward BFTN engineering change contract award. Award contract for modification and testing efforts of BFTN engineering change to overcome obsolescence issues which include: initiation of system sub-component miniaturization to reduce system weight and power parameters for ready integration into a broader range of platform configurations and support MIL-STD (Military Standard).

FY 2016 Base Plans:
Complete the development of engineering changes and resolve any developmental issues that are realized during the FY15 Integrated Testing and Operational Testing (IOT&E). These efforts include completing the system integration package for BFTN engineering changes as back-fit and forward-fit configuration with associated engineering drawings, logistics and training. These efforts also include completing the active anti-jam sub-system Propagation Aware Automated Link Establishment/Automated Link Establishment Controller (PAALE/ALEC) and field test for hands-free automation, implementing component miniaturization to fit ships/

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
subs and manned/unmanned aircraft; and development and certification of digital multi-coupler which allows up to 4 radios to share a single antenna reducing top-side footprint. In addition, these efforts include shore integration of BFTN Global Information Grid Entry Point (non permanent change) with cooperation of USN and USAF. Final lab testing of Automated Digital Network System (ADNS) to/from BFTN to validate internet-working end to end compatibility. Complete certification of engineering changes at Common Submarine Radio Room, land-based submarine radio room and BFTN land-based test station. ***FY 2016 OCO Plans:*** N/A					
Title: Joint Aerial Layer Network -Maritime (JALN-M) ***Articles:*** ***Description:*** Overall program efforts include investigation of emerging technologies through study, development and associated testing for feasibility of program insertion. ***FY 2014 Accomplishments:*** Completed Airborne eXtended Data Rate (A-XDR) flight testing. Conducted flight test demonstrations of airborne XDR payload to establish throughput at range, anti-jamming capability verses uplink and downlink jamming, simultaneous connections, link availability and bit error rate. Initiated the design specifications for a JALN-M prototype payload. Initiated efforts on development of JALN-M prototype payloads in a Pod, leveraging the results of Airborne XDR flight demonstrations. ***FY 2015 Plans:*** FY15 efforts will include development of Joint Aerial Layer Network-Maritime (JALN-M) capabilities to be interoperable with the Airborne XDR (Navy Multiband Terminal (NMT)) and High Capacity Backbone (HCB) waveforms, as well as establish a network connection to enable access to Department of Defense (DoD) wide area networks such as NIPRNET and SIPRNET via the shore node HCB terminal and a Mobile Global Information Grid (GIG) Entry Point (MGEP). Funding will also facilitate the development of the design specification of JALN-M payload requirements for integration into an airborne prototype Pod. Funds will also be applied to the planning and execution of a JALN-M demonstration scheduled in FY18. ***FY 2016 Base Plans:*** FY16 efforts will focus on the continued design, development, integration and test of the Joint Aerial Layer Network-Maritime (JALN-M) end-to-end system. Begin Pod assembly and subsystem integration and test of Pod, High Capacity Backbone (HCB), and Airborne Extended Data Rate (XDR). Begin integration and installation of Mobile Gig Entry Point (MGEP). Continue Assured Position Navigation and Timing (PNT)	19.076 -	19.287 -	46.392 -	- -	46.392 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
subsystem integration and test and Pod, MGEP, and ship terminal production for HCB. Complete Airborne XDR development, PNT subsystem development, studies and design for HCB, and equipment procurement of MGEP. Efforts include planning activities and the development of systems engineering documentation in support of the JALN-M Pod demonstration scheduled for FY18. ***FY 2016 OCO Plans:*** N/A					
Title: Automated Digital Network System (ADNS)	-	-	3.447	-	3.447
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Funding resides under PE: 0303138N ***FY 2015 Plans:*** Funding resides under PE: 0303138N ***FY 2016 Base Plans:*** Continue testing and interfaces with ENMS, IPv6 transition, and integration of SHF. Continue the IDD and integration with network applications, develop LOS link, DISN integration and development of CT Piers. Investigate and recommend platform network devices, network design support to include integration with WAN and JALN-M system. Commence network-based Cyber Security technology and virtualizing ADNS. Post Implementation Review (PIR) will occur in support of Increment III Submarines. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	22.576	27.039	62.867	-	62.867

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/3057: *Battle Force Tactical Network (BFTN).*	1.836	1.425	4.068	-	4.068	7.224	-	-	-	-	41.831
• OPN/3050: *Automated Digital Network System (ADNS)*	-	-	53.395	-	53.395	44.549	49.397	57.972	58.608	-	263.921
• OPN/2915: *CANES (ADNS Only)*	52.098	56.626	-	-	-	-	-	-	-	-	160.060

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost

Remarks

ADNS - Prior to FY13 funding resides in PE 0204163N/BLI 3050. FY13-15 funding resides in PE 0303138N/BLI 2915. FY16-20 funding was realigned back into PE 0204163N/BLI 3050 for Major Automated Information System (MAIS) Transparency compliance.

D. Acquisition Strategy

Battle Force Tactical Network (BFTN) will follow an evolutionary acquisition approach with collegial development across activities and coalesced implementation phases at accredited facility to achieve interoperable component upgrades, system integration and automated operations that optimize Fleet implementation. Program will use awarded OMNIBUS contracts to obtain engineering and support services consistent with acquisition initiatives. Development of BFTN engineering change enhancements leverages Commercial-Off-The-Shelf (COTS) and Government-Off-The-Shelf (GOTS) products while expanding material savings by streamlining logistics, installation, integration and training concepts. Where feasible, differing types of advantageous contract vehicles will be used to provide flexibility, decrease contract administrative costs, and encourage acquisition streamlining through the use of COTS products.

Joint Aerial Layer Network-Maritime (JALN-M) will address capability gaps as directed by the JALN Analysis of Alternatives (AoA) by integrating a suite of technical capabilities into a single payload. Technical and acquisition support will be provided to conduct HCB and airborne XDR demonstrations and to develop six prototype JALN-M payloads.

Automated Digital Network System (ADNS): Evolutionary acquisition approach with overlapping development and implementation phases for defined INC I, II, and III baselines. INC I , II , and III will use competitively awarded contracts to implement changes consistent with acquisition initiatives. ADNS leverages Commercial-Off-The-Shelf (COTS) and Government Off-the-Shelf (GOTS) products while capitalizing on acquisition reform initiatives to achieve material savings in the logistics, installation, integration and training areas. Where feasible, differing types of advantageous contract vehicles will be used to provide flexibility, decrease contract administrative costs, and encourage acquisition streamlining through the use of COTS/GOTS products.

E. Performance Metrics

BFTN - Complete successful Initial Operational Test and Evaluation (IOT&E). Legacy UHF Radios Modified for Multichannel Wideband Interoperability Verified. Successful Electro Magnetic Control/Electro Magnetic Interference (EMC/EMI) Test & Accreditation. Continue engineering changes for BFTN engineering change to increase individual High Frequency Internet Protocol (HFIP) channel data rates to 128Kbps and Ultra High Frequency Internet Protocol (UHFIP) to 1.9Mbps. Successful demonstration of engineering change over three (3) channels simultaneously, followed by successful demonstration of Spatial Multiplexing design over eight (8) channels simultaneously. Increased data rates for modem and controller are verified.

ADNS - Included in the ADNS program goals are the improvements to bandwidth throughput, connectivity to multiple Radio Frequency (RF) paths, greater security, and system capability delivered within a smaller form factor. The ADNS program will, at a minimum, provide bandwidth throughput enhancements resulting in an increase from 2 megabytes per

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second (Mbps) to 25 Mbps. ADNS will also provide the ability to transport data across multiple paths simultaneously vice the current limitations of single or secondary paths. ADNS will provide greater security posture by encrypting each enclave, increase performance of the routing and transport architecture while reducing physical footprint and cost, and securing the core via Cipher-Text.

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	PO	SSC : PAC/LANT	1.025	-		-		-		-		-	-	1.025	-
Primary Hardware Development	C/CPFF	Northrop Grumman : McLean, Virginia	7.793	-		-		-		-		-	-	7.793	-
Primary Hardware Development	C/CPFF	General Dynamics : Maryland	17.601	-		-		-		-		-	-	17.601	-
Primary Hardware Development	C/CPFF	SRA : San Diego, CA	0.016	-		-		-		-		-	-	0.016	-
Primary Hardware Dev. - MALN Inc 2	C/FFP	Boeing : Washington State	1.245	-		-		-		-		-	-	1.245	-
Primary Hardware/ Software	C/CPFF	Air Force : Various	2.078	-		-		-		-		-	-	2.078	-
Primary Hardware/ Software MALN Inc 1	WR	SSC : PAC	0.207	-		-		-		-		-	-	0.207	-
Integration and Test - MALN Inc 1	WR	SSC : PAC	0.810	-		-		-		-		-	-	0.810	-
Integration and Test - MALN Inc 2	WR	SSC : PAC	0.521	-		-		-		-		-	-	0.521	-
Integration and Test	C/CPFF	VAR : Various	0.079	-		-		-		-		-	-	0.079	-
Systems Engineering-ADNS	WR	SSC : PAC/LANT	22.389	-		-		-		-		-	-	22.389	-
Systems Engineering	Various	VAR : Various	5.172	-		-		-		-		-	-	5.172	-
Systems Engineering	MIPR	CECOM (MITRE) : New Jersey	0.585	-		-		-		-		-	-	0.585	-
Systems Engineering-ADNS	WR	NUWC : Newport, RI	1.864	-		-		-		-		-	-	1.864	-
Prime Mission Product	PO	SSC : PAC/LANT	4.353	-		-		-		-		-	-	4.353	-
Integration and Test-ADNS	WR	NUWC : Newport	1.162	-		-		-		-		-	-	1.162	-
Systems Engineering	C/CPFF	Boeing : Washington State	2.087	-		-		-		-		-	-	2.087	-
Integration and Test-ADNS	WR	SSC : PAC/LANT	0.459	-		-		-		-		-	-	0.459	-

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering-ADNS	C/CPFF	Solute : San Diego,CA	0.253	-		-		-		-		-	-	0.253	-
System Engineering - MALN Inc 1	WR	SSC : PAC	0.207	-		-		-		-		-	-	0.207	-
System Engineering - MALN Inc 2	WR	SSC : PAC	0.717	-		-		-		-		-	-	0.717	-
System Engineering - MALN Inc 1	SS/FPIF	Linquest : San Diego, CA	0.536	-		-		-		-		-	-	0.536	-
Primary Hardware Dev.-JALN-M	WR	NSWC : Panama City, FL	0.000	0.635	Apr 2014	-		-		-		-	-	0.635	-
Primary Hardware Dev.-JALN-M	C/CPFF	Raytheon : Marlborough, MA	0.000	-		-		-		-		-	-	-	-
Primary Hardware Dev.-JALN-M	WR	NAWCAD : Patuxent River, MD	3.573	-		3.970	Jan 2015	-		-		-	Continuing	Continuing	Continuing
Primary Hardware/ Software - JALN-M	C/FFP	MIT/Lincoln Lab : Lexington MA	9.898	6.760	Mar 2014	1.070	Oct 2014	12.847	Oct 2015	-		12.847	Continuing	Continuing	Continuing
System Enginering JALN-M	C/CPFF	STF : San Diego,CA	0.000	0.901	Feb 2014	0.950	Nov 2014	2.285	Nov 2015	-		2.285	Continuing	Continuing	Continuing
System Enginering JALN-M	WR	SSC : PAC	0.000	1.321	Feb 2014	0.600	Jan 2015	1.443	Jan 2016	-		1.443	Continuing	Continuing	Continuing
System Enginering JALN-M	WR	NAWCAD : Patuxent River, MD	0.000	1.200	Nov 2013	1.300	Mar 2015	3.127	Mar 2016	-		3.127	Continuing	Continuing	Continuing
System Engineering BFTN	WR	SSC : PAC	0.433	0.538	Jul 2014	1.578	Nov 2014	2.652	Nov 2015	-		2.652	Continuing	Continuing	Continuing
Primary HW/SW Dev BFTN	WR	SSC : PAC	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Primary Hardware Dev BFTN	C/FFP	Leidos : Sterling, VA	0.000	-		0.250	Jan 2015	0.420	Jan 2016	-		0.420	Continuing	Continuing	Continuing
System Engineering BFTN	WR	SSC : LANT JICF	0.000	0.129	May 2014	0.065	Nov 2014	0.109	Nov 2015	-		0.109	Continuing	Continuing	Continuing
System Engineering BFTN	C/CPFF	STF : San Diego,CA	0.000	0.285	Feb 2014	0.156	Nov 2014	0.262	Nov 2015	-		0.262	Continuing	Continuing	Continuing
System Engineering BFTN	SS/CPIF	GD : General Dynamics	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Primary Hardware BFTN	SS/CPIF	Metasoft : San Diego, CA	0.000	0.714	Sep 2014	1.774	Sep 2015	2.981	Jan 2016	-		2.981	Continuing	Continuing	Continuing

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering BFTN	WR	NAVAIR : Lexington Park, MD	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Primary HW Dev BFTN	WR	SSC : PAC NIEF/ JCF	0.000	0.060	May 2014	0.125	Jan 2015	0.210	Jan 2016	-		0.210	Continuing	Continuing	Continuing
Primary HW/SW Developement BFTN	WR	NSWC : Corona, CA	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Primary Software Dev BFTN	SS/BA	SSC : PAC	0.642	0.810	Nov 2013	0.426	Nov 2014	0.716	Nov 2015	-		0.716	Continuing	Continuing	Continuing
System Engineering BFTN	WR	SSC : LANT	0.000	0.268	Nov 2013	0.580	Nov 2014	0.975	Nov 2015	-		0.975	Continuing	Continuing	Continuing
Systems Engineering-ADNS	WR	SSC : PAC	0.000	-		-		2.839	Dec 2015	-		2.839	-	2.839	-
Intergration and Test-ADNS	WR	SSC : PAC	0.000	-		-		0.174	Dec 2015	-		0.174	-	0.174	-
Systems Engineering-ADNS	WR	SSC : LANT	0.000	-		-		0.243	Nov 2015	-		0.243	-	0.243	-
		Subtotal	85.705	13.621		12.844		31.283		-		31.283	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	SSC : PAC/LANT	0.160	-		-		-		-		-	-	0.160	-
Software Development	Various	VAR : Various	7.250	-		-		-		-		-	-	7.250	-
Integrated Logistics Support-ADNS	WR	SSC : PAC/LANT	0.138	-		-		-		-		-	-	0.138	-
Integrated Logistics Support	Various	VAR : Various	1.150	-		-		-		-		-	-	1.150	-
Technical Data	Various	VAR : Various	0.500	-		-		-		-		-	-	0.500	-
Studies and Analysis	WR	SSC : PAC/LANT	0.960	-		-		-		-		-	-	0.960	-
Documentation- MALN Inc 1	WR	SSC : PAC	0.200	-		-		-		-		-	-	0.200	-

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analysis BFTN	WR	SSC : PAC	0.048	-		0.320	Oct 2014	0.538	Oct 2015	-		0.538	Continuing	Continuing	Continuing
System Engineering BFTN	WR	SSC : PAC	0.000	-		0.102	Nov 2014	0.171	Nov 2015	-		0.171	Continuing	Continuing	Continuing
Documentation BFTN	C/CPFF	CSA : San Diego, CA	0.000	0.126	Dec 2013	0.249	Nov 2014	0.418	Nov 2015	-		0.418	Continuing	Continuing	Continuing
Documentation BFTN	C/CPFF	TASC : San Diego, CA	0.000	-		0.125	Nov 2014	0.210	Nov 2015	-		0.210	Continuing	Continuing	Continuing
Studies and Analysis - JALN-M	WR	NAWCAD : Patuxent River, MD	0.000	-		-		-		-		-	-	-	-
Development Support - JALN-M	C/CPFF	BAH : San Diego	0.697	2.015	Dec 2013	0.750	Dec 2014	1.804	Dec 2015	-		1.804	Continuing	Continuing	Continuing
Development Support - JALN-M	C/CPFF	Mitre : San Diego, CA	0.000	0.541	Oct 2013	0.300	Oct 2014	0.722	Oct 2015	-		0.722	Continuing	Continuing	Continuing
Development Support - JALN-M	WR	SSC : PAC	0.000	0.948	Oct 2013	1.158	Oct 2014	2.785	Oct 2015	-		2.785	Continuing	Continuing	Continuing
Development Support - JALN-M	C/CPFF	Linquest : San Diego, CA	0.000	-		0.300	Apr 2015	-		-		-	Continuing	Continuing	Continuing
Financial Management Support - JALN-M	C/CPFF	Artemis : San Diego, CA	0.000	0.206	Oct 2013	0.230	Oct 2014	0.553	Oct 2015	-		0.553	Continuing	Continuing	Continuing
Software Dev Support-ADNS	WR	SSC : LANT	0.000	-		-		0.017	Dec 2015	-		0.017	-	0.017	-
		Subtotal	11.103	3.836		3.534		7.218		-		7.218	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation-ADNS	WR	SSC : PAC/LANT	6.659	-		-		-		-		-	-	6.659	-
Developmental Test & Evaluation-ADNS	MIPR	JTIC : Fort Huachuca, AZ	0.449	-		-		-		-		-	-	0.449	-
Operational Test & Evaluation-ADNS	WR	COMOPTEVOR : Norfolk, VA	1.697	-		-		-		-		-	-	1.697	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204163N / *Fleet Tactical Development*	Project (Number/Name) 0725 / *Communication Automation*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	Various	VAR : Various	4.955	-		-		-		-		-	-	4.955	-
Developmental Test & Evaluation-MALN INC I	WR	SSC : PAC	0.148	-		-		-		-		-	-	0.148	-
Developmental Test & Evaluation-MALN INC II	WR	SSC : PAC	0.604	-		-		-		-		-	-	0.604	-
Integration and Test BFTN	C/FFP	COMOPTEVOR : Norfolk, VA	0.257	0.240	Jul 2014	0.357	Nov 2014	0.600	Nov 2015	-		0.600	Continuing	Continuing	Continuing
Test and Evaluation Support BFTN	WR	SSC : PAC	0.000	-		0.242	Jan 2015	0.407	Jan 2016	-		0.407	Continuing	Continuing	Continuing
Test and Evaluation Support BFTN	SS/CPFF	UCSD : San Diego, CA	0.000	-		0.380	Mar 2015	0.639	Mar 2016	-		0.639	Continuing	Continuing	Continuing
Developmental Test and Evaluation-JALN-M	C/CPFF	JHU/APL : Laurel, MD	0.000	1.400	Apr 2014	1.400	Nov 2014	3.367	Nov 2015	-		3.367	Continuing	Continuing	Continuing
Developmental Test and Evaluation-JALN-M	C/CPFF	MIT/Lincoln Lab : Lexington, MA	0.000	2.949	Mar 2014	7.059	Nov 2014	16.979	Nov 2015	-		16.979	Continuing	Continuing	Continuing
		Subtotal	14.769	4.589		9.438		21.992		-		21.992	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support - BFTN	C/CPFF	BAH : San Diego, CA	0.000	0.330	Nov 2013	1.023	Nov 2014	1.719	Nov 2015	-		1.719	Continuing	Continuing	Continuing
Program Management Support JALN-M	C/CPFF	BAH : San Diego, CA	0.000	0.200	Nov 2013	0.200	Nov 2014	0.481	Nov 2015	-		0.481	Continuing	Continuing	Continuing
Program Management Support-ADNS	C/CPFF	Systems Research & Application : San Diego, CA	0.000	-		-		0.174	Jul 2016	-		0.174	-	0.174	-
		Subtotal	0.000	0.530		1.223		2.374		-		2.374	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204163N / *Fleet Tactical Development*	Project (Number/Name) 0725 / *Communication Automation*	

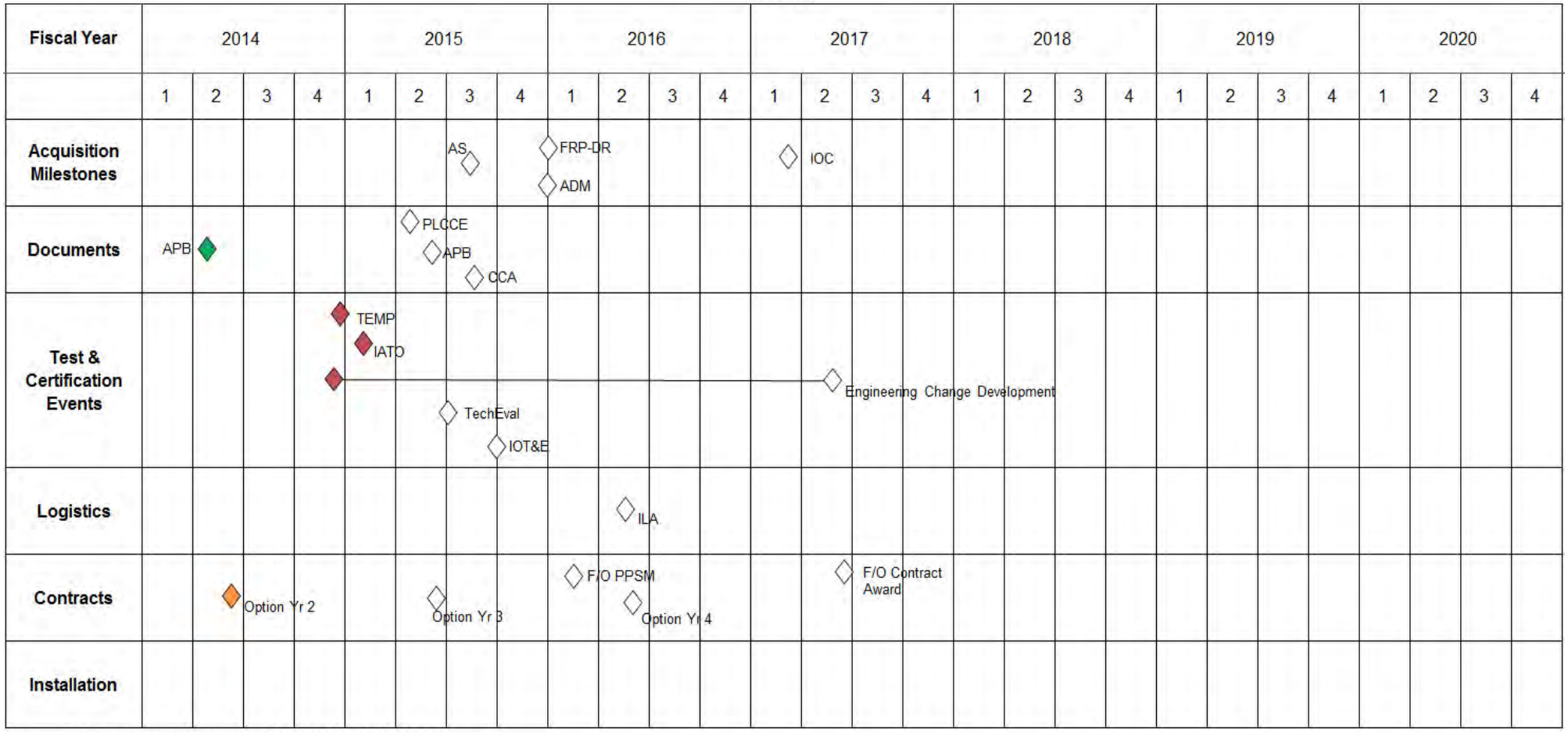
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	111.577	22.576		27.039		62.867		-		62.867	-	-	-

Remarks

Automated Digital Network System (ADNS) - Prior to FY13 funding resides in PE 0204163N. FY13-15 funding resides in PE 0303138N. FY16-20 funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204163N / *Fleet Tactical Development*	**Project (Number/Name)** 0725 / *Communication Automation*

BFTN



Notes: CPD 4QFY10, MS C 4QFY11,ATO 4QFY11, FOC 4QFY22

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204163N / *Fleet Tactical Development*	**Project (Number/Name)** 0725 / *Communication Automation*

JALN-M Demonstration

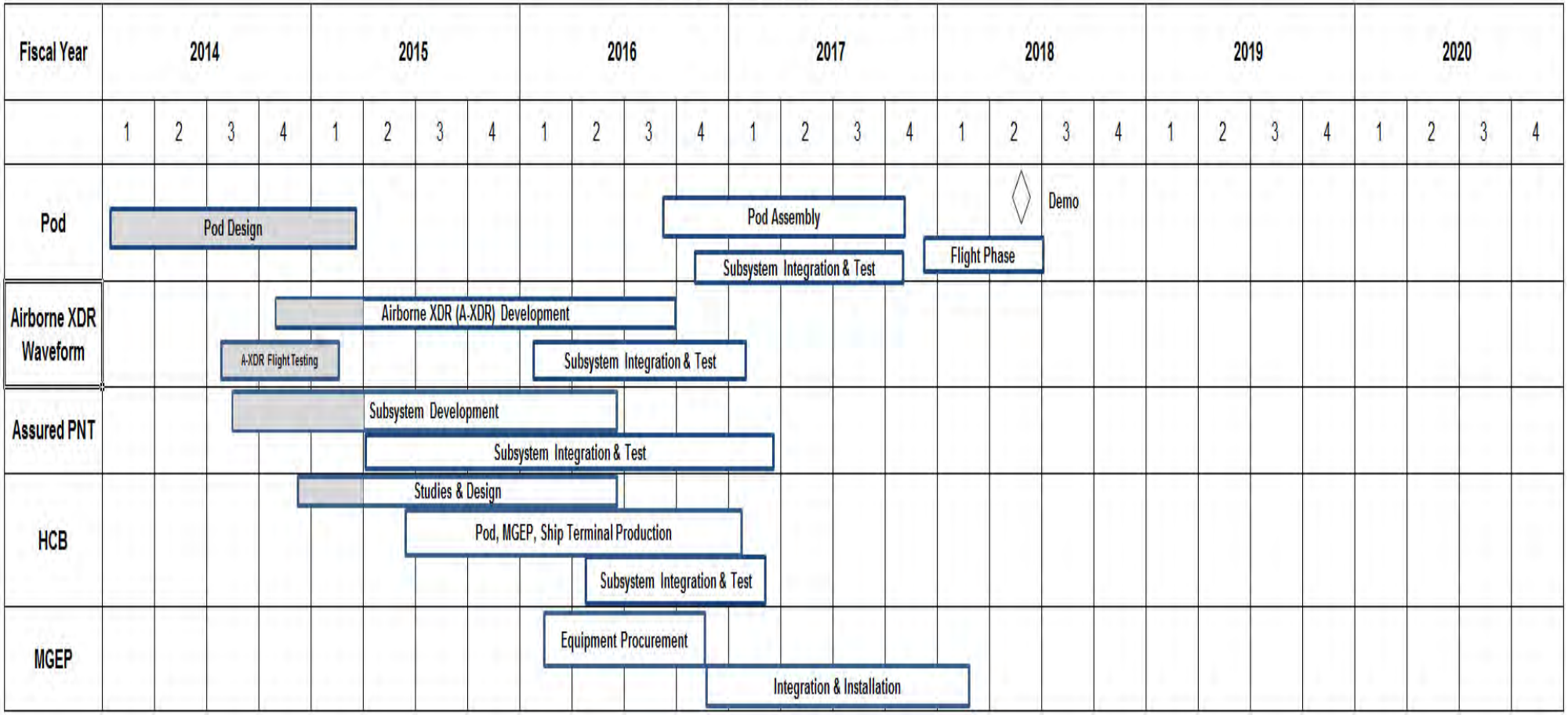


Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204163N / *Fleet Tactical Development*	**Project (Number/Name)** 0725 / *Communication Automation*

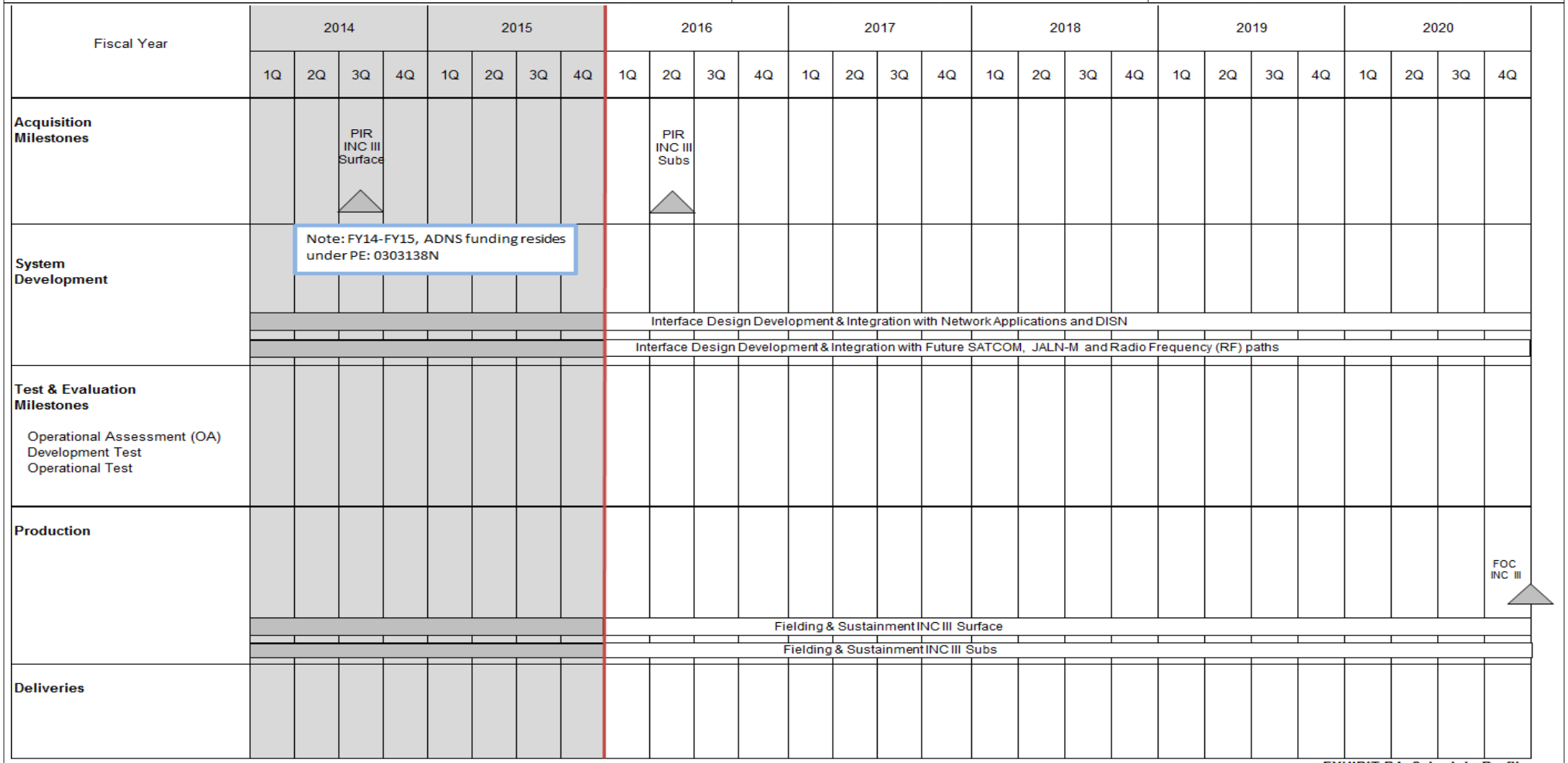


EXHIBIT R4, Schedule Profile

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204163N / *Fleet Tactical Development*	**Project (Number/Name)** 0725 / *Communication Automation*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
BFTN				
Integrated Test/Operational Test (IT/OT)	4	2015	4	2015
Full Rate Production Decision Review (FRP DR) Baseline System	4	2015	4	2015
Initial Operational Capability (IOC) Baseline System	1	2017	1	2017
Engineering Change Development (EOL)	4	2014	2	2017
JALN-M				
Pod Design	1	2014	1	2015
Pod Assembly	3	2016	4	2017
Pod Subsystem Integration & Test	4	2016	4	2017
Pod Flight Phase	4	2017	3	2018
Pod Demo	2	2018	2	2018
A-XDR Development	4	2014	3	2016
A-XDR Flight Test	3	2014	1	2015
A-XDR Integration & Test	1	2016	1	2017
PNT Development	3	2014	2	2016
PNT Integration & Test	2	2015	1	2017
HCB Studies & Design	4	2014	2	2016
HCB Pod, MGEP, Ship Terminal Production	2	2015	1	2017
HCB Integration & Test	2	2016	1	2017
MGEP Equipment Procurement	1	2016	4	2016
MGEP Integration & Installation	4	2016	1	2018
ADNS				
Acquisition Milestones: ADNS: Increment III_Subs Post Implementation Review	2	2016	2	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204163N / *Fleet Tactical Development*	**Project (Number/Name)** 0725 / *Communication Automation*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
System Development: ADNS: Increment III_Interface Design Development and Integration with Network Applications and Defense Information Systems Network (DISN)	1	2016	4	2020
System Development: ADNS: Increment III_Interface Design Development and Integration with SATCOM, Joint Aerial Layer Network-Maritime (JALN) and Radio Frequency (RF) paths	1	2016	4	2020
Production: ADNS: Increment III_Fielding and Sustainment INC III Surface	1	2016	4	2020
Production: ADNS: Increment III_Fielding and Sustainment INC III Submarines	1	2016	4	2020
Production: ADNS: Increment III_Full Operational Capability	4	2020	4	2020

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0204228N / *Surface Support*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	6.291	2.320	2.878	36.045	-	36.045	24.918	15.978	17.006	14.939	Continuing	Continuing
3311: *Navigation Systems*	6.291	2.320	2.878	36.045	-	36.045	24.918	15.978	17.006	14.939	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Surface Support RDT&E funding will be used for the research, design, development, integration testing, and documentation of a new Inertial Navigation System (INS) for all Navy platforms. The program will implement systems engineering processes to investigate major navigation system error sources, define new functions, research new technologies, algorithms, and techniques to improve system performance, conduct analyses of alternatives, create preliminary and final design concepts, develop new hardware components and associated software, and conduct land based and shipboard testing. The INS-R consists of an Inertial Sensor Module (ISM) and a Navigation Processing Module (NPM). The ISM is planned to be designed, developed, and procured through an open competition. The NPM is a Government design. A Request for Information (RFI) was issued in 22 Aug 2013 for initial concepts and market availability of the ISM. The results of the RFI changed the FY16 and out requirements to complete development of all INS-R configurations (surface/amphib, submarine, and carrier).

The Navy's current INS is the AN/WSN-7(V) Ring Laser Gyro Navigator (RLGN), a legacy 1980's design that was first installed in 1998 and is now obsolete. This is a proprietary design. The RLGN is reaching its limit with respect to providing the high-accuracy navigation solution required to meet known and emerging mission requirements. Navigator of the Navy's Vision 2025 identified emergent requirements with respect to improved navigation in a GPS denied environment, littoral warfare, mine countermeasures, and manned and unmanned vehicle operations that cannot be met with existing systems. The RLGN employs an Inertial Measuring Unit (IMU) with three single-axis ring laser gyros that allow the system to provide continuous and automatic data outputs of the ship's geographic position (latitude, longitude), horizontal and vertical linear velocity (Ve, Vn, Vv), attitude (heading, roll, and pitch) and attitude rates. The INS provides mission critical ship's position and attitude data to shipboard sensors (such as radars), combat systems, gun, and missile systems. The INS uses data from the Global Positioning System (GPS) to periodically update (i.e., reset) its position and internal clock. The INS is the ship's primary position source in absence of GPS.

In addition to INS-R, this funding will be used for the research, development, integration testing, and documentation of other navigation wholeness initiatives, including Phase I Cybersecurity Enclave Boundary Defense Capability, MK27 Gyrocompass Replacement, Own Ship Speed (OSS) and Course Repeater Replacement, submarine Time Frequency Distribution System (TFDS) Replacement, and new submarine speed sensors. These efforts will provide replacement designs and architectures to address legacy obsolescence, capability gaps, and performance shortfalls that impact the quality, reliability, and total ownership costs of the overall navigation suite.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*			R-1 Program Element (Number/Name) PE 0204228N *I Surface Support*		
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	2.374	2.878	2.340	-	2.340
Current President's Budget	2.320	2.878	36.045	-	36.045
Total Adjustments	-0.054	-	33.705	-	33.705
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.002	-			
• SBIR/STTR Transfer	-0.052	-			
• Program Adjustments	-	-	33.933	-	33.933
• Rate/Misc Adjustments	-	-	-0.228	-	-0.228

Change Summary Explanation

FY 2014 reduction reflect SBIR and other misc adjustments.

FY 2016 Program Adjustments include increases for Navigation Wholeness to address Inertial Navigation System - Replacement (INS-R) Phase I Cybersecurity Enclave Defense Cybersecurity, MK27 Gyrocompass Replacement, Own Ship Speed (OSS) and Course Repeater, Time Frequency Distribution System (TFDS) Replacement, and Submarine Speed Sensors. FY 2016 also includes other Rate/Misc Adjustments for NWCF Rate Impact Adjustments and Inflation Rate Adjustments.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204228N / *Surface Support*				Project (Number/Name) 3311 / *Navigation Systems*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
3311: *Navigation Systems*	6.291	2.320	2.878	36.045	-	36.045	24.918	15.978	17.006	14.939	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Surface Support RDT&E funding will be used for the research, design, development, integration testing, and documentation of a new Inertial Navigation System (INS) for all Navy platforms. The program will implement systems engineering processes to investigate major navigation system error sources, define new functions, research new technologies, algorithms, and techniques to improve system performance, conduct analyses of alternatives, create preliminary and final design concepts, develop new hardware components and associated software, and conduct land based and shipboard testing. The INS-R consists of an Inertial Sensor Module (ISM) and a Navigation Processing Module (NPM). The ISM is planned to be designed, developed, and procured through an open competition. The NPM is a Government design. A Request for Information (RFI) was issued in 22 Aug 2013 for initial concepts and market availability of the ISM. The results of the RFI changed the FY16 and out requirements to complete development of all INS-R configurations (surface/amphib, submarine, and carrier).

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Title: Inertial Navigation System - Replacement (INS-R)	2.320	2.878	25.076	-	25.076
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204228N / *Surface Support*	**Project (Number/Name)** 3311 / *Navigation Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Continued initial design and development efforts for the surface INS-R variant. The surface INS-R variant consists of the Inertial Sensor Module (ISM) and Navigation Processor Module (NPM) connected by a defined interface. - Finalized initial Technical Requirements Documents (TRD) for the surface INS-R variant ISM and NPM. - Finalized initial Interface Requirement Specification (IRS) for the surface INS-R variant design. - Began design efforts associated with the surface INS-R variant NPM. ***FY 2015 Plans:*** - Continue design and development efforts for the surface INS-R variant. - Continue design efforts for the surface INS-R variant NPM and build three NPM prototypes. One NPM EDM will be provided as Government Furnished Equipment (GFE) to the ISM contractor and one NPM EDM will be provided to an ACB-16/AEGIS Land Based Test Site (LBTS) to reduce integration risks. Conduct design review on NPM. ***FY 2016 Base Plans:*** - Continue design and development efforts for the surface INS-R variant. - Award contract for ISM development - Conduct Preliminary Design Review on ISM - Build four ISM EDM to support integration and testing at the ACB-16/AEGIS LBTS and Surface Combat Systems Center (SCSC) LBTS. - Continue with development of NPM and provide last NPM prototype to support second ACB-16/AEGIS LBTS and Surface Combat Systems Center (SCSC) LBTS. - Begin design and development efforts for the amphibious, submarine, and carrier INS-R variants. - Update design and development documentation to include additional variants. - Increase design and development efforts under the ISM contract to include additional variants to meet test and integration schedules. ***FY 2016 OCO Plans:*** N/A					
Title: Phase I Cybersecurity Enclave Boundary Defense Capability	-	-	5.000	-	5.000
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204228N / *Surface Support*	**Project (Number/Name)** 3311 / *Navigation Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2016 Base Plans:*** - Effort to complete development, testing, and implementation of external boundary enclave cyber defense solutions. - Develop navigation wholeness Cybersecurity requirements based on mandated requirements, threats and standards via Functional Requirements Document (FRD). - Develop navigation architecture changes and Cybersecurity protections for current and future equipment. - Develop future Boundary Defense technologies to meet Advanced Cyber threats. ***FY 2016 OCO Plans:*** N/A					
Title: MK27 Gyrocompass Replacement	-	-	3.400	-	3.400
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** - Effort to complete design, development, and testing of a MK27 gyrocompass replacement for surface, amphibious and submarine platforms leveraging the INS-R architecture. Includes build of three prototypes (one of each variant). ***FY 2016 OCO Plans:*** N/A					
Title: Time Frequency Distribution System (TFDS) Replacement	-	-	1.400	-	1.400
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204228N / *Surface Support*	**Project (Number/Name)** 3311 / *Navigation Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Effort to replace legacy Time Frequency Distribution System (TFDS) architecture on submarines with modern architecture. This leverages the development effort associated with the surface Time and Frequency Component (TFC) of Global Positioning System (GPS) - Based Positioning, Navigation, and Timing Service (GPNTS). - Develop design documentation to adapt surface design to a submarine configuration and begin development of prototype. ***FY 2016 OCO Plans:*** N/A					
Title: Own Ship Speed (OSS) and Course Repeater	-	-	0.722	-	0.722
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** - Effort to complete design, development, and testing of an Own Ship Speed (OSS) and Course Repeater replacement for surface platforms. Includes build of two prototypes for testing. ***FY 2016 OCO Plans:*** N/A					
Title: Submarine Speed Sensors	-	-	0.447	-	0.447
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204228N / *Surface Support*	**Project (Number/Name)** 3311 / *Navigation Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Effort to test new shark fin and Doppler speed sensors for submarines using Commercial Off the Shelf (COTS) technology to replace legacy speed sensors. Effort will be used to guide future development of new speed sensor. Includes build of two prototypes for testing. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	2.320	2.878	36.045	-	36.045

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/0670: *Other Navigation*	33.386	39.298	87.481	-	87.481	67.181	58.298	104.240	122.593	-	758.740

Remarks

D. Acquisition Strategy

Inertial Navigation System (INS) contract planned to be competitively awarded in FY 2016.

E. Performance Metrics

FY14:
- NPM development hardware/software.

FY15:
- NPM development hardware/software.
- Complete NPM Engineering Development Model (EDM).
- Delivery of EDM ACB-16/AEGIS Land Based Test Site (LBTS).

FY16:
- Award competitive contract for ISM development.
- Deliver Test Assets to Surface Combat Systems Center (SCSC) LBTS.
- Deliver ISM EDM to ACB-16/AEGIS LBTS
- Doppler/Sharkfin speed sensor completed testing.
- Complete FRD for Phase I Cybersecurity Enclave Boundary Defense Capability.
- Build three prototype MK27 Gyrocompass Replacement.
- Initiate TFDS prototype.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204228N / *Surface Support*	**Project (Number/Name)** 3311 / *Navigation Systems*

- Build two prototype OSS and Course Repeaters.
- Build two prototype Submarine Speed Sensors.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204228N / *Surface Support*	**Project (Number/Name)** 3311 / *Navigation Systems*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering/ Design	WR	SPAWAR Atlantic : Little Creek, VA	2.296	0.840	Oct 2013	0.315	Jan 2015	6.492	Dec 2015	-		6.492	Continuing	Continuing	Continuing
Systems Engineering/ Design	C/CPFF	WR Systems : Norfolk, VA	1.564	0.883	Oct 2013	0.766	Jan 2015	9.446	Dec 2015	-		9.446	Continuing	Continuing	Continuing
Systems Engineering/ Design	C/CPFF	Penn State/ARL : Warminster, PA	1.391	0.200	Oct 2013	0.250	Jan 2015	-	Dec 2015	-		-	Continuing	Continuing	Continuing
Systems Engineering/ Design	WR	NSWC Dahlgren : Dahlgren, VA	0.271	0.087	Oct 2013	0.025	Jan 2015	0.068	Dec 2015	-		0.068	Continuing	Continuing	Continuing
Systems Engineering/ Design	C/CPFF	Old Dominion University : Suffolk, VA	0.450	-		-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering/ Design	C/CPFF	Contractor 1 TBD : TBD	0.000	-		1.200	Apr 2015	15.675	Dec 2015	-		15.675	Continuing	Continuing	Continuing
Systems Engineering/ Design	WR	SPAWAR : Charleston, SC	0.000	-		-		0.563	Dec 2015	-		0.563	Continuing	Continuing	Continuing
Systems Engineering/ Design	WR	SPAWAR : San Diego, CA	0.000	-		-		0.450	Dec 2015	-		0.450	Continuing	Continuing	Continuing
Systems Engineering/ Design	WR	NAVSSES : Philadelphia, PA	0.000	-		-		0.450	Dec 2015	-		0.450	Continuing	Continuing	Continuing
Systems Engineering/ Design	C/CPFF	TCNI : Middletown, MD	0.000	-		-		0.450	Dec 2015	-		0.450	Continuing	Continuing	Continuing
Systems Engineering/ Design	C/CPFF	Northrop Grumman : Charlottesville, VA	0.000	-		-		0.225	Dec 2015	-		0.225	Continuing	Continuing	Continuing
Systems Engineering/ Design	C/CPFF	Contractor 2 TBD : TBD	0.000	-		-		1.669	Dec 2015	-		1.669	Continuing	Continuing	Continuing
		Subtotal	5.972	2.010		2.556		35.488		-		35.488	-	-	-

Remarks

- Based on the responses from the 22 Aug 2013 issued Request for Information (RFI) for initial concepts and market availability of the ISM, additional funding to complete development of all INS-R configurations (surface/amphib, submarine, and carrier) has been added in FY16 and out.
- Key requirements driving increased funding from FY15 to FY16. These efforts include: (1) Build four ISM EDM to support integration testing at the ACB-16/AEGIS LBTS and Surface Combat Systems Center (SCSC) LBTS, (2) Begin design and development efforts for the amphibious, submarine, and carrier INS-R variants, (3) Update design and development documentation to include additional variants, (4) Increase design and development efforts under the ISM contract to include additional variants to meet test and integration schedules.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204228N / *Surface Support*	**Project (Number/Name)** 3311 / *Navigation Systems*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
- In addition to funding for the INS-R development efforts, the increase in FY16 provides funding to initiate and complete other navigation design and development efforts. (1) Effort to complete design, development, and testing of a MK27 gyrocompass replacement for surface, amphibious and submarine platforms leveraging the INS-R architecture; (2) Effort to complete design, development, and testing of an Own Ship Speed (OSS) and Course Repeater replacement for surface platforms; (3) Effort to complete design, development, and testing of a modern architecture to replace the legacy submarine Time Frequency Distribution System (TFDS) architecture; this leverages the development effort associated with the surface Time and Frequency Component (TFC) of the Global Positioning System (GPS) - Based Positioning, Navigation, and Timing Service (GPNTS); (4) Effort to test new shark fin and Doppler speed sensors for submarines using Commercial Off the Shelf (COTS) technology to replace legacy speed sensors. Test results will be used to guide future development of new speed sensors.														

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	C/CPFF	TBD : TBD	0.319	0.310	Dec 2013	0.322	Feb 2015	0.557	Dec 2015	-		0.557	Continuing	Continuing	Continuing
		Subtotal	0.319	0.310		0.322		0.557		-		0.557	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.291	2.320		2.878		36.045		-		36.045	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204228N / *Surface Support*	**Project (Number/Name)** 3311 / *Navigation Systems*

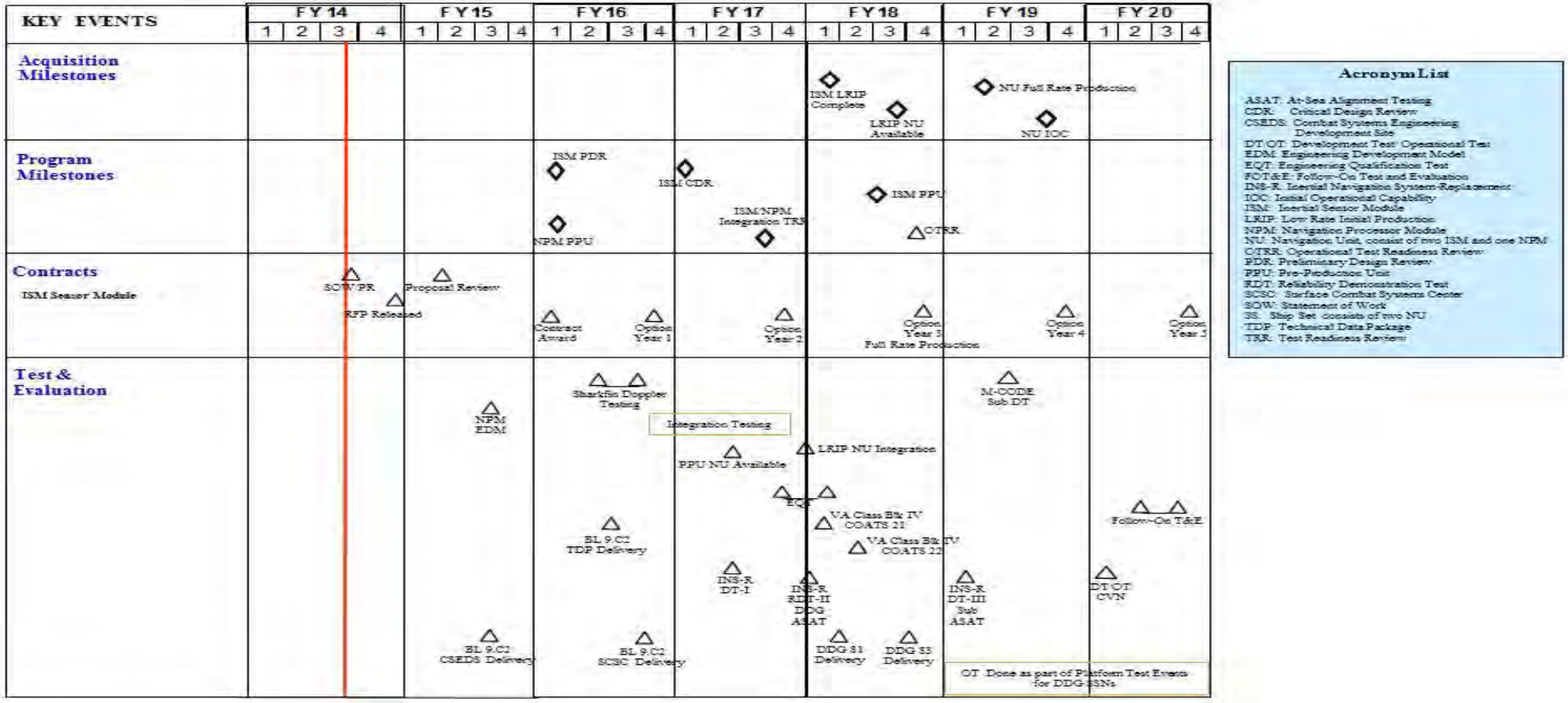

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204228N / *Surface Support*	**Project (Number/Name)** 3311 / *Navigation Systems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3311				
ISM LRIP Complete	1	2018	1	2018
LRIP Navigation Unit (NU) Available	3	2018	3	2018
NU Full Rate Production (FRP)	2	2019	2	2019
NU IOC	3	2019	3	2019
ISM Preliminary Design Review (PDR)	1	2016	1	2016
NPM Pre-Production Unit (PPU)	1	2016	1	2016
ISM/NPM IntegrationTest Readiness Review (TRR)	3	2017	3	2017
ISM Critical Design Review (CDR)	1	2017	1	2017
ISM PPU	2	2018	2	2018
Operational Test Readiness Review (OTRR)	4	2018	4	2018
ISM Sensor Module Statement of Work/Purchase Request (SOW/PR)	3	2014	3	2014
ISM Sensor Module Request for Proposal (RFP) Released	4	2014	4	2014
ISM Sensor Module Proposal Review	2	2015	2	2015
ISM Sensor Module Contract Award	1	2016	1	2016
ISM Sensor Module Option Year 1	4	2016	4	2016
ISM Sensor Module Option Year 2	4	2017	4	2017
ISM Sensor Module Option Year 3 FRP	4	2018	4	2018
ISM Sensor Module Option Year 4	4	2019	4	2019
ISM Sensor Module Option Year 5	4	2020	4	2020
NPM EDM	3	2015	3	2015
BL 9.C2 CSEDS Delivery	3	2015	3	2015
Sharkfin Doppler Testing	2	2016	3	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204228N / *Surface Support*	**Project (Number/Name)** 3311 / *Navigation Systems*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
BL 9.C2 Technical Data Package (TDP) Delivery	3	2016	3	2016
BL 9.C2 SCSC Delivery	4	2016	4	2016
PPU NU Available	2	2017	2	2017
Low Rate Initial Production (LRIP) NU Integration	4	2017	4	2017
Environmental Qualification Test (EQT)	3	2017	1	2018
Inertial Navigation System-Replacement (INS-R) Development Testing I (DT-1)	2	2017	2	2017
INS-R DT-II DDG At Sea Alignment Test (ASAT)	1	2018	1	2018
VA Class BLK IV Consolidated Off Hull Assemblies Test Site (COATS) 21	1	2018	1	2018
VA Class BLK IV COATS 22	2	2018	2	2018
DDG-81 Delivery	1	2018	1	2018
DDG-83 Delivery	3	2018	3	2018
M-CODE SSN DT	2	2019	2	2019
INS-R DT-III SSN ASAT	1	2019	1	2019
Follow-On Test & Evaluation (T&E)	2	2020	3	2020
DT/OT CVN	1	2020	1	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204229N *I Tomahawk Mssn Planning Ctr*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	3,103.133	12.015	26.145	25.228	-	25.228	40.764	32.240	20.227	16.081	Continuing	Continuing
0545: *TOMAHAWK*	3,103.133	12.015	21.145	25.228	-	25.228	40.764	32.240	20.227	16.081	Continuing	Continuing
3378: *Next Generation Land Attack Weapon (NGLAW)*	0.000	-	5.000	-	-	-	-	-	-	-	-	5.000

Note

Funding for the Next Generation Land Attack Weapon has moved from Program Element 0204229N (Tomahawk Mission Planning Center) to 0604659N (Precision Strike Weapons Development Program) under the same Project Unit of 3378 effective FY 2016.

A. Mission Description and Budget Item Justification

Funds support development of the Tomahawk Weapon System (TWS) encompassing Tomahawk Land-Attack Missile (TLAM) upgrades, initiate baseline improvements into the Block IV weapon system, Tactical Tomahawk Weapons Controls System (TTWCS), Tomahawk Mission Planning Center (TMPC) upgrades and other missile system improvements to maintain pace with threats. The TWS provides a Tomahawk cruise missile attack capability against fixed and mobile targets. Tomahawk is capable of being deployed from both submarines and surface ships. Launched from mobile, sea-based platforms, the land attack variant significantly increases the total capability of joint forces. This Program Element also includes initial funding for the NGLAW Analysis of Alternatives (AoA).

This program is funded under Operational Systems Development because it includes development efforts to upgrade systems that have been fielded or have received approval for Full Rate Production (FRP) and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	12.407	32.385	37.187	-	37.187
Current President's Budget	12.015	26.145	25.228	-	25.228
Total Adjustments	-0.392	-6.240	-11.959	-	-11.959
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-6.240			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.392	-			
• Program Adjustments	-	-	15.499	-	15.499
• Rate/Misc Adjustments	-	-	-27.458	-	-27.458

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204229N *I Tomahawk Mssn Planning Ctr*

Change Summary Explanation

The FY 2016 funding request was reduced by $1.546 million to account for the availability of prior year execution balances.

Technical: FY16 increase in funding will be used to continue Anti-Access/Area Denial (A2AD) navigation improvements and A2AD communication upgrades as well as initiate baseline improvements into the Block IV Tomahawk weapon system to be incorporated as part of the recertification of the Tactical Tomahawk (TACTOM).

Schedule:

PU 3378- Removed FY16-FY20 schedule due to Next Generation Land Attack Weapon moving from Program Element 0204229N (Tomahawk Mission Planning Center) to 0604659N (Precision Strike Weapons Development Program.

AoA changed to AoA preparation and will now begin in Q2 FY15 due to delays associated with the congressional enactment of a new start program.

Added acquisition milestone Mission Technical Baseline/Capabilities Baseline Assessment (CBA/MTB) to 2Q-3Q FY15.

Added completion of acquisition milestone CBA to Q4 2015

PU 0545- Tomahawk Mission Planning Center (TMPC) Final Operational Capability (FOC) milestone dates were removed and replaced by TMPC Initial Operational Capability (IOC) dates for TMPC versions 5.0.1 and 6.0. TMPC is post MS-C /in sustainment and IOC is an acquisition milestone that is tracked and included in all the program acquisition documents for the TMPC program.

System Readiness Review and System Functionality Review due to updated System Engineering Technical Review (SETR) Strategy.

Navigation reviews were deleted due to Anti-Access/Area Denial (A2AD) navigation and communications taking place concurrently.

Baseline improvement Engineering Change Proposal (ECP) kit contract award and 1st modernized TACTOM missile delivery schedule added due to further development of the Tomahawk modernization acquisition strategy.

TTWCS V5.6 Developmental Test/Operational Test (DT/OT) added as part of the baseline improvement upgrades into the Block IV weapon system.

A2AD navigation and communications previous schedules still reflected remnants of image navigation. Cancellation of image navigation and continued A2AD navigation program planning, as well as the approval of A2AD communications for transition, have caused changes to the overall Tomahawk modernization schedule.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204229N / *Tomahawk Mssn Planning Ctr*				Project (Number/Name) 0545 / *TOMAHAWK*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
0545: *TOMAHAWK*	3,103.133	12.015	21.145	25.228	-	25.228	40.764	32.240	20.227	16.081	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Tomahawk Weapons System (TWS) provides a Tomahawk Land Attack Missile (TLAM) capability against fixed and mobile targets. This program ensures that the TWS exploits state-of the art technology to preserve the efficiency of this proven weapon system, and includes all missile development, mission planning system development, and submarine and surface ship weapons control system development.

The Tactical Tomahawk (TACTOM) All-Up-Round (AUR) Block IV missile is a comprehensive spiral baseline upgrade to the TWS that provides the tactical commander a quick reaction response capability as well as improved flexibility, increased accuracy and higher lethality. The essential upgrades of the TACTOM missile are: improved guidance, navigation, control and mission computer two-way satellite communications (SATCOM), and a lower production cost as compared to the Block III missile. TACTOM provides a Ultra High Frequency SATCOM data link to enable the missile to receive in-flight mission modification messages, to transfer health and status messages and to broadcast Battle Damage Indication messages. TACTOM also includes a high anti-jam Global Postitioning System (GPS) receiver, navigation improvements and associated antenna systems. The Tomahawk program also includes development of continuing advances identified as spiral development under the Tomahawk Baseline IV Operational Requirements Document (ORD), to include development of the Joint Multiple Effects Warhead System/Joint Capability Technology Demonstration (JMEWS/JCTD) and Anti-Access Area-Denial (A2AD) Navigation and Communications.

The Theater Mission Planning Center (TMPC) previously referred to as Tomahawk Command and Control System (TC2S) consists of Commercial and Government Off-The-Shelf (COTS/GOTS) software and COTS hardware. TMPC provides targeting, mission planning, strike planning, mission distribution, command & control, and employment capabilities for Tomahawk Land Attack Missile (TLAM). Continuous TMPC software development decreases mission planning time and increases the quality and accuracy of each mission while reducing complexity. TMPC provides mission planning at the theater and operational levels and is designed for high rate mission planning production responsive to national strategic, operational, and tactical requirements. TMPC develops and distributes missions for the Tomahawk Missile; provides command information services for TWS; provides strike planning, execution, coordination, control and reporting, and provides Maritime Component Commanders (MCC) the capability to plan or modify conventional Tomahawk Land-Attack Missile (TLAM) missions. TMPC has evolved into scalable configurations deployed in four configurations at 180 sites: Cruise Missile Support Activities (CMSAs) (3+1 FMS), Tomahawk Strike Mission Planning Cells (TSMPCs) (3 - C5F, C6F, C7F), Carrier Strike Groups (CSGs) (16 - 10 CVN), Firing Units (FRUs) (84 Surface/56 Submarines), Fleet Training Sites and Labs (17).

The TTWCS provides launch capability for surface and submarine platforms. Development of the TTWCS provides a common architecture to launch the TACTOM and all variants in inventory. Development of upgrades to the TTWCS is required to meet the Department of Defense Information Technology Standards Registry, to meet FORCEnet compliance and be Internet Protocol Version 6 ready in order to remain interoperable within the Joint Service Architecture and to retain weapons system viability and usability for our Sailors. These efforts provide battle-group tactical flexibility and responsiveness while maximizing TWS wartime capability.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204229N / *Tomahawk Mssn Planning Ctr*	**Project (Number/Name)** 0545 / *TOMAHAWK*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Tactical Tomahawk All-Up-Round (AUR) and Tactical Tomahawk Weapons Control System (TTWCS)	4.283	10.787	17.683	-	17.683
Articles:	-	-	-	-	-

Description: Continue Anti-Access/Area Denial (A2AD) navigation and communication integration into Block IV weapons system. Continue fleet experimentation and requirements coordination as well as Concept of Operations (CONOPS)/ Concept of Employment development. Continuation of the cooperatively funded United States Navy/United Kingdom Joint Multi-Effects Warhead System (JMEWS) / Joint Capability Technology Demonstration (JCTD). Include significant research and analysis of the worldwide target set capability gaps to include Hard and Buried Targets and Prompt Global Strike targets, for which JMEWS is a potential solution. In addition, NAWCAD also provides engine power data/analysis in order to determine reserve power available to power potential upgrades to the Tomahawk AUR, such as JMEWS.

FY 2014 Accomplishments:
Commence A2AD navigation and communication integration into Block IV weapons system. FY 2014 efforts include requirements development and documentation; CONOPS development; software development; mission planning updates; and integration efforts. Continuation of JMEWS transition, integration, and demonstration efforts. Assessing and testing communication architecture and technologies to overcome more challenging communication environments. Target assessments, engine performance analysis, campaign planning and mission analysis for potential Tactical Tomahawk upgrades or new applicable weapons. Non-recurring engineering, systems and software development, integration and testing of capability upgrades to address emergent threats, UONS, fleet gaps, and the Tomahawk ORD.

FY 2015 Plans:
Continue A2AD navigation and communications transition and engineering change proposals to include software development, systems engineering, system testing, and transition documentation. Continuation of JMEWS transition, integration, and demonstration efforts. Target assessments, engine performance analysis, campaign planning and mission analysis for potential Tactical Tomahawk upgrades or new applicable weapons. Non-recurring engineering, systems and software development, integration and testing of capability upgrades to address emergent threats, UONS, fleet gaps, and the Tomahawk ORD.

FY 2016 Base Plans:
Continuation of A2AD navigation and communications transition and engineering change proposals to include software

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204229N / *Tomahawk Mssn Planning Ctr*	**Project (Number/Name)** 0545 / *TOMAHAWK*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
development, hardware development, systems engineering, integration, system testing and transition documentation. Hardware development will include development and testing of either multiple or multi-band antennas, and continued development and testing of an integrated single box solution radio. Software development will include continued development and testing of Operationally Embedded Software for incorporation into the missile, as well as development of TTWCS for qualification testing. Update Tomahawk test and evaluation master plan. Continue JMEWS transition, integration, demonstration, and test efforts. Perform target and lethality assessments, engine performance analysis to include high-speed engine feasibility studies and SBIRs, data-fusion studies, campaign planning and mission analysis for potential TACTOM upgrades or new applicable weapons. Continue participation in fleet experimentation and kill chain analysis. Perform Non-Recurring Engineering activities, systems and software development, integration and testing of capability upgrades to address emergent threats, UONS, fleet gaps, and the Tomahawk ORD as directed. ***FY 2016 OCO Plans:*** N/A					
Title: Theater Mission Planning Center (TMPC)	7.732	10.358	7.545	-	7.545
Articles:	-	-	-	-	-
Description: Development and incorporation of new capabilities into the Theater Mission Planning Center (TMPC) necessary for the employment of the Tomahawk Weapon System (TWS). ***FY 2014 Accomplishments:*** Continue TLAM navigation and accuracy and weapons delivery CEP studies and assessments necessary to ensure the TWS is properly employed; continue evaluation of TMPC design process to ensure Tactical Tomahawk missile performance characteristics are adequately modeled in TMPC. Continue evaluation of imagery formats resulting from NGA mandated architectural changes. Initial evaluation of Anti-Access/Area Denial (A2AD) navigation and communications integration and mission planning timeline upgrades. Develop requirements and design for A2AD navigation and communications integration and mission planning timeline upgrades. ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204229N / *Tomahawk Mssn Planning Ctr*	**Project (Number/Name)** 0545 / *TOMAHAWK*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue TLAM navigation and accuracy and weapons delivery CEP studies and assessments necessary to ensure the TWS is properly employed; continue evaluation of TMPC design process to ensure Tactical Tomahawk missile performance characteristics are adequately modeled in TMPC. Continue evaluation of imagery formats resulting from NGA mandated architectural changes. Continue the development of navigation software improvements capability and software code completion associated with A2AD navigation and communications integration and mission planning timeline upgrades. The majority of the development will occur in FY15. ***FY 2016 Base Plans:*** Continue TLAM navigation and accuracy and weapons delivery CEP studies and assessments necessary to ensure the TWS is properly employed; continued evaluation of TMPC design process to ensure Tactical Tomahawk missile performance characteristics are adequately modeled in TMPC. Continue evaluation of imagery formats resulting from NGA mandated architectural changes. Continue development of A2AD software for targeting and navigation improvements. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	12.015	21.145	25.228	-	25.228

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN/2101: *Tomahawk*	307.456	317.458	184.814	-	184.814	22.546	39.901	39.405	40.290	590.684	13,849.818
• OPN/5253: *Tomahawk Support Equip*	63.370	60.062	71.245	-	71.245	73.995	73.505	73.007	73.118	Continuing	Continuing
• OPN/9020: *Initial and Vendor Direct Spares*	0.158	0.240	0.161	-	0.161	0.216	0.220	0.277	0.152	Continuing	Continuing

Remarks

D. Acquisition Strategy

The TACTOM Weapon System achieved IOC in May 2004. The acquisition strategy involves maintaining production through FY16 and entrance into recertification starting in FY19. Recertification of TACTOM missiles starting in FY19 provides modernization opportunities to improve weapon system performance. TMPC and TTWCS

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204229N / *Tomahawk Mssn Planning Ctr*	**Project (Number/Name)** 0545 / *TOMAHAWK*

are in sustainment requiring periodic hardware and software updates to maintain compliance with IA standards and maintain system relevance against emerging threats. Sustainment of TMPC and TTWCS segments will rely on a blend of industry and government expertise through the remaining life of the program.

Research & Development technology demonstration capabilities (Multiple-Effects Warhead, Anti Surface Warfare) will be potentially introduced after successful qualification and testing.

E. Performance Metrics

The Navy seeks to improve the Tomahawk cruise missile attack capability against land targets through research and development done predominantly through defense contractors and government field activities.

Examples in the area of the All-Up-Round include development of candidate warheads and sensors that will enhance weapon ability to cover all assigned target types, provide a quick reaction response capability for the weapon system, and improved guidance, navigation, control, mission computer two-way satellite communications, and a high anti-jam GPS receiver all in line with state of the art technology.

In the area of the weapons control system, research and development is performed to ensure viability and usability of the system into the future, providing necessary upgrades to meet the Department of Defense Information Technology standards registry to comply with FORCEnet requirements and be Internet Protocol Version 6 ready to remain interoperable within Joint Service Architecture, in order to provide battle-group tactical flexibility and responsiveness needed to enable full wartime capability.

In the area of the TMPC, continue research and development in order to provide scalable configurations to deploy where and as needed to provide necessary command and control, development necessary to function with national and tactical imagery architectures, decrease mission planning time, and increase the quality and accuracy of each mission for the TWS.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204229N / *Tomahawk Mssn Planning Ctr*	**Project (Number/Name)** 0545 / *TOMAHAWK*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engeineering - AUR Fleet Representative	SS/CPFF	UARC APL : Laurel, MD	0.000	0.047	Feb 2014	-	Feb 2015	0.235	Feb 2016	-		0.235	Continuing	Continuing	Continuing
Systems Engineering - Advanced Concepts A2AD Improvements (NAV/ COMMS)	WR	NAWC-AD : Pax River, MD	0.000	0.245	Feb 2014	0.069	Feb 2015	-		-		-	-	0.314	-
Systems Engineering - A2AD Improvements TDA (NAV/COMMS)	SS/CPFF	UARC APL : Laurel, MD	0.708	0.046	Feb 2014	0.236	Feb 2015	0.652	Feb 2016	-		0.652	Continuing	Continuing	Continuing
Systems Engineering - A2AD Improvements Prime Integrator (NAV/ COMMS)	SS/CPFF	Raytheon : Tucson, AZ	0.000	0.430	Feb 2014	1.390	Feb 2015	2.435	Feb 2016	-		2.435	Continuing	Continuing	Continuing
Systems Engineering - TTWCS A2AD Improvements (NAV/ COMMS)	WR	NSWC : Dahlgren, VA	0.000	0.939	Feb 2014	1.282	Feb 2015	0.887	Feb 2016	-		0.887	Continuing	Continuing	Continuing
Systems Engineering - Hardware Development- A2AD Improvements (NAV/COMMS)	MIPR	NRO : Chantilly, VA	0.000	1.050	Feb 2014	6.837	Feb 2015	10.055	Feb 2016	-		10.055	Continuing	Continuing	Continuing
Prior Year Prod Dev cost no longer funded in FYDP	Various	Various : Various	2,660.209	-		-		-		-		-	-	2,660.209	-
		Subtotal	2,660.917	2.757		9.814		14.264		-		14.264	-	-	-

Remarks

A2AD Improvements (NAV/COMMS) increase is due to transition from antenna/harness development in FY15 to radio system integration in FY16 to the TACTOM.
Activity TBD was changed to NRO-Chantilly, VA due to updates to the security classification guide.
NRO increase due to transition from sub-component development to full-up radio assembly and component level testing for compatibility with Tomahawk interfaces, Guidance Electronics Unit (GEU), and antenna.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204229N / *Tomahawk Mssn Planning Ctr*	Project (Number/Name) 0545 / *TOMAHAWK*	

Support ($ in Millions)				FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
A2AD Improvements (NAV/COMMS) - Mission Planning upgrade	SS/CPFF	ComGlobal : San Jose, CA	0.000	0.357	Feb 2014	1.686	Feb 2015	1.000	Feb 2016	-		1.000	Continuing	Continuing	Continuing
A2AD Improvements (NAV/COMMS) - Mission Planning upgrade	SS/CPFF	Boeing : St. Louis, MO	0.000	0.907	Feb 2014	1.913	Feb 2015	0.813	Feb 2016	-		0.813	Continuing	Continuing	Continuing
A2AD Improvements (NAV/COMMS) - Mission Planning upgrade	SS/CPFF	BAE Systems : San Diego, CA	0.000	1.269	Feb 2014	1.809	Feb 2015	0.443	Feb 2016	-		0.443	Continuing	Continuing	Continuing
A2AD Improvements (NAV/COMMS) - Mission Planning upgrade	SS/CPFF	Leidos : California, MD	0.000	1.871	Feb 2014	1.370	Feb 2015	1.319	Feb 2016	-		1.319	Continuing	Continuing	Continuing
A2AD Improvements (NAV/COMMS) - Mission Planning upgrade	SS/CPFF	UARC APL : Laurel, MD	1.294	0.870	Feb 2014	0.459	Feb 2015	1.243	Feb 2016	-		1.243	Continuing	Continuing	Continuing
TLAM MP Analysis - Mission Planning	SS/CPFF	UARC APL : Laurel, MD	0.000	0.300	Feb 2014	1.040	Feb 2015	1.060	Feb 2016	-		1.060	Continuing	Continuing	Continuing
Imagery Format Analysis - Mission Planning	SS/CPFF	Navy Sys Mgt Act : Arlington, VA	1.432	1.343	Feb 2014	1.391	Feb 2015	1.164	Feb 2016	-		1.164	-	5.330	5.330
A2AD Improvements (NAV/COMMS) - Mission Planning upgrade	WR	NAWC-AD : Pax River, MD	0.000	0.329	Feb 2014	0.690	Feb 2015	0.503	Feb 2016	-		0.503	Continuing	Continuing	Continuing
A2AD Improvements (NAV/COMMS) - Mission Planning upgrade	Various	Various : Various	0.000	0.486	Feb 2014	-		-		-		-	Continuing	Continuing	Continuing
Development Support - TTWCS AUR	WR	NSWC : Dahlgren, VA	2.857	-	Feb 2014	0.040	Feb 2015	0.450	Feb 2016	-		0.450	Continuing	Continuing	Continuing
Development Support - Logistics AUR	WR	NSWC : Pt. Hueneme, CA	0.000	-		0.095	Feb 2015	0.300	Feb 2016	-		0.300	-	0.395	-
Development Support - CSS AUR	SS/CPFF	Leidos : Arlington, VA	0.000	0.716	Feb 2014	0.347	Feb 2015	0.347	Feb 2016	-		0.347	-	1.410	1.410
Development Support - Advanced Concepts AUR	WR	NAWC-WD : China Lake, CA	78.783	0.456	Feb 2014	0.144	Feb 2015	0.450	Feb 2016	-		0.450	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204229N / *Tomahawk Mssn Planning Ctr*	Project (Number/Name) 0545 / *TOMAHAWK*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support - AUR Fleet Representative	SS/CPFF	UARC APL : Laurel, MD	0.000	0.114	Feb 2014	-	Feb 2015	1.060	Feb 2016	-		1.060	-	1.174	1.174
Development Support - Advanced Concepts AUR	WR	NAWC-AD : Pax River, MD	0.105	0.240	Feb 2014	-	Feb 2015	0.190	Feb 2016	-		0.190	Continuing	Continuing	Continuing
Development Support - CSS AUR	SS/CPFF	Various : PMA 280 Follow on CSS	0.000	-		0.347	Feb 2015	0.347	Feb 2016	-		0.347	-	0.694	0.694
Prior Year Support cost no longer funded in FYDP	Various	Various : Various	273.932	-		-		-		-		-	-	273.932	-
		Subtotal	358.403	9.258		11.331		10.689		-		10.689	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test and Evaluation - A2AD Improvements (NAV/ COMMS)	WR	NAWC : China Lake, CA	0.000	-		-		0.275	Feb 2016	-		0.275	-	0.275	-
Operational Test and Evaluation - A2AD Improvements (NAV/ COMMS)	WR	NSWC : Dahlgren, VA	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Prior Year T&E cost no longer funded in FYDP	Various	Various : Various	83.412	-		-		-		-		-	-	83.412	-
		Subtotal	83.412	-		-		0.275		-		0.275	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Mgmt cost no longer funded in FYDP	Various	Various : Various	0.401	-		-		-		-		-	-	0.401	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204229N / *Tomahawk Mssn Planning Ctr*	**Project (Number/Name)** 0545 / *TOMAHAWK*

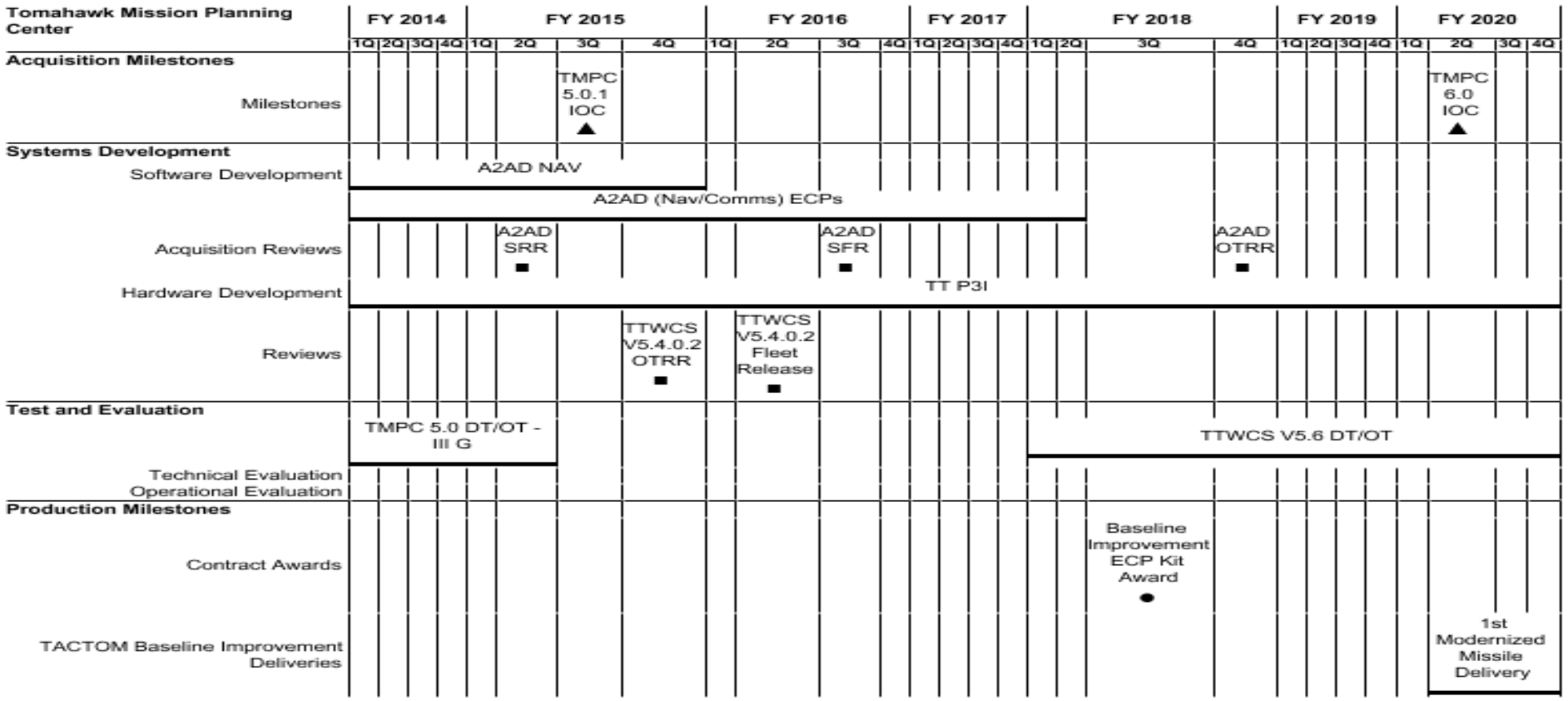
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.401	-		-		-		-		-	-	0.401	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3,103.133	12.015		21.145		25.228		-		25.228	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204229N / *Tomahawk Mssn Planning Ctr*	**Project (Number/Name)** 0545 / *TOMAHAWK*



2016PB - 0204229N - 0545

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204229N / *Tomahawk Mssn Planning Ctr*	**Project (Number/Name)** 0545 / *TOMAHAWK*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Tomahawk Mission Planning Center				
Acquisition Milestones: Milestones: TMPC 5.0.1 IOC	3	2015	3	2015
Acquisition Milestones: Milestones: TMPC 6.0 IOC	2	2020	2	2020
Systems Development: Software Development: A2AD Navigation	1	2014	4	2015
Systems Development: Software Development: A2AD Navigation/Communications ECPs	1	2014	2	2018
Systems Development: Acquisition Reviews: A2AD - SRR	2	2015	2	2015
Systems Development: Acquisition Reviews: A2AD- SFR	3	2016	3	2016
Systems Development: Acquisition Reviews: A2AD- OTRR	4	2018	4	2018
Systems Development: Hardware Development: TT Preplanned Product Improvement (P3I)	1	2014	4	2020
Systems Development: Reviews: TTWCS V5.4.0.2 OTRR	4	2015	4	2015
Systems Development: Reviews: TTWCS V5.4.0.2 Fleet Release	2	2016	2	2016
Test and Evaluation: TTWCS V5.6 Modernized Missile DT/OT	1	2018	4	2020
Test and Evaluation: TMPC 5.0 Test	1	2014	2	2015
Production Milestones: Contract Awards: ECP Kit Award	3	2018	3	2018
Production Milestones: TACTOM Baseline Improvement Deliveries: 1st Modernized Missile Delivery	2	2020	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204229N / *Tomahawk Mssn Planning Ctr*	Project (Number/Name) 3378 / *Next Generation Land Attack Weapon (NGLAW)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3378: *Next Generation Land Attack Weapon (NGLAW)*	-	-	5.000	-	-	-	-	-	-	-	-	5.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funding for the Next Generation Land Attack Weapon has moved from Program Element 0204229N (Tomahawk Mission Planning Center) to 0604659N (Precision Strike Weapons Development Program) under the same Project Unit of 3378 effective FY 2016.

A. Mission Description and Budget Item Justification

Funding is provided for a Next Generation Land Attack Weapon (NGLAW), a weapons system that is long range, survivable and can be launched from multiple surface and submarine platforms. NGLAW will incorporate evaluated existing and emergent technologies to support an improved strike capability with an Initial Operational Capability (IOC) no later than 2024.

This effort will enter the Analysis of Alternatives (AoA) phase of the acquisition cycle in FY15. Upon completion, the Department of the Navy will assess the results of the AoA and make a determination on a preferred material approach, the phase of the acquisition cycle the program will enter, and when the NGLAW weapon will achieve IOC.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Next Generation Land Attack Weapon	-	5.000	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: Conduct a thorough AoA assessing existing weapons systems, emergent technologies, and industry Internal Research and Development (IRAD) activities/proposals; develop potential Program of Record (POR) costs, schedules, and risks, as they apply to each. Conduct threat assessments based on current and future scenarios and environments to inform performance requirements and relevant technology which will be matured to provide potential NGLAW solution.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204229N / *Tomahawk Mssn Planning Ctr*	**Project (Number/Name)** 3378 / *Next Generation Land Attack Weapon (NGLAW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	-	5.000	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN/2101: *Tomahawk*	307.456	317.458	184.814	-	184.814	22.546	39.901	39.405	40.290	590.684	13,849.818
• OPN/5253: *Tomahawk Support Equipment*	63.370	60.062	71.245	-	71.245	73.995	73.505	73.007	73.118	Continuing	Continuing
• OPN/9020: *Initial and Vendor Direct Spares*	0.158	0.240	0.161	-	0.161	0.216	0.220	0.277	0.152	Continuing	Continuing

Remarks

D. Acquisition Strategy

Initiate AoA in FY15.

E. Performance Metrics

Obtain CBA and initiate AoA for NGLAW by the end of FY15.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204229N / *Tomahawk Mssn Planning Ctr*	Project (Number/Name) 3378 / *Next Generation Land Attack Weapon (NGLAW)*	

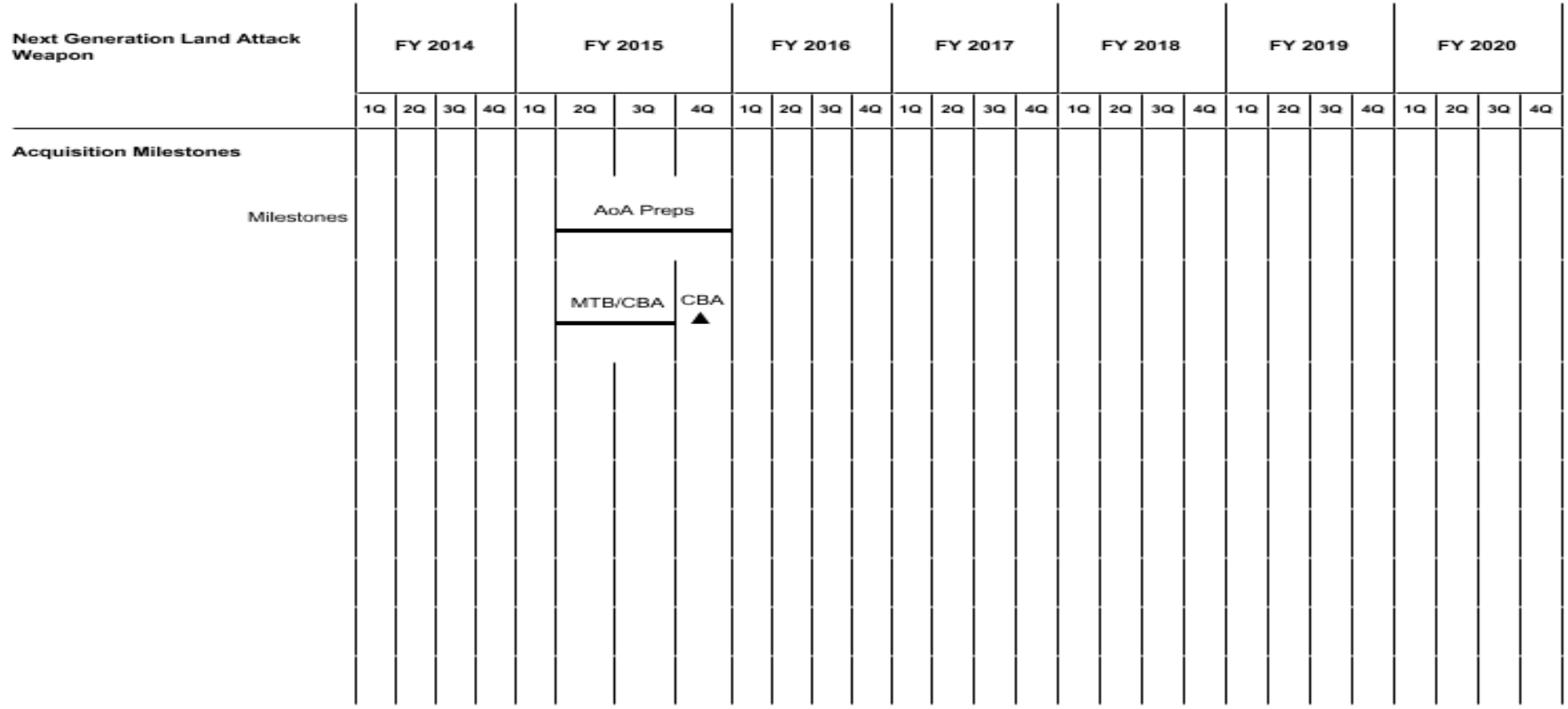
Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NAWC-WD : China Lake, CA	0.000	-		2.000	Feb 2015	-		-		-	-	2.000	-
Development Support	WR	NAWC-AD : Pax River MD	0.000	-		2.000	Feb 2015	-		-		-	-	2.000	-
Development Support	SS/CPFF	UARC APL : Laurel, MD	0.000	-		1.000	Apr 2015	-		-		-	-	1.000	-
		Subtotal	0.000	-		5.000		-		-		-	-	5.000	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		5.000		-		-		-	-	5.000	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204229N / *Tomahawk Mssn Planning Ctr*	**Project (Number/Name)** 3378 / *Next Generation Land Attack Weapon (NGLAW)*



2016PB - 0204229N - 3378

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204229N / *Tomahawk Mssn Planning Ctr*	**Project (Number/Name)** 3378 / *Next Generation Land Attack Weapon (NGLAW)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Next Generation Land Attack Weapon				
Acquisition Milestones: Milestones: AoA Preparations	2	2015	4	2015
Acquisition Milestones: Milestones: Mission Technical Baseline/Capabilities Baseline Assessment	2	2015	3	2015
Acquisition Milestones: Milestones: CBA	4	2015	4	2015

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0204311N *I Integrated Surveillance System*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	343.477	41.609	34.471	54.218	-	54.218	26.160	26.139	26.744	27.310	Continuing	Continuing
0344: *SUB AUXILIARIES*	2.767	0.904	0.811	0.921	-	0.921	0.905	0.873	0.892	0.911	Continuing	Continuing
0766.: *IUSS Detect/Classif System*	340.710	40.705	33.660	53.297	-	53.297	25.255	25.266	25.852	26.399	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element (PE) comprises two projects - 0766 and 0344. Project 0766 provides for Integrated Undersea Surveillance Systems (IUSS) Research and Development Projects under the Maritime Surveillance Systems (MSS) Program Office (PEO SUB PMS 485). IUSS provides the Navy with its primary means of submarine detection both nuclear and diesel. A portion of project 0766 (FSS) is classified, with details available at a higher classification level. Project 0344 funds the Shallow Water Surveillance System (SWSS) project to develop and demonstrate the technology to enable autonomous installation of a passive acoustic array with processing and communications gear.

The IUSS Research and Development project (0766) funds SURTASS Passive and SURTASS Low Frequency Active (LFA) developments. SURTASS provides the mobile, tactical arm of the Integrated Undersea Surveillance System, providing long range detection and cueing for tactical weapons platforms against both diesel and nuclear powered submarines. SURTASS LFA provides an active adjunct capability for IUSS passive and tactical sensors to assist in countering the quieter diesel and nuclear threats of the 1990s and beyond. The LFA tasks are directed at detection of slow quiet threats in harsh littoral waters.

In order to continue with reductions in life cycle costs and continue with system-wide consolidation, a short-term goal is to develop a common IUSS processor based on NAVSEA's Acoustic Rapid COTS Insertion (ARCI) program, with a cyclical tech refresh of hardware and software in conjunction with the submarine Advanced Processor Build (APB) process. The IUSS Integrated Common Processor (ICP) has the capability to process and display data from all fixed and mobile underwater systems. The IUSS ICP will be used for all new system installations and replace the legacy systems as they reach end of life and require upgrading. Additionally, SURTASS has consolidated on the TB-29A Twin-line array, a variant of the Submarine TB-29A Long line array. This reduced the number of array variants employed by SURTASS from 3 to 1, and enabled development and logistics cost savings by leveraging off the submarine TB-29A program.

The Shallow Water Surveillance System (SWSS) project (0344) funds the development and demonstration of the Version 1 system with technology to enable autonomous classification and reporting of specific submarine targets of interest.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204311N *I Integrated Surveillance System*	

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	41.609	39.371	31.473	-	31.473
Current President's Budget	41.609	34.471	54.218	-	54.218
Total Adjustments	-	-4.900	22.745	-	22.745
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.900			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	25.000	-	25.000
• Rate/Misc Adjustments	-	-	-2.255	-	-2.255

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

Program Adjustments:
Decrease of $4.9M in FY15 is a classified adjustment. Details are available at a higher level of classification.
Increase of $25.0M in FY16 is to accelerate IUSS Capability. Increase is in response to an Emerging Threat Advisory Board (ETAB) recommendation.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204311N / *Integrated Surveillance System*	Project (Number/Name) 0344 / *SUB AUXILIARIES*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0344: *SUB AUXILIARIES*	2.767	0.904	0.811	0.921	-	0.921	0.905	0.873	0.892	0.911	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Shallow Water Surveillance System (SWSS) project (0344) funds the development and demonstration of the Version 1 system with technology to enable autonomous classification and reporting of specific submarine targets of interest.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: SWSS	0.904	0.811	0.921	-	0.921
Articles:	-	-	-	-	-
FY 2014 Accomplishments: FY14 SWSS funding was used to continue new development and integration of components to support FY15 system demonstration.					
FY 2015 Plans: FY15 SWSS funding will be used to complete system integration test and to conduct initial fully integrated system demonstration. Following system demonstration, system ruggedization testing and transition to manufacturing efforts will be conducted.					
FY 2016 Base Plans: FY16 funding will be used to implement features for system ruggedization and reliability testing.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.904	0.811	0.921	-	0.921

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Under Development

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0344 / *SUB AUXILIARIES*

E. Performance Metrics

SWSS Requirements Document has been developed. Details are available at a higher level of classification.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0344 / *SUB AUXILIARIES*

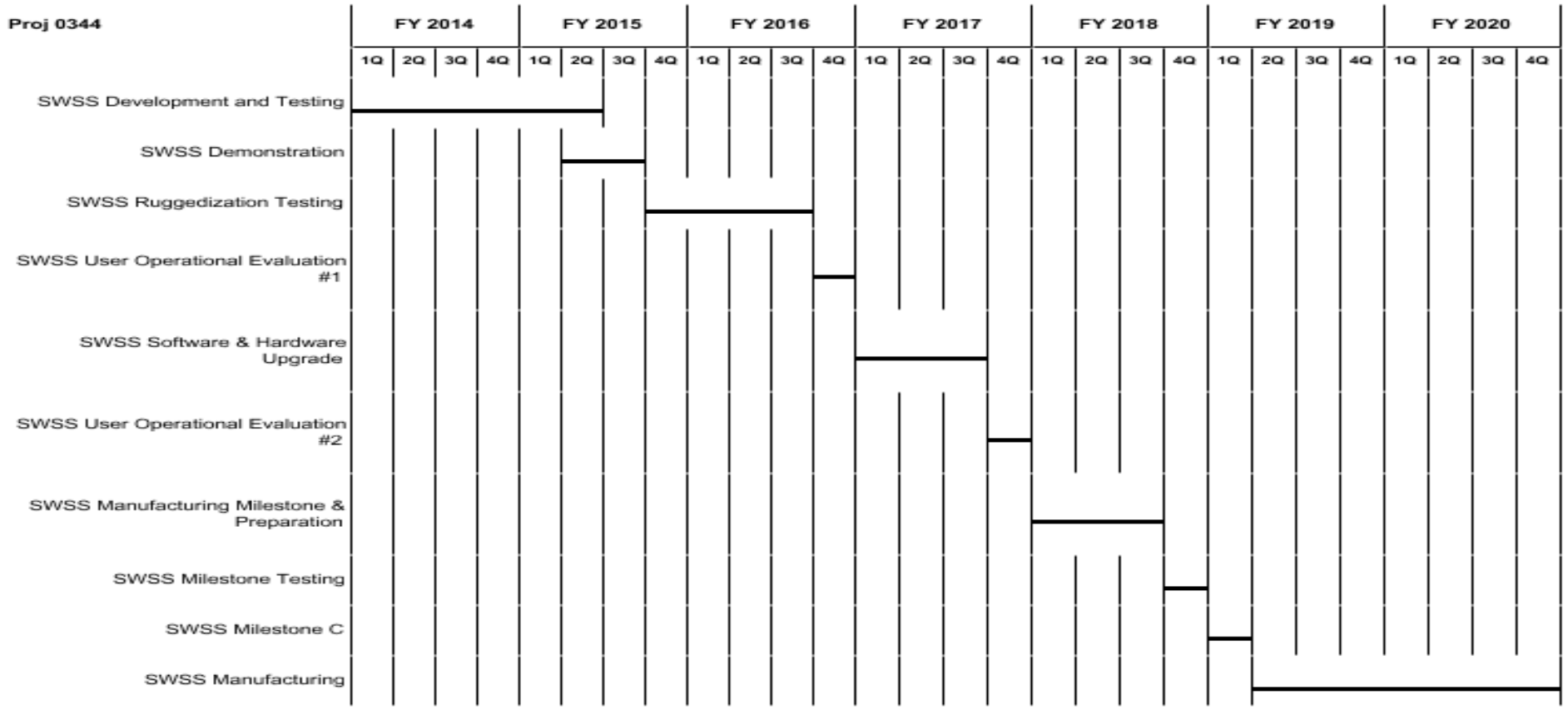
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering Trade Studies	WR	SSC PAC : San Diego CA	1.000	-		-		-		-		-	-	1.000	-
Component Technology Risk Reduction Testing	WR	SSC PAC : San Diego CA	1.767	0.709	Nov 2013	0.621	Nov 2014	-		-		-	-	3.097	-
Makai Development	SS/CPFF	Makai : Honolulu HI	0.000	0.195	Jan 2014	0.190	Jan 2015	-		-		-	-	0.385	-
System Ruggedization and Reliability Testing	WR	SSC PAC : San Diego CA	0.000	-		-		0.621	Dec 2015	-		0.621	-	0.621	-
User Operational Evaluation	WR	SSC PAC : San Diego CA	0.000	-		-		0.300	Dec 2015	-		0.300	Continuing	Continuing	Continuing
		Subtotal	2.767	0.904		0.811		0.921		-		0.921	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.767	0.904		0.811		0.921		-		0.921	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0344 / *SUB AUXILIARIES*



2016PB - 0204311N - 0344

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0344 / *SUB AUXILIARIES*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0344				
SWSS Development and Testing: System Development and Subsystem Testing	1	2014	2	2015
SWSS Demonstration: System Demonstration	2	2015	3	2015
SWSS Ruggedization Testing: Ruggedization Testing	4	2015	3	2016
SWSS User Operational Evaluation #1: SWSS User Operational Evaluation #1	4	2016	4	2016
SWSS Software & Hardware Upgrade: SWSS Software & Hardware Upgrade	1	2017	3	2017
SWSS User Operational Evaluation #2: SWSS User Operational Evaluation #2	4	2017	4	2017
SWSS Manufacturing Milestone & Preparation: SWSS Manufacturing Milestone & Preparation	1	2018	3	2018
SWSS Milestone Testing: SWSS Milestone Testing	4	2018	4	2018
SWSS Milestone C: SWSS Milestone C	1	2019	1	2019
SWSS Manufacturing: Manufacturing	2	2019	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204311N / *Integrated Surveillance System*	Project (Number/Name) 0766. / *IUSS Detect/Classif System*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0766.: *IUSS Detect/Classif System*	340.710	40.705	33.660	53.297	-	53.297	25.255	25.266	25.852	26.399	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

A. This project includes efforts for SURTASS. The SURTASS project comprises the mobile, tactical arm of the Integrated Undersea Surveillance System, providing long range detection and cueing for tactical weapons platforms against both diesel and nuclear powered submarines. SURTASS also provides the undersea surveillance necessary to support regional conflicts and sea-lane protection. SURTASS has experienced recent passive and active success against diesel submarines operating in shallow water. SURTASS is leveraging existing developments and reducing costs by using Non-Developmental Items and commercial hardware, supporting common Navy Undersea Warfare processing and towed array developments, and increasing operator efficiency through computer-aided detection and classification processing. SURTASS development efforts include LFA improvements, common IUSS processing, twin-line array development and processing, improved detection and classification/passive automation to counter quieter threats, additional signal processing, integrated active and passive operations, improved Battle Group support, and improved information processing.

LFA provides an active adjunct capability for IUSS passive and tactical sensors to counter the quieter diesel and nuclear threats of the 1990s and beyond. The LFA tasks are directed at detection of slow, quiet threats in harsh littoral waters. Improvements include TL-29A/LFA integration enhancements, advanced waveforms for littoral/shallow water operations including Doppler sensitive waveforms, and processing algorithms to reduce clutter and reverberation false alarms in shallow water. The LFA task includes development and testing of a compact LFA transmit source array for SWATH-P ships, and upgrade of LFA processing capability in the IUSS Integrated Common Processing (ICP) architecture. The ICP is a derivative of the NAVSEA Submarine Acoustic Rapid COTS Insertion (ARCI) program, and is being augmented for IUSS requirements. Together, the LFA improvements, TL-29A, and the ICP support the SURTASS Active Improvement Program.

Functional improvements are delivered to the Fleet in software "builds" while hardware improvements are delivered through the Tech Insertion (TI) process. Software improvements delivered via the Advanced Surveillance Build (ASB) process are based on the Advanced Processor Build (APB) process begun by the NAVSEA Submarine USW program. Each ASB will introduce new capabilities into SURTASS systems including improved automation, normalizer techniques, adaptive beam forming, and display enhancements. SURTASS participates in the process by contributing algorithms for consideration, supplying peer group members for review of candidate algorithms, participating in test evolutions, and incorporating improved algorithms into operational systems. The TI process, modeled after the NAVSEA Submarine USW hardware improvement program, delivers processing technology improvements to platforms on roughly a 4-year cycle. Hardware upgrades for active and passive arrays and communications systems will also be provided during TI upgrades, but not on a regular planned development cycle as for the processing upgrades.

B. PEO SUB is involved with the development and maintenance of various IUSS systems. These systems include FDS, FDS-C, and SURTASS. The near-term goal is development of ICP, which will result in a single IUSS processor baseline, with minor maintenance efforts continuing on fielded systems. The existing system architecture, signal processing, contact management, and reporting requirements will be evaluated as well as the requirements for future systems. The development

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0766. / *IUSS Detect/Classif System*

of the ICP will take advantage of automation advancement, array technology improvements, along with IUSS, submarine, and surface USW system commonality. Additionally, a long term goal is to activate all IUSS sensors as part of a coordinated Active Improvement Program.
The FSS portion of 0766 is classified with details available at a higher classification level.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Integrated Common Processor (ICP)	10.389	9.633	11.074	-	11.074
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued development of new automation algorithms and techniques for addressing multi-array high beam count requirements. Continued to develop software to implement technology refresh for SURTASS ships as well the Integrated Undersea Surveillance Systems' (IUSS) Advanced Surveillance Build (ASB) in coordination with the Submarine Acoustic Rapid Commercial Off The Shelf (COTS) Insertion (ARCI) program Advanced Processor Build (APB). Continued to address processing improvement recommendations and deficiencies associated with CLFA DT/OT and LFA FOT&E.					
FY 2015 Plans: Continue development of operator automation to allow operator to more quickly detect targets of interest. Specific focus on compensating for array shape in a ship maneuver as well as system improvements to alert the operator of potential targets of interest in both the active and passive realms. Continue to develop software to implement technology refresh for SURTASS ships as well the Integrated Undersea Surveillance Systems' (IUSS) Advanced Surveillance Build (ASB) in coordination with the Submarine Acoustic Rapid Commercial Off The Shelf (COTS) Insertion (ARCI) program Advanced Processor Build (APB). Continue to address processing improvement recommendations and deficiencies associated with CLFA and/or LFA FOT&E and/or DT/OT.					
FY 2016 Base Plans: Continue development of operator automation to allow operator to more quickly detect targets of interest. Specific focus on compensating for array shape in a ship maneuver as well as system improvements to alert the operator of potential targets of interest in both the active and passive realms. Continue to develop software to implement technology refresh for SURTASS ships as well the Integrated Undersea Surveillance Systems' (IUSS) Advanced Surveillance Build (ASB) in coordination with the Submarine Acoustic Rapid Commercial Off The Shelf (COTS) Insertion (ARCI) program Advanced Processor Build (APB). Continue to address processing improvement recommendations and deficiencies associated with CLFA and/or LFA FOT&E and/or DT/OT.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0766. / *IUSS Detect/Classif System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Update processing to provide seamless integration of active/passive processing to support geo-centric contact-based search. Investigate methods to reduce surface ship clutter in order to enhance detection performance. Support technical insertion hardware replacement to enhance ICP surveillance capability. ***FY 2016 OCO Plans:*** N/A					
Title: Compact Low Frequency Active ***Articles:*** ***FY 2014 Accomplishments:*** Continued development of product improvements and corrections associated with CLFA DT/OT and LFA FOT&E. Conducted at-sea testing of product improvements. ***FY 2015 Plans:*** Continue development of product improvements and corrections associated with CLFA DT/OT and LFA FOT&E. Conduct at-sea testing of product improvements. ***FY 2016 Base Plans:*** Continue product improvement and upgrade efforts associated with CLFA DT/OT and LFA FOT&E. Conduct pierside and at-sea test and evaluation efforts to research alternative LFA/CLFA system performance enhancements. ***FY 2016 OCO Plans:*** N/A	1.750 -	1.500 -	1.750 -	- -	1.750 -
Title: TB-29A/Twin-Line ***Articles:*** ***FY 2014 Accomplishments:*** Continued development of connectionless array technologies and true fiber-optic arrays. Continued efforts to explore Twin-line variants of new submarine Long-line arrays for future application to SURTASS. Continued development of fishing net mitigation approaches. ***FY 2015 Plans:***	1.750 -	1.500 -	1.750 -	- -	1.750 -

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0766. / *IUSS Detect/Classif System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue development of connectionless array technologies and true fiber-optic arrays. Continue efforts to explore Twin-line variants of new submarine Long-line arrays for future application to SURTASS. Continue development of fishing net mitigation approaches. ***FY 2016 Base Plans:*** Continue development of connectionless array technologies and true fiber-optic arrays. Continue efforts to explore Twin-line variants of new submarine Long-line arrays for future application to SURTASS. Continue development of fishing net mitigation approaches and associated test and evaluation efforts. Develop upgraded components to enhance system performance ***FY 2016 OCO Plans:*** N/A					
Title: Classified Effort	26.816	21.027	38.723	-	38.723
Articles:	-	-	-	-	-
Description: The FSS portion of 0766 is classified with details available at a higher classification level. ***FY 2014 Accomplishments:*** The FSS portion of 0766 is classified with details available at a higher classification level. ***FY 2015 Plans:*** The FSS portion of 0766 is classified with details available at a higher classification level. ***FY 2016 Base Plans:*** The FSS portion of 0766 is classified with details available at a higher classification level. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	40.705	33.660	53.297	-	53.297

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0766. / *IUSS Detect/Classif System*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/2237: *Surveillance Towed Array Sensor System*	9.545	9.619	12.953	-	12.953	4.208	14.778	12.051	15.519	Continuing	Continuing

Remarks

D. Acquisition Strategy

FY 2010: T&E Milestones: CLFA/TL-29A/ICP DT.
FY 2011: Engineering Milestones: ICP Tech Refresh.
FY 2011: T&E Milestones: CLFA/TL-29A/ICP DT. LFA/TL-29A/ICP FOT&E.
FY 2012: T&E Milestones: CLFA/TL-29A/ICP DT/OT. LFA/TL-29A/ICP FOT&E.
FY 2013: LFA/TL-29A/ICP FOT&E.
FY 2014: ICP Tech Refresh. LFA/CLFA/TL/29A/ICP FOT&E
FY 2015: ICP Tech Refresh. LFA/CLFA/TL/29A/ICP FOT&E
The FSS portion of 0766 is classified with details available at a higher classification level.

E. Performance Metrics

Successfully achieve CLFA Initial Operational Capability. Successfully complete CLFA Operational Test Readiness Review. Successfully complete CLFA Developmental Test / Operational Test. Successful demonstration of required LFA/CLFA improvements capability. Successful transition of Submarine Advanced Processing Build (APB) functionality into IUSS products. Successful transition of net mitigation technologies into Towed Array baseline.
The FSS portion of 0766 is classified with details available at a higher classification level.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0766. / *IUSS Detect/Classif System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IUSS COMMON ARCHITECTURE	C/CPFF	LOCKHEED MARTIN : VA	19.977	4.841	Nov 2013	4.792	Nov 2014	4.801	Dec 2015	-		4.801	Continuing	Continuing	Continuing
IUSS COMMON ARCHITECTURE	SS/CPFF	APL/JHU : MD	1.668	0.540	Nov 2013	0.513	Nov 2014	0.640	Feb 2016	-		0.640	Continuing	Continuing	Continuing
IUSS COMMON ARCHITECTURE	Various	VARIOUS : Not Specified	65.173	0.764	Nov 2013	0.659	Nov 2014	1.593	Dec 2015	-		1.593	Continuing	Continuing	Continuing
IUSS COMMON ARCHITECTURE	C/CPFF	ADAPTIVE Methods : VA	1.025	0.575	Dec 2013	0.550	Nov 2014	0.500	Dec 2015	-		0.500	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENT/ CLFA/LFA	WR	NFESC : CA	0.962	0.420	Nov 2013	0.425	Nov 2014	0.425	Dec 2015	-		0.425	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENT/ CLFA/LFA	WR	SSC PAC : CA	0.877	0.240	Nov 2013	0.225	Nov 2014	0.240	Dec 2015	-		0.240	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENT/ CLFA/LFA	SS/CPFF	APL/JHU : MD	1.455	0.464	Nov 2013	0.374	Nov 2014	0.610	Feb 2016	-		0.610	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENT/ CLFA/LFA	Various	VARIOUS : Not Specified	116.910	0.081	Nov 2013	0.081	Nov 2014	-		-		-	-	117.072	-
ARRAY IMPROVEMENTS	SS/CPFF	APL/JHU : VA	1.396	0.652	Nov 2013	0.575	Nov 2014	0.735	Feb 2016	-		0.735	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	WR	ADAPTIVE METHODS : VA	0.566	0.223	Nov 2013	0.200	Nov 2014	0.225	Jan 2016	-		0.225	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	Various	VARIOUS : Not Specified	8.790	0.319	Nov 2013	0.296	Nov 2014	0.310	Dec 2015	-		0.310	Continuing	Continuing	Continuing
FSS - Classified	Various	TBD : Not Specified	49.304	26.816	Nov 2013	21.027	Nov 2014	38.723	Nov 2015	-		38.723	Continuing	Continuing	Continuing
		Subtotal	268.103	35.935		29.717		48.802		-		48.802	-	-	-

Remarks

The FSS portion of 0766 is classified with details available at a higher classification level.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0766. / *IUSS Detect/Classif System*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IUSS COMMON ARCHITECTURE	WR	SSC PAC : CA	3.418	0.300	Nov 2013	0.274	Nov 2014	0.250	Dec 2015	-		0.250	Continuing	Continuing	Continuing
IUSS COMMON ARCHITECTURE	C/CPFF	APL/JHU : MD	0.487	0.490	Jan 2014	0.434	Nov 2014	0.700	Feb 2016	-		0.700	Continuing	Continuing	Continuing
IUSS COMMON ARCHITECTURE	C/CPFF	Lockheed Martin : VA	0.912	0.940	Nov 2013	0.700	Nov 2014	0.700	Dec 2015	-		0.700	Continuing	Continuing	Continuing
IUSS COMMON ARCHITECTURE	Various	VARIOUS : Not Specified	4.046	0.303	Nov 2013	0.277	Nov 2014	0.280	Dec 2015	-		0.280	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENTS/CLFA/ LFA	WR	SSC PAC : CA	0.498	0.165	Nov 2013	0.115	Nov 2014	0.150	Dec 2015	-		0.150	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENTS/CLFA/ LFA	Various	VARIOUS : Not Specified	7.394	0.093	Nov 2013	0.068	Nov 2014	0.075	Jan 2016	-		0.075	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	Various	VARIOUS : Not Specified	0.867	0.280	Nov 2013	0.205	Nov 2014	0.200	Jan 2016	-		0.200	Continuing	Continuing	Continuing
		Subtotal	17.622	2.571		2.073		2.355		-		2.355	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IUSS COMMON ARCHITECTURE	C/CPFF	LOCKHEED MARTIN : VA	2.384	0.675	Nov 2013	0.582	Nov 2014	0.700	Dec 2015	-		0.700	Continuing	Continuing	Continuing
IUSS COMMON ARCHITECTURE	Various	VARIOUS : Not Specified	7.120	0.377	Nov 2013	0.334	Nov 2014	0.375	Dec 2015	-		0.375	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENTS/CLFA/ LFA	WR	OPTEVFOR : Not Specified	0.250	0.124	Nov 2013	0.088	Nov 2014	0.090	Mar 2016	-		0.090	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENTS/CLFA/ LFA	Various	VARIOUS : Not Specified	20.723	0.070	Nov 2013	0.056	Nov 2014	0.070	Dec 2015	-		0.070	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0766. / *IUSS Detect/Classif System*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ARRAY IMPROVEMENTS	SS/CPFF	APL/JHU : MD	0.385	0.185	Nov 2013	0.135	Nov 2014	0.185	Feb 2016	-		0.185	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	Various	VARIOUS : Not Specified	2.768	-	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	33.630	1.431		1.195		1.420		-		1.420	-	-	-

Management Services ($ in Millions)

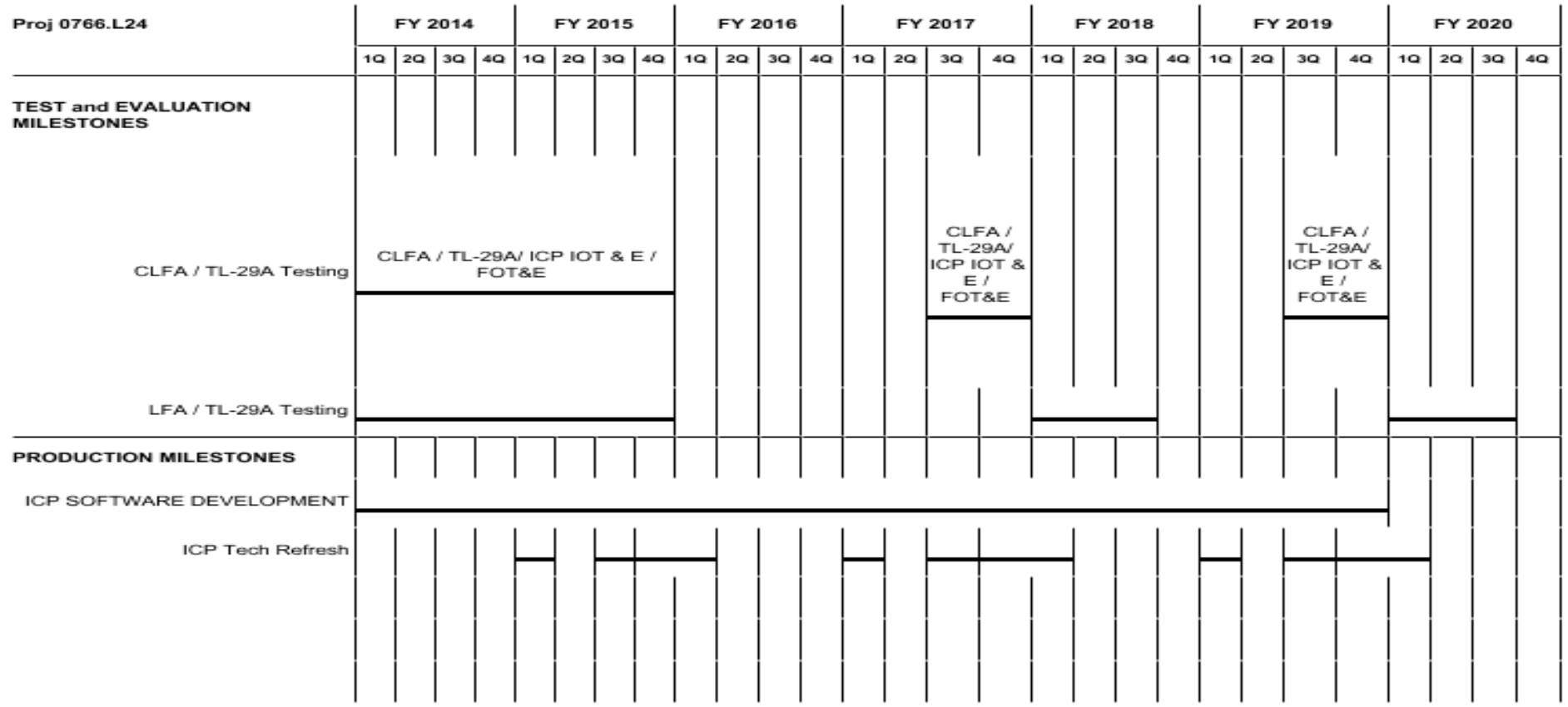
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IUSS COMMON ARCHITECTURE	Various	VARIOUS : Not Specified	5.473	0.584	Nov 2013	0.518	Nov 2014	0.535	Mar 2016	-		0.535	Continuing	Continuing	Continuing
ACTIVE IMPROVEMENTS/CLFA/ LFA	Various	VARIOUS : Not Specified	15.599	0.093	Nov 2013	0.068	Nov 2014	0.090	Mar 2016	-		0.090	Continuing	Continuing	Continuing
ARRAY IMPROVEMENTS	Various	VARIOUS : Not Specified	0.283	0.091	Nov 2013	0.089	Nov 2014	0.095	Mar 2016	-		0.095	Continuing	Continuing	Continuing
		Subtotal	21.355	0.768		0.675		0.720		-		0.720	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	340.710	40.705		33.660		53.297		-		53.297	-	-	-

Remarks

The R3 and the R4 / R4A reflect the UNCLASSIFIED portion of the PE.
The FSS portion of 0766 is classified with details available at a higher classification level.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0766. / *IUSS Detect/Classif System*



2016PB - 0204311N - 0766.L24

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204311N / *Integrated Surveillance System*	**Project (Number/Name)** 0766. / *IUSS Detect/Classif System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0766.L24				
TEST and EVALUATION MILESTONES: CLFA / TL-29A Testing: CLFA / TL-29A/ ICP IOT & E / FOT&E (COMPL 2015)	1	2014	4	2015
TEST and EVALUATION MILESTONES: CLFA / TL-29A Testing: CLFA / TL-29A/ ICP IOT & E / FOT&E (COMPL 2017)	3	2017	4	2017
TEST and EVALUATION MILESTONES: CLFA / TL-29A Testing: CLFA / TL-29A/ ICP IOT & E / FOT&E (COMPL 2019)	3	2019	4	2019
TEST and EVALUATION MILESTONES: LFA / TL-29A Testing: LFA / TL-29A/ ICP FOT & E (COMPLETE 2016)	1	2014	4	2015
TEST and EVALUATION MILESTONES: LFA / TL-29A Testing: LFA / TL-29A/ ICP FOT & E (COMPLETE 2018)	1	2018	3	2018
TEST and EVALUATION MILESTONES: LFA / TL-29A Testing: LFA / TL-29A/ ICP FOT & E (COMPLETE 2020)	1	2020	3	2020
PRODUCTION MILESTONES: ICP SOFTWARE DEVELOPMENT: ICP Software Development	1	2014	4	2019
PRODUCTION MILESTONES: ICP Tech Refresh: ICP Tech Refresh 1st QTR FY15	1	2015	1	2015
PRODUCTION MILESTONES: ICP Tech Refresh: ICP Tech Refresh 3rd QTR FY15	3	2015	3	2015
PRODUCTION MILESTONES: ICP Tech Refresh: ICP Tech Refresh 4th QTR FY15	4	2015	1	2016
PRODUCTION MILESTONES: ICP Tech Refresh: ICP Tech Refresh 1st QTR FY17	1	2017	1	2017
PRODUCTION MILESTONES: ICP Tech Refresh: ICP Tech Refresh 3rd QTR FY17	3	2017	3	2017
PRODUCTION MILESTONES: ICP Tech Refresh: ICP Tech Refresh 4th QTR FY17	4	2017	1	2018
PRODUCTION MILESTONES: ICP Tech Refresh: ICP Tech Refresh 1st QTR FY19	1	2019	1	2019
PRODUCTION MILESTONES: ICP Tech Refresh: ICP Tech Refresh 3rd QTR FY19	3	2019	3	2019
PRODUCTION MILESTONES: ICP Tech Refresh: ICP Tech Refresh 4th QTR FY19	4	2019	1	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0204413N *I Amphibious Tactical Supt Units*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	24.328	4.534	4.609	11.335	-	11.335	8.900	2.111	1.629	1.662	Continuing	Continuing
2231: *SC(X)(R)*	24.328	4.534	4.027	11.335	-	11.335	8.900	2.111	1.629	1.662	Continuing	Continuing
2909: *Amphibious Lighterage Development*	0.000	-	0.582	-	-	-	-	-	-	-	-	0.582

A. Mission Description and Budget Item Justification

Landing Craft Air Cushion (LCAC) Technology Transition: Provides for research and development efforts on LCAC Future Naval Capabilities to transfer technologies to functional uses on current LCACs. Current technology initiatives include sustainability/readiness/performance analyses, LCAC communication improvements, development and qualification of Full Authority Digital Engine Controller (FADEC) for LCAC engines, new torque meter design for LCAC ETF40B engines, Marine Rotor Active Balancing System (MRABS), and LCAC fuel efficiency initiatives.

Surface Connector (X) Replacement (SC(X)(R)): Replacement program for the current Landing Craft Utility (LCU) 1610 class craft - a class of craft that has significantly exceeded its 20-year planned service life. SC(X)(R) will provide similar payload, range, speed, and interoperability. Procurement is currently scheduled to begin in FY18.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	4.382	4.609	11.026	-	11.026
Current President's Budget	4.534	4.609	11.335	-	11.335
Total Adjustments	0.152	-	0.309	-	0.309
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.162	-			
• SBIR/STTR Transfer	-0.010	-			
• Program Adjustments	-	-	0.366	-	0.366
• Rate/Misc Adjustments	-	-	-0.057	-	-0.057

Change Summary Explanation

The FY 2016 funding request was reduced by $1.334 million to account for the availability of prior year execution balances and increased $1.700 million to address SC(X)(R) RDTEN Design and Development efforts.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204413N *I Amphibious Tactical Supt Units*

FY 2014 program adjustment reflects an increase of $0.162 million to begin the definition of requirements and Analysis of Alternatives (AoA) which would enable the LCAC to transport and perform at-sea launch of legacy and future United States Marine Corps (USMC) vehicles and SBIR transfer of $0.010 million.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204413N / *Amphibious Tactical Supt Units*	Project (Number/Name) 2231 / *SC(X)(R)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2231: *SC(X)(R)*	24.328	4.534	4.027	11.335	-	11.335	8.900	2.111	1.629	1.662	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Landing Craft Air Cushion (LCAC) Technology Transition: Provides for research and development efforts on LCAC Future Naval Capabilities to transfer technologies to functional uses on current LCACs. Current technology initiatives include sustainability/readiness/performance analyses, LCAC communication improvements, development and qualification of Full Authority Digital Engine Controller (FADEC) for LCAC engines, new torque meter design for LCAC ETF40B engines, Marine Rotor Active Balancing System (MRABS), and LCAC fuel efficiency initiatives.

Surface Connector (X) Replacement (SC(X)(R)): Replacement program for the current Landing Craft Utility (LCU) 1610 class craft - a class of craft that has significantly exceeded its 20-year planned service life. SC(X)(R) will provide similar payload, range, speed, and interoperability. Procurement is currently scheduled to begin in FY18.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: LCAC RDT&E,N and LCU Replacement	4.534	4.027	11.335	-	11.335
Articles:	-	-	-	-	-
FY 2014 Accomplishments: FY14 LCAC: Performed full-scale testing of composite vehicle ramps and underway testing of composite propulsion shafting (entire drive train); researched and tested improved bow thruster bearings to achieve increased reliability; initiated the definition of requirements, AoA, and feasibility study in support of the launch of USMC vehicles from an LCAC. FY14 SC(X)(R): Completed Materiel Solution Analysis and the AoA; continued requirements documentation development; conducted Software Specification Review (SSR); initiated preliminary design / contract design; began development of Test and Evaluation Master Plan (TEMP).					
FY 2015 Plans: FY15 LCAC: Perform full-scale testing of all-in-one LCAC power supply capable of charging craft batteries, powering 28VD electronics and providing 60Hz 115VAC power; develop technologies to prevent moisture intrusion into craft windows; develop auxiliary power unit controller to improve visibility and equipment reliability.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204413N / *Amphibious Tactical Supt Units*	**Project (Number/Name)** 2231 / *SC(X)(R)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY15 SC(X)(R): Complete requirements documentation; continue preliminary design / contract design and TEMP development; conduct System Functional Review (SFR) and Preliminary Design Review (PDR); initiate Life Cycle Sustainment Plan (LCSP) development; begin integrated developmental / operational testing; Capability Development Document (CDD) approval. ***FY 2016 Base Plans:*** FY16 LCAC: Improve the reliability of the LCAC main engine fuel shutoff valve and harden main engines against marine corrosion. FY16 SC(X)(R): Complete preliminary design and contract design. Transition from Preliminary Design into Contract Design requires a sub system level of detail and most significantly a design that supports the development of a specification for a Gate 4, Requirement Decision Point (RDP), and System Functional Review (SFR). The design development phase requires the stand up and frequent meeting/support to OSD Integrated Product Teams including systems engineering, acquisition, test, logistics and cost in preparation for MS B. The contract design effort will explore innovative and cost saving concepts such as flexible infrastructure, incorporation of commonality products, and a common design environment. Continue participation by Shipbuilders to support affordability trade-offs and informing a producible design. Milestone B documents will be developed and refined. Continue TEMP and LCSP development Continue integrated developmental and operational testing. Conduct Early Operational Assessment (EOA). ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	4.534	4.027	11.335	-	11.335

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204413N / *Amphibious Tactical Supt Units*	**Project (Number/Name)** 2231 / *SC(X)(R)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN 0970: *Amphibious Tactical Support Units*	14.431	7.158	20.965	-	20.965	3.237	5.445	4.141	5.707	Continuing	Continuing
• SCN 5139: *LCAC SLEP*	80.987	40.485	80.738	-	80.738	82.777	-	-	-	85.054	1,506.232
• SCN 5100: *SC(X)(R) Procurement*	-	-	-	-	-	-	33.842	63.663	64.497	Continuing	Continuing

Remarks

D. Acquisition Strategy

Technology Transition - RDT&E efforts commenced in FY06. Multiple contracts and Field Activities are involved through FY20 to complete the various projects.

E. Performance Metrics

FY14 LCAC: Performed full-scale testing of composite vehicle ramps and underway testing of composite propulsion shafting (entire drive train); researched and tested improved bow thruster bearings to achieve increased reliability; initiated the definition of requirements, AoA, and feasibility study in support of the launch of USMC vehicles from an LCAC.

FY14 SC(X)(R): Completed Materiel Solution Analysis and the AoA; continued requirements documentation development; conducted SSR; initiated preliminary design / contract design; began development of the TEMP.

FY15 LCAC: Perform full-scale testing of all-in-one LCAC power supply capable of charging craft batteries, powering 28VD electronics and providing 60Hz 115VAC power; develop technologies to prevent moisture intrusion into craft windows; develop auxiliary power unit controller to improve visibility and equipment reliability.

FY15 SC(X)(R): Complete requirements documentation; continue preliminary design / contract design and TEMP development; conduct SFR and PDR; initiate LCSP development; begin integrated developmental / operational testing; CDD approval.

FY16 LCAC: Improve the reliability of the LCAC main engine fuel shutoff valve and harden main engines against marine corrosion.

FY16 SC(X)(R):

Complete preliminary design and contract design.

Transition from Preliminary Design into Contract Design requires a sub system level of detail and most significantly a design that supports the development of a specification for a Gate 4, Requirement Decision Point (RDP), and System Functional Review (SFR). The design development phase requires the stand up and frequent meeting/support to OSD Integrated Product Teams including systems engineering, acquisition, test, logistics and cost in preparation for MS B. The contract design effort

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204413N / *Amphibious Tactical Supt Units*	**Project (Number/Name)** 2231 / *SC(X)(R)*

will explore innovative and cost saving concepts such as flexible infrastructure, incorporation of commonality products, and a common design environment. Continue participation by Shipbuilders to support affordability trade-offs and informing a producible design. Milestone B documents will be developed and refined.

Continue TEMP and LCSP development

Continue integrated developmental and operational testing.

Conduct Early Operational Assessment (EOA).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204413N / *Amphibious Tactical Supt Units*	Project (Number/Name) 2231 / *SC(X)(R)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Component Development	WR	NSWC CD : Philadelphia, PA	8.325	-		-		-		-		-	-	8.325	-
Systems Engineering	WR	NSWC CD : Philadelphia, PA	3.229	0.913	Feb 2014	1.196	Feb 2015	1.252	Feb 2016	-		1.252	3.296	9.886	-
SC(X)(R)	Various	Various : Various	2.091	2.382	Apr 2014	1.407	Mar 2015	8.591	Mar 2016	-		8.591	7.087	21.558	-
		Subtotal	13.645	3.295		2.603		9.843		-		9.843	10.383	39.769	-

Remarks

*The key events driving the increase in funding between FY15 and FY16 are the following SC(X)(R) efforts: Transition from Preliminary Design (PD) to Contract Design (CD) efforts. CD efforts translate the engineering findings and decisions from the PD into a biddable technical package, including specifications and contract/guidance drawings, which will allow the shipbuilders to develop competitive bids once the Request for Proposal (RFP) is released. Additionally, the FY16 Product Development funds will support the Test & Evaluation planning, Life Cycle Sustainment Plan (LCSP) development, integrated developmental and operational testing, conduct Early Operational Assessment (EOA), continue document develop for combined Milestone B/C, involve industry in design development through trade studies, and begin prototyping systems efforts.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NSWC PCD : Panama City, FL	6.340	1.037	Apr 2014	1.159	Mar 2015	1.214	Mar 2016	-		1.214	3.195	12.945	-
SC(X)(R)	Various	Various : Various	0.565	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	6.905	1.037		1.159		1.214		-		1.214	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental T&E	WR	Various : Various	0.287	-		-		-		-		-	-	0.287	-
Operational T&E	WR	NSWC PCD : Panama City, FL	0.777	0.156	Mar 2014	0.205	Mar 2015	0.215	Mar 2016	-		0.215	0.565	1.918	-
Test Assets	WR	NSWC PCD : Panama City, FL	0.850	-		-		-		-		-	-	0.850	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204413N / *Amphibious Tactical Supt Units*	**Project (Number/Name)** 2231 / *SC(X)(R)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	1.914	0.156		0.205		0.215		-		0.215	0.565	3.055	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	WR	Various : Various	0.726	-		-		-		-		-	-	0.726	-
Program Mangement Support	WR	NSWC PCD : Panama City, FL	1.063	0.046	Apr 2014	0.060	Apr 2015	0.063	Apr 2016	-		0.063	0.165	1.397	-
Travel	WR	NAVSEA : Not Specified	0.064	-		-		-		-		-	-	0.064	-
DAWDF	MIPR	OSD : Not Specified	0.011	-		-		-		-		-	-	0.011	-
		Subtotal	1.864	0.046		0.060		0.063		-		0.063	0.165	2.198	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	24.328	4.534		4.027		11.335		-		11.335	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204413N / *Amphibious Tactical Supt Units*	**Project (Number/Name)** 2231 / *SC(X)(R)*

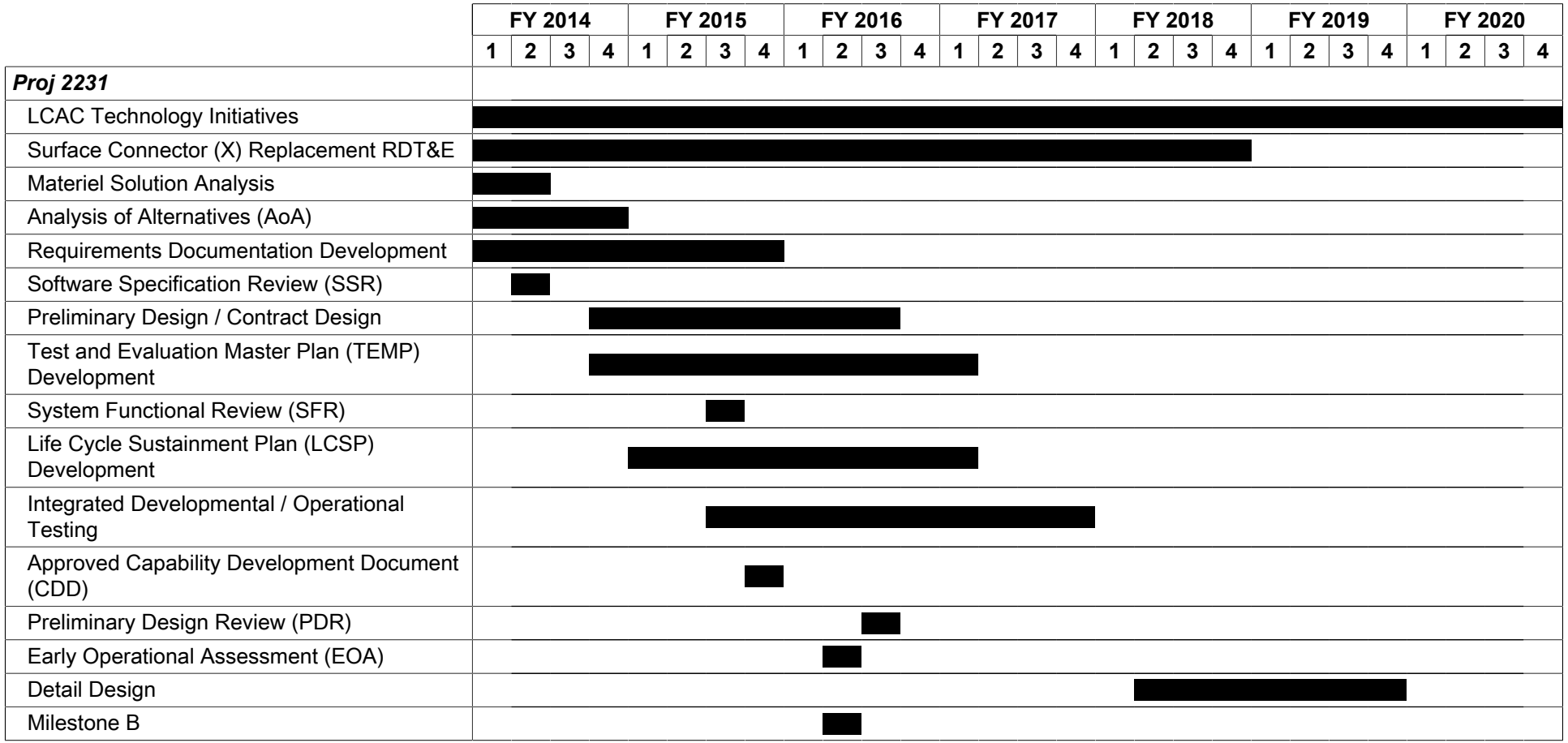

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204413N / *Amphibious Tactical Supt Units*	**Project (Number/Name)** 2231 / *SC(X)(R)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2231				
LCAC Technology Initiatives	1	2014	4	2020
Surface Connector (X) Replacement RDT&E	1	2014	4	2018
Materiel Solution Analysis	1	2014	2	2014
Analysis of Alternatives (AoA)	1	2014	4	2014
Requirements Documentation Development	1	2014	4	2015
Software Specification Review (SSR)	2	2014	2	2014
Preliminary Design / Contract Design	4	2014	3	2016
Test and Evaluation Master Plan (TEMP) Development	4	2014	1	2017
System Functional Review (SFR)	3	2015	3	2015
Life Cycle Sustainment Plan (LCSP) Development	1	2015	1	2017
Integrated Developmental / Operational Testing	3	2015	4	2017
Approved Capability Development Document (CDD)	4	2015	4	2015
Preliminary Design Review (PDR)	3	2016	3	2016
Early Operational Assessment (EOA)	2	2016	2	2016
Detail Design	2	2018	4	2019
Milestone B	2	2016	2	2016

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204413N / *Amphibious Tactical Supt Units*	Project (Number/Name) 2909 / *Amphibious Lighterage Development*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2909: *Amphibious Lighterage Development*	-	-	0.582	-	-	-	-	-	-	-	-	0.582
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Sealift support amphibious vehicle which will be the Lighter Amphibious Resupply Cargo, 5 ton (LARC-V) Replacement, provides amphibious equipment and personnel transport and near shore salvage and diving capability. It is a vital piece of equipment required for the execution of the Naval Beach Group (NBG)and Underwater Construction Team (UCT) missions.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: New Accomplishment/Planned Program Entry	-	0.582	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: New Start Project not funded for FY14 "Technology investigation unfunded outyear requirement".					
FY 2015 Plans: Commence Technology Investigation in FY15, NAVFAC HQ, NAVFAC field activity and other agencies are involved in this effort. Research for the propulsion systems and human interface with replacement near shore amphibious initiatives.					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	0.582	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204413N / *Amphibious Tactical Supt Units*	**Project (Number/Name)** 2909 / *Amphibious Lighterage Development*

D. Acquisition Strategy

RDT&E funding is required to begin development of a replacement amphibious vehicle to support OPLAN and Required Operational Capability/Potential Operation Environment (ROC/POE) requirements of the NBGs and UCTs. Technology Investigation to commence in FY15, Naval Facilities Engineering Command (NAVFAC)HQ, NAVFAC field activity and other agencies are involved in this effort.

E. Performance Metrics

FY15:
15 Oct 2014 Award Engineering and Manufacturing Development (EMD) contract
15 Dec 2014 Award Low Rate Initial Production (LRIP) contract

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204413N / *Amphibious Tactical Supt Units*	**Project (Number/Name)** 2909 / *Amphibious Lighterage Development*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Amphibious Vehicle Replacement	WR	Engineering Expeditionary Warfare Center (EXWC) : Port Hueneme, CA	0.000	-		0.582	Jan 2015	-		-		-	-	0.582	0.900
		Subtotal	0.000	-		0.582		-		-		-	-	0.582	0.900

Remarks

RDTEN funding is required to begin development of a replacement amphibious vehicle to support OPLAN and Required Operational Capability/Potential Operation Environment (ROC/POE) requirements of the NBGs and UCTs.

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.582		-		-		-	-	0.582	0.900

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204413N / *Amphibious Tactical Supt Units*	**Project (Number/Name)** 2909 / *Amphibious Lighterage Development*

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 2909																												
Development of acquisition and design requirements for Amphibious Vehicle Replacement					[redacted]																							

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204413N / *Amphibious Tactical Supt Units*	**Project (Number/Name)** 2909 / *Amphibious Lighterage Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2909				
Development of acquisition and design requirements for Amphibious Vehicle Replacement	1	2015	1	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204460M *I (U)Ground/Air Task Oriented Radar (G/ATOR)*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	70.217	74.432	99.082	80.129	-	80.129	84.424	36.109	10.192	6.254	Continuing	Continuing
9C89: *Marine Ground-Air Radar*	70.217	74.432	99.082	80.129	-	80.129	84.424	36.109	10.192	6.254	Continuing	Continuing

MDAP/MAIS Code:
Other MDAP/MAIS Code(s): 386

A. Mission Description and Budget Item Justification

The Ground/Air Task Oriented Radar (G/ATOR) is a multi-role, ground-based, expeditionary radar that replaces five legacy radar systems for the Marine Air Ground Task Force. It satisfies the Marine Air Command and Control System (G/ATOR Block 1) and the Ground Counter Fire/Counter Battery (G/ATOR Block 2) capabilities. The G/ATOR replaces the AN/TPS-63 and complements the AN/TPS-59 long range radar and will provide mobile, multi-functional, three-dimensional surveillance of air breathing targets, detection of cruise missiles and UAS, and the cueing of air defense weapons. The G/ATOR contributes to the extension of Sea Shield/Sea Strike by surveillance and detection of enemy air threats not seen by Navy sensors in the littorals by participating in a cooperative engagement network of sensors and shooters. G/ATOR enables Integrated Fire Control (IFC) and provides engage/fire on remote capability. G/ATOR surveillance coverage with IFC will provide unprecedented reach, volume, and precision in the execution of Operational Maneuver From The Sea, allowing Naval forces to project and sustain power deep inland.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	78.208	99.106	79.595	-	79.595
Current President's Budget	74.432	99.082	80.129	-	80.129
Total Adjustments	-3.776	-0.024	0.534	-	0.534
• Congressional General Reductions	-	-0.024			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.252	-			
• SBIR/STTR Transfer	-2.524	-			
• Program Adjustments	-	-	1.100	-	1.100
• Rate/Misc Adjustments	-	-	-0.566	-	-0.566

Change Summary Explanation

RDT&E funding decreases from FY15 to FY16 as G/ATOR Block 1 transitions to procurement and Engineering Development Model (EDM)-1 is refurbished.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204460M / *(U)Ground/Air Task Oriented Radar (G/ATOR)*	Project (Number/Name) 9C89 / *Marine Ground-Air Radar*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
9C89: *Marine Ground-Air Radar*	70.217	74.432	99.082	80.129	-	80.129	84.424	36.109	10.192	6.254	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: 386

A. Mission Description and Budget Item Justification

The Ground/Air Task Oriented Radar (G/ATOR) is a multi-role, ground-based, expeditionary radar that replaces five legacy radar systems for the Marine Air Ground Task Force. It satisfies the Marine Air Command and Control System (G/ATOR Block 1) and the Ground Counter Fire/Counter Battery (G/ATOR Block 2) capabilities. The G/ATOR replaces the AN/TPS-63 and complements the AN/TPS-59 long range radar and will provide mobile, multi-functional, three-dimensional surveillance of air breathing targets, detection of cruise missiles and UAS, and the cueing of air defense weapons. The G/ATOR contributes to the extension of Sea Shield/Sea Strike by surveillance and detection of enemy air threats not seen by Navy sensors in the littorals by participating in a cooperative engagement network of sensors and shooters. G/ATOR enables Integrated Fire Control (IFC) and provides engage/fire on remote capability. G/ATOR surveillance coverage with IFC will provide unprecedented reach, volume, and precision in the execution of Operational Maneuver From The Sea, allowing Naval forces to project and sustain power deep inland. RDT&E funding decreases ($18.953) from FY15 to FY16 as G/ATOR Block 1 transitions to procurement and Engineering Development Model (EDM)-1 is refurbished. However, there is an increase in Test & Evaluation costs between FY15 and FY16 in preparation for G/ATOR Block 1 DT1C/OA testing events and the planning and procurement of ammunition necessary to support G/ATOR Block 2 testing for the DT1D/OA test events in FY17/FY18.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: G/ATOR Contractor Technical, Development Engineering	57.831	40.686	12.378	-	12.378
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Completed Developmental Test/Operational Assessment (DT/OA). -Initiated Transition to Production and Producibility Enhancements in support of Gallium Nitride (GaN) Transition. -Initiated planning for Technology Protection implementation and planning to develop G/ATOR Block 2. -Continued Reliability Improvements and Systems Engineering Program Management (SEPM) for G/ATOR through LRIP contract award.					
FY 2015 Plans: -Initiate Technology Protection implementation and Refurbishment of Engineering Development Model(EDM)-1. -Continue Reliability Improvements, Transition to Production and Producibility Enhancements in support of GaN Transition.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *(U)Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 9C89 / *Marine Ground-Air Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue Technology Protection implementation, Transition to Production, and Producibility Enhancements in support of GaN Transition. -Complete EDM-1 Refurbishment. ***FY 2016 OCO Plans:*** N/A					
Title: G/ATOR Contractor Technical, Development Engineering/Block 2	-	37.565	21.771	-	21.771
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** Development of and Systems Engineering Program Management (SEPM) for G/ATOR Block 2 software. ***FY 2016 Base Plans:*** Continue to support development of and Systems Engineering Program Management (SEPM) for G/ATOR Block 2 software. ***FY 2016 OCO Plans:*** N/A					
Title: G/ATOR: Test and Evaluation	3.762	4.550	31.909	-	31.909
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Completed G/ATOR development Test (DT1B) and Operational Assessment (OA). -Participated in WTI, C2 FOS and Black Dart events. ***FY 2015 Plans:*** -Initiate to plan for G/ATOR Developmental Test (DT1C), Operational Assessment (OA) and C2 FOS. -Participate in WTI and Black Dart events. ***FY 2016 Base Plans:*** -Initiate planning for G/ATOR Block 2 (GB 2) Development Test (DT1D) and Operational Assessment (OA). -Continue planning for G/ATOR Block 1 (GB 1) Developmental Test (DT1C), Operational Assessment (OA).					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *(U)Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 9C89 / *Marine Ground-Air Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Participate in C2 FOS and WTI events. Includes procurement of ammunition to support DT1D Test Event. ***FY 2016 OCO Plans:*** N/A					
Title: Government Technical Support	10.352	12.946	10.850	-	10.850
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Government support from the following activities enabled program execution; MITRE, NSWC Dahlgren, NSWC Crane, NSWC Pt Hueneme, Air Traffic Control Radar Beacon System Identification Friend or Foe, Mark XII/XIIA System (AIMS) Program Office. ***FY 2015 Plans:*** Continue Government support from the following activities to enable program execution; MITRE, NSWC Dahlgren, NSWC Crane, NSWC Pt Hueneme, Air Traffic Control Radar Beacon System Identification Friend or Foe, Mark XII/XIIA System (AIMS) Program Office. ***FY 2016 Base Plans:*** Continue Government support from the following activities will enable program execution; MITRE, NSWC Dahlgren, NSWC Crane, NSWC Pt Hueneme. ***FY 2016 OCO Plans:*** N/A					
Title: G/ATOR: Program Office Management & Travel Costs	0.300	0.300	0.300	-	0.300
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued Program Office Management and travel in support of system development and test. ***FY 2015 Plans:*** Continue Program Office Management and travel in support of system development and test. ***FY 2016 Base Plans:*** Continue Program Office Management and travel in support of G/ATOR Block 2 system development and test. ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *(U)Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 9C89 / *Marine Ground-Air Radar*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: G/ATOR: Engineering, Management, & Logistics Support	2.187	3.035	2.921	-	2.921
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued engineering, management & logistics program office support. Support included MS-C documentation and support for Operational Assessment documentation.					
FY 2015 Plans: Continue engineering, management & logistics program office support.					
FY 2016 Base Plans: Continue engineering, management & logistics program office support.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	74.432	99.082	80.129	-	80.129

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/4650: *GRND/AIR TASK ORIENTED RADAR*	86.343	-	-	-	-	-	-	-	-	-	180.017
• RDTE/0604504N: *AIR CONTROL MATCALS*	2.330	4.103	1.412	-	1.412	1.215	1.017	0.638	0.650	-	11.365
• PMC/7000: *INITIAL SPARES*	7.425	2.598	-	-	-	16.058	20.295	13.081	13.358	8.058	80.873
• PMC/4655: *GRND/AIR TASK ORIENTED RADAR*	-	89.230	130.661	-	130.661	124.937	125.556	221.656	211.222	694.754	1,598.016

Remarks

D. Acquisition Strategy

The Ground/Air Task Oriented Radar (G/ATOR) is a multi-role, ground-based, expeditionary radar that replaces five legacy radar systems and provides the USMC Air Defense and Air Surveillance (AD/AS)(G/ATOR Block 1), Counterfire/Targeting (G/ATOR Block 2), and Air Traffic Control (G/ATOR Block 4) capability. The AD/AS (GB1) development effort was competitively awarded in 2007 and completed Milestone C in FY14. Development of the Counterfire/Targeting (GB2) capability was

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *(U)Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 9C89 / *Marine Ground-Air Radar*

initiated in FY10 with a RFI to industry, followed by a Business Case Analysis (BCA) to select the most cost effective procurement strategy. The results of the BCA indicated that a sole source contract to Northrup Grumman Electronic Systems (NGES) was the most cost effective solution. Thus, development award is planned for the 4th Qtr FY15. In FY13, a BCA was performed to determine the optimum strategy for development of the Air Traffic Control (GB4) mission with a developmental contract to be awarded in FY16. Both the AD/AS (GB1) and Air Traffic Control (GB4) capabilities require JROCM mandated Identification Friend or Foe (IFF) enhancements.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204460M / *(U)Ground/Air Task Oriented Radar (G/ATOR)*	Project (Number/Name) 9C89 / *Marine Ground-Air Radar*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
G/ATOR	C/CPIF	NORTHROP GRUMMAN SYSTEMS CORPORATION : LINTHICUM HEIGHTS, MD	46.738	57.831	Dec 2013	40.686	Dec 2014	12.378	Dec 2015	-		12.378	Continuing	Continuing	Continuing
G/ATOR BLOCK 2 SOFTWARE DEVELOPMENT	C/CPFF	NORTHROP GRUMMAN SYSTEMS CORPORATION : LINTHICUM HEIGHTS, MD	0.000	-		37.565	Aug 2015	21.771	Apr 2016	-		21.771	Continuing	Continuing	Continuing
		Subtotal	46.738	57.831		78.251		34.149		-		34.149	-	-	-

Remarks

Award date reflects the actual obligation date for the first incremental award. The Northrop Grumman Product Development contract is incrementally funded throughout the fiscal year.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
G/ATOR	FFRDC	MITRE : BOSTON, MA	0.784	0.916	Nov 2013	1.803	Dec 2014	1.898	Dec 2015	-		1.898	Continuing	Continuing	Continuing
G/ATOR	WR	NSWC-DAHLGREN : DAHLGREN, VA	8.882	8.390	Dec 2013	8.557	Dec 2014	6.803	Dec 2015	-		6.803	Continuing	Continuing	Continuing
G/ATOR	WR	NSWC-CRANE : CRANE, IN	0.199	0.180	Dec 2013	0.404	Dec 2014	0.200	Dec 2015	-		0.200	Continuing	Continuing	Continuing
G/ATOR	C/FP	MCSC : QUANTICO, VA	0.000	0.131	Dec 2013	0.500	Dec 2014	0.540	Dec 2015	-		0.540	Continuing	Continuing	Continuing
G/ATOR	FFRDC	CMU/SEI : PITTSBURGH, PA	0.000	0.520	Aug 2014	0.600	Jun 2015	0.650	Jun 2016	-		0.650	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204460M / *(U)Ground/Air Task Oriented Radar (G/ATOR)*	Project (Number/Name) 9C89 / *Marine Ground-Air Radar*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
G/ATOR	WR	NSWC PHD : DAM NECK, VA	0.575	0.215	Dec 2013	0.721	Dec 2014	0.759	Dec 2015	-		0.759	Continuing	Continuing	Continuing
G/ATOR	C/CPFF	AIMS : ROBINS AFB, GA	0.000	-		0.361	Dec 2014	-		-		-	Continuing	Continuing	Continuing
		Subtotal	10.440	10.352		12.946		10.850		-		10.850	-	-	-

Remarks

Award dates reflect the actual obligation date for the first incremental award. Each activity, with the exception of MITRE and CMU/SEI is incrementally funded throughout the fiscal year.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
G/ATOR	C/CPIF	NORTHROP GRUMMAN SYSTEMS CORPORATION : LINTHICUM HEIGHTS, MD	0.040	-		0.019	Dec 2014	3.461	Dec 2015	-		3.461	Continuing	Continuing	Continuing
G/ATOR	WR	NSWC DAHLGREN : DAHLGREN, VA	0.397	-		0.043	Dec 2014	1.778	Dec 2015	-		1.778	Continuing	Continuing	Continuing
G/ATOR	MIPR	AMRDEC : REDSTONE ARSENAL, AL	2.169	0.917	Dec 2013	1.078	Dec 2014	1.322	Dec 2015	-		1.322	Continuing	Continuing	Continuing
G/ATOR	MIPR	JTIC : FT HUACHUCA, AZ	0.098	-		0.100	Dec 2014	0.100	Dec 2015	-		0.100	Continuing	Continuing	Continuing
G/ATOR	Various	NSWC-FALLBROOK : CRANE, IN	1.092	0.893	Dec 2013	0.984	Dec 2014	0.900	Dec 2015	-		0.900	Continuing	Continuing	Continuing
G/ATOR	C/CPIF	MCOTEA : QUANTICO, VA	1.159	0.331	Dec 2013	0.207	Dec 2014	1.397	Dec 2015	-		1.397	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204460M / *(U)Ground/Air Task Oriented Radar (G/ATOR)*	Project (Number/Name) 9C89 / *Marine Ground-Air Radar*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
G/ATOR	Various	NSWC CORONA : CORONA, CA	1.420	-		-		0.160	Dec 2015	-		0.160	Continuing	Continuing	Continuing
G/ATOR	Various	NSWC PHD : DAM NECK, VA	1.536	1.507	Dec 2013	1.399	Dec 2014	1.400	Dec 2015	-		1.400	Continuing	Continuing	Continuing
G/ATOR	C/CPFF	MCSC : QUANTICO, VA	1.033	-		0.134	Dec 2014	14.472	Dec 2015	-		14.472	Continuing	Continuing	Continuing
G/ATOR	Various	3D MAW : CAMP PENDLETON, CA	0.961	-		0.203	Dec 2014	2.313	Dec 2015	-		2.313	Continuing	Continuing	Continuing
G/ATOR	Various	MACS-1 : YUMA, AZ	0.605	-		0.163	Dec 2014	1.670	Dec 2015	-		1.670	Continuing	Continuing	Continuing
G/ATOR	Various	MCTSSA : CAMP PENDLETON, CA	0.107	-		0.070	Dec 2014	0.786	Dec 2015	-		0.786	Continuing	Continuing	Continuing
G/ATOR	Various	3D LAAD : CAMP PENDLETON, CA	0.145	-		-		0.781	Dec 2015	-		0.781	Continuing	Continuing	Continuing
G/ATOR	MIPR	ATC : ABERDEEN, MD	0.000	0.114	Dec 2013	0.150	Dec 2014	0.150	Dec 2015	-		0.150	Continuing	Continuing	Continuing
G/ATOR	Various	10th or 12th MARINES : OAK FIELD, NC	0.000	-		-		1.219	Dec 2015	-		1.219	Continuing	Continuing	Continuing
G/ATOR Prior Years Cumulative Funding	Various	N/A : N/A	0.952	-		-		-		-		-	-	0.952	-
		Subtotal	11.714	3.762		4.550		31.909		-		31.909	-	-	-

Remarks

Award dates reflect the actual obligation date for the first incremental award. Each activity is incrementally funded throughout the fiscal year.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
G/ATOR	C/FP	MCSC : MCSC - QUANTICO, VA	1.025	2.187	May 2014	3.035	May 2015	2.921	May 2016	-		2.921	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204460M / *(U)Ground/Air Task Oriented Radar (G/ATOR)*	Project (Number/Name) 9C89 / *Marine Ground-Air Radar*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
G/ATOR	Various	MCSC : QUANTICO, VA	0.300	0.300	Sep 2014	0.300	Sep 2015	0.300	Sep 2016	-		0.300	Continuing	Continuing	Continuing
		Subtotal	1.325	2.487		3.335		3.221		-		3.221	-	-	-

Remarks

Award dates reflect the actual obligation date for the first incremental award. Each activity is incrementally funded throughout the fiscal year.

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	70.217	74.432		99.082		80.129		-		80.129	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *(U)Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 9C89 / *Marine Ground-Air Radar*

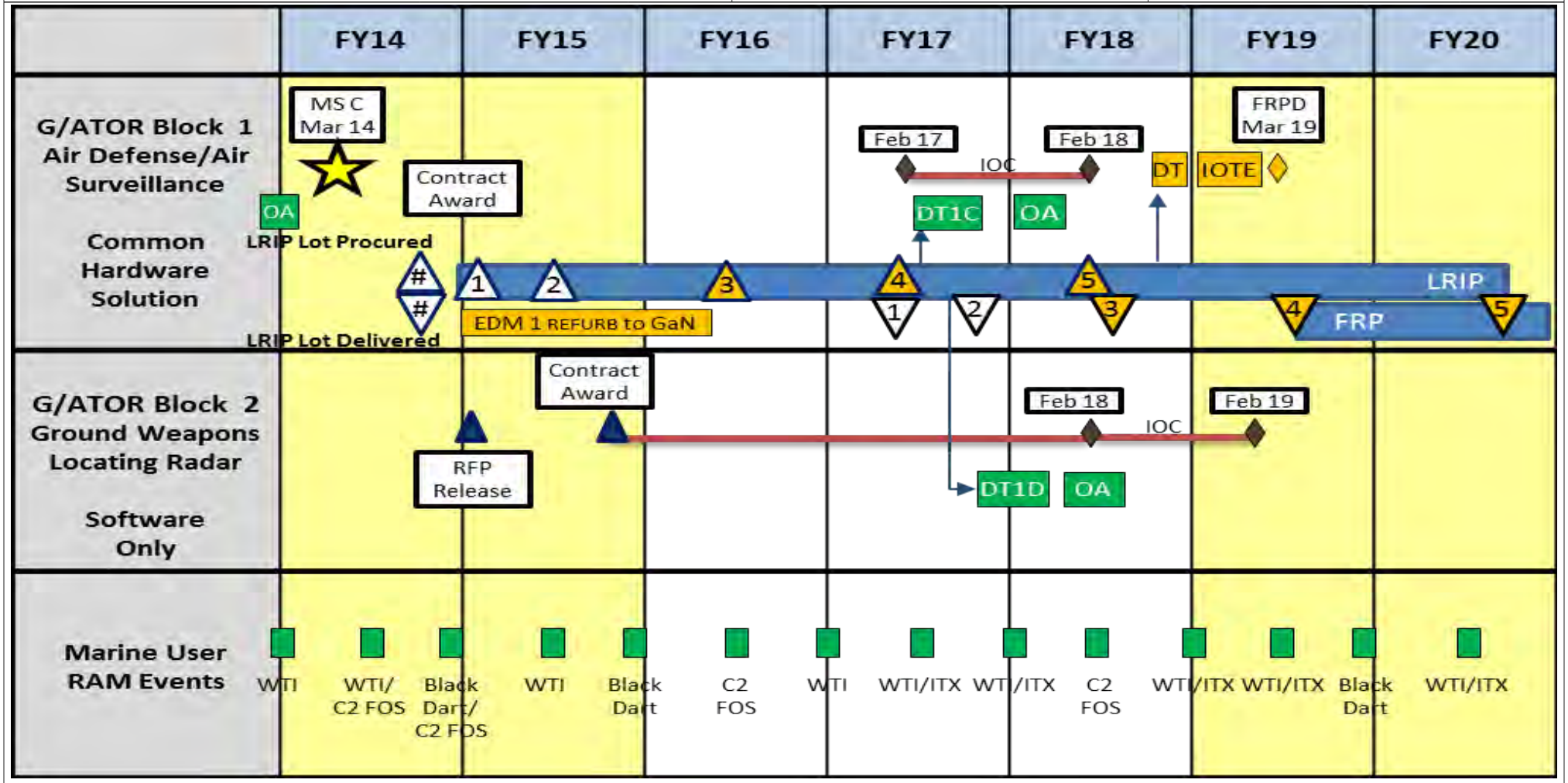


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204460M / *(U)Ground/Air Task Oriented Radar (G/ATOR)*	**Project (Number/Name)** 9C89 / *Marine Ground-Air Radar*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9C89				
Air Defense/Air Surveillance AD/AS Radar Milestone C	2	2014	2	2014
Air Defense/Air Surveillance AD/AS Radar Low Rate Initial Production (LRIP) Award	1	2015	1	2015
Air Defense/Air Surveillance AD/AS Radar Developmental Test (DT1C)	3	2017	4	2017
Air Defense/Air Surveillance AD/AS Radar Operational Assessment (OA)-2	4	2017	1	2018
Air Defense/Air Surveillance AD/AS Radar IOC	2	2017	2	2018
Air Defense/Air Surveillance AD/AS Radar Developmental Test (DT)	4	2018	4	2018
Air Defense/Air Surveillance AD/AS Radar IOTE	1	2019	1	2019
Air Defense/Air Surveillance AD/AS Radar FRPD	2	2019	2	2019
Air Defense/Air Surveillance AD/AS Radar FRP	3	2019	3	2019
Ground Weapons Locating Radar MDA IPR	4	2014	4	2014
Ground Weapons Locating Radar Development Awards	4	2015	4	2015
Ground Weapons Locating Radar Developmental Test (DT)	4	2017	1	2018
Ground Weapons Locating Radar Operatonal Assessment (OA)	2	2018	3	2018
Ground Weapons Locating Radar IOC	2	2018	2	2019
Marine User RAM Events Commend Control Family of Systems (C2 FOS)	3	2014	3	2014
Marine User RAM Events Black Dart-1	4	2014	4	2014
Marine User RAM Events Weapons Tactics Instructor (WTI-3)	3	2015	3	2015
Marine User RAM Events Black Dart-2	4	2015	4	2015
Marine User RAM Events Commend Control Family of Systems (C2 FOS-1)	3	2016	3	2016
Marine User RAM Events Weapons Tactics Instructor (WTI-4)	4	2016	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0204571N *I Consolidated Trng Sys Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	296.110	38.446	37.922	39.087	-	39.087	41.952	42.701	20.330	20.767	Continuing	Continuing
0604: *Training Range & Instr Dev*	138.426	3.460	2.729	3.502	-	3.502	3.575	3.606	3.679	3.755	Continuing	Continuing
1427: *Surface Tactical Team Trainer (STTT)*	70.008	10.849	16.768	9.954	-	9.954	13.893	11.764	10.631	10.851	Continuing	Continuing
2124: *Air Warfare Training*	29.263	10.395	1.262	1.611	-	1.611	1.654	1.671	1.707	1.741	Continuing	Continuing
3093: *TACTS/LATR Replacement*	58.413	4.250	10.349	19.252	-	19.252	16.070	24.478	4.313	4.420	Continuing	Continuing
3356: *High Fidelity Surface Trainers*	0.000	9.492	6.814	4.768	-	4.768	6.760	1.182	-	-	-	29.016
MDAP/MAIS Code: 223												

A. Mission Description and Budget Item Justification

A. MISSION DESCRIPTION:

0604 - This project develops specialized instrumentations for fleet readiness training while minimizing life cycle costs. Tasks include development of the following: Large Area Tracking Range improvements, technology improvements for fixed and portable Anti-Submarine Warfare training ranges, and Tactical Training Range (TTR) infrastructure improvements to include: the Joint Display Subsystem, Radar Acquisition Display Subsystem, Electronic Warfare server, Link 16 interface, TTR rotary platform technology improvements and the Radiant Mercury Cross Domain Solution.

1427 - Surface Tactical Team Trainer (STTT) develops modifications during sustainment of Battle Force Tactical Training (BFTT) system. This is required to maintain capabilities and interfaces to provide realistic combat system coordinated team, unit and Fleet Synthetic Training (FST) collective Group/Force level training events. In addition, BFTT supports the embedded trainer "family of systems" approach for the development of a Total Ship Training Capability (TSTC). Specific improvements include improved integration with the Navy Continuous Training Environment (NCTE) and development of a High Level Architecture (HLA) capable, integrated shipboard network to meet increasing Commander Naval Surface Forces (CNSF) and United States Fleet Forces Command (USFFC) FST requirements. The need for transforming training is documented within the DoD Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan and Commander United States Fleet Forces Command Fleet Readiness Training Plan.

2124 - Air Warfare Training Development (AWTD) provides for risk mitigation and next generation platform, Unmanned Aerial Systems (UAS), Live Virtual Constructive (LVC) and associated visualization component development for distributed mission training, and for stand-alone and small footprint deployable devices. Support the Navy Aviation Simulation Master Plan (NASMP) upgrade efforts and Type/Model/Series programs with advanced visual system display configurations requirements. Provide for Open Architecture (OA), and common systems interface applications. Assess trainee cognitive requirements and the development and incorporation of

next generation LVC, UAS constructive and associated visualization component technologies. Additionally, AWTD provides for advanced virtual component fidelity improvements for LVC capability which includes the "Mobility" Part-Task Trainers and the Multiplex Data Bus Controller Translator Transmitter enabling technologies. LVC technologies will facilitate advanced, cost effective weapons and tactics training and emerging capability requirements in the Air-Sea Battle Space and Naval Integrated Fire Control-Counter Air capabilities development.

3093 - The Tactical Combat Training System (TCTS) will provide the Navy a replacement for the Tactical Aircrew Combat Training System (TACTS) and Large Area Tracking Range systems. TCTS will also provide fleet deployable training for at-sea training and tactics development. By providing a rangeless capability, the system will greatly increase the area where live instrumented training can be conducted. Fielding of a pod system is complete at TACTS sites. The program incorporates an evolutionary development (incremental) towards an encrypted system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant sensor stimulation, open architecture and an encrypted/long range secure data link.

3356- Funds FCA, high fidelity Aegis Integrated Air and Missile Defense (IAMD) individual and team trainers for all Advanced Capability Build (ACB) and below Aegis baselines. This line also provides funds for development of a CIWS 1B Baseline 2 Trainer upgrade.

JUSTIFICATON FOR BUDGET ACTIVITY:
This program is funded under Operational Systems Development because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	39.124	39.922	47.715	-	47.715
Current President's Budget	38.446	37.922	39.087	-	39.087
Total Adjustments	-0.678	-2.000	-8.628	-	-8.628
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.679	-			
• Rate/Misc Adjustments	0.001	-	-8.628	-	-8.628

Change Summary Explanation

The FY 2016 funding request was reduced by $8.3 million to account for the availability of prior year execution balances.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204571N *I Consolidated Trng Sys Dev*

0604: R-4/R-4a reflects the following program changes: Ocean Systems: Established new accomplishment with schedule due to updated fleet requirements for future ocean range upgrades.

2124: R-4/R-4A reflects the following program changes: Due to a change in fleet priorites the following was updated.
Human/Instructional Systems Integration
Systems Development: All efforts consolidated under "Common Instr. System/Semi-Automated Forces and Unmanned- Aerial Systems Interface Selection and Training Technologies Technology Development" 1st Qtr FY2014 to 4th Qtr FY2020.
Test and Evaluation:
Added - Automated Performance Assessment and After Action Review System 4th Qtr FY2015; Tactical Aircraft Semi-Automated Forces 4th Qtr FY2015.
Production Milestones:
Added - TACAIR Instr. Sys Post Mission Assesment Tacitical Training 4th Qtr FY2014; APAARS 1st Article 3rd Qtr FY2015; Unmanned Aerial Systems Instr. Sys Tier 1/2 4th Qtr FY2017; Live Virtual Constructive (LVC) Instr. Sys Component Technologies 4th Qtr FY2016
Renamed - P-3C Mission Training Station (MTS)/PMATT 4th Qtr FY2014 to P-3C Instr. Sys PMATT Inc I; P-8A MTS/PMATT 4th Qtr FY2015 to P-8A Instr. Sys PMATT Inc II; UAS MTS Tier One/Two 4th Qtr FY2018 to UAS Instr. Sys Tier 1/2; UAS MTS Tier I/II 4th Qtr FY2019 to UAS Instr. Sys Tier 1/2.
Deleted: Rotary Wing Hypoxia/Spatial Disorientation (SD) 4th Qtr FY2015; LVC MTS 4th Qtr FY2017
Sensors and Environment
Systems Development:
Renamed - Atmospherics/Weather 1st Qtr FY2013 to 4th Qtr FY2014 to Atmospherics/Illusions(SD) 1st Qtr FY2014 to 4th Qtr 2015.
Added: Spatial Disorientation Technologies (Fixed/Rotary) 1st Qtr FY2014 to 4th Qtr FY2015.
Deleted: Communications (COMMS)/Electonic Warfare (EW)/SAF/Break-Link 1st Qtr FY2013 to 4th Qtr FY2019
Test and Evaluation:
Added - Spatial Disorientation v/s Upgrade 4th Qtr FY2015
Production Milestones:
Added - Rotary Wing Hypoxia/SD 4th Qtr FY2015; Fused Sensors UAS/Tier 2 4th Qtr FY2014; Fused Sensors UAS/Tier 1 4th Qtr FY2019
Deleted - Real-Time Atmospherics w/Electro Optics 4th Qtr 2014; UAS/LVC 4th Qtr FY2016
LVC and Visuals
Systems Development:
Changed - Live 1st Qtr FY2013 to 4th Qtr FY2016 to 1st Qtr FY2014 to 4th Qtr 2017
Added - Naval Integrated Fire Control-Counter Air (NIFC-CA) 1st Qtr FY2014 to 4th Qtr FY2017
Renamed - Integrated LVC 1st Qtr FY2014 to 4th QTR 2018 to Integrated LVC Components
Test and Evaluation:
Added - NIFC-CA, LVC, Fallon, Phase I/II 4th Qtr 2016; NIFC-CA, LVC, Fallon, Phase III 4th Qtr FY2017
Production Milestones:
Changed - Symbology Set 4th Qtr FY2014 to 4th Qtr 2015; LVC Datalink 4th Qtr FY2016 to 4th Qtr FY2017; Mobility Part Task Trainer 4th Qtr FY2015 to 4th Qtr FY2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204571N *I Consolidated Trng Sys Dev*

3093: R-4/R-4A reflects the following program changes: Due to a change in contract strategy from sole source to competitive (Milestone Decision Authority directed), the program schedule shifted due to the added time required for a competitive selection: Tactical Aircrew Combat Training System/Large Area Tracking Range (TACTS/LATR) Replacement-Acquisition Milestone Encryption MS B from 4th Qtr FY2014 to 2nd Qtr FY2016; TACTS/LATR Replacement-Acquisition Milestone Encryption MS C from 3rd Qtr FY2017 to 3rd Qtr FY2019; TACTS/LATR Replacement-Production Milestone Increment 2 Encrypted Datalink Capability from 4th Qtr FY2017 to 3rd Qtr FY2019.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 0604 / *Training Range & Instr Dev*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0604: *Training Range & Instr Dev*	138.426	3.460	2.729	3.502	-	3.502	3.575	3.606	3.679	3.755	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops specialized instrumentations for fleet readiness training while minimizing life cycle costs. Tasks include development of the following: Large Area Tracking Range (LATR) improvements, technology improvements for fixed and portable Anti-Submarine Warfare (ASW) training ranges, and Tactical Training Range (TTR) infrastructure improvements to include: the Joint Display Subsystem (JDS), Radar Acquisition Display Subsystem (RADS), Electronic Warfare (EW) server, Link 16 interface, TTR rotary platform technology improvements and the Radiant Mercury (RM) Cross Domain Solution (CDS).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: LATR	2.051	1.876	1.250	-	1.250
Articles:	-	-	-	-	-

Description: Design, integrate and test modules to eliminate obsolete components in the LATR Pod. Design, integrate and test LATR software baseline upgrades. Design, integrate and test Participant Instrumentation Packages (PIP) modules to address obsolescence, high failure components and to improve operability and performance. Conduct and complete installation of the Ground System Rehosts. Conduct and complete security testing and assessment for LATR system certification and accreditation for Ground System Rehosts. Develop, test and integrate software and hardware modifications to system test sets. Develop, test and integrate LATR data translators. Conduct studies to identify sub-projects required through FY22. Complete ground system and PIP refresh sub-projects, in conjuction with, semi-annual system block upgrades. Conduct LATR Operational Security (OPSEC) Posture Improvements Sub-Project and Shipboard and Rotary Wing Technology Wing Upgrade (LSRTU).

FY 2014 Accomplishments:
Develop and test LATR ground software version 5.8.0. Continue to develop LATR Shipboard and LSRTU. Complete LATR OPSEC posture improvements.

FY 2015 Plans:
Develop and test LATR ground software version 5.9.0. Continue to develop LATR Shipboard and LSRTU.

FY 2016 Base Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Develop and test Large Area Tracking Range (LATR) ground software version 6.0.0. Continue to develop LATR Shipboard and Rotary Wing Technology Upgrade (LSRTU). ***FY 2016 OCO Plans:*** N/A					
Title: TENA	0.800	-	-	-	-
Articles:	-	-	-	-	-
Description: Develop and test Tactical Training Ranges (TTR) Object Model (OM) for use with the Office of the Secretary of Defense (OSD) Test & Training Enabling Architecture (TENA) Software Development Agency (SDA) TENA Middleware versions 5.0-11.0. Develop TTR TENA Gateway for use with the TTR Electronic Warfare (EW) server and Joint Display System (JDS) and Tactical Combat Training System instrumentation set. Develop TTR TENA Monitoring Tool for diagnostic use by TTR personnel and TTR System Support Activities. Develop and test TTR TENA product upgrades to be compatible with TENA SDA Middleware. Host TENA on the TTR EW server and JDS. ***FY 2014 Accomplishments:*** Develop Graphic User Interface for TTR TENA Monitoring Tool as requested by Fleet users. Develop and test TTR TENA 9.0 product upgrades to be compatible with evolving TENA SDA Middleware. Develop interfaces with evolving Joint TENA training events. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: TTR	0.609	0.853	2.002	-	2.002
Articles:	-	-	-	-	-
Description: Develop and test upgrades to the JDS, Radar Acquisition Display Subsystem (RADS), and EW server. Develop and test upgrades to the Link-16 Interface, JDS, RADS, and EW server. ***FY 2014 Accomplishments:*** Develop and test 2014.1 & 2014.2 upgrades to the JDS, RADS, and EW server.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Complete Tactical Training Ranges rotary platform tracking set. ***FY 2015 Plans:*** Develop and test 2015.1 & 2015.2 upgrades to the Joint Display System (JDS), Radar Acquisition Display Subsystem (RADS)& Electronis Warfare (EW) Server. ***FY 2016 Base Plans:*** Develop and test 2016.1 & 2016.2 upgrades to the JDS, RADS & EW Server. With the exception of FY 15, TTR fields two software block upgrades per year to allow the Joint Display System (JDS), Electronic Warfare (EW) Server, and Radar Acquisition and Display Subsystem (RADS) to remain in concert with evolving threat and tactical training requirements. ***FY 2016 OCO Plans:*** N/A					
Title: Ocean Systems	-	-	0.250	-	0.250
Articles:	-	-	-	-	-
Description: Research, develop, and test technology improvements for fixed and portable Anti-Submarine Warfare (ASW) training ranges. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Conduct analysis of advanced technical solutions for ASW range capability at Pacific Missle Range Facility (PMRF), Barking Sands, Hawaii and future ocean range locations. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.460	2.729	3.502	-	3.502

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/4204: *Weapons Range Support Equipment (WRSE)/LSRTU*	-	-	3.133	-	3.133	0.364	-	-	-	-	3.497

Remarks

D. Acquisition Strategy

The Training Range and Instrumentation Development (TRID) program is a non-ACAT program. The integrated program teams that develop new TRID capabilities include government and contractor engineering personnel.

E. Performance Metrics

Metric/Description:
Naval Air Warfare Center-Aircraft Division (NAWC-AD): # of Large Area Tracking Range (LATR) system product improvements and new capabilities. Successful application of system engineering processes. Design and development of improvements. Site acceptance of product improvements with no Priority 1 or 2 problem reports. Completion of 1 upgrade per year.

Jacobs Eng: # of LATR system product improvements and new capabilities. Successful design, development and testing of product improvements and new capabilities. Site acceptance of product improvements with no Priority 1 or 2 problem reports.

NAWC-Weapons Division (WD): # of Tactical Training range (TTR) upgrades per year. Successful application of system engineering processes. Design and development of improvements. Site acceptance of product improvements with no Priority 1 or 2 problem reports. Completion of 2 upgrade per year.

Jacobs Eng: # of TTR system product improvements and new capabilities. Successful design, development, and testing of product improvements and new capabilities. Site acceptance of product improvements with no Priority 1 or 2 problem reports.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 0604 / *Training Range & Instr Dev*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPFF	JACOBS ENG : RIDGECREST, CA	9.417	0.744	Nov 2013	0.397	Nov 2014	1.238	Jan 2016	-		1.238	-	11.796	11.796
Software Development	C/CPFF	JACOBS ENG : RIDGECREST, CA	3.354	1.291	Nov 2013	0.688	Nov 2014	0.375	Jan 2016	-		0.375	-	5.708	5.708
Hardware Development	WR	NSWC : CORONA, CA	0.000	-		0.050	Nov 2014	-		-		-	Continuing	Continuing	Continuing
Hardware Development	WR	NUWC : NEWPORT, RI	0.000	-		-		0.250	Nov 2015	-		0.250	Continuing	Continuing	Continuing
Software Development	WR	NAWC-AD : PAX RIVER, MD	6.559	0.500	Nov 2013	1.079	Nov 2014	0.739	Nov 2015	-		0.739	Continuing	Continuing	Continuing
Software Development	WR	NAWC-WD : POINT MUGU, CA	5.510	0.200	Nov 2013	0.165	Nov 2014	0.050	Nov 2015	-		0.050	Continuing	Continuing	Continuing
Software Development	WR	NRL : WASHINGTON, DC	0.200	-		0.100	Nov 2014	0.100	Jan 2016	-		0.100	Continuing	Continuing	Continuing
Prior Year Prod Dev No Longer Funded in the FYDP	Various	Various : Various	93.905	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	118.945	2.735		2.479		2.752		-		2.752	-	-	-

Remarks

Jacobs Engineering formally Tybrin Corporation.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-AD : PAX RIVER, MD	0.163	0.300	Nov 2013	-		0.300	Nov 2015	-		0.300	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWC-WD : CHINA LAKE, CA	0.085	0.100	Nov 2013	-		0.100	Nov 2015	-		0.100	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : CORONA, CA	0.345	0.075	Nov 2013	-		0.100	Nov 2015	-		0.100	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 0604 / *Training Range & Instr Dev*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Support No Longer Funded in the FYDP	Various	Various : Various	10.576	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	11.169	0.475		-		0.500		-		0.500	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year T&E No Longer Funded in the FYDP	Various	Various : Various	5.299	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	5.299	-		-		-		-		-	-	-	-

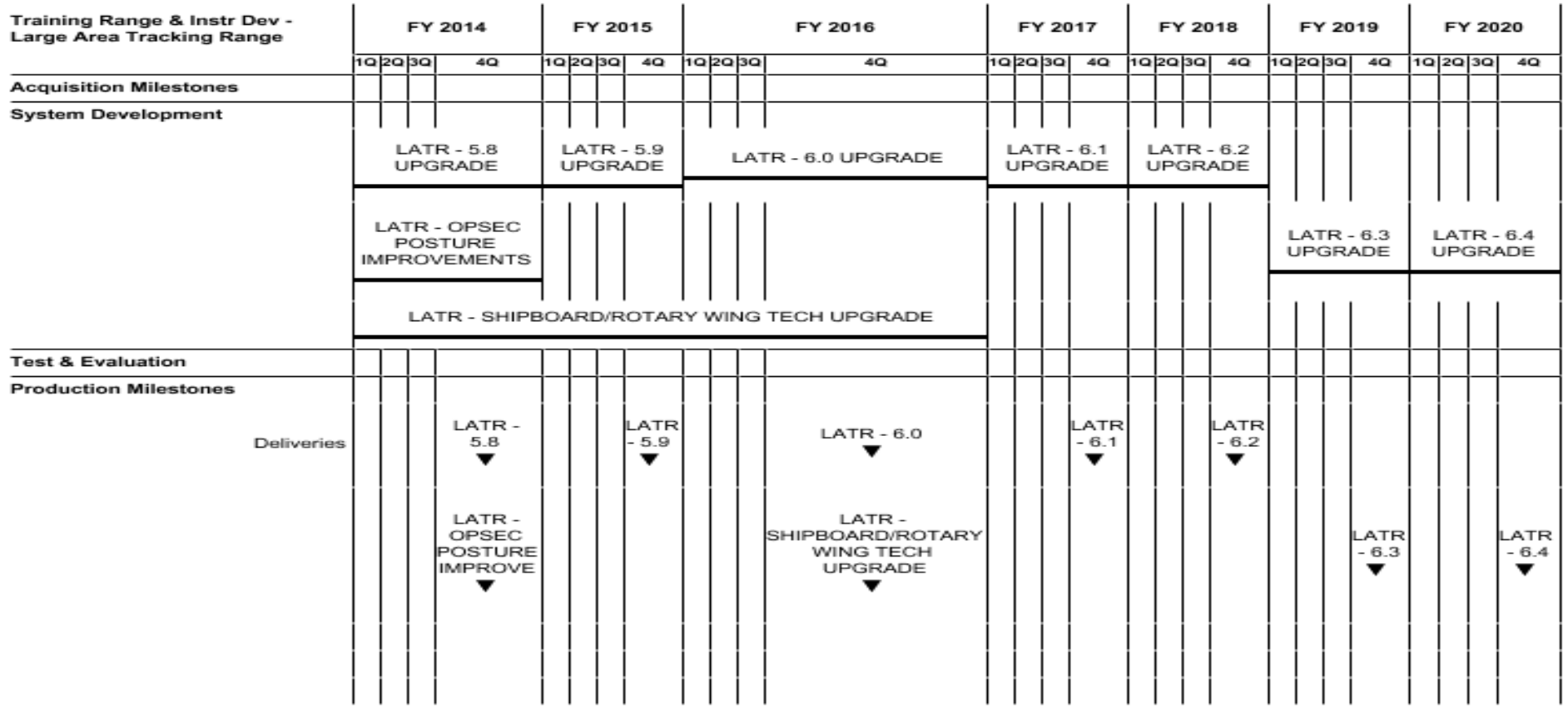
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prog Mngt Sup	WR	NAWC-TSD : ORLANDO, FL	3.013	0.250	Nov 2013	0.250	Nov 2014	0.250	Nov 2015	-		0.250	Continuing	Continuing	Continuing
		Subtotal	3.013	0.250		0.250		0.250		-		0.250	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	138.426	3.460		2.729		3.502		-		3.502	-	-	-

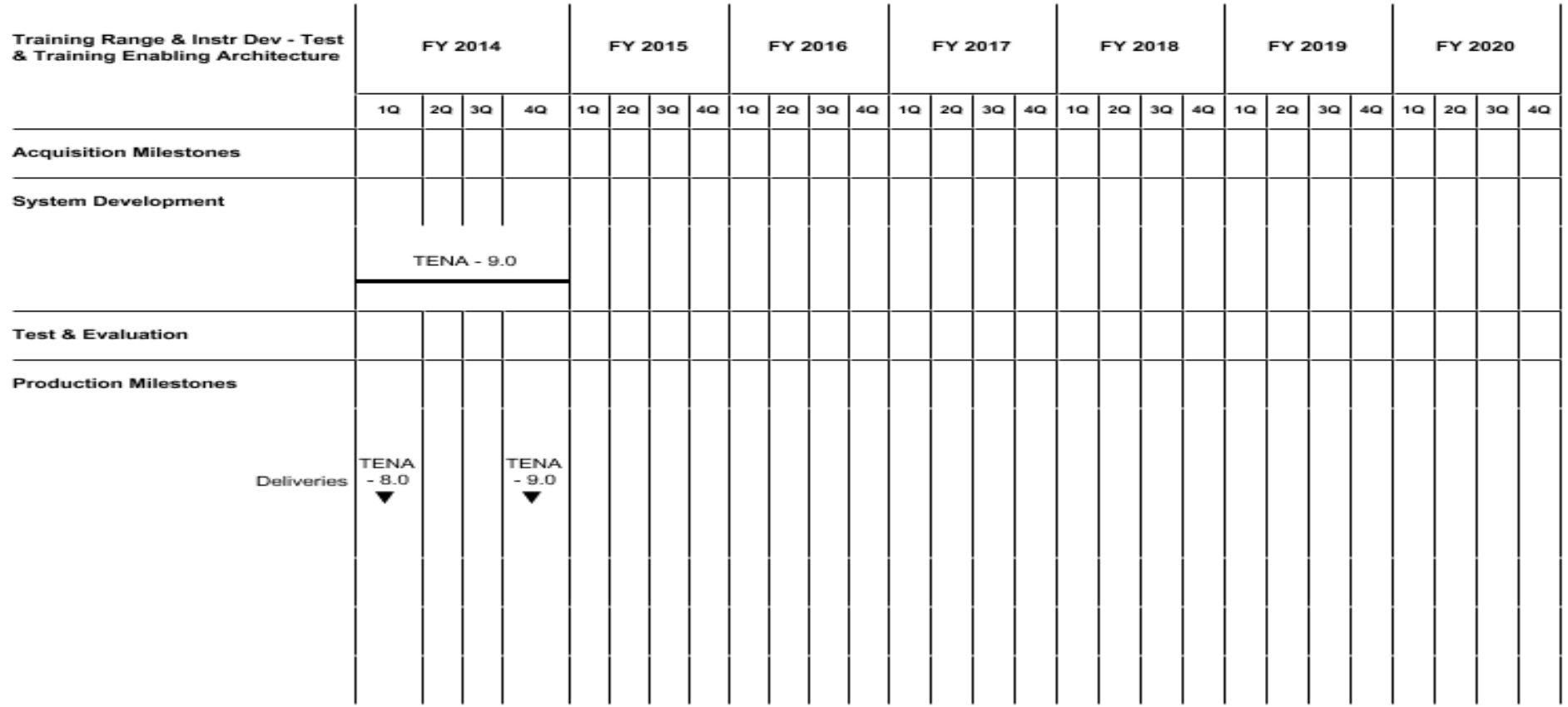
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*



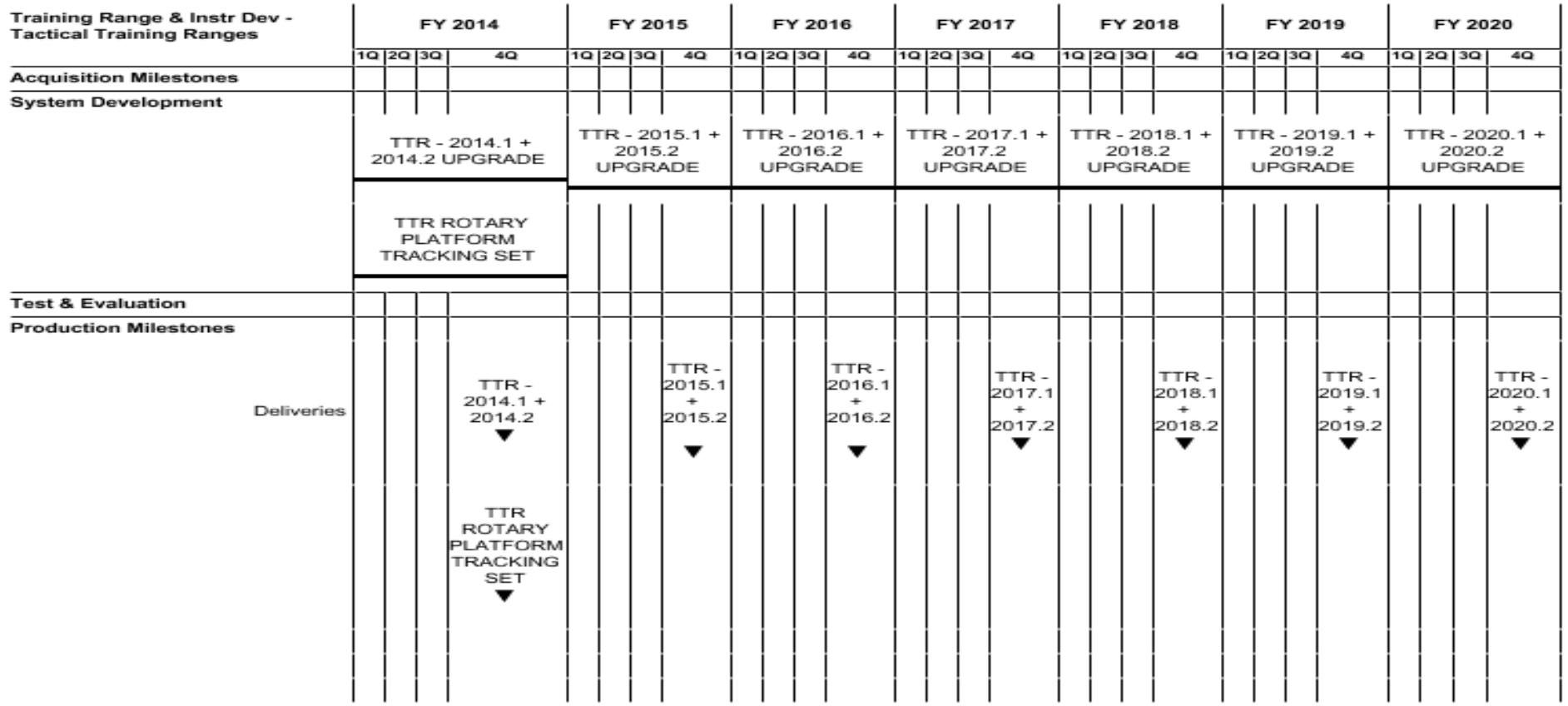
2016PB - 0204571N - 0604

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*



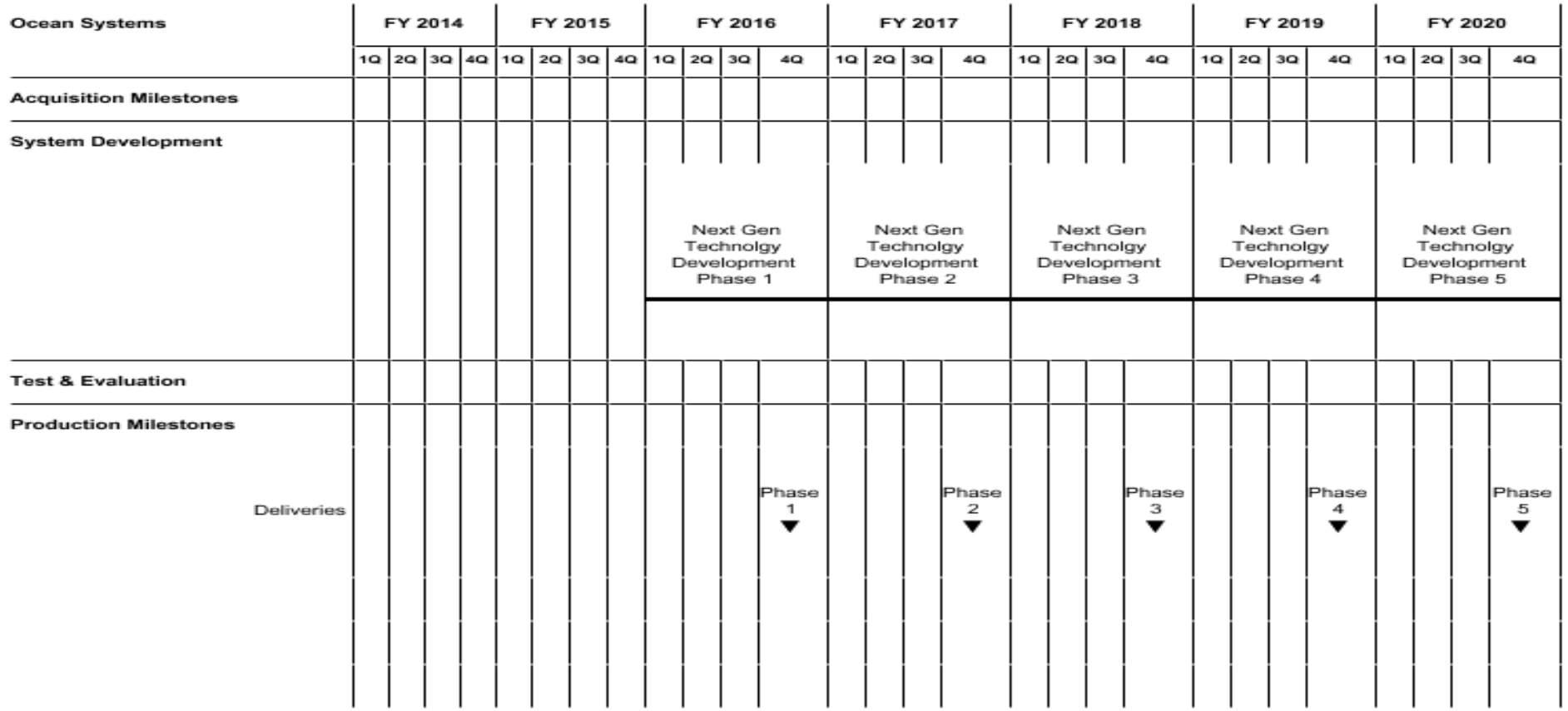
2016PB - 0204571N - 0604

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*



2016PB - 0204571N - 0604

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*



2016PB - 0204571N - 0604

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Training Range & Instr Dev - Large Area Tracking Range				
System Development: LATR - 5.8 UPGRADE	1	2014	4	2014
System Development: LATR - 5.9 UPGRADE	1	2015	4	2015
System Development: LATR - 6.0 UPGRADE	1	2016	4	2016
System Development: LATR - 6.1 UPGRADE	1	2017	4	2017
System Development: LATR - 6.2 UPGRADE	1	2018	4	2018
System Development: LATR - OPSEC POSTURE IMPROVEMENTS	1	2014	4	2014
System Development: LATR - 6.3 UPGRADE	1	2019	4	2019
System Development: LATR - 6.4 UPGRADE	1	2020	4	2020
System Development: LATR - SHIPBOARD/ROTARY WING TECH UPGRADE	1	2014	4	2016
Production Milestones: Deliveries: LATR - 5.8 UPGRADE	4	2014	4	2014
Production Milestones: Deliveries: LATR - 5.9 UPGRADE	4	2015	4	2015
Production Milestones: Deliveries: LATR - 6.0 UPGRADE	4	2016	4	2016
Production Milestones: Deliveries: LATR - 6.1 UPGRADE	4	2017	4	2017
Production Milestones: Deliveries: LATR - 6.2 UPGRADE	4	2018	4	2018
Production Milestones: Deliveries: LATR - OPSEC POSTURE IMPROVEMENTS	4	2014	4	2014
Production Milestones: Deliveries: LATR - 6.3 UPGRADE	4	2019	4	2019
Production Milestones: Deliveries: LATR - 6.4 UPGRADE	4	2020	4	2020
Production Milestones: Deliveries: LATR - SHIPBOARD/ROTARY WING TECH UPGRADE	4	2016	4	2016
Training Range & Instr Dev - Test & Training Enabling Architecture				
System Development: TENA - 9.0	1	2014	4	2014
Production Milestones: Deliveries: TENA - 8.0	1	2014	1	2014

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: Deliveries: TENA - 9.0	4	2014	4	2014
Training Range & Instr Dev - Tactical Training Ranges				
System Development: TTR - 2014.1 + 2014.2 UPGRADE	1	2014	4	2014
System Development: TTR - 2015.1 + 2015.2 UPGRADE	1	2015	4	2015
System Development: TTR - 2016.1 + 2016.2 UPGRADE	1	2016	4	2016
System Development: TTR - 2017.1 + 2017.2 UPGRADE	1	2017	4	2017
System Development: TTR - 2018.1 + 2018.2 UPGRADE	1	2018	4	2018
System Development: TTR - 2019.1 + 2019.2 UPGRADE	1	2019	4	2019
System Development: TTR - 2020.1 + 2020.2 UPGRADE	1	2020	4	2020
System Development: TTR ROTARY PLATFORM TRACKING SET	1	2014	4	2014
Production Milestones: Deliveries: TTR - 2014.1 + 2014.2 UPGRADE	4	2014	4	2014
Production Milestones: Deliveries: TTR - 2015.1 + 2015.2 UPGRADE	4	2015	4	2015
Production Milestones: Deliveries: TTR - 2016.1 + 2016.2 UPGRADE	4	2016	4	2016
Production Milestones: Deliveries: TTR - 2017.1 + 2017.2 UPGRADE	4	2017	4	2017
Production Milestones: Deliveries: TTR - 2018.1 + 2018.2 UPGRADE	4	2018	4	2018
Production Milestones: Deliveries: TTR - 2019.1 + 2019.2 UPGRADE	4	2019	4	2019
Production Milestones: Deliveries: TTR - 2020.1 + 2020.2 UPGRADE	4	2020	4	2020
Production Milestones: Deliveries: TTR ROTARY PLATFORM TRACKING SET	4	2014	4	2014
Ocean Systems				
System Development: Next Gen Technolgy Development Phase 1	1	2016	4	2016
System Development: Next Gen Technolgy Development Phase 2	1	2017	4	2017
System Development: Next Gen Technolgy Development Phase 3	1	2018	4	2018
System Development: Next Gen Technolgy Development Phase 4	1	2019	4	2019
System Development: Next Gen Technolgy Development Phase 5	1	2020	4	2020
Production Milestones: Deliveries: Phase 1	4	2016	4	2016
Production Milestones: Deliveries: Phase 2	4	2017	4	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: Deliveries: Phase 3	4	2018	4	2018
Production Milestones: Deliveries: Phase 4	4	2019	4	2019
Production Milestones: Deliveries: Phase 5	4	2020	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 1427 / *Surface Tactical Team Trainer (STTT)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1427: *Surface Tactical Team Trainer (STTT)*	70.008	10.849	16.768	9.954	-	9.954	13.893	11.764	10.631	10.851	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Surface Tactical Team Trainer project/BFTT Program provides enhancements and upgrades to the Total Ship Training Capability (TSTC) training components to support AEGIS and SSDS needs for increased training capability and functionality. The BFTT component develops new capabilities and integrates training capabilities developed by the AEGIS and SSDS TSTC Training Improvement Programs into a consolidated integrated training system for use on AEGIS and SSDS. TSTC enhancements developed address current and future training requirements by implementing new functionality and by integrating capabilities being developed by both the AEGIS and SSDS Training Improvement Programs into a consolidated training system. TSTC is developments and upgrades include the evolution to an open distributed architecture with maximum commonality across ship classes, integrating existing training systems, or leveraging capabilities developed by other programs.

TSTC provides realistic joint warfare training across the spectrum of armed conflict, realistic unit level team training in all warfare areas (e.g. NIFC-CA and BMD missions to support IAMD). TSTC provides ships' Commanding Officers and Battle Group/Battle Force Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training Organization, the Tactical Training Groups and C2F/C3F FSTs.

TSTC integrated on SSDS provides the capability to complete system and operational level testing of the combat system.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Surface Tactical Team Trainer (STTT)	10.849	16.768	9.954	-	9.954
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continue developing BFTT Build 5.0 to support deployment to Aegis Baseline 9 and SSDS CVN-78 to include modifications to support Cooperative Engagement Capability (CEC) Enhanced Training (CET) upgrades, Simulated Own-Ship Missile generation and control, database decouple, simulated weapon profile updates and integrated editor, and various Human Machine Interface (HMI) improvements. Initiated systems engineering efforts to develop updates to BFTT program in supporting integration of TSTC capabilities for improved Integrated Air and Missile Defense (IAMD), Anti-Submarine Warfare (ASW), and Surface Warfare (SUW) training on AEGIS ACB16/BL9.C2 and SSDS MK 2. These systems engineering efforts included developing BFTT requirements for integrating MH-60R constructive simulator, Identification Friend or Foe (IFF) simulator, Cooperative Engagement Capability (CEC) trainer updates, Dual Band Radar simulator,					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1427 / *Surface Tactical Team Trainer (STTT)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Electronic Warfare (EW), Anti-Submarine Warfare (ASW) trainer and Carrier Tactical Support Center (CV-TSC) trainer upgrades with AEGIS ACB 16/BL9.C2 and SSDS MK2 Combat System. Initiated engineering development for the Cooperative Engagement Capability (CEC) Interim Trainer (CIT) to support near-term fleet training needs. Began requirements development for the AEGIS Training Domain (ATD) components of TSTC to support Aegis Baseline 9.C2 training and SSDS Integrated Combat System Training enhancements. This effort is being accomplished in conjunction with AEGIS TSTC Training Improvement Program and the SSDS TSTC Training Improvement Programs to ensure maximum leveraging of capabilities and reusability between programs. ***FY 2015 Plans:*** Continue Build 5.0, 5.1 and 5.2 developments required for CVN78, AEGIS Baseline 9.C2, and AEGIS Baseline 9 & 7.2 backfit. Integrate CVN78 Dual Band Radar and Cooperative Engagement Capability (CEC) Enhanced Trainer (CET). Complete Build 5.2 SRR. Complete Build 5.0 Test Readiness Review (TRR) and commence Build 5.0 Test and Evaluation. Complete Build 5.1 and 5.2 System Functional Review (SFR) and Preliminary Design Review (PDR) and associated systems engineering and development analysis. Support AEGIS Baseline 9.C2 PDR and SSDS development effort. Initiate Critical Design Review (CDR) development and systems engineering efforts to support FY17 AEGIS Baseline 9.C2 CDR. Initiate Interface Control Documents (ICD) development for hardware and software integration into 9C.2. ***FY 2016 Base Plans:*** Continue Build 5.1 and 5.2 development required to support CVN78 and AEGIS Baseline 9.C2 training capability. Complete Build 5.1 CDR and Test Readiness Review (TRR). Support CVN78 SSDS MK2 Mod 6C engineering tests at Wallops Island for BFTT Build 5.1 Integration and Combat System light off. Continue Combat Systems level Integration engineering for CVN78 Dual Band Radar and Cooperative Engagement Capability (CEC) Enhanced Trainer (CET) training capabilities. Complete Build 5.2 CDR. Complete Build 5.0 Certification to support Baseline 9. Initiate software development for Build 5.2 and necessary integration engineering to support Aegis Baseline 9.C2 Aegis Training Domain (ATD) development. Initiate development of requirements to support TSTC capability improvements to support tactical training requirements of AEGIS and SSDS ACB 20, to include training system modifications to support integration of the Air and Missile Defense Radar (AMDR) stimulation capability. Initiate study to determine method of simulating and integrating real world environments within shipboard sensors for Anti-Area / Area Denial (A2AD) training.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1427 / *Surface Tactical Team Trainer (STTT)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Investigate options to integrate of Full Motion Video capability onto AEGIS and SSDS to provide required realism/fidelity for Surface Warfare Training. Continue to modify TSTC training capability, as components are modernized or new components developed, into a common core system to eliminate redundancies between the AEGIS and SSDS. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	10.849	16.768	9.954	-	9.954

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN 2762: *Other Training Equipment (Surface BFTT/TSTC portion only)*	27.213	41.128	37.096	-	37.096	38.951	38.105	38.880	39.658	-	360.949
• 0604307N/3357: *Aegis Training Improvement Program*	3.733	8.994	15.353	-	15.353	12.874	11.322	9.860	8.703	-	70.839
• 0604755N/3358: *SSDS Training Improvement Program*	1.060	1.120	3.136	-	3.136	3.000	7.658	7.574	8.795	-	32.343

Remarks

D. Acquisition Strategy

The BFTT acquisition strategy for system development utilizes the Advanced Capability Build (ACB) development model, as mandated by OPNAV. Incremental acquisition and fielding, utilizing commercial off-the-shelf technology to the extent possible, is in accordance with OPNAV LTR Ser N86/9U179029 dtd 31 Jul 09.

E. Performance Metrics

TSTC BFTT Core component will be developed to meet the following developmental milestones. These milestones are in close alignment with AEGIS BL9.C2 development milestones and also will support SSDS MK 2 development and integration events.

BFTT 5.1 SRR Q4 2014 4 2014
BFTT 5.2 SRR Q1 2015 1 2015
BFTT 5.0 TRR Q1 2015 1 2015
BFTT 5.1 SFR/PDR Q3 2015 3 2015

BFTT 5.2 SFR/PDR Q4 2015 4 2015
BFTT 5.1 Certification Intial Install CG54 Q4 2016 4 2016
BFTT 5.0 Certification Q1 2016 1 2016
BFTT 5.1 CDR Q1 2016 1 2016
BFTT 5.2 CDR Q2 2016 2 2016
BFTT 5.1 TRR Q3 2016 3 2016
BFTT 5.2 TRR Q2 2017 2 2017
BFTT 5.2 CPR for AEGIS Q2 2018 2 2018
BFTT 5.2 Certification for AEGIS Q1 2019 1 2019

TSTC Capability enhancements will be aligned to the AEGIS Training Improvement Program. TSTC Products will be provided to meet each major AEGIS BL9.C2 development milestones.

AEGIS BL9.C2 System Requirements Review Q1-2014, Q1-2014
AEGIS BL9.C2 System Functional Review Q3-2014, Q3-2014
AEGIS BL9.C2 Preliminary Design Review Q2-2015, Q2-2015
AEGIS BL9.C2 Critical Design Review Q4-2015, Q4-2015
AEGIS BL9.C2 Test Readiness Review Q4-2016, Q4-2016
AEGIS BL9.C2 Light-off Q3-2017, Q3-2017

TSTC Capability enhancements will be aligned to the SSDS Training Improvement Program. TSTC Products will be provided to meet each major SSDS development milestones.

SSDS MK2 ACB 12 IPR 7 Q1-2014, Q1-2014
SSDS MK2 ACB 12 IPR 8 Q2-2014, Q2-2014
SSDS MK2 ACB 12 IPR 9 Q3-2014, Q3-2014
SSDS MK2 ACB 12 IPR 10 Q1-2015, Q1-2015
SSDS MK2 ACB 12 IPR 11 Q2-2015, Q2-2015
SSDS MK2 ACB 12 IPR 12 Q3-2015, Q3-2015
SSDS MK2 ACB 12 IPR 13 Q1-2016, Q1-2016
SSDS MK2 ACB 12 IPR 14 Q2-2016, Q2-2016
SSDS MK2 ACB 12 IPR 15 Q3-2016, Q3-2016

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 1427 / *Surface Tactical Team Trainer (STTT)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	WR	NSWC Dam Neck : Dam Neck	13.625	0.675	Dec 2013	0.292	Dec 2014	0.259	Dec 2015	-		0.259	Continuing	Continuing	Continuing
Systems Engineering	WR	SEA02/NSWC Dam Neck/NSWC Dahlgren : NAVSEA/ Dam Neck/NSWC Dahlgren	13.875	1.807	Dec 2013	1.557	Dec 2014	1.393	Dec 2015	-		1.393	-	18.632	-
		Subtotal	27.500	2.482		1.849		1.652		-		1.652	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	NSWC Dam Neck/ SEA 02 : WR/REQN	27.837	6.006	Dec 2013	12.953	Dec 2014	6.463	Dec 2015	-		6.463	-	53.259	-
		Subtotal	27.837	6.006		12.953		6.463		-		6.463	-	53.259	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC Dam Neck/ SEA 02 : WR/REQN	7.983	1.523	Dec 2013	0.962	Dec 2014	0.854	Dec 2015	-		0.854	-	11.322	-
		Subtotal	7.983	1.523		0.962		0.854		-		0.854	-	11.322	-

Management Services ($ in Millions)

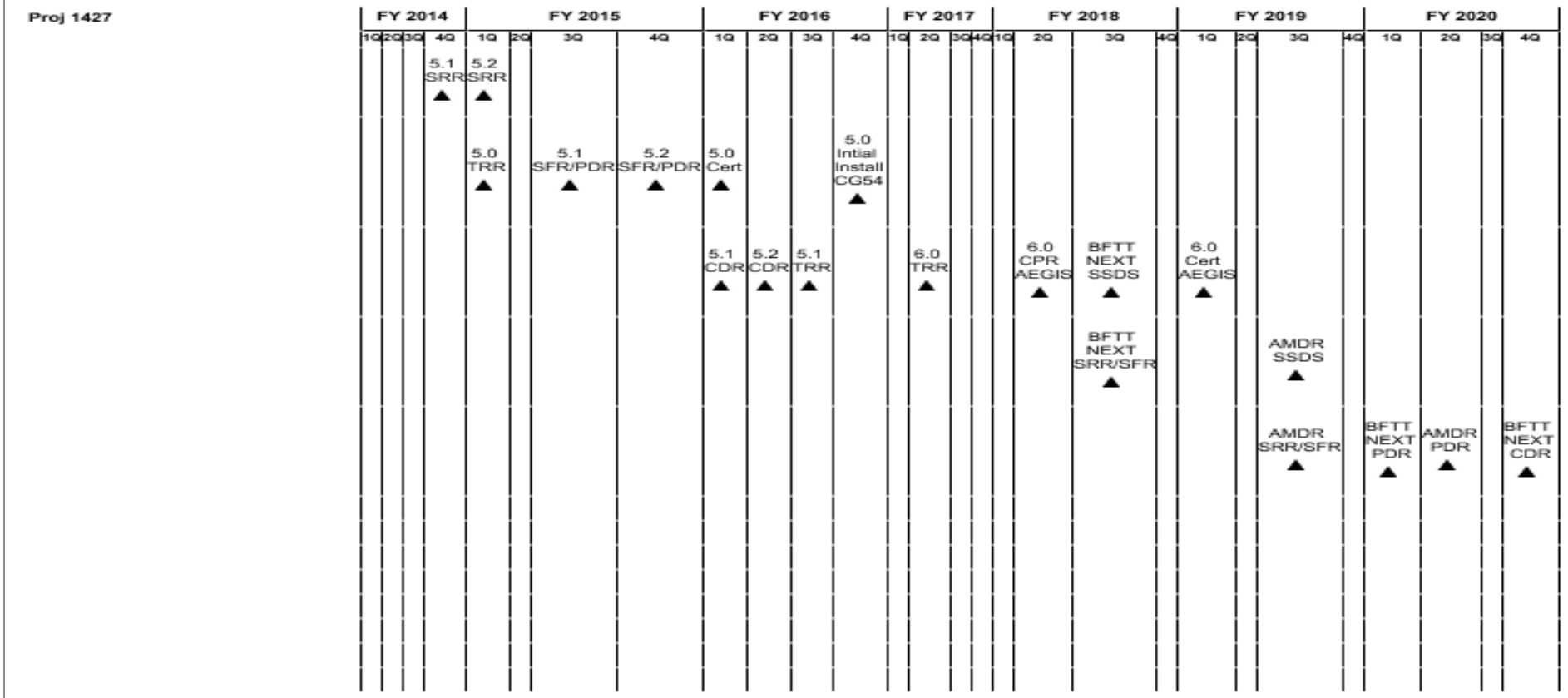
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NSWC Dam Neck/ SEA02 : WR/REQN	6.688	0.838	Dec 2013	1.004	Dec 2014	0.985	Dec 2015	-		0.985	-	9.515	-
		Subtotal	6.688	0.838		1.004		0.985		-		0.985	-	9.515	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 1427 / *Surface Tactical Team Trainer (STTT)*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	70.008	10.849		16.768		9.954		-		9.954	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1427 / *Surface Tactical Team Trainer (STTT)*



2016PB - 0204571N - 1427

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1427 / *Surface Tactical Team Trainer (STTT)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1427				
BFTT 5.1 SRR	4	2014	4	2014
BFTT 5.2 SRR	1	2015	1	2015
BFTT 5.0 TRR	1	2015	1	2015
BFTT 5.1 SFR/PDR	3	2015	3	2015
BFTT 5.2 SFR/PDR	4	2015	4	2015
BFTT 5.1 Certification Intial Install CG54	4	2016	4	2016
BFTT 5.0 Certification	1	2016	1	2016
BFTT 5.1 CDR	1	2016	1	2016
BFTT 5.2 CDR	2	2016	2	2016
BFTT 5.1 TRR	3	2016	3	2016
BFTT 5.2 TRR	2	2017	2	2017
BFTT 5.2 CPR for AEGIS	2	2018	2	2018
BFTT 5.2 Certification for AEGIS	1	2019	1	2019
BFTT NEXT SSDS ACB18	3	2018	3	2018
BFTT NEXT SRR/SFR	3	2018	3	2018
AMDR SSDS Platform Integration	3	2019	3	2019
AMDR SSDS SRR/SFR	3	2019	3	2019
BFTT NEXT PDR	1	2020	1	2020
AMDR PDR	2	2020	2	2020
BFTT NEXT CDR	4	2020	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 2124 / *Air Warfare Training*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2124: *Air Warfare Training*	29.263	10.395	1.262	1.611	-	1.611	1.654	1.671	1.707	1.741	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project transitions new training and range system technologies for use in Naval Aviation training. Products from this effort are directly tied to the Navy Aviation Simulation Master Plan (NASMP), MH-60R/S master plan, Unmanned Aerial Systems (UAS) master plan, the Live Virtual Constructive (LVC) program, component technologies, including the Multiplex Data Bus Controller Translator Transmitter, F/A-18C-F Requirements Procurement Plan (RPP), open architecture implementation, multiple technology refresh efforts and the Multi-Mission Maritime Aircraft/P-8 programs. These efforts will support training optimization of future naval aviation training/preview/mission rehearsal systems (fixed, deployed, and unmanned). Tasks include: specification development to provide for common, modular, High Level Architecture compliant, high fidelity Distributed Mission Training and mission rehearsal capabilites ashore and afloat. Technologies to be developed and integrated include: intelligent semi-automated forces (SAF) technologies, automated performance measurement technology, advanced net-ready weapons simulation, Air to Air/ Air to Ground, visual/sensor enhancement, sensor/weather server, common post mission assessment technologies, tablet mission preview technology, advanced visual-sensor technology, high resolution helmet mounted, and/or flat panel displays, 20-20 visual acuity image generation, NAVAIR Portable Source Initiative improvements, common correlated data set technologies, common link, common software/database reuse technologies, advanced environmental effects modeling, fused radar/infra-red/electro-optic and acoustic sensor simulations, aerodynamic modeling, physics-based infra-red simulations, spatial disorientation research, comms degradation modeling, and final Test and Evaluation (T&E) within the Aviation Training Technology Integration Facility (ATTIF), Naval Air Warfare Center-Aircraft Division. This Manned-Flight Simulator (MFS) ATTIF capability provides a window to fleet aviators for critical comment, evaluation and fine tuning of new, interoperable, and innovative technologies such as LVC before final transition to the fleet. Naval Aviation Distributed Training Center, debrief/After Action Review (AAR), and intelligent training tools for the virtual environment are focused on human performance and trend analysis enhancements for fleet readiness and distributed mission training at all levels.

Metrics: These technology transitions seek to lower Total Ownership Costs of the training systems and life cycle costs, including: increasing software re-use, reduced instructor manning profiles, software-based fidelity enhancements and increased fleet readiness by enhancing overall system fidelity to the projected operating environments. NASMP readiness improvements are conservatively forecasted at 12-35% Training and Readiness improvement via synthetic environment upgrades and associated technology upgrades to stand-alone and networked simulators. Individual technology transition investments have routinely exceeded 300+% financial Return On Investment. Technology Readiness Levels, Training and Readiness, fleet readiness, and financial metrics are used.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: HUMAN/INSTRUCTIONAL SYSTEMS INTEGRATION	2.158	0.473	0.770	-	0.770
Articles:	-	-	-	-	-
Description: Develop common AAR and platform-unique post mission assessment, Intelligent Tactical SAF, and high fidelity simulator component technologies. AAR, and high fidelity components such as Intelligent SAF designs lower NASMP upgrade and simulator life-cycle costs. Integrate Voice-Capable SAF component					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
technologies, improve open common instructor interface effectiveness and provide for multi-SAF exercise utilization. Analyze, develop, and integrate common architecture components for F/A-18C-F, EA-18G, MH-60R/S, Unmanned Aerial Systems (UAS) platforms, E-2C/D & USMC mission areas, intelligent instructor operator components, automated performance measurement technologies, Tactical Aircraft/ Multi-Mission Maritime Aircraft/ Reduced Oxygen Breathing Device-Spatial Disorientation devices common graphic user interface initiatives, common threat system formats, Next Generation Threat System technology transitions, Joint SAF compatability, cross platform post mission performance measurement, and after action review/debrief innovations, thereby maximizing return on investment for instructional systems technology investments. ***FY 2014 Accomplishments:*** Provide continued development and support for Instructional Systems based brief preview, debrief and tactical training assessment technologies for all Naval Aviation Platforms, to include data and trend-analysis. Provide technology in support of common simulation product lines, UAS common control station, and debrief visualization. ***FY 2015 Plans:*** Provide continued development and support for Instructional Systesm based brief/preview, debrief, and tactical assessment technologies for all Naval Aviation platforms, to include data and trend analysis. Provide technology in support of common, and open-architecture simulation product lines, UAS training, UAS common control station, and debrief visualizations. ***FY 2016 Base Plans:*** Provide continued support to the NAMRU research team to complete both Reduced Oxygen Breathing Device/ Hypoxia system configuration, test and evaluation, and final prototyping development/support for the Spatial Disorientation family of systems to meet new curricula and requirements. Provide training station/instructional systems support for standard post-mission assessment software, tactical trend analysis and Common Simulation Product development. ***FY 2016 OCO Plans:*** N/A					
Title: SENSORS AND ENVIRONMENT	1.059	0.200	0.640	-	0.640
Articles:	-	-	-	-	-
Description: Develop common and platform unique sensor, visual, and environmental simulation (atmospherics or acoustics) into fidelity upgrades with Commercial Off The Shelf and/or Government Off the Shelf Software (GOTS). Perform risk reduction, advanced displays innovation, test and evaluation, integration, and production					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
of Common Sensor Model, High Fidelity Active-Acoustics Sensor Operator Training, 3D weather effects, 3D Ocean acoustic modeling, new ROBD Spatial Disorientation, and legacy device technologies. Demonstrate GOTS capability for cost-effective database materialization, Material Properties Reference Dataset library, associated NAVAIR Portable Source Iniative specifications and processes for implementation on Distributed Mission Training, deployed trainers, legacy, and new visual system upgrade programs. In support of Navy Aviation Simulation Master Plan (NASMP) upgrade efforts, develop texture storage, sensor-environmental effects, NAVAIR Portable Source Initiative material reference processes/standards, automated technology applications for real time publishing, shadows, cultural lighting, combat, and weather effects and very high-resolution visualization technologies, to include tablet-based mission preview for tactical aircrew. ***FY 2014 Accomplishments:*** Test, evaluate and demonstrate new platform and composite squadron mission preview sensor-prediction, Carrier Qualification (CQ) and after-action review (AAR) technologies that improve individual, squadron unit and wing readiness. Provide Government Off the Shelf Software (GOTS)/ Commercial Off The Shelf (COTS) applications for common and platform unique visual/sensor technologies in all phases of training on mission preview/preparation. ***FY 2015 Plans:*** Continue to develop, test, and demonstrate new platform and composite/MEU squadron mission preview, sensor prediction, CQ part-task training, and AAR technologies that improve individual, squadron, and wing readiness metrics. Provide GOTS/or COTS applications for platform unique, or common visual-sensor technology challenges for all phases of training or mission preview. Perform new sensor-fusion and synthetic vision technology development to meet fleet requirements, and emerging UAS CCS, or UAS-platform unique requirements. ***FY 2016 Base Plans:*** Support final acquisition plan documentation, specifications, and testing for the CQ mobility part task trainer prototypes, and for all after action/post-mission assessment technologies. Using sensor fusion, and simulation-based displacement mapping, provide enhanced technology development for low-level flight operations training over water environments, and Terrain-Following, flight training in all weather, sensor environments. Provide enhanced threat presentations with improved tactical behaviors for Next-Generation Threat System application. ***FY 2016 OCO Plans:*** N/A					
Title: LIVE VIRTUAL CONSTRUCTIVE (LVC), AND VISUALS	7.178	0.589	0.201	-	0.201

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-

Description: Air Warfare Training Development provides for risk mitigation and next generation platform, Unmanned Aerial Systems, Live Virtual Constructive and associated visualization component development for Navy aviation distributed mission training centers (NADTC), and for stand-alone and small footprint deployable devices. Support the NASMP upgrade efforts and Type/Model/Series programs with advanced visual system display configurations requirements. Assess trainee cognitive requirements and the development and incorporation of next generation LVC, UAS constructive and associated debrief/AAR visualization component technologies. Additionally, AWTD provides for advanced virtual component fidelity improvements for Live Virtual Constructive capability (such as "Mobility" Part-Task Trainers and the Multiplex Data Bus Controller Translator Transmitter (MDBCTT)). Live Virtual Constructive (LVC) technologies will facilitate advanced, cost effective weapons and tactics training and emerging capability requirements in the Air-Sea battlespace and Naval Integrated Fire Control-Counter Air (NIFC-CA) capabilities development.

FY 2014 Accomplishments:
Provide continued support to incremental LVC technology development, enhanced visual, sensor, environmental, motion, aero and ocean state fidelity for new virtual training and readiness capabilities. Provide man-in-the-loop and multiplexer Technology Readiness Level (TRL) assessment at Manned Flight Simulator (MFS) and assess other mobility training application areas for improved fleet training and life-cycle cost reductions.

FY 2015 Plans:
Provide continued support to incremental LVC component technology development, to enhance visual, sensor, environmental, motion, aerodynamics, and ocean fidelity for required training and readiness improvements. Provide man-in-the-loop TRL assessment at MFS, and assess Distributed Mission Readiness Trainer-class systems, and other mobility focused training devices for improved fleet training, T&D metrics, and life-cycle cost reductions.

FY 2016 Base Plans:
Provide continued development and prototype Spatial Disorientation training system syllabus, visual system enhancements, and SD research. Provide Office of Naval Research LVC enhancements. Complete Multiplex Data Bus Controller Translator Transmitter initial integration/ demonstrations for F/A-18E/F embedded training capability.

FY 2016 OCO Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Accomplishments/Planned Programs Subtotals	10.395	1.262	1.611	-	1.611

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN/0705: *COMMON GROUND EQUIPMENT - TRAINING*	152.654	156.522	218.515	-	218.515	206.566	199.798	195.987	197.335	Continuing	Continuing
• OPN/4204: *Weapons Range Support Equipment (WRSE)/LVC*	-	-	-	-	-	-	11.910	27.816	9.901	Continuing	Continuing

Remarks

D. Acquisition Strategy

Air Warfare Training Development (AWTD) is a 6.7 RDT&E joint technology transition program tied to Navy Aviation Simulation Master Plan (NASMP), USMC upgrades and the various platform simulation master plans with the purpose of transitioning advanced training and mission preview/rehearsal technologies. AWTD provides risk mitigation, test and evaluation, and prototype development for stand-alone, manned, un-manned, distributed, open systems and deployed training systems for the warfighter utilizing an Integrated Product Team approach and a combination of reimbursable and direct cite/cost-plus time and material (T&M) contracts.

E. Performance Metrics

Naval Air Warfare Center-Training Systems Division (NAWC-TSD): # of transitions to Fleet Platforms. For each transition, successful Technical Readiness Level (TRL) testing and device Ready for Training (RFT) to Fleet platforms. Seminal transition events are either RFT or tech-refresh Authority to Operate.
NAWC-Aircraft Division (AD): Complete TRL & compliance testing for NASMP and Information Assurance directives.

RSC, Inc.: Government acceptance of evaluation of Small Business Innovation Research (SBIR) device testing.

Aptima, Inc.: Government acceptance of evaluation of SBIR device testing.

CTSI, Inc.: Government acceptance of evaluation of SBIR device testing and Multiplex Data Buse Controller Translator Transmitter warfare testing.

AEGIS TECHNOLOGIES, Inc.: Government acceptance of BAA research of ocean modeling improvements in 3D layered propogation loss, and reverberation.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 2124 / *Air Warfare Training*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPFF	RSC INC. : ORLANDO, FL	0.000	-		0.050	Mar 2015	-		-		-	-	0.050	0.050
Software Development	SS/CPFF	CTSI INC. : LEXINGTON PARK, MD	0.000	5.678	Aug 2014	-		-		-		-	-	5.678	5.678
Software Development	C/CPFF	RSC INC. : ORLANDO, FL	0.314	0.155	Jul 2014	-		-		-		-	-	0.469	0.469
Software Development	C/CPFF	AEGIS TECH : ORLANDO, FL	0.000	0.450	Sep 2014	-		-		-		-	-	0.450	0.450
Software Development	WR	NAWC-AD : PAX RIVER, MD	1.176	-		-		0.393	Nov 2015	-		0.393	Continuing	Continuing	Continuing
Software Development	WR	NAWC-TSD : ORLANDO, FL	16.432	2.935	Nov 2013	0.509	Nov 2014	0.577	Nov 2015	-		0.577	Continuing	Continuing	Continuing
Software Development	WR	NAMRU : DAYTON, OH	0.195	0.225	May 2014	-		0.100	Nov 2015	-		0.100	Continuing	Continuing	Continuing
Software Development	FFRDC	SANDIA, NATIONAL LAB : ALBUQUERQUE, NM	0.075	0.205	Mar 2014	0.061	Mar 2015	0.091	Nov 2015	-		0.091	Continuing	Continuing	Continuing
Prior Year Prod Dev No Longer Funded in the Budget or Out Years	Various	Various : Various	0.938	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	19.130	9.648		0.620		1.161		-		1.161	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPFF	ENGILITY INC. : LEXINGTON PARK, MD	0.343	-		0.300	Mar 2015	-		-		-	-	0.643	0.643
Prior Year Support No Longer Funded in the Budget or Out Years	Various	Various : Various	1.753	-		-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 2124 / *Air Warfare Training*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	2.096	-		0.300		-		-		-	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC AD : PAX RIVER, MD	6.439	0.565	Nov 2013	0.160	Dec 2015	0.235	Nov 2015	-		0.235	Continuing	Continuing	Continuing
		Subtotal	6.439	0.565		0.160		0.235		-		0.235	-	-	-

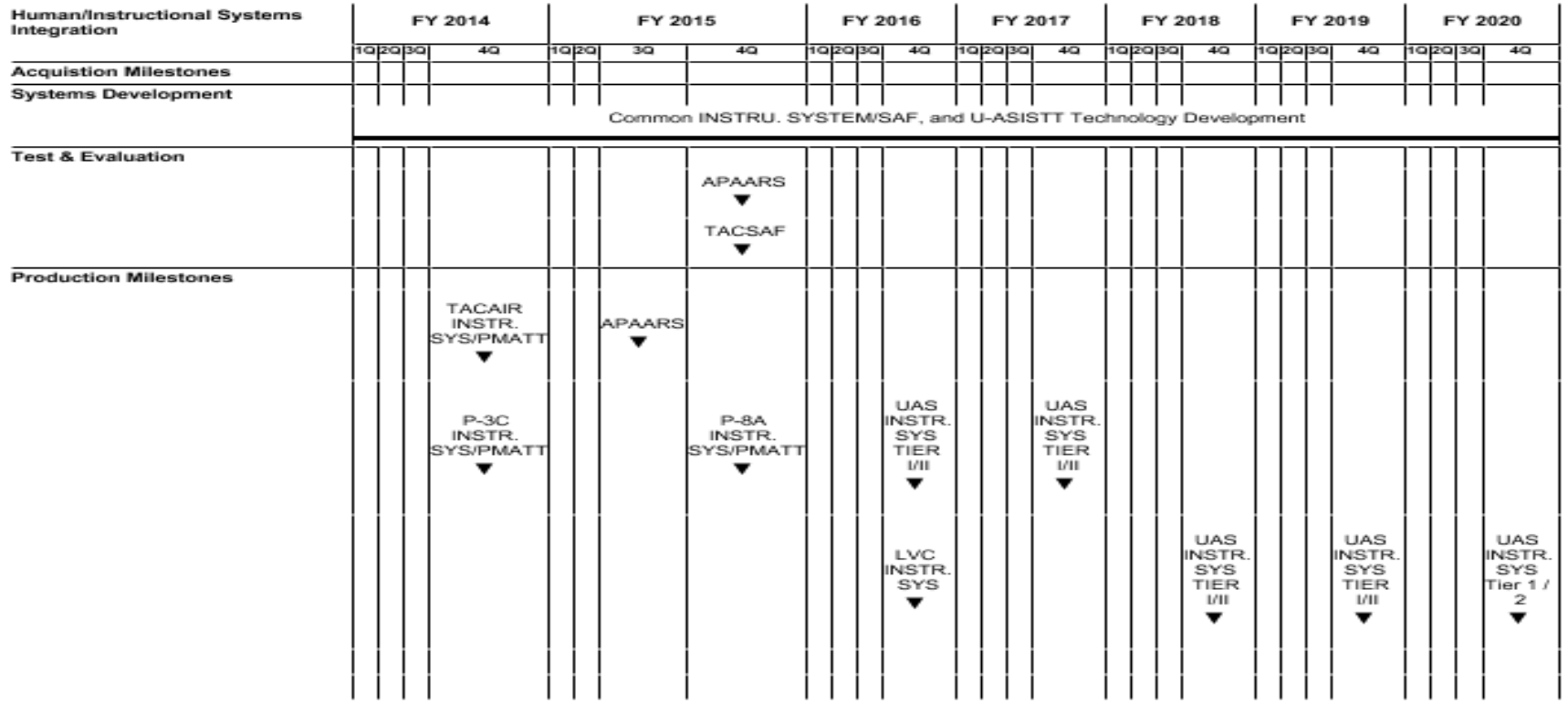
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	METI CORP : PAX RIVER, MD	0.874	0.167	Nov 2013	0.167	Nov 2014	0.200	Nov 2015	-		0.200	-	1.408	1.408
Travel	Allot	NAVAIR : PAX RIVER, MD	0.512	0.015	Nov 2013	0.015	Nov 2014	0.015	Nov 2015	-		0.015	Continuing	Continuing	Continuing
Prior year Mgmt Sup no longer funded in the FYDP	Various	Various : Various	0.212	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	1.598	0.182		0.182		0.215		-		0.215	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	29.263	10.395		1.262		1.611		-		1.611	-	-	-

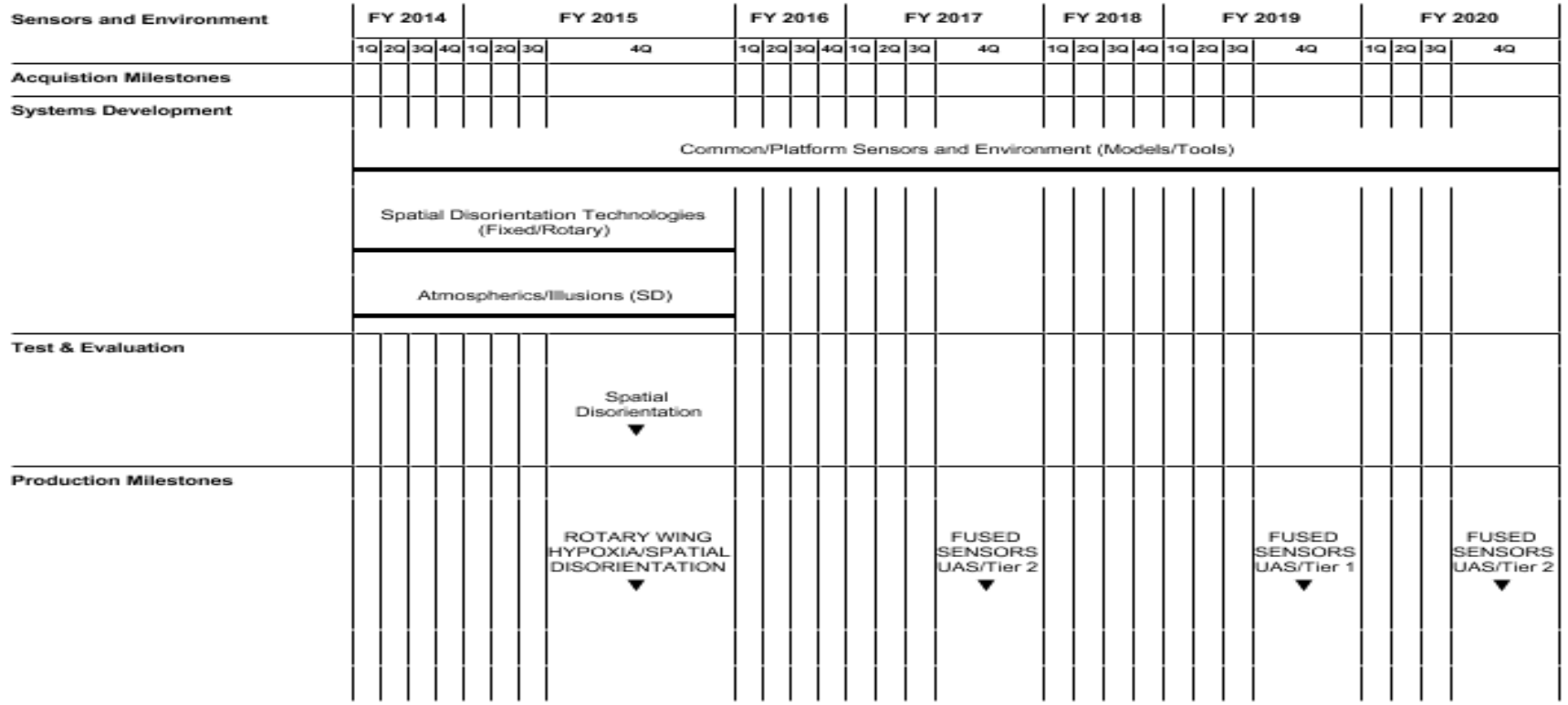
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*



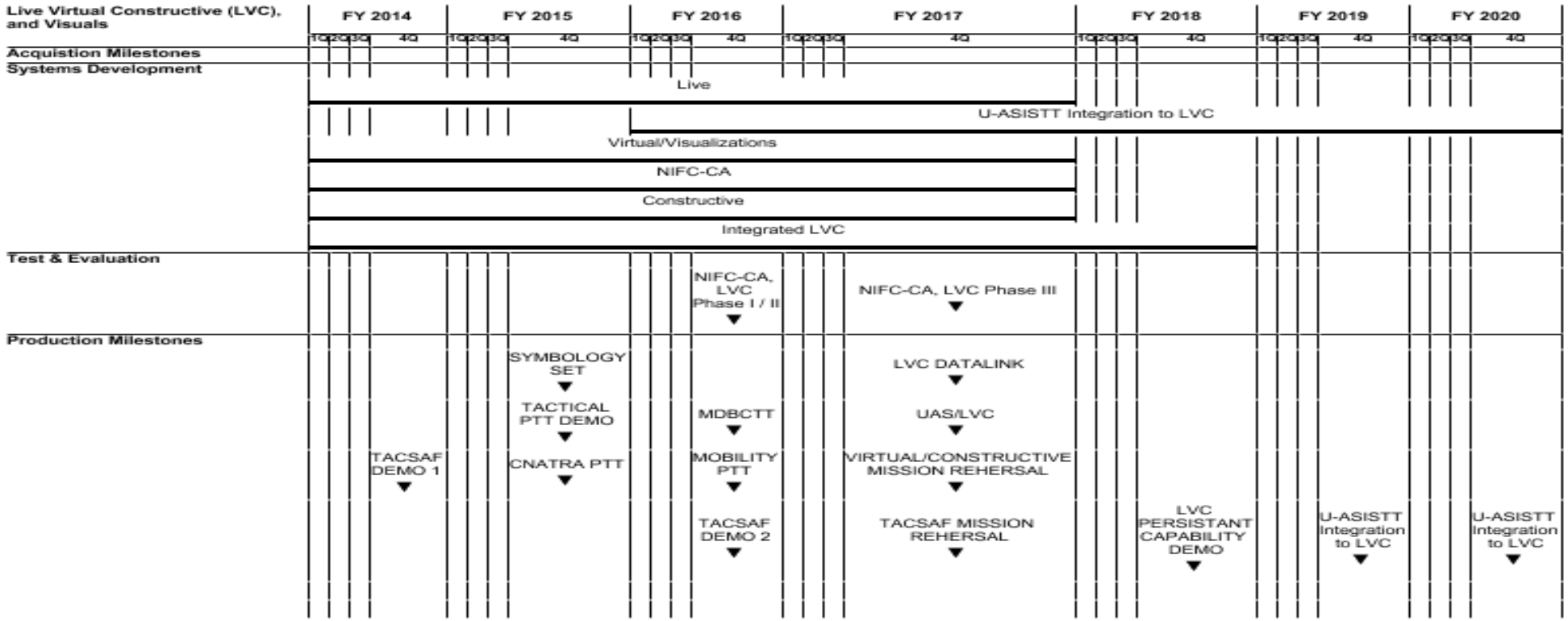
2016PB - 0204571N - 2124

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*



2016PB - 0204571N - 2124

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*



2016PB - 0204571N - 2124

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Human/Instructional Systems Integration				
Systems Development: Common INSTR. SYSTEM/SAF, and U-ASISTT Technology Development	1	2014	4	2020
Test & Evaluation: APAARS	4	2015	4	2015
Test & Evaluation: TACSAF	4	2015	4	2015
Production Milestones: APAARS, 1ST ARTICLE	3	2015	3	2015
Production Milestones: TACAIR INSTR. SYS PMATT	4	2014	4	2014
Production Milestones: P-3C INSTR. SYS PMATT, Increment I	4	2014	4	2014
Production Milestones: P-8A INSTR. SYS PMATT, Increment II	4	2015	4	2015
Production Milestones: UAS INSTR. SYS Tier 1/ 2	4	2016	4	2016
Production Milestones: UAS INSTR SYS Tier 1/ 2	4	2017	4	2017
Production Milestones: LVC INSTR. SYS Component Technologies	4	2016	4	2016
Production Milestones: UAS INSTR. SYS Tier 1 /2	4	2018	4	2018
Production Milestones: UAS INSTR SYS Tier 1 / 2	4	2019	4	2019
Production Milestones: UAS INSTR. SYS Tier 1 / 2	4	2020	4	2020
Sensors and Environment				
Systems Development: Common/Platform Sensors and Environment (Models/Tools)	1	2014	4	2020
Systems Development: Spatial Disorientation Technologies (Fixed/Rotary)	1	2014	4	2015
Systems Development: Atmospherics/Illusions Spatial Disorientation	1	2014	4	2015
Test & Evaluation: Spatial Disorientation Visual Systems Upgrade	4	2015	4	2015
Production Milestones: ROTARY WING HYPOXIA/SPATIAL DISORIENTATION (SD)	4	2015	4	2015
Production Milestones: FUSED SENSORS UAS/Tier 2	4	2017	4	2017
Production Milestones: FUSED SENSORS UAS/Tier 1	4	2019	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: FUSED SENSORS UAS/Tier 2.	4	2020	4	2020
Live Virtual Constructive (LVC), and Visuals				
Systems Development: Live	1	2014	4	2017
Systems Development: U-ASISTT Integration to LVC	1	2016	4	2020
Systems Development: Virtual/SAF Visualizations	1	2014	4	2017
Systems Development: NIFC-CA FEA	1	2014	4	2017
Systems Development: Constructive	1	2014	4	2017
Systems Development: Integrated LVC Components	1	2014	4	2018
Test & Evaluation: NIFC-CA, LVC, Fallon, Phase I / II	4	2016	4	2016
Test & Evaluation: NIFC-CA, LVC, Fallon, Phase III	4	2017	4	2017
Production Milestones: SYMBOLOGY SET	4	2015	4	2015
Production Milestones: LVC DATALINK	4	2017	4	2017
Production Milestones: UAS/LVC Component Technologies	4	2017	4	2017
Production Milestones: MDBCTT Capability Demo	4	2016	4	2016
Production Milestones: TACTICAL PTT DEMO	4	2015	4	2015
Production Milestones: MOBILITY PTT	4	2016	4	2016
Production Milestones: CNATRA PTT	4	2015	4	2015
Production Milestones: VIRTUAL/CONSTRUCTIVE MISSION REHERSAL	4	2017	4	2017
Production Milestones: TACSAF DEMO 1	4	2014	4	2014
Production Milestones: TACSAF DEMO 2	4	2016	4	2016
Production Milestones: TACSAF MISSION REHERSAL	4	2017	4	2017
Production Milestones: LVC PERSISTANT CAPABILITY DEMO	4	2018	4	2018
Production Milestones: U-ASISTT Integration to LVC	4	2019	4	2019
Production Milestones: U-ASISTT Integration to LVC.	4	2020	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 3093 / *TACTS/LATR Replacement*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3093: *TACTS/LATR Replacement*	58.413	4.250	10.349	19.252	-	19.252	16.070	24.478	4.313	4.420	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Tactical Combat Training System (TCTS) will provide the Navy a replacement for the Tactical Aircrew Combat Training System (TACTS) and Large Area Tracking Range (LATR) systems. TCTS will also provide fleet deployable training for at-sea training and tactics development. By providing a rangeless capability, the system will greatly increase the area where live instrumented training can be conducted. Fielding of a pod system is complete at TACTS sites. The program incorporates an evolutionary development (incremental) towards an encrypted system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant sensor stimulation, open architecture and an encrypted/long range secure data link.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: TACTS/LATR REPLACEMENT	4.250	10.349	19.252	-	19.252
Articles:	-	-	-	-	-
Description: TCTS: Qualify and complete the Rangeless Pod system fielding for CVW-5 CVN installation, including the complete Integrated Logistics products and training. Define Test & Training Enabling Achitecture (TENA) compliant interface between TCTS and an Advance Display System (ADS). Develop a Rack-Mounted subsystem for use on rotary wing and transport aircraft. Continue development of the encrypted data link. Develop related training range integration.					
FY 2014 Accomplishments: Update technical specifications and related documentation for the Request For Proposal (RFP). Conduct RFP review with the Milestone Decision Authority prior to RFP release.					
FY 2015 Plans: Conduct source selection on responses to the RFP. Conduct performance, cost, and technical readiness assessment on the proposals.					
FY 2016 Base Plans: Conduct Intergrated Baseline Review to establish a Performance Measurement Baseline with the contractor. Increase of $9M from FY15 to FY16 reflects software development efforts towards encrypted TCTS solution to begin in FY2016.					
FY 2016 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 3093 / *TACTS/LATR Replacement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Accomplishments/Planned Programs Subtotals	4.250	10.349	19.252	-	19.252

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/4204: *Weapons Range Support Equipment (WRSE)/TCTS*	3.269	3.817	1.598	-	1.598	4.044	3.827	3.906	4.025	Continuing	Continuing
• APN/0725: *Other Production Charges/Tactical Combat Training System (TCTS)*	5.268	5.630	2.455	-	2.455	0.959	1.468	21.379	21.806	Continuing	Continuing

Remarks

D. Acquisition Strategy

Tactical Combat Training System will employ an evolutionary incremental acquisition strategy. This strategy will provide for the development of a system that meets the Operational Requirements Document.

E. Performance Metrics

Contractor (TBD): National Security Agency (NSA) approved encrypted Data Link Transceiver (DLT). Successful Engineering Development Model testing of encrypted DLT requirements with NSA.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 3093 / *TACTS/LATR Replacement*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	TBD	TBD : TBD	0.000	-		2.100	Jan 2016	-		-		-	-	2.100	2.100
Software Development	TBD	TBD : TBD	0.000	-		2.658	Jan 2016	12.967	Mar 2016	-		12.967	-	15.625	15.625
Software Development	C/CPFF	BOEING : ST. LOUIS, MO	0.000	-		-		0.866	Mar 2016	-		0.866	-	0.866	0.866
Prior Year Prod Dev No Longer Funded in the Budget or Out Years	Various	Various : Various	10.901	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	10.901	-		4.758		13.833		-		13.833	-	-	-

Remarks

The change in contract award been made to reflect a change in contracting strategy to competitive from the previous plan to award sole source to the vendor that developed and produced the unencrypted TCTS. Delay in contract award allows time for Government to conduct the competition.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPFF	JACOBS ENGINEERING : RIDGECREST, CA	1.438	1.280	Nov 2013	0.510	Nov 2014	0.970	Nov 2015	-		0.970	-	4.198	4.198
Systems Engineering	WR	NAWC-WD : CHINA LAKE, CA	0.358	0.096	Nov 2013	1.884	Nov 2014	0.114	Nov 2015	-		0.114	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWC-AD : PAX RIVER, MD	1.455	2.129	Nov 2013	2.424	Nov 2014	3.655	Nov 2015	-		3.655	Continuing	Continuing	Continuing
Prior Year Support No Longer Funded in the Budget or Out Years	Various	Various : Various	23.946	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	27.197	3.505		4.818		4.739		-		4.739	-	-	-

Remarks

Jacobs Engineering formally Tybrin Corporation.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 3093 / *TACTS/LATR Replacement*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC-AD : PAX RIVER, MD	0.772	0.356	Nov 2013	0.489	Nov 2014	0.265	Nov 2015	-		0.265	Continuing	Continuing	Continuing
Prior Year T&E No Longer Funded in the Budget or Out Years	Various	Various : Various	3.425	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	4.197	0.356		0.489		0.265		-		0.265	-	-	-

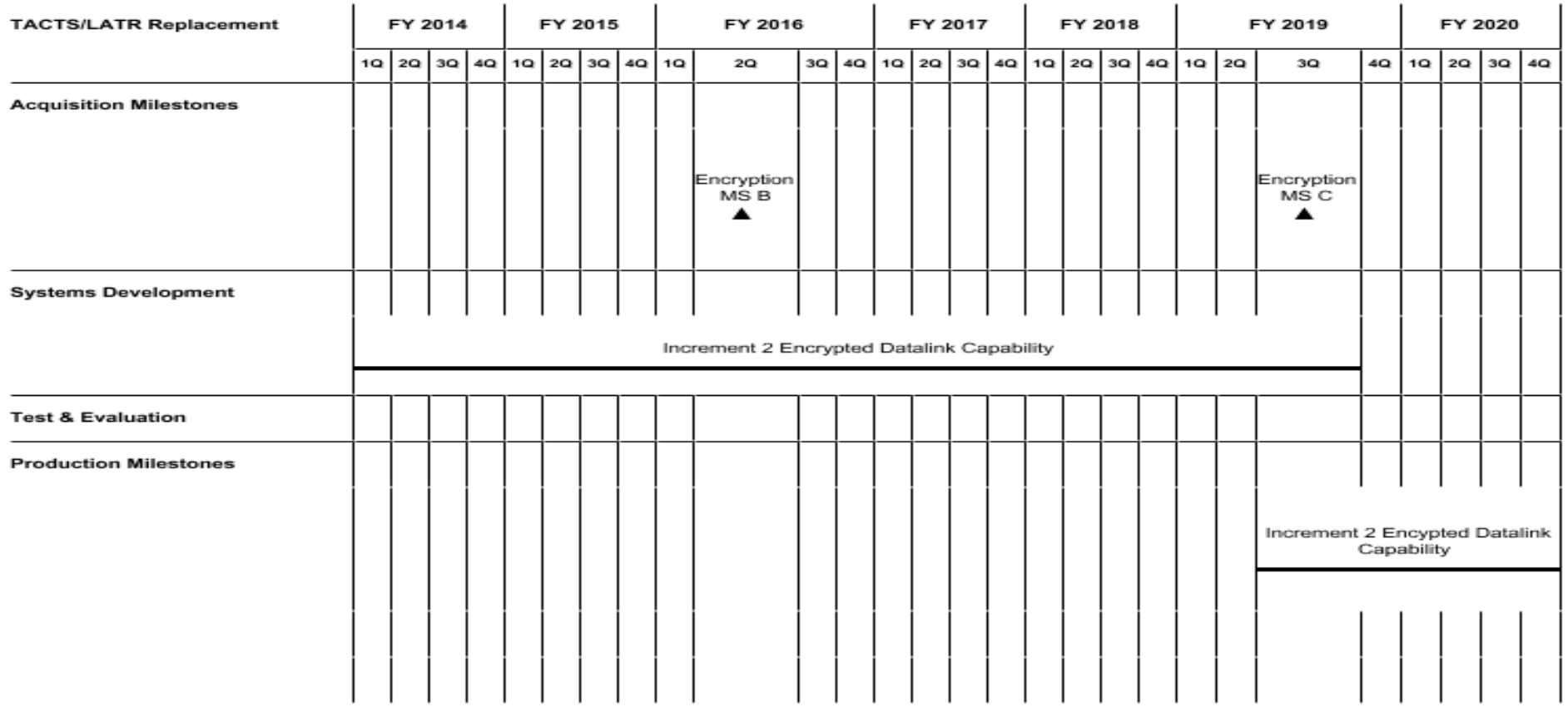
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prog Mgnt Sup	WR	NAWC-AD : PAX RIVER, MD	0.000	0.381	Nov 2013	0.229	Nov 2014	0.388	Nov 2015	-		0.388	Continuing	Continuing	Continuing
Travel	Allot	NAVAIR : PAX RIVER, MD	0.059	0.008	Nov 2013	0.055	Nov 2014	0.027	Nov 2015	-		0.027	Continuing	Continuing	Continuing
Prior Year Mgmt No Longer Funded in the Budget or Out Years	Various	Various : Various	16.059	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	16.118	0.389		0.284		0.415		-		0.415	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	58.413	4.250		10.349		19.252		-		19.252	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3093 / *TACTS/LATR Replacement*



2016PB - 0204571N - 3093

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3093 / *TACTS/LATR Replacement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
TACTS/LATR Replacement				
Acquisition Milestones: Encryption MS B	2	2016	2	2016
Acquisition Milestones: Encryption MS C	3	2019	3	2019
Systems Development: Increment 2 Encrypted Datalink Capability	1	2014	3	2019
Production Milestones: Increment 2 Encypted Datalink Capability	3	2019	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 3356 / *High Fidelity Surface Trainers*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3356: *High Fidelity Surface Trainers*	-	9.492	6.814	4.768	-	4.768	6.760	1.182	-	-	-	29.016
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This line provides SEA 21 (PMS 339) funds for development of a High Fidelity Aegis Combined Integrated Air and Missile Defense (IAMD) and Anti-Submarine Warfare (ASW) Trainer (CIAT) to enable advanced warfare training (AWT) Phase II objectives to be accomplished ashore and to support Active and Passive Sonar Operations, Target Motion Analysis, Sonobuoy Localization, Command and Control, and execution of ASW Kill chain. Funds are provided for advanced component technology development, prototype evaluation, and technology readiness level assessment. Development of these trainers is in response to CNO Wholeness Review and COMNAVSURFOR requirements. This line also funds the research and development of advanced technologies to allow Close-In Weapon System (CIWS) 1B Baseline 2 integration at CSCS Damneck and Detachment West.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Combined IAMD ASW Trainer (CIAT)	9.492	5.404	4.768	-	4.768
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Develop a high fidelity Combined IAMD and ASW Shore Based Trainer (SBT), research and develop advanced technologies necessary to introduce a SBT that will support scenario driven watch team practice of Standard Operating Procedures (SOPs), Tactics Techniques and Procedures (TTPs) and Pre-Planned Response (PPRs) against advanced threats in a realistic environment. Research and develop technologies and interfaces which will enable Surface Anti-Submarine Warfare Synthetic Trainer (SAST) to be integrated with the shore based trainer. Research and define hardware that maximizes the benefits of COTS equipment and reuse of tactical software components. Research and develop integration of models to allow for Navy Integrated Fire Control - Counter Air (NIFC-CA) training. Develop Engineering Development Model (EDM).					
FY 2015 Plans: Develop a high fidelity Combined IAMD and ASW Shore Based Trainer (SBT), research and develop advanced technologies necessary to introduce a SBT that will support scenario driven watch team practice of Standard Operating Procedures (SOPs), Tactics Techniques and Procedures (TTPs) and Pre-Planned Response (PPRs) against advanced threats in a realistic environment. Research and develop technologies and interfaces which will enable Surface Anti-Submarine Warfare Synthetic Trainer (SAST) to be integrated with the shore based trainer. Research and define hardware that maximizes the benefits of COTS equipment and reuse of tactical					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3356 / *High Fidelity Surface Trainers*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
software components. Research and develop integration of models to allow for Navy Integrated Fire Control - Counter Air (NIFC-CA) trainer. ***FY 2016 Base Plans:*** Develop simulations and system architecture for the High Fidelity Combined IAMD & ASW Trainer (CIAT). Research and Develop Advanced technologies necessary to stimulate and emulate the AEGIS B/L 5.1 tactical system. Research and Develop a solution to virtualize AEGIS legacy tactical code to be able to re-host the tactical software on COTS hardware. These solutions will support scenario driven watch team practice of standard operating procedures (SOPs), Tactical Techniques and Procedures (TTPs) and Pre-Planned Response (PPRs) against advanced threats in a realistic environment. Research and Develop technologies and interfaces which will enable ASW trainers to be integrated with IAMD training system for integrated training events. Research and Develop models to allow for Navy Integrated Fire Control-Counter Air (NIFC-CA) training, NCTE integration and advanced threat models. ***FY 2016 OCO Plans:*** N/A					
Title: CIWS 1B Baseline 2 Schoolhouse Integration	-	1.410	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** Research and Develop advanced technologies to allow CIWS 1B Baseline 2 integration at CSCS Dam Neck and Det West to enable accurate training. This project will introduce an upgrade to a training system which is insufficient for accurate training on the fleet configuration. Funds are provided for development of the technologies and test and evaluation of the integrated components. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	9.492	6.814	4.768	-	4.768

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3356 / *High Fidelity Surface Trainers*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

The software development for High Fidelity Surface Trainers is accounted for in this RDT&E line. All production kits are procured in OPN PE 0804731N BLI 5662. The software development and introduction for the CIWS 1B Baseline 2 Schoolhouse Integration is accounted for in this RDT&E line. This upgrade will provide an enabling technology to an existing training system.

E. Performance Metrics

NSWC Dahlgren: Approved Combined IAMD and ASW Trainer (CIAT). Successful engineering development model (EDM) introducing advanced technologies necessary to simulate/stimulate the AEGIS Combat System elements required for operators stated in AEGIS Ashore Baseline 9 Weapons Specification (WS) 21200 series. Successful EDM introducing advanced technologies necessary to simulate/stimulate the Aegis Combat System elements required for operators of Aegis BL 7 system.

NSWC Dahlgren: Approved CIWS 1B Baseline 2 Schoolhouse Integration. 1) Accurate replication of CIWS 1B Baseline 2 configuration and functionality. 2) Successful introduction and test and evaluation to integrate and simulate the performance of Close In Weapons System (CIWS) 1B Baseline 2.

NSWC Carderock: Approved Combined IAMD & ASW Trainer (CIAT). Successful engineering development model introducing advanced technologies necessary to 1) simulate performance of AN/SQQ-89A(V)15 sonar system in alignment with fielding plan for initial Sonar software versions with capability to receive AN/SQQ-89A(V)15 coordinated routine modernizations and 2) replicate Combat Information Center (CIC) configuration and functionalities representative of AEGIS Baseline 9.

NUWC Newport: Approved Combined IAMD & ASW Trainer (CIAT). Develop ASW components to be integrated in the CIAT system for Technology Requirements Model (TRM) simulation of own ship and threat torpedos, and emulations of sonar devices.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 3356 / *High Fidelity Surface Trainers*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SYSTEMS ENG	WR	NSWC DAHLGREN : DAHLGREN,VA	0.000	6.432	Nov 2013	3.940	Nov 2014	3.762	Nov 2015	-		3.762	-	14.134	-
SYSTEMS ENG	WR	NSWC CARDEROCK : CARDEROCK, MD	0.000	2.170	Nov 2013	2.388	Nov 2014	1.006	Nov 2015	-		1.006	-	5.564	-
SYSTEMS ENG	WR	NUWC NEWPORT : NEWPORT, RI	0.000	0.890	Nov 2013	0.486	Nov 2014	-		-		-	-	1.376	-
		Subtotal	0.000	9.492		6.814		4.768		-		4.768	-	21.074	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	9.492		6.814		4.768		-		4.768	-	21.074	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3356 / *High Fidelity Surface Trainers*

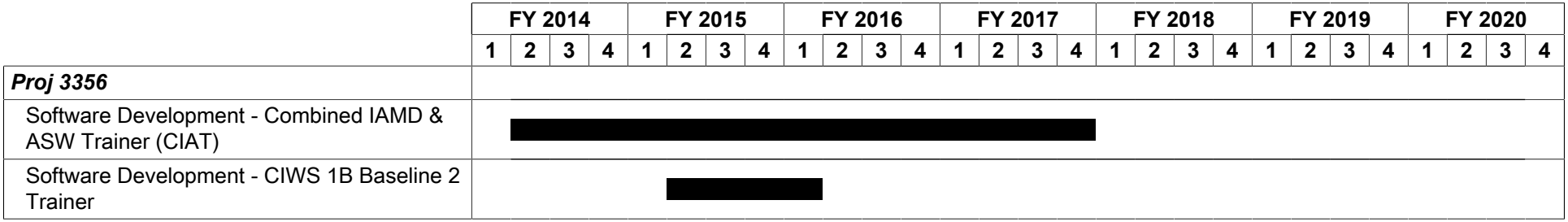


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3356 / *High Fidelity Surface Trainers*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3356				
Software Development - Combined IAMD & ASW Trainer (CIAT)	2	2014	4	2017
Software Development - CIWS 1B Baseline 2 Trainer	2	2015	1	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0204574N *I Cryptologic Direct Support*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	15.424	2.703	1.627	1.915	-	1.915	1.185	1.253	2.313	2.360	Continuing	Continuing
3091: *Advanced Cryptological Sys Eng (CCOP)*	15.424	2.703	1.627	1.915	-	1.915	1.185	1.253	2.313	2.360	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Advanced Cryptologic Systems Engineering - The Cryptologic Carry-on Program develops state-of-the-art signal acquisition software in response to Combatant Command requirements for a quick-reaction surface cryptologic carry-on capability. There are 124 cryptologic capable surface ships in the current Navy inventory. Each of these ships is a potential user of this carry-on equipment, depending on deployment schedules and the tempo of operations. In addition, numerous other Navy and Coast Guard platforms are potential users.

FY15 OCO funds ($470K) required for the development of Red Falcon systems in order to combat future Signals of Interest (SOI).

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	2.703	1.157	1.179	-	1.179
Current President's Budget	2.703	1.627	1.915	-	1.915
Total Adjustments	-	0.470	0.736	-	0.736
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	0.470	0.736	-	0.736

Change Summary Explanation

Technical: Not applicable.
Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204574N / *Cryptologic Direct Support*	Project (Number/Name) 3091 / *Advanced Cryptological Sys Eng (CCOP)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3091: *Advanced Cryptological Sys Eng (CCOP)*	15.424	2.703	1.627	1.915	-	1.915	1.185	1.253	2.313	2.360	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Advanced Cryptologic Systems Engineering - Cryptologic Carry On Program (CCOP) develops state-of-the-art signal acquisition software in response to Combatant Command requirements for a quick-reaction surface, subsurface and airborne cryptologic carry-on capability. There are approximately 124 cryptologic capable surface ships and shore sites in the current Navy inventory; each is a potential user of this carry-on equipment, depending on deployment schedules and the tempo of operations. In addition, there are numerous subsurface and air platforms that are also potential users. This funding line will provide the resources to enable rapid transition of available Commercial Off-The-Shelf (COTS) and Government Off -The-Shelf (GOTS) technologies that apply to Fleet requirements for carry-on system functionalities. These technologies typically require various levels of integration to leverage on-board systems that provide system and mission management, product reporting, and data analysis. COTS/GOTS system documentation and training materials usually require adaptation or modification to meet fleet operator requirements, or entirely new training materials may need to be developed. Before deployment for operational use, systems must be systematically tested to ensure suitable and reliable operation, tested for network vulnerabilities if connected to shipboard Local Area Networks, and tested relative to interoperability requirements. Certification testing is conducted to meet Office of Naval Intelligence security requirements and network testing is conducted in accordance with Information Technology (IT) requirements to allow connection to Navy networks. Funding will also provide resources to address rapid deployment of enhancements or improvements to the common hardware and/or software baseline of all other carry-on subsystems to meet emergent requirements.

FY16 funds will continue to integrate, test, and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the Signals of Interest (SOI) and target threat list. Funds will continue to develop upgrades to existing systems and subsystems according to Fleet requirements. Additional funds will aid the development of new signal processing algorithms and software based solutions to enable rapid transition to permanently installed Ship's Signal Exploitation Space (SSES) systems and the research of self contained small form factor systems for Patrol craft and other small units.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Advanced Cryptological Sys Eng - CCOP	2.703	1.157	1.915	-	1.915
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued to integrate, test, and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the Signals of Interest (SOI) and target threat list. Funds continued to develop upgrades to existing systems and subsystems according to Fleet requirements.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204574N / *Cryptologic Direct Support*	**Project (Number/Name)** 3091 / *Advanced Cryptological Sys Eng (CCOP)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Additional funds aided in the development of new signal processing algorithms to meet emerging threat targets and to address creation of software based solutions for rapid transition to existing hardware. ***FY 2015 Plans:*** Continue to integrate, test and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the Signals of Interest (SOI) and target threat list. Funds will continue to develop upgrades to existing systems and subsystems according to Fleet requirements. Continue the development of new signal processing algorithms and software based solutions to enable rapid transition. ***FY 2016 Base Plans:*** Continue to integrate, test and document identified COTS and GOTS technologies and subsystems that meet emergent and on-going Fleet requirements as specified in the Signals of Interest (SOI) and target threat list. Funds will continue to develop upgrades to existing systems and subsystems according to Fleet requirements. Continue the development of new signal processing algorithms and software based solutions to enable rapid transition to permanently installed Ship's Signal Exploitation Space (SSES) systems and the research of self contained small form factor systems for Patrol craft and other small units. Develop enhanced Red Falcon systems to combat future SOI. ***FY 2016 OCO Plans:*** N/A					
Title: Advanced Cryptological Sys Eng - CCOP Red Falcon OCO	-	0.470	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** Develop enhanced Red Falcon systems which will provide additional processing and collection of simultaneous targets (additional details held at a higher classification). ***FY 2016 Base Plans:*** In FY16, Red Falcon requirements transition to baseline under the Advanced Cryptological Systems Engineering line. ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204574N / *Cryptologic Direct Support*	**Project (Number/Name)** 3091 / *Advanced Cryptological Sys Eng (CCOP)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Accomplishments/Planned Programs Subtotals	2.703	1.627	1.915	-	1.915

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN / 3501: *Cryptologic Communications Equipment*	10.716	13.646	9.979	-	9.979	9.165	9.277	9.427	9.646	Continuing	Continuing

Remarks

D. Acquisition Strategy

Acquisition, management, and contracting strategies are to support engineering and manufacturing development by providing funds to Space and Naval Warfare (SPAWAR) Systems Centers Atlantic and Pacific, and miscellaneous contractors with management oversight by SPAWAR.

E. Performance Metrics

Cryptologic Carry On Program (CCOP) will deliver state-of-the-art signal acquisition software for CCOP systems in response to Combatant Command requirements for a quick-reaction surface, subsurface and airborne cryptologic carry-on capability. There are approximately 295 CCOP systems in inventory.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204574N / *Cryptologic Direct Support*	Project (Number/Name) 3091 / *Advanced Cryptological Sys Eng (CCOP)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	Various	Various : Various	6.109	-		-		-		-		-	Continuing	Continuing	Continuing
Software Development	C/CPFF	Classified Contract : Classified Contract	2.189	1.032	Jan 2014	1.011	Dec 2014	1.252	Dec 2015	-		1.252	Continuing	Continuing	Continuing
Software Development	WR	SSC PAC : San Diego, CA	1.397	0.659	Nov 2013	0.092	Nov 2014	0.100	Nov 2015	-		0.100	Continuing	Continuing	Continuing
Software Development	WR	SSC LANT : Charleston, SC	0.748	0.457	Nov 2013	0.204	Nov 2014	0.205	Nov 2015	-		0.205	Continuing	Continuing	Continuing
		Subtotal	10.443	2.148		1.307		1.557		-		1.557	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	Various	Various : Various	1.915	-		-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	Classified Contract : Classified Contract	0.917	0.140	Mar 2014	0.187	Dec 2014	0.214	Dec 2015	-		0.214	Continuing	Continuing	Continuing
		Subtotal	2.832	0.140		0.187		0.214		-		0.214	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	C/CPFF	Classified Contract : Classified Contract	0.333	0.180	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NPGS : Monterey, CA	0.104	0.055	Apr 2014	0.032	Apr 2015	0.035	Apr 2016	-		0.035	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	OPTEVFOR : Norfolk, VA	0.079	0.060	Apr 2014	0.032	Apr 2015	0.035	Apr 2016	-		0.035	Continuing	Continuing	Continuing
		Subtotal	0.516	0.295		0.064		0.070		-		0.070	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204574N / *Cryptologic Direct Support*	**Project (Number/Name)** 3091 / *Advanced Cryptological Sys Eng (CCOP)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Various	0.958	-		-		-		-		-	Continuing	Continuing	Continuing
Program Management Support	WR	SSC PAC : San Diego, CA	0.360	0.120	Nov 2013	0.069	Nov 2014	0.074	Nov 2015	-		0.074	Continuing	Continuing	Continuing
Travel	WR	SPAWAR : San Diego, CA	0.315	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	1.633	0.120		0.069		0.074		-		0.074	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	15.424	2.703		1.627		1.915		-		1.915	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204574N / *Cryptologic Direct Support*	**Project (Number/Name)** 3091 / *Advanced Cryptological Sys Eng (CCOP)*

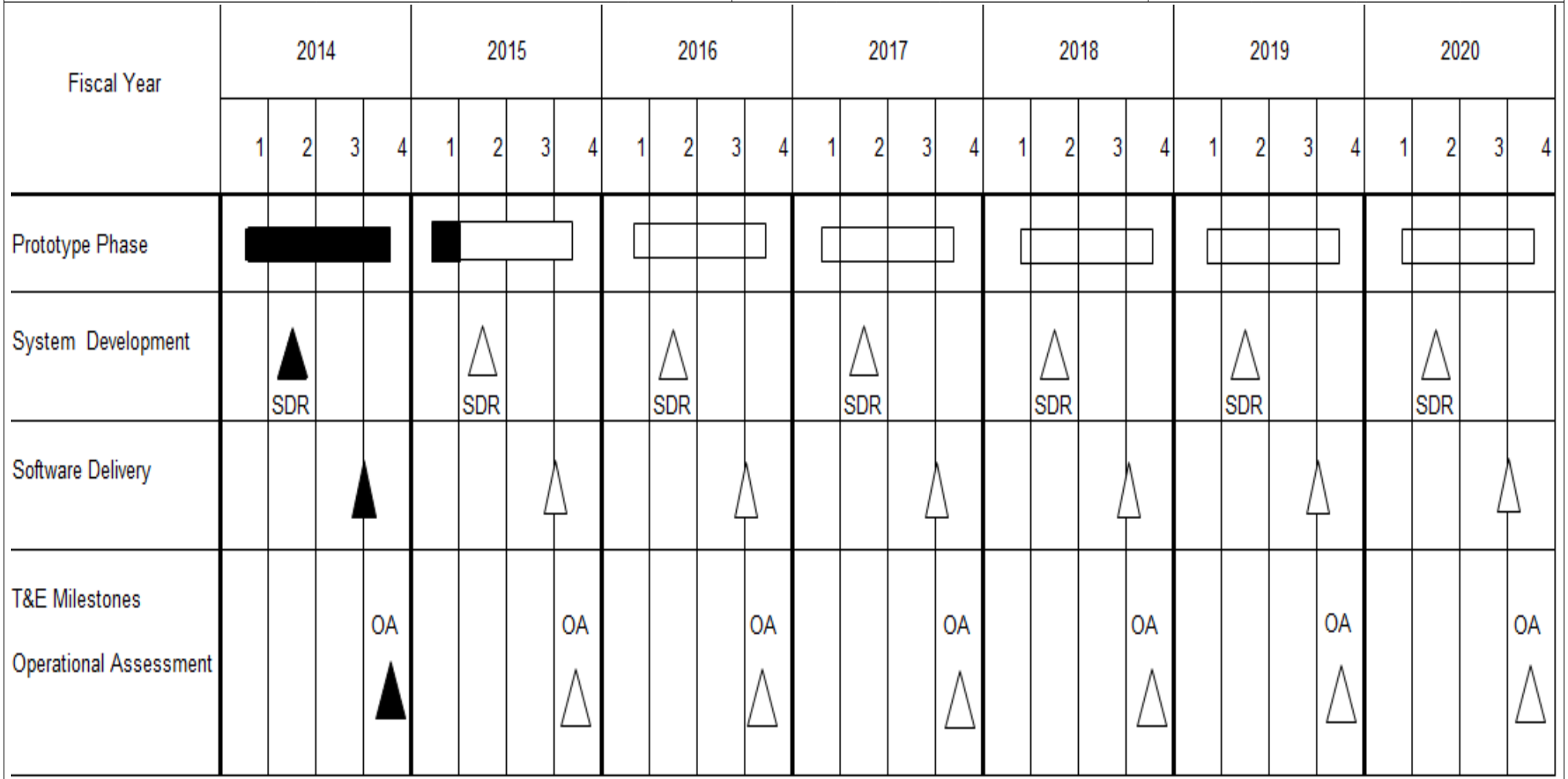

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204574N / *Cryptologic Direct Support*	**Project (Number/Name)** 3091 / *Advanced Cryptological Sys Eng (CCOP)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3091				
Prototype Phase - 2014	1	2014	4	2014
Prototype Phase - 2015	1	2015	4	2015
Prototype Phase - 2016	1	2016	4	2016
Prototype Phase - 2017	1	2017	4	2017
Prototype Phase - 2018	1	2018	4	2018
Prototype Phase - 2019	1	2019	4	2019
Prototype Phase - 2020	1	2020	4	2020
System Design Review (SDR) - 2014	2	2014	2	2014
System Design Review (SDR) - 2015	2	2015	2	2015
System Design Review (SDR) - 2016	2	2016	2	2016
System Design Review (SDR) - 2017	2	2017	2	2017
System Design Review (SDR) - 2018	2	2018	2	2018
System Design Review (SDR) - 2019	2	2019	2	2019
System Design Review (SDR) - 2020	2	2020	2	2020
Software Delivery - 2014	3	2014	4	2014
Software Delivery - 2015	3	2015	4	2015
Software Delivery - 2016	3	2016	4	2016
Software Delivery - 2017	3	2017	4	2017
Software Delivery - 2018	3	2018	4	2018
Software Delivery - 2019	3	2019	4	2019
Software Delivery - 2020	3	2020	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204574N / *Cryptologic Direct Support*	**Project (Number/Name)** 3091 / *Advanced Cryptological Sys Eng (CCOP)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Operational Assessment (OA) - 2014	4	2014	4	2014
Operational Assessment (OA) - 2015	4	2015	4	2015
Operational Assessment (OA) - 2016	4	2016	4	2016
Operational Assessment (OA) - 2017	4	2017	4	2017
Operational Assessment (OA) - 2018	4	2018	4	2018
Operational Assessment (OA) - 2019	4	2019	4	2019
Operational Assessment (OA) - 2020	4	2020	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0204575N *I Elect Warfare Readiness Supt*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	213.584	18.859	16.567	46.609	-	46.609	124.058	110.407	127.783	86.955	Continuing	Continuing
2263: *Information Warfare System*	213.584	18.859	16.567	46.609	-	46.609	124.058	110.407	127.783	86.955	Continuing	Continuing

A. Mission Description and Budget Item Justification

Research, assess, and develop information warfare capabilities.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	19.563	22.067	31.510	-	31.510
Current President's Budget	18.859	16.567	46.609	-	46.609
Total Adjustments	-0.704	-5.500	15.099	-	15.099
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-5.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.704	-			
• Program Adjustments	-	-	2.900	-	2.900
• Rate/Misc Adjustments	-	-	12.199	-	12.199

Change Summary Explanation

The FY 2016 funding request was reduced by $1.3 million to account for the availability of prior year execution balances.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204575N / *Elect Warfare Readiness Supt*				Project (Number/Name) 2263 / *Information Warfare System*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
2263: *Information Warfare System*	213.584	18.859	16.567	46.609	-	46.609	124.058	110.407	127.783	86.955	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funding for this Project Code will be managed by BSO 60 starting in FY14.

A. Mission Description and Budget Item Justification

Information Operations (IO) Counter Measure Capability Research and Development: Develops software to account for antenna modeling, weather calculations, radio frequency modeling, signals mapping and terrain modeling for warfighter use in configuring optimal Electronic Attack (EA) from afloat.

Maritime Cryptologic Systems for the 21st Century Systems Development and Support: Develops and fields spiral Electronic Support, and cyber capabilities against Fleet Forces Command prioritized signals, networks, and target sets. EA capabilities will be integrated into a software architecture baseline that is deployed on subsurface, airborne and surface Information Operations (IO) platforms (Classic Troll, Banshee and Ships Signal Exploitation Equipment Increment E and Increment F) and Office of the Chief of Naval Operations N2/N6 sponsored Pacific Sail (PACSAIL) research project. SCMA - Signal Descriptor File (SDF) Configuration Management Authority (SCMA) is the technical lead for the development, testing and validation of electronic support and electronic attack techniques for Maritime Cryptologic Systems in support of Navy-wide Information Operations planning.
Research, Analysis and Research and Development Technical Support: Conducts vulnerability analysis and reverse engineering on emerging threats and targets and provides specialized technical, engineering and management capabilities to the program management office. (Specific details held at a higher classification level)

Computer Network Operations: Funds development and testing of computer networks for modeling, simulation, and tailoring of Cyber capabilities. Develops specific Cyber tools, techniques, and operators in support of Fleet Cyber Command and Commander, TENTH Fleet requirements. (Specific development details held at a higher classification level). Conducts vulnerability analyses and reverse engineering on improvised explosive devices (Specific details held at a higher classification level)

Task Force Cyber Awakening (TFCA) as directed by the CNO, provides cyber security investments to expand Operation Rolling Tide (ORT) approach to address near term and executable vulnerabilities across Platform IT (PIT) capabilities. These projects and capabilities include the studies and analysis to support PIT improvements to ensure systems are optimally configured to enhance Navy's ability to maneuver in this expanding environment.

Maritime Cyber Operations: Analytical and engineering effort to develop cyber capabilities in the maritime domain. Funds additional development and testing of computer
networks for vulnerability analysis, reverse engineering and simulation systems, and closed development networks. Details can be provided separately in an appropriate environment.
Twisted Web: A developmental capability that improves Fleet ability to safely operate in all ocean areas by reducing adversary capability to engage kinetically

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

Funds risk reduction and system engineering development for project initiation. Details available at classified level.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Electronic Warfare / Information Operations (IO) Countermeasure Capability Research & Development	4.086	12.698	22.837	-	22.837
Articles:	-	-	-	-	-

Description: Information Operations (IO) Counter Measure Capability Research and Development: Develops and tests IO Countermeasure capabilities across various platforms. Develops specific waveforms to attack adversary systems. Develops and uses modeling and simulation techniques to prototype and test emergent waveforms.

FY 2014 Accomplishments:
* Develop and test IO Countermeasures capabilities across various platforms.
* Develop specific waveforms to attack adversary systems.
* Develop and use modeling and simulations techniques to prototype and test emergent waveforms.
* Modeling and Simulation Lab (Applied/projected level of effort).
* Information Warfare (IW) / Information Operations (IO) Electronic Attack (EA) capability development (Details held at a higher classification level).
* Waveform Weapon Development.

FY 2015 Plans:
* Increased, developed and testing of IO Countermeasures capabilities across various platforms.
* Increased and developed specific waveforms to attack adversary systems.
* Increased, developed and used modeling and simulations techniques to prototype and test emergent waveforms.
* Increased Modeling and Simulation Labs (Applied/projected level of effort).
* Increased Information Warfare (IW) / Information Operations (IO) Electronic Attack (EA) capability development (Details held at a higher classification level).
* Increased Waveform Weapon Development.
* Continued spiral development from proof of concept to prototype development for new IO Countermeasure Capability.
* Drive integration of developed capability from single terrestrial cite to Fleet assets.
* Leveraged existing capability to target evolving adversaries capabilities.

FY 2016 Base Plans:
* Increased develop and test IO Countermeasures capabilities across various platforms.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
* Increased develop specific waveforms to attack adversary systems. * Increased develop and use modeling and simulations techniques to prototype and test emergent waveforms. * Increased Modeling and Simulation Lab (Applied/projected level of effort). * Increased Information Warfare (IW)/Information Operations (IO) Electronic Attack (EA) capability development (Details held at a higher classification level). * Increased Waveform Weapon Development. * Continued spiral development from proof of concept to prototype development for new IO Countermeasure Capability. * Continued drive integration of developed capability from single terrestrial cite to Fleet assets. * Continued leveraging existing capability to target evolving adversaries capabilities. * Transition of developed capabilitiy to Fleet customers through, ships signal exploitation equipment increment F program of record. ***FY 2016 OCO Plans:*** N/A					
Title: Electronic Warfare Readiness/MCS-21 Systems Development	0.637	0.302	3.502	-	3.502
Articles:	-	-	-	-	-
Description: Maritime Cryptologic Systems for the 21st Century Systems Development: Develops and fields spiral EA and cyber capabilities against Fleet Forces Command prioritized signals, networks and target sets. Capabilities will be integrated into a software architecture baseline that is deployed on subsurface, airborne and surface Information Operations platforms (Classic Troll Banshee and Ships Signal Exploitation Equipment Increment E and Increment F). SCMA Configuration Management Authority (SCMA) is the technical lead for the development, testing and validation of electronic support and electronic attack techniques for Maritime Cryptologic Systems in support of Navy-wide Information Operations planning. Maritime Cryptologic Systems for the 21st Century Systems Development: Develops and fields spiral EA and cyber capabilities against Fleet Forces Command prioritized signals, networks and target sets. Capabilities will be integrated into a software architecture baseline that is deployed on subsurface, airborne and surface Information Operations platforms (Classic Troll, Banshee and Ships Signal Exploitation Equipment Increment E and Increment F). ***FY 2014 Accomplishments:*** * Develop and field spiral EA and cyber capabilities against Fleet Forces Command prioritized signals, networks and targets sets. Capabilities will be integrated into a software architecture baseline that is deployed on					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
subsurface, airborne, and surface IP platforms (Classic Troll, Banshee, and Ships Exploitation Increment E and Increment F). * Continue IW/IO EA capability development & integration (Details held at higher classification level). * Continue Research and Analysis (Details held at higher classification level). * Continue IW/IO EA capability development & integration (Details held at higher classification level). * Continue Research and Analysis (Details held at higher classification level). ***FY 2015 Plans:*** * Develop and test IO Countermeasures capabilities across various platforms. * Develop specific waveforms to attack adversary systems. * Develop and use modeling and simulations techniques to prototype and test emergent waveforms. * Modeling and Simulation Lab (Applied/projected level of effort). * Information Warfare (IW) / Information Operations (IO) Electronic Attack (EA) capability development (Details held at a higher classification level). * Waveform Weapon Development. ***FY 2016 Base Plans:*** * Continue to develop and test IO Countermeasures capabilities across various platforms. * Continue to develop specific waveforms to attack adversary systems. * Continue to develop and use modeling and simulations techniques to prototype and test emergent waveforms * Modeling and Simulation Lab (Applied/projected level of effort). * Information Warfare (IW) / Information Operations (IO) Electronic Attack (EA) capability development (Details held at a higher classification level). * Waveform Weapon Development. * Redirect internal funding to reduce risk created by elimination of funds from other organizations to support SCMA. * Upgrade current SDF development and validation systems to maintain concurrency with systems on maritime platforms. * Purchase a system to support next generation electronic support and electronic attack capability development * Increase development and testing of electronic attack capabilities across maritime platforms * Upgrade systems and infrastructure to support next generation electronic support and electronic attack capability development * Full Operating Capability for Remoted SDF capability					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
* Increase the number of priority signals that can be demodulated and decoded. ***FY 2016 OCO Plans:*** N/A					
Title: Electronic Warfare/Research, Analysis and R&D Technical Support	5.696	1.936	4.509	-	4.509
Articles:	-	-	-	-	-
Description: Research, Analysis and Research and Development Technical Support: Conducts vulnerability analysis and reverse engineering on emerging threats and targets and provides specialized technical, engineering and management capabilities to the program management office. (Specific details held at a higher classification level)					
FY 2014 Accomplishments: * Conduct vulnerability analysis and reverse engineering on emerging threats and targets and provide specialized technical, engineering and management capabilities to the program management office. (Specific development details h eld at a higher classification level). * Technical and intelligence related studies and contractor engineering, technical and management capabilities. * Research and Analysis (Specific development details held at higher classification level).					
FY 2015 Plans: * Conduct vulnerability analysis and reverse engineering on emerging threats and targets and provide specialized technical, engineering and management capabilities to the program management office. (Specific development details held at a higher classification level). * Technical and intelligence related studies and contractor engineering, technical and management capabilities. * Research and Analysis (specifice development details held at higher classification level).					
FY 2016 Base Plans: * Restores FY15 HAC reductions in support of the development of specific signal detection capability for two new, distinct signal sets, as well as IO technique development. * Develop a capability study against new technology widely deployed in adversary theaters. * Conduct Operational testing and deployment tasks. * Develop and test IO Countermeasures capabilities across various platforms. * Develop specific waveforms to attack adversary systems. * Develop and use modeling and simulations techniques to prototype and test emergent waveforms. * Modeling and Simulation Lab (Applied/projected level of effort).					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
* Information Warfare (IW) / Information Operations (IO) Electronic Attack (EA) capability development (Details held at a higher classification level). * Waveform Weapon Development ***FY 2016 OCO Plans:*** N/A					
Title: Electronic Warfare/Computer Network Operations (CNO)	8.440	1.631	4.961	-	4.961
Articles:	-	-	-	-	-
Description: Computer Network Operations (CNO): Funds development and testing of computer networks for modeling, simulation, and tailoring of Cyber capabilities. Develops specific Cyber tools, techniques, and operators in support of Fleet Cyber Command and Commander, TENTH Fleet requirements. (Specific development details held at a higher classification level) ***FY 2014 Accomplishments:*** * Develop Cyber tools, techniques, and operators in support of Fleet Cyber Command and Commander, TENTH Fleet requirements. (Specific development details held at a higher classification level). * CNO Research and Development Integration Testing Facility. * Computer Network Attack Capabilities (Details held at a higher classification level). * Demonstration of Advanced Computer Network Operations Concept (Details held at a higher classification level). ***FY 2015 Plans:*** * Conduct vulnerability analysis and reverse engineering on emerging threats and targets and provide specialized technical engineering and management capabilities to the program management office. (Specific details held at a higher classification level). * Technical and intelligence related studies and contractor engineering, technical and management capabilities. ***FY 2016 Base Plans:*** * Develop and test IO Countermeasures capabilities across various platforms. * Develop specific waveforms to attack adversary systems. * Develop and use modeling and simulations techniques to prototype and test emergent waveforms. * Modeling and Simulation Lab (Applied/projected level of effort). * Information Warfare (IW) / Information Operations (IO) Electronic Attack (EA) capability development (Details held at a higher classification level).					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
*Develop Cyber Infrastructure that will host teams of intelligence analysts, technical linguists, tool developers, and engineering experts. *Develop Integrated Testing / Cyber Foundry in support of capability development, testing, and evaluation ***FY 2016 OCO Plans:*** N/A					
Title: Twisted Web	-	-	3.000	-	3.000
Articles:	-	-	-	-	-
Description: A developmental capability that improves Fleet ability to safely operate in all ocean areas by reducing adversary capability to engage kinetically. Funds risk reduction and system engineering development for project initiation. Details available at classified level. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** * New project kickoff * Technical, engineering, and intelligence related studies. * Leverage existing capabilities to characterize evolving adversary capabilities. * Evaluation of Fleet capabilities and operations that affect system specifications * Develop and use modeling and simulation techniques to prototype system and characterize operating environment. * Develop deployable system specifications and infrastructure. ***FY 2016 OCO Plans:*** N/A					
Title: Maritime Cyber Operations	-	-	7.800	-	7.800
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: Produces CNO capabilities and accesses to meet COCOM/USCYBERCOM/C10F requirements. Enables development of new operating systems to ensure access and cyber weapons delivery. Details can be provided separately in an appropriate environment. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** * Develop intelligence analysis to determine specific technical vulnerabilities for Computer Network Operations (Specific development details held at a higher classification level). * Funds development and testing of computer networks for modeling, simulation, and tailoring of Cyber capabilities. (Specific development details held at a higher classification level). ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	18.859	16.567	46.609	-	46.609

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTEN/0604270N/1742: *Electronic Warfare Technical Development*	1.352	1.652	1.642	-	1.642	1.665	1.596	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

These programs are designated non-ACAT and operate under streamlined acquisition. This designation supports a streamlined acquisition process using the Advanced Concept Technology Demonstration documentation of the Defense Acquisition Guidance.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

E. Performance Metrics

Measures include quality and impact of new ideas and approaches, the success of the technology application in satisfying Combatant Commanders and Fleet requirements, and successful cost effective transition of the capability into operational systems. The goal of these investments is to provide to Commanders non-kinetic options to influence adversaries and prevent escalation of crises. Due to the nature and classification of these efforts, qualitative measures are used. It is the intent through the development of modeling and simulation scenarios and capabilities to develop quantitative metrics. The success of this depends heavily on the insight obtained via various intelligence community efforts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Classified-1 : Classified	23.128	4.079	Oct 2013	2.200	Oct 2014	6.914	Oct 2015	-		6.914	Continuing	Continuing	Continuing
System Engineering	SS/CPFF	Applied Research Laboratory : University Park, PA	1.935	0.500	Nov 2013	3.589	Oct 2014	5.957	Oct 2015	-		5.957	-	11.981	-
Systems Engineering	WR	NRL : Washington, DC	4.179	0.850	Oct 2013	3.084	Oct 2014	9.340	Oct 2015	-		9.340	-	17.453	-
Training Development (Classified)	Reqn	Classified : Classifed	0.000	-		0.500	Oct 2014	0.810	Oct 2015	-		0.810	-	1.310	-
Training Development (CDL)	Reqn	NAVICP : Philadelphia, PA	0.000	-		0.061	Oct 2014	0.098	Oct 2015	-		0.098	-	0.159	-
		Subtotal	29.242	5.429		9.434		23.119		-		23.119	-	-	-

Remarks

Training Development: Contract Method is Goverment Purchase Card (GPC).

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	SS/CPFF	ARGON-1 : Fairfax, VA	14.224	0.250	Oct 2013	0.234	Oct 2014	0.370	Oct 2015	-		0.370	-	15.078	-
Software Development	SS/CPFF	L3 Communications : New York, NY	65.782	0.333	Dec 2013	-		-		-		-	-	66.115	-
Development Support	WR	SSC PAC : San Diego, VA	0.000	0.368	Oct 2013	-		-		-		-	-	0.368	-
Software Development	SS/CPFF	ARGON-2 : Fairfax, VA	0.000	0.834	Nov 2013	-		-		-		-	-	0.834	-
Development Support	WR	NRL-1 : Washington, DC	3.610	0.620	Nov 2013	1.169	Oct 2014	3.520	Oct 2015	-		3.520	-	8.919	-
Development Support	Various	Classified-1 : Classified	11.110	3.033	Nov 2013	1.800	Oct 2014	2.920	Oct 2015	-		2.920	-	18.863	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analysis	WR	NRL-2 : Washington, DC	0.000	1.654	Oct 2013	-		-		-		-	-	1.654	-
Software Development	SS/CPFF	ARL : University Park, PA	3.900	0.250	Nov 2013	-		-		-		-	-	4.150	-
Software Development	SS/CPFF	ARGON-3 : Fairfax, VA	19.842	-		-		-		-		-	-	19.842	-
Software Development	Various	Classified-2 : Classified	28.737	4.209	Oct 2013	-		3.100	Oct 2015	-		3.100	-	36.046	-
Research, Studies and Vulnerability	WR	NRL-4 : Washington, DC	16.414	-		-		-		-		-	-	16.414	-
Development Support	WR	SSC PAC : San Diego, CA	3.675	-		-		-		-		-	-	3.675	-
Integrated Logistics Support (ILS)	Reqn	NAVICP : Philadelphia, PA	0.000	-		0.046	Oct 2014	0.074	Oct 2015	-		0.074	-	0.120	-
Technical Data (Software Programs & Ref Materials)	Reqn	NPWC : Chesapeake, VA	0.000	-		0.025	Nov 2014	0.040	Oct 2015	-		0.040	-	0.065	-
Development Support	MIPR	Classified : Classified	0.000	-		-		2.000	Oct 2015	-		2.000	-	2.000	-
Software Development	MIPR	Classified : Classified	0.000	-		-		4.700	Oct 2015	-		4.700	-	4.700	-
Studies & Analysis	MIPR	Classified : Classified	0.000	-		-		1.975	Oct 2015	-		1.975	-	1.975	-
Comm'l Drivers Licenses (CDL)	Reqn	Classified : Classified	0.000	-		0.009	Oct 2014	0.001	Oct 2015	-		0.001	-	0.010	-
		Subtotal	167.294	11.551		3.283		18.700		-		18.700	-	200.828	-

Remarks

CDL, ILS & Tech Data: Contract Method is Goverment Purchase Card (GPC).

CDLs are required for Command Personnel to drive Command Vehicles supporting the installation of mission hardware.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204575N / *Elect Warfare Readiness Supt*	Project (Number/Name) 2263 / *Information Warfare System*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC : China Lake, CA	5.602	0.440	Oct 2013	0.226	Dec 2014	0.360	Dec 2015	-		0.360	-	6.628	-
		Subtotal	5.602	0.440		0.226		0.360		-		0.360	-	6.628	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering and Program Management	Various	Classified-1 : Classified	7.121	-		-		-		-		-	-	7.121	-
Program Management Support	Various	Classified-2 : Classified	0.000	0.530	Nov 2013	0.480	Nov 2014	0.850	Nov 2015	-		0.850	-	1.860	-
Program Engineering	Various	Classified-3 : Classified	0.000	0.909	Nov 2013	-		-		-		-	-	0.909	-
Project Engineering	Various	Classified-4 : Classified	4.325	-		-		-		-		-	-	4.325	-
Overhead	Various	Classified : Classified	0.000	-		2.164	Dec 2014	2.164	Oct 2015	-		2.164	-	4.328	-
Contractor Engineering Services	Various	Classifed : Classified	0.000	-		0.480	Oct 2014	0.770	Oct 2015	-		0.770	-	1.250	-
Program Management Personnel (Classified)	Various	Classified : Classified	0.000	-		0.500	Oct 2014	0.646	Nov 2015	-		0.646	-	1.146	-
		Subtotal	11.446	1.439		3.624		4.430		-		4.430	-	20.939	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	213.584	18.859		16.567		46.609		-		46.609	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

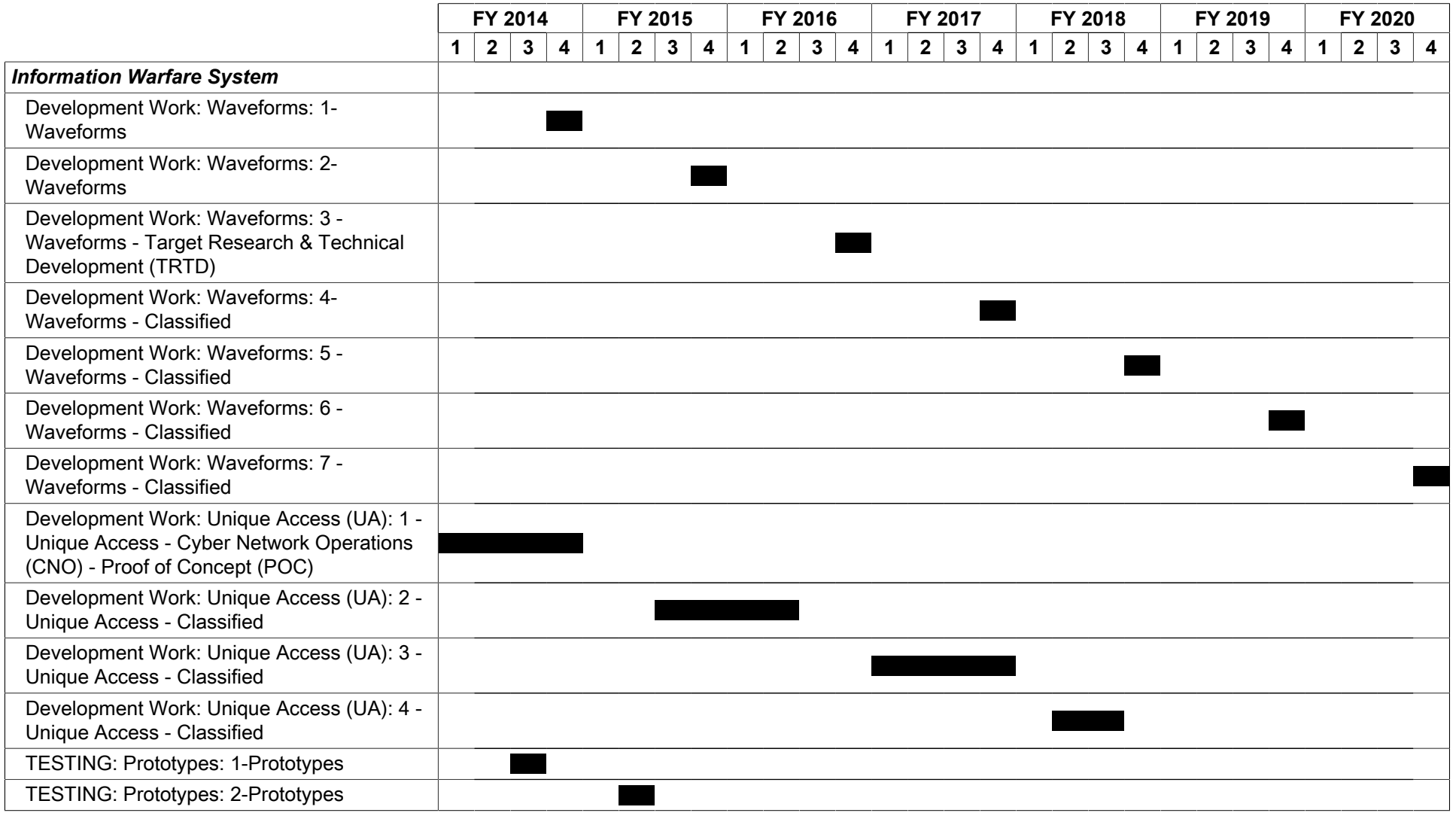

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

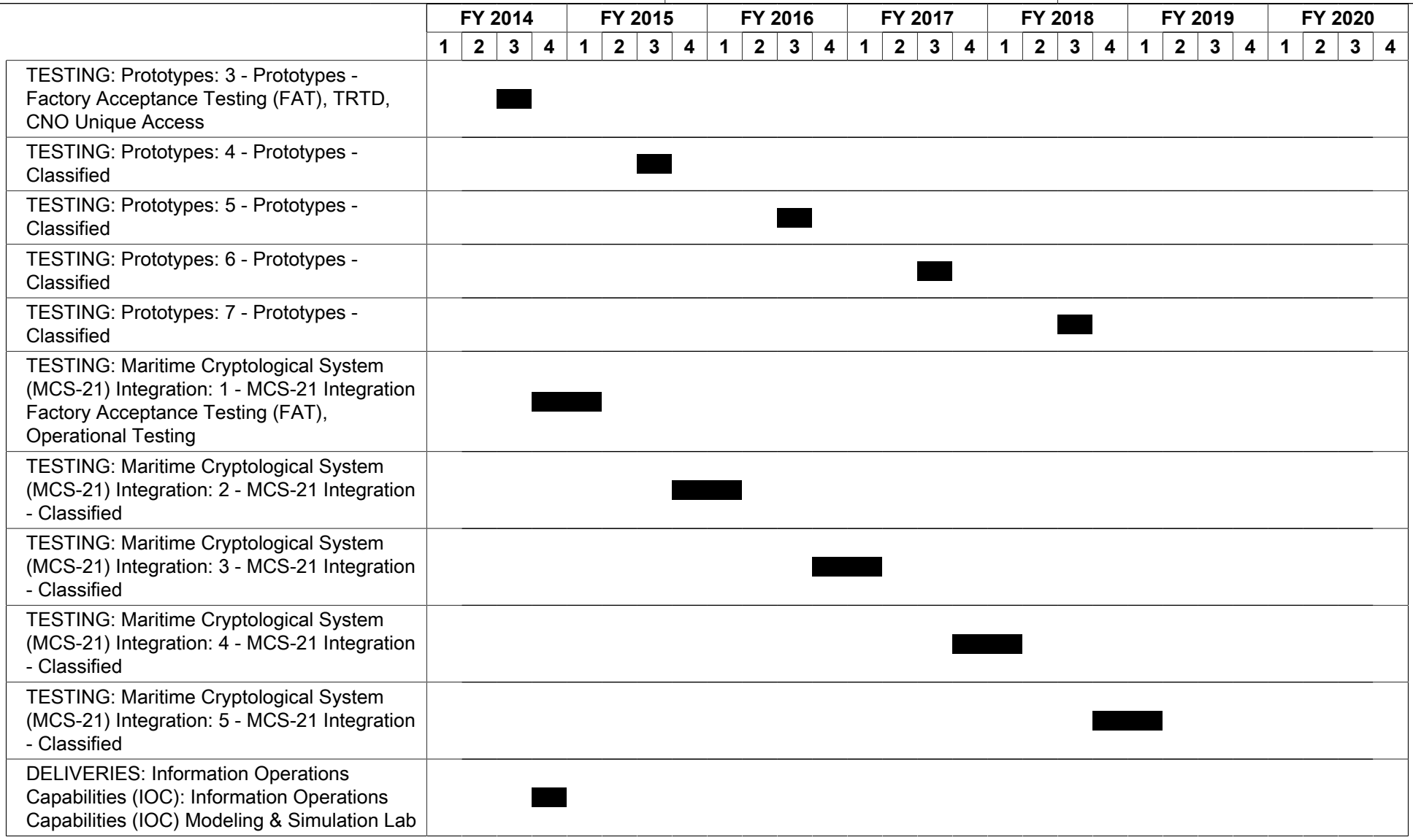

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

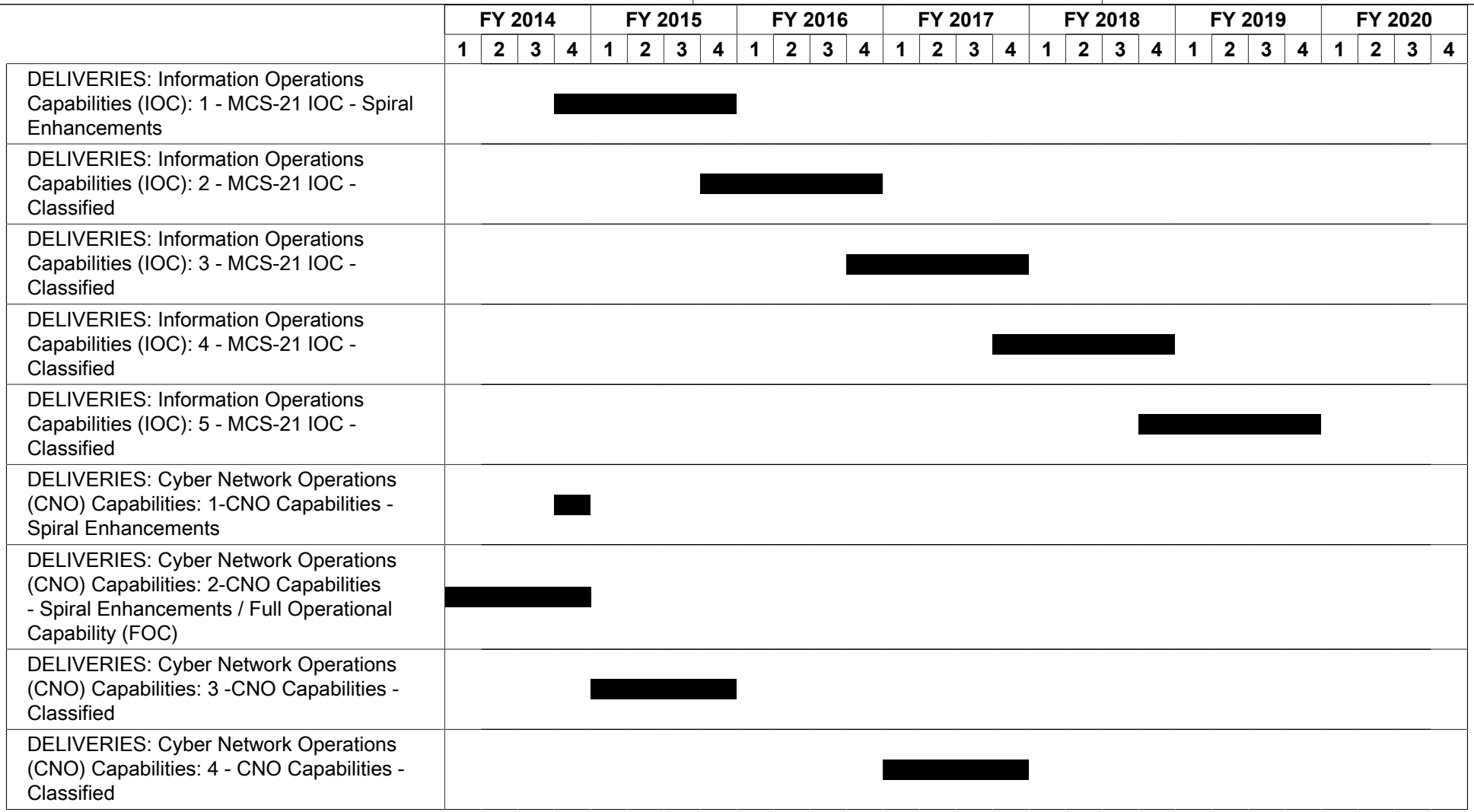

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
DELIVERIES: Maritime Cryptological System (MSC-21): MCS-21 Product Line - Full Operational Capability (FOC)					[redacted]																							

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Information Warfare System				
Development Work: Waveforms: 1-Waveforms	4	2014	4	2014
Development Work: Waveforms: 2-Waveforms	4	2015	4	2015
Development Work: Waveforms: 3 - Waveforms - Target Research & Technical Development (TRTD)	4	2016	4	2016
Development Work: Waveforms: 4- Waveforms - Classified	4	2017	4	2017
Development Work: Waveforms: 5 - Waveforms - Classified	4	2018	4	2018
Development Work: Waveforms: 6 - Waveforms - Classified	4	2019	4	2019
Development Work: Waveforms: 7 - Waveforms - Classified	4	2020	4	2020
Development Work: Unique Access (UA): 1 - Unique Access - Cyber Network Operations (CNO) - Proof of Concept (POC)	1	2014	4	2014
Development Work: Unique Access (UA): 2 - Unique Access - Classified	3	2015	2	2016
Development Work: Unique Access (UA): 3 - Unique Access - Classified	1	2017	4	2017
Development Work: Unique Access (UA): 4 - Unique Access - Classified	2	2018	3	2018
TESTING: Prototypes: 1-Prototypes	3	2014	3	2014
TESTING: Prototypes: 2-Prototypes	2	2015	2	2015
TESTING: Prototypes: 3 - Prototypes - Factory Acceptance Testing (FAT), TRTD, CNO Unique Access	3	2014	3	2014
TESTING: Prototypes: 4 - Prototypes - Classified	3	2015	3	2015
TESTING: Prototypes: 5 - Prototypes - Classified	3	2016	3	2016
TESTING: Prototypes: 6 - Prototypes - Classified	3	2017	3	2017
TESTING: Prototypes: 7 - Prototypes - Classified	3	2018	3	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204575N / *Elect Warfare Readiness Supt*	**Project (Number/Name)** 2263 / *Information Warfare System*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
TESTING: Maritime Cryptological System (MCS-21) Integration: 1 - MCS-21 Integration Factory Acceptance Testing (FAT), Operational Testing	4	2014	1	2015
TESTING: Maritime Cryptological System (MCS-21) Integration: 2 - MCS-21 Integration - Classified	4	2015	1	2016
TESTING: Maritime Cryptological System (MCS-21) Integration: 3 - MCS-21 Integration - Classified	4	2016	1	2017
TESTING: Maritime Cryptological System (MCS-21) Integration: 4 - MCS-21 Integration - Classified	4	2017	1	2018
TESTING: Maritime Cryptological System (MCS-21) Integration: 5 - MCS-21 Integration - Classified	4	2018	1	2019
DELIVERIES: Information Operations Capabilities (IOC): Information Operations Capabilities (IOC) Modeling & Simulation Lab	4	2014	4	2014
DELIVERIES: Information Operations Capabilities (IOC): 1 - MCS-21 IOC - Spiral Enhancements	4	2014	4	2015
DELIVERIES: Information Operations Capabilities (IOC): 2 - MCS-21 IOC - Classified	4	2015	4	2016
DELIVERIES: Information Operations Capabilities (IOC): 3 - MCS-21 IOC - Classified	4	2016	4	2017
DELIVERIES: Information Operations Capabilities (IOC): 4 - MCS-21 IOC - Classified	4	2017	4	2018
DELIVERIES: Information Operations Capabilities (IOC): 5 - MCS-21 IOC - Classified	4	2018	4	2019
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 1-CNO Capabilities - Spiral Enhancements	4	2014	4	2014
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 2-CNO Capabilities - Spiral Enhancements / Full Operational Capability (FOC)	1	2014	4	2014
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 3 -CNO Capabilities - Classified	1	2015	4	2015
DELIVERIES: Cyber Network Operations (CNO) Capabilities: 4 - CNO Capabilities - Classified	1	2017	4	2017
DELIVERIES: Maritime Cryptological System (MSC-21): MCS-21 Product Line - Full Operational Capability (FOC)	1	2015	4	2018

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0205601N *I Harm Improvement*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	719.941	13.581	17.420	52.708	-	52.708	83.991	79.602	64.858	25.409	Continuing	Continuing
1780: *HARM Improvement*	46.312	1.339	1.343	1.383	-	1.383	1.428	1.424	1.452	1.481	Continuing	Continuing
2185: *AARGM*	673.629	12.242	16.077	12.904	-	12.904	4.839	4.820	4.803	4.901	2.664	736.879
2189: *AARGM ER*	0.000	-	-	38.421	-	38.421	77.724	73.358	58.603	19.027	Continuing	Continuing
MDAP/MAIS Code: 368												

Note

A new Program Element (PE), 0605555N, has been established for the Direct and Time Sensitive Strike Program Office to support research, development, test and evaluation of strike weapons to be employed from a multitude of fixed and rotary wing aircraft in support of offensive and defensive land and sea based targets across multiple mission areas. The following projects have been realigned/transferred to PE 0605555N beginning in FY 2014: 3212 - MEDUSA Joint Capability Technology Demonstration (JCTD) and 3412 - Hellfire-Romeo (Hellfire-R) Integration. Project Unit 2189 was established for the Anti-Radiation Guided Missile (AARGM) Extended Range (ER) developmental effort and will be a new start in FY 2016.

A. Mission Description and Budget Item Justification

Research, Development, Test and Evaluation funding for the Joint Service Anti-Radiation Missile (ARM) program, which will include near and far term performance improvements, cost reduction, and studies that establish future development requirements. Specific initial efforts include lower cost seeker component development and seeker aided fuzing to enhance warhead performance in low angle impacts and against certain ship targets.

These projects are funded under Operational Systems Development because they include development efforts to upgrade systems that have been fielded or have received approval for full-rate production and anticipate funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*		R-1 Program Element (Number/Name) PE 0205601N *I Harm Improvement*			
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	13.586	17.420	6.982	-	6.982
Current President's Budget	13.581	17.420	52.708	-	52.708
Total Adjustments	-0.005	-	45.726	-	45.726
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.005	-			
• Program Adjustments	-	-	46.400	-	46.400
• Rate/Misc Adjustments	-	-	-0.674	-	-0.674

Change Summary Explanation

The FY 2016 funding request was reduced by $0.326 million to account for the availability of prior year execution balances.

Technical: FY16-FY20 funding increases to support AARGM Extended Range (ER) Development reflected in PU2189.

Schedule: PU2185 AARGM Block 1 Test and Evaluation was updated to an integrated test approach for Block 1 Integrated Testing / Operational Testing Follow-on Operational Test & Evaluation (IT/OT FOT&E). AARGM Block 1 software upgrade Fleet Release estimated 1Q2017 and IT/OT FOT&E completion expected 4Q2016. Full-Rate Production-1 (FRP1) deliveries have been extended from 1Q2015 to 2Q2015 as a result of a contractual modification to the delivery schedule signed in August 2014.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 1780 / *HARM Improvement*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1780: *HARM Improvement*	46.312	1.339	1.343	1.383	-	1.383	1.428	1.424	1.452	1.481	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

High-speed Anti-Radiation Missile (HARM) Improvement is a Navy led joint service program with the Air Force. The program commenced production in FY 1983. Program element 0205601N was used until FY 1990 to develop and test one hardware and two software upgrades to the HARM (Air-to-Ground (AGM)-88B, Block 3 & AGM-88C, Block 4) as Engineering Change Proposals (ECPs). Another ECP software program (Block 3A & 5) was developed (FY 1996 through FY 1999) to modify HARM software in order to meet operational requirements. HARM Block 3A/5 software was distributed to the Fleet in FY 2000. The Block 5 tactical software upgrade gives HARM improved geographic specificity and improved capability against advanced waveforms. HARM Block 5A is currently being deployed in the Fleet.

HARM Improvement includes efforts to conduct Foreign Military Assessment (FMA) analysis and engineering to exploit vulnerabilities of foreign weapon system threats. HARM Improvement includes funding for threat assessment, operational updates and integration efforts.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: HARM Foreign Military Assessment (FMA)	1.339	1.343	1.383	-	1.383
Articles:	-	-	-	-	-

FY 2014 Accomplishments:

The FMA team continued to conduct FMA analysis and engineering to exploit vulnerabilities of foreign weapon system threats. Focused on new threat systems as they became available as well as theater/country-specific systems of interest, with priorities coordinated through the Anti-Radiation Missile (ARM) Steering Committee (ASC). Expect continued testing on advanced Surface-to-Air weapons and related integrated air defense systems (IADS), jammers and ARM countermeasures, and non-traditional ARM targets. One specific area of attention expanded collection, analysis, and definition of radar parametric related to HARM 5A improvements, with feedback from full Fleet fielding in 2013. Team has continued to support Fleet engagement as a key element of engineering and analytical efforts, which includes funding for threat assessment, operational updates and integration efforts.

FY 2015 Plans:

The FMA team will continue to conduct FMA analysis and engineering to exploit vulnerabilities of foreign weapon system threats. Focus will be on new threat systems as they become available as well as theater/country-specific systems of interest, with priorities coordinated through the ARM ASC. Expect continued testing on advanced Surface-to-Air weapons and related IADS, jammers and ARM countermeasures, and non-traditional

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 1780 / *HARM Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
ARM targets. Team will continue to support Fleet engagement as a key element of engineering and analytical efforts, which includes funding for threat assessment, operational updates and integration efforts. ***FY 2016 Base Plans:*** The FMA team will continue to conduct FMA analysis and engineering to exploit vulnerabilities of foreign weapon system threats. Focus will be on new threat systems as they become available as well as theater/country-specific systems of interest, with priorities coordinated through the ARM ASC. Expect continued testing on advanced Surface-to-Air weapons and related IADS, jammers and ARM countermeasures, and non-traditional ARM targets. Team will continue to support Fleet engagement as a key element of engineering and analytical efforts, which includes funding for threat assessment, operational updates and integration efforts. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.339	1.343	1.383	-	1.383

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

HARM software updates are provided through the Software Support Activity (SSA) at Naval Air Warfare Center - Weapons Division (NAWC-WD), China Lake, CA.

E. Performance Metrics

Successfully complete FMA testing analysis to support the HARM.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 1780 / *HARM Improvement*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-WD : China Lake, CA	2.476	1.337	Nov 2013	1.341	Nov 2014	1.381	Nov 2015	-		1.381	Continuing	Continuing	Continuing
Prior Year Prod Dev no longer funded in FYDP	Various	Various : Various	24.732	-		-		-		-		-	-	24.732	-
		Subtotal	27.208	1.337		1.341		1.381		-		1.381	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Eval	WR	NAWC-WD : China Lake, CA	18.701	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	18.701	-		-		-		-		-	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	WR	Various : Various	0.403	0.002	Jan 2014	0.002	Jan 2015	0.002	Jan 2016	-		0.002	Continuing	Continuing	Continuing
		Subtotal	0.403	0.002		0.002		0.002		-		0.002	-	-	-

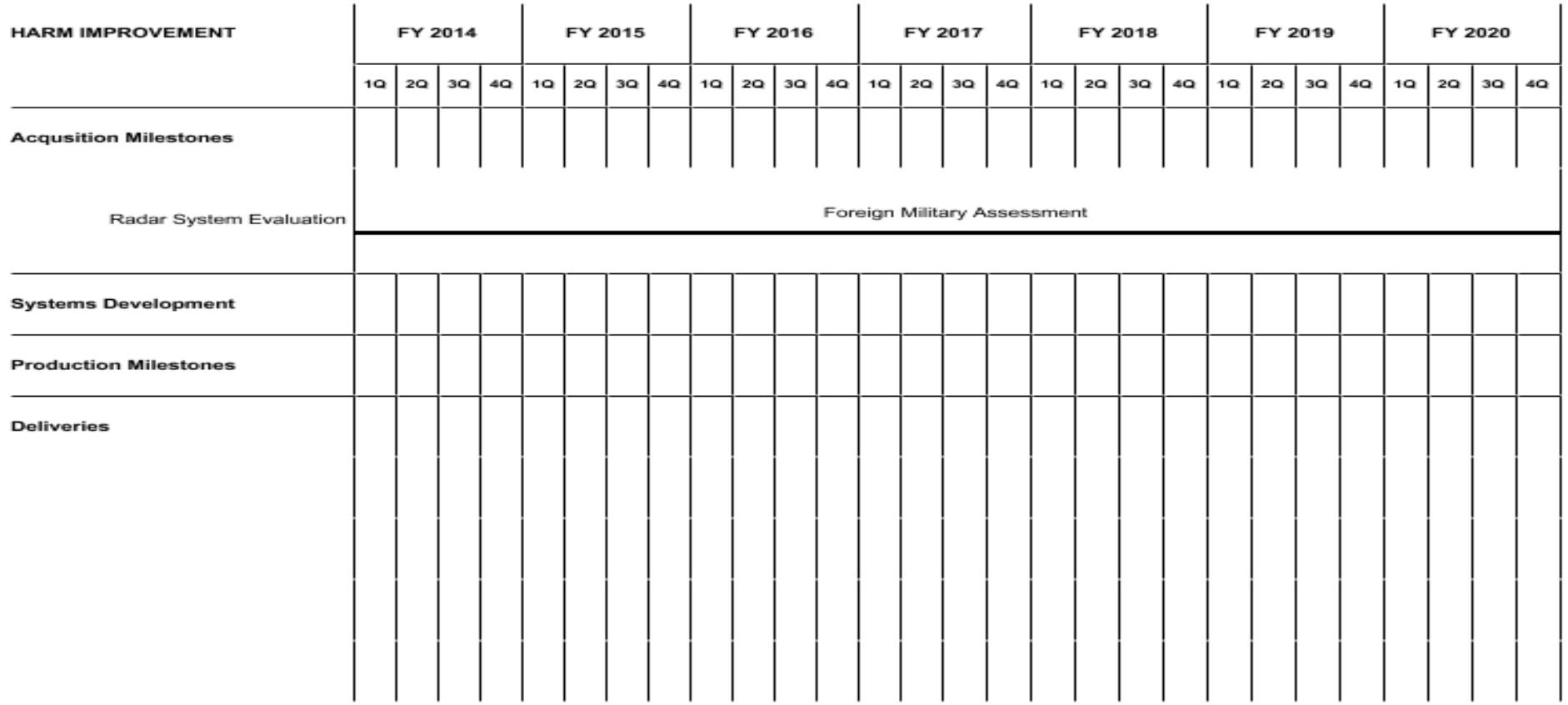
Remarks

Contract Type for Travel is Travel Order (TO).

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	46.312	1.339		1.343		1.383		-		1.383	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 1780 / *HARM Improvement*



2016PB - 0205601N - 1780

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 1780 / *HARM Improvement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
HARM IMPROVEMENT				
Acqusition Milestones: Radar System Evaluation: Radar System Evaluation - Foreign Military Assessment	1	2014	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 2185 / *AARGM*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2185: *AARGM*	673.629	12.242	16.077	12.904	-	12.904	4.839	4.820	4.803	4.901	2.664	736.879
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Advanced Anti-Radiation Guided Missile (AARGM) transitioned a Phase III Small Business Innovative Research (SBIR) program to develop and demonstrate a multi-mode guidance section on a HARM airframe to System Development and Demonstration (SD&D) in FY 2003. The AARGM SD&D program was designed to integrate multi-mode guidance (passive Anti-Radiation Homing (ARH)/active Millimeter Wave (MMW) Radar/Global Positioning System (GPS)/Inertial Navigation System) on the HARM Air-to-Ground Missile (AGM)-88. AARGM weapon system capabilities include: active MMW terminal guidance, counter shutdown, expanded threat coverage, enhanced ARH, netted targeting real-time feed via Integrated Broadcast System (IBS) prior to missile launch, Weapon Impact Assessment (WIA) transmitted prior to detonation, GPS/point-to-point weapon navigation, and weapon employment with impact avoidance zone/missile impact zones.

In June 2003, a successful Milestone B transitioned AARGM to a SD&D Acquisition Category 1C program. Alliant Techsystems (ATK) Missile Systems Company was awarded the AARGM SD&D contract valued at $222.6M. In May 2004, the contract baseline was increased to $231.9M to accelerate incorporation of an embedded IBS-Receiver, enabling the warfighter to directly receive National intelligence data, increasing overall pilot situational awareness. Recent modifications have changed the current baseline to $232.3M.

The AARGM program includes 40 SD&D test articles with the follow on of 1,879 production modification kits. Milestone C was achieved 4Q FY 2008, followed by a combined FY 2008/FY 2009 Low Rate Initial Production (LRIP) contract award in 1Q FY 2009. Developmental testing was completed in 2009. Initial Operational Test and Evaluation (IOT&E) was completed in 3Q FY 2012. Full-Rate Production (FRP) decision was received 4 September 2012 with FRP contract award on 10 September 2012, and deliveries began in January 2014. The program awarded FRP-3 on 23 April 2014 with deliveries projected to begin in January 2016.

The AARGM Block 1 Upgrade program began in FY 2012 and consists of a software only upgrade to deferred KPP3 and to correct IOT&E deficiencies in the AGM-88E AUR as well as the Common Munitions Built-in Test (BIT) Reprogramming Equipment (CMBRE). In parallel with the Block 1 Upgrade, efforts to complete the development of Phase III equipment (Integrated Broadcast Service (IBS)-R/Embedded Network Tactical Receiver (ENTR) and IBS-R/ENTR antenna) are ongoing.

Follow-on Operational Test and Evaluation/Integrated Test/Operational Test - Development (FOT&E/IT/OT-D) in conjunction with Block 1 Upgrade will complete tactics development and support promulgation of Operational Tactics Guide (OTG).

In FY 2014 - FY 2020, the AGM-88E AARGM program plans to develop and demonstrate the capability to engage and destroy non-traditional and Overseas Contingency Operations targets through the Destruction of Enemy Air Defenses (DEAD) missions. These developments continue Future Naval Capability Science and Technology investments by the Office of Naval Research initiated in FY 2006.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2185 / *AARGM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Threat Data Library	1.828	0.400	0.400	-	0.400
Articles:	-	-	-	-	-
FY 2014 Accomplishments: As part of the Air-to-Ground Missile (AGM)-88E Block 1 Upgrade, continued effort to update Electronic Intelligence files and Millimeter Wave signatures to identify track and engage new and/or improved threat radars. Continued the test and assessment of threat systems. Developed threat data for new target sets.					
FY 2015 Plans: AGM-88E Block 1 Upgrade continues effort to update Electronic Intelligence files and Millimeter Wave signatures to identify track and engage new and/or improved threat radars. Continue test and assessment of threat systems. Develop threat data for new target sets.					
FY 2016 Base Plans: AGM-88E Block 1 Upgrade continues effort to update Electronic Intelligence files and Millimeter Wave signatures to identify track and engage new and/or improved threat radars. Continue test and assessment of threat systems. Develop threat data for new target sets.					
FY 2016 OCO Plans: N/A					
Title: AARGM Derivative Program (ADP)	0.125	0.400	0.400	-	0.400
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Block 1 Upgrade to AGM-88E, continued to develop the capability to carry-out Destruction of Enemy Air Defenses (DEAD) missions and to attack non-traditional and Overseas Contingency Operations targets. Developed new propulsion systems and data links to support warfighter needs against advancing threat systems, and developed additional target sets capability.					
FY 2015 Plans: Block 1 Upgrade to AGM-88E continues to develop the capability to carry-out DEAD missions and to attack non-traditional and OCO targets. Develop additional target sets capability.					
FY 2016 Base Plans: Block 1 Upgrade to AGM-88E continues to develop the capability to carry-out DEAD missions and to attack non-traditional and OCO targets. Develop additional target sets capability.					
FY 2016 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2185 / *AARGM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: Follow-on Operational Test and Evaluation (FOT&E)	9.864	12.828	10.814	-	10.814
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued FOT&E for AARGM Block 1 utilizing Naval Command Operational Test and Evaluation Force (COMOPTEVFOR) requirements for suitable and effective for desired flights, targets and locations. ***FY 2015 Plans:*** Continue FOT&E, including Integrated Test (IT) and Operational Test (OT) for AARGM Block 1 utilizing COMOPTEVFOR requirements for suitable and effective for desired flights, targets and locations. ***FY 2016 Base Plans:*** Complete FOT&E, including IT and OT for AARGM Block 1 utilizing COMOPTEVFOR requirements for suitable and effective for desired flights, targets and locations. ***FY 2016 OCO Plans:*** N/A					
Title: Capability Development Document (CDD) and Capability Production Document (CPD)	0.425	1.000	0.290	-	0.290
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Continue activities for development of Key Performance Parameter's and Integrated Broadcast Service-Receiver requirements in accordance with the Capability Production. ***FY 2016 OCO Plans:*** N/A					
Title: ADVANCED DEVELOPMENT	-	1.449	1.000	-	1.000
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2185 / *AARGM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2015 Plans:*** Continue support for advanced development, analysis activities of testing, configuration control board review, test plan reviews, requirements analysis and weapons integration analysis. ***FY 2016 Base Plans:*** Continue support for advanced development, analysis activities of testing, configuration control board review, test plan reviews, requirements analysis and weapons integration analysis. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	12.242	16.077	12.904	-	12.904

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN 2327: *HARM Mods*	94.060	106.489	122.298	-	122.298	195.485	224.799	224.486	158.809	-	1,455.666

Remarks

FY 2019, FY 2020 and Total Cost does not include the AARGM ER funding captured under Project Unit 2189.

D. Acquisition Strategy

The AARGM program started as a Phase I Small Business Innovative Research (SBIR), Advanced Technology Program, evolved into a Phase III SBIR program, and transitioned into a System Development and Demonstration (SD&D) Acquisition Category 1C program in June 2003. The AARGM SD&D fulfills U.S. Navy operational requirements and incorporates AARGM Advanced Technology Development and Quick Bolt Advanced Concept Technology Demonstration - demonstrated system requirements. Government responsibilities for SD&D have included monitoring, technical assessment, and validation of contractor technology development and testing. Milestone C was achieved 4Q FY 2008, followed by a combined FY08/FY09 Low Rate Initial Production (LRIP) contract award in 1Q FY 2009. LRIP I deliveries commenced 3Q FY 2010. Full-Rate Production (FRP) decision was received 20 August 2012 with FRP contract award on 10 September 2012 and deliveries began in January 2014. Block 1 Fleet Release anticipated for 1Q FY 2017.

E. Performance Metrics

Achieved Milestone C in 2008. Completed Developmental Testing in 2009. Successfully completed Operational Test Readiness Review in 2010. Successfully completed Operational Test in 3Q FY 2012. Full-Rate Production approval was granted in 4Q FY 2012, and deliveries commenced in FY 2014.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 2185 / *AARGM*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSMA : Arlington, VA	1.973	-		-		-		-		-	6.661	8.634	-
Systems Engineering	WR	NAWC-WD : China Lake, CA	66.497	3.880	Nov 2013	3.712	Nov 2014	3.448	Nov 2015	-		3.448	11.324	88.861	-
Software Development	WR	SPAWAR : San Diego, CA	0.371	0.100	Mar 2014	0.075	Mar 2015	0.050	Mar 2016	-		0.050	-	0.596	-
Telemetry Section Development	WR	NAWC-WD : China Lake, CA	3.399	1.600	Nov 2013	-		-		-		-	-	4.999	-
Mission Planning	WR	Various : Various	0.000	0.100	Mar 2014	0.100	Mar 2015	0.100	Mar 2016	-		0.100	-	0.300	-
Prior year Prod Dev no longer funded in the FYDP	Various	Various : Various	536.414	-		-		-		-		-	-	536.414	-
		Subtotal	608.654	5.680		3.887		3.598		-		3.598	17.985	639.804	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies and Analyses	Various	Various : Various	0.711	-		-		-		-		-	-	0.711	-
Prior year Support no longer funded in the FYDP	Various	Various : Various	6.436	-		-		-		-		-	-	6.436	-
		Subtotal	7.147	-		-		-		-		-	-	7.147	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	WR	NAWC-WD : China Lake, CA	24.050	2.000	Nov 2013	0.220	Nov 2014	-		-		-	1.286	27.556	-
Operational and Integrated Test & Evaluation (IT&OT)	WR	COMOPTEVFOR : Norfolk, VA	10.109	0.543	Nov 2013	8.378	Nov 2014	6.537	Nov 2015	-		6.537	0.331	25.898	-
Development Test & Evaluation	SS/IDIQ	ATK : Woodland Hills, CA	0.505	0.800	Feb 2014	0.950	Feb 2015	0.600	Feb 2016	-		0.600	-	2.855	2.615

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 2185 / *AARGM*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational and Integrated Test & Evaluation (IT&OT)	WR	NAWC-WD : China Lake, CA	0.000	1.795	May 2014	1.430	Nov 2014	0.979	Nov 2015	-		0.979	-	4.204	-
Prior year T&E no longer funded in the FYDP	Various	Various : Various	7.469	-		-		-		-		-	-	7.469	-
		Subtotal	42.133	5.138		10.978		8.116		-		8.116	1.617	67.982	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Various	3.321	0.830	Feb 2014	0.330	Feb 2015	0.297	Feb 2016	-		0.297	0.200	4.978	-
Travel	WR	NAVAIR HQ : Patuxent River, MD	1.678	0.019	Jan 2014	0.017	Jan 2015	0.015	Feb 2016	-		0.015	0.100	1.829	-
Government Engineering Support	WR	NAWC AD : Patuxent River, MD	0.446	0.575	Nov 2013	0.665	Nov 2014	0.678	Nov 2015	-		0.678	2.000	4.364	-
Program Management Support	Various	NRO : Washington, D.C.	0.000	-		0.200	Nov 2014	0.200	Nov 2015	-		0.200	-	0.400	-
Prior year Mgmt no longer funded in the FYDP	Various	Various : Various	10.250	-		-		-		-		-	-	10.250	-
		Subtotal	15.695	1.424		1.212		1.190		-		1.190	2.300	21.821	-

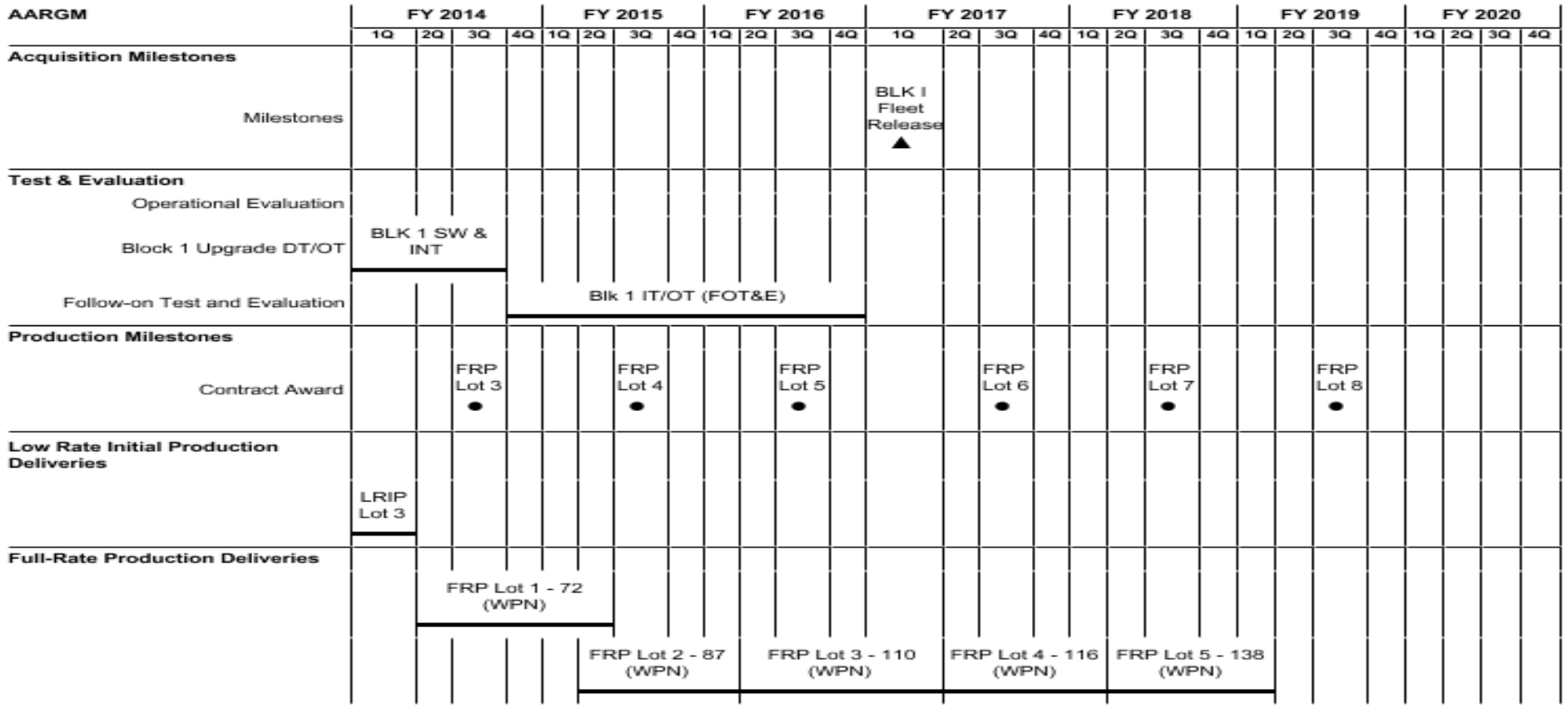
Remarks

Contract Type for Travel is TO

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	673.629	12.242		16.077		12.904		-		12.904	21.902	736.754	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2185 / *AARGM*



2016PB - 0205601N - 2185

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2185 / *AARGM*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
AARGM				
Acquisition Milestones: Milestones: BLOCK 1 Fleet Release	1	2017	1	2017
Test & Evaluation: Block 1 Upgrade DT/OT: Block 1 Software Development and Integration	1	2014	3	2014
Test & Evaluation: Follow-on Test and Evaluation: Block 1 IT/OT (FOT&E)	4	2014	4	2016
Production Milestones: Contract Award: Full-Rate Production Lot 3	3	2014	3	2014
Production Milestones: Contract Award: Full-Rate Production Lot 4	3	2015	3	2015
Production Milestones: Contract Award: Full-Rate Production Lot 5	3	2016	3	2016
Production Milestones: Contract Award: Full-Rate Production Lot 6	3	2017	3	2017
Production Milestones: Contract Award: Full-Rate Production Lot 7	3	2018	3	2018
Production Milestones: Contract Award: Full-Rate Production Lot 8	3	2019	3	2019
Low Rate Initial Production Deliveries: Low Rate Initial Production 3 Delivery (WPN)	1	2014	1	2014
Full-Rate Production Deliveries: Full-Rate Production Deliveries - Lot 1 (WPN)	2	2014	2	2015
Full-Rate Production Deliveries: Full-Rate Production Deliveries - Lot 2 (WPN)	2	2015	1	2016
Full-Rate Production Deliveries: Full-Rate Production Deliveries - Lot 3 (WPN)	2	2016	1	2017
Full-Rate Production Deliveries: Full-Rate Production Deliveries - Lot 4 (WPN)	2	2017	1	2018
Full-Rate Production Deliveries: Full-Rate Production Deliveries - Lot 5 (WPN)	2	2018	1	2019

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 2189 / *AARGM ER*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2189: *AARGM ER*	-	-	-	38.421	-	38.421	77.724	73.358	58.603	19.027	Continuing	Continuing
Quantity of RDT&E Articles		-	-	6	-	6	9	20	20	-		

A. Mission Description and Budget Item Justification

The Air-to-Ground (AGM)-88E Extended Range (ER) Upgrade will be a new start for FY 2016 and will develop a hardware and software modification kit that will improve Advanced Anti-Radiation Guided Missile (AARGM)'s operational capabilities, including extended range, survivability and effectiveness against complex, new, and emerging threats. This budget line item will fund a new rocket motor redesign, preliminary design review, test asset procurement, testing, and associated software updates for the AGM-88E ER to ensure these capabilities perform in accordance with established requirements.

AARGM ER will retain the same guidance, sensor, and warhead capabilities of the Block 1 AARGM.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: AARGM ER Development	-	-	38.421	-	38.421
Articles:	-	-	6	-	6
FY 2014 Accomplishments: N/A					
FY 2015 Plans: N/A					
FY 2016 Base Plans: Begin the developmental effort for the AGM-88E ER Upgrade including hardware and software improvements that will improve AARGM's operational capabilities, including extended range, survivability and effectiveness against complex, new, and emerging threats. 6 AARGM ER test articles will be procured for Developmental Test.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	-	38.421	-	38.421

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN/2327: *HARM Mods ER*	-	-	-	-	-	-	-	45.100	62.600	-	107.700

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2189 / *AARGM ER*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost

Remarks

FY 2019, FY 2020 and Total Cost does not include the AARGM Block 1 funding, which is captured under Project Unit 2185.

D. Acquisition Strategy

The AARGM Extended Range program will provide a hardware and software modification kit that will improve AARGM's operational capabilities, including extended range, survivability and effectiveness against complex, new, and emerging threats. The programs Initial Operational Capability is planned for 4Q FY2021.

E. Performance Metrics

AARGM ER is expected to enter Developmental Testing in FY 2018 and complete Inital Operational Test and Evaluation in FY 2020.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 2189 / *AARGM ER*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	TBD	TBD : TBD	0.000	-		-		11.410	Dec 2015	-		11.410	57.928	69.338	-
Primary Hardware Development 2	TBD	TBD : TBD	0.000	-		-		11.988	Dec 2015	-		11.988	19.918	31.906	-
Aircraft Integration	WR	NAWC-WD : China Lake, CA	0.000	-		-		0.578	Nov 2015	-		0.578	3.670	4.248	-
Systems Engineering	WR	NAWC-WD : China Lake, CA	0.000	-		-		1.760	Nov 2015	-		1.760	30.652	32.412	-
Software Development	WR	SPAWAR : San Diego, CA	0.000	-		-		0.050	Jan 2016	-		0.050	Continuing	Continuing	Continuing
Telemetry Section	WR	NAWC-WD : China Lake, CA	0.000	-		-		2.492	Jan 2016	-		2.492	3.873	6.365	-
		Subtotal	0.000	-		-		28.278		-		28.278	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC-WD : China Lake, CA	0.000	-		-		1.691	Mar 2016	-		1.691	3.673	5.364	-
ER Test Assets	TBD	TBD : TBD	0.000	-		-		6.575	Dec 2015	-		6.575	40.102	46.677	-
Operational and Integrated T&E	WR	NAWC-WD : China Lake, CA	0.000	-		-		-		-		-	6.265	6.265	-
		Subtotal	0.000	-		-		8.266		-		8.266	50.040	58.306	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Various	0.000	-		-		0.100	Nov 2015	-		0.100	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205601N / *Harm Improvement*	Project (Number/Name) 2189 / *AARGM ER*	

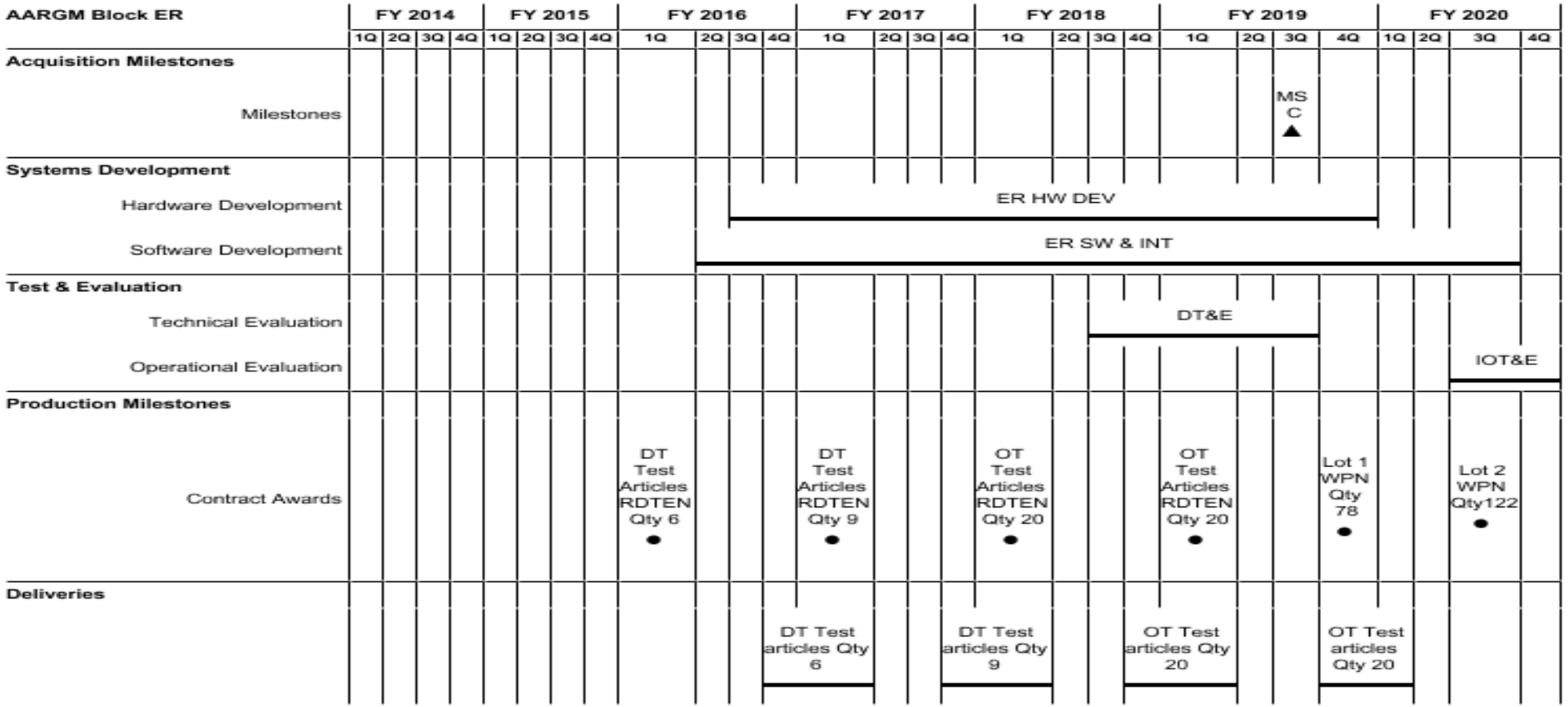
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NRO : Washington, DC	0.000	-		-		0.125	Feb 2016	-		0.125	Continuing	Continuing	Continuing
Travel	WR	NAVAIR HQ : Patuxent River, MD	0.000	-		-		0.050	Nov 2015	-		0.050	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWC AD : Patuxent River, MD	0.000	-		-		1.602	Nov 2015	-		1.602	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		1.877		-		1.877	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		38.421		-		38.421	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2189 / *AARGM ER*



2016PB - 0205601N - 2189

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205601N / *Harm Improvement*	**Project (Number/Name)** 2189 / *AARGM ER*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
AARGM Block ER				
Acquisition Milestones: Milestones: MS C	3	2019	3	2019
Systems Development: Hardware Development: ER Hardware Development	3	2016	4	2019
Systems Development: Software Development: ER Software Development and Integration	2	2016	3	2020
Test & Evaluation: Technical Evaluation: Developmental Test & Evaluation	3	2018	3	2019
Test & Evaluation: Operational Evaluation: Initial Operational Test & Evaluation	3	2020	4	2020
Production Milestones: Contract Awards: DT Test Articles RDTEN Qty 6	1	2016	1	2016
Production Milestones: Contract Awards: DT Test Articles RDTEN Qty 9	1	2017	1	2017
Production Milestones: Contract Awards: OT Test Articles 1 RDTEN Qty 20	1	2018	1	2018
Production Milestones: Contract Awards: OT Test Articles 2 RDTEN Qty 20	1	2019	1	2019
Production Milestones: Contract Awards: Lot 1 WPN Qty 78	4	2019	4	2019
Production Milestones: Contract Awards: Lot 2 WPN Qty122	3	2020	3	2020
Deliveries: DT Test articles Qty 6	4	2016	1	2017
Deliveries: DT Test articles Qty 9	4	2017	1	2018
Deliveries: OT Test articles 1 Qty 20	4	2018	1	2019
Deliveries: OT Test articles 2 Qty 20	4	2019	1	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	667.734	162.499	121.680	149.997	-	149.997	127.611	45.526	43.839	44.796	Continuing	Continuing
2126: *ATDLS Integration*	622.313	41.465	53.028	45.079	-	45.079	34.957	23.679	25.554	26.231	Continuing	Continuing
3020: *MIDS/JTRS*	0.000	112.826	53.946	70.325	-	70.325	59.157	21.479	18.285	18.565	Continuing	Continuing
3341: *Network Tactical Common Data Link*	13.543	3.383	14.706	34.593	-	34.593	33.497	0.368	-	-	-	100.090
4022: *Other Tactical Data Link Engineering*	31.878	4.825	-	-	-	-	-	-	-	-	-	36.703
MDAP/MAIS Code: **Other MDAP/MAIS Code(s):** 554												

A. Mission Description and Budget Item Justification

This Program Element develops and improves the Navy's Tactical Data Link (TDL) systems. It includes the Advanced Tactical Data Link Systems (ATDLS) Integration Programs, specifically Link 16 Network, Command and Control Processor (C2P) and Link Monitoring and Management Tool (LMMT); and Network Tactical Common Data Link (NTCDL) Program which provides the ability to transmit/receive real-time Intelligence, Surveillance, and Reconnaissance (ISR) data simultaneously from multiple sources (surface, air, sub-surface, man-portable), and exchange command and control information (voice, data, imagery, and Full Motion Video (FMV)) across dissimilar Joint, Service, Coalition, and civil networks. The Program Element also develops and tests tactical data link capability to distribute other data types to new and existing platforms.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Operational Systems Development because it encompasses engineering and manufacturing development for upgrade of existing operational systems.

Network Tactical Common Data Link (NTCDL) provides the ability to transmit/receive real-time Intelligence, Surveillance, and Reconnaissance (ISR) data simultaneously from multiple sources (surface, airborne, sub-surface, man-portable), and exchange command and control information (voice, data, imagery, and Full Motion Video) across dissimilar Joint, Service, Coalition, and civil networks. NTCDL provides warfighters with the capability to support multiple, simultaneous, networked operations with currently fielded Common Data Link (CDL)-equipped platforms (e.g. F/ A-18, P-3, and MH-60R), in addition to next generation manned and unmanned platforms (e.g., P-8, Triton, UCLASS, and Fire Scout). NTCDL is an incremental capability (surface, airborne, sub-surface, man-portable) providing a modular, scalable, multiple-link networked communications. NTCDL benefits the fleet by providing horizon extension for line-of-sight sensor systems for use in time critical strike missions. NTCDL counters Anti-Access/Area Denial (A2/AD) through its relay capability, and supports Tasking Collection Processing Exploitation Dissemination (TCPED) through its ISR networking capability. Additionally, NTCDL supports Humanitarian Assistance/Disaster Relief (HA/DR) efforts through its ability to share ISR data across dissimilar Joint, Service, Coalition, and Civil organizations.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*

Joint Aerial Layer Network-Maritime (JALN-M) is the Navy implementation of the JALN architecture which provides assured communications in any environment, especially A2/AD. With disruption or loss of Space tier communications, JALN-M establishes and/or restores connectivity with the High Capacity Backbone (HCB) tier, the Distribution Access Range Extension (DARE) tier, and the Transition tier in accordance with the JALN-M Initial Capabilities Document (ICD) and the JALN-M Analysis of Alternatives (AoA) Final Report. JALN-M is a robust, assured communications capability providing joint connectivity via the HCB and Navy platform connectivity via a pseudo satellite DARE capability. JALN-M will use the Extended Data Rate (XDR) waveform (Navy Multiband Terminal (NMT)) for intra-battle group DARE communications, a CDL waveform for the HCB cross-link capability, and will leverage enhanced Ultra High Frequency/High Frequency (UHF/HF) waveforms for coalition connectivity. Furthermore, Positioning, Navigation, and Timing (PNT) efforts related to the JALN-M Pod will develop a prototype PNT subsystem that will be integrated into the JALN-M Pod, and will provide position and timing data to other Pod subsystems, both with and without Global Positioning System (GPS) connectivity. Because the Pod is being designed to operate in an A2/AD environment, the Pod HCB and XDR (i.e. NMT) subsystems need to be provided with PNT data in the absence of GPS, and the assured PNT subsystem will provide that data.

Link 16 Network Program provides high power shipboard and shore integrated Link 16 capability through the fielding of Joint Tactical Information Distribution System (JTIDS), Multifunctional Information Distribution System (MIDS) on Ships (MOS) and MOS Modernization (MOS Mod) including transmit and receive antennas and High Power Amplifiers (HPA). JTIDS, MOS and MOS Mod utilizes the JTIDS, MIDS Low Volume Terminal (LVT), and MIDS Joint Tactical Radio System (JTRS) terminals respectively, integrates the HPA and interfaces to the shipboard antenna and Command and Control Processor (C2P) . MIDS-LVT and MIDS JTRS terminals are developed by the MIDS Program Office. JTIDS terminal is no longer in production, but is undergoing product improvement to maintain interoperability and security with MIDS-LVT and MIDS JTRS. As part of the product improvement all shipboard link 16 terminals are required to have Dynamic Network Management (DNM), Crypto Modernization (CM) and Frequency Remapping (FR). MIDS Program Office is developing additional improvements to the MIDS-LVT and MIDS JTRS terminals. The MIDS-LVT will have Link 16 Enhanced Throughput (ET) and the MIDS JTRS will have the added capability of four net Concurrent Multi-Netting (CMN) with Current Contention Receive (CCR) and Tactical Targeting Networking Technology (TTNT).

The Multifunctional Information Distribution System (MIDS) program consists of two (2) products, MIDS Low Volume Terminal (LVT) and MIDS Joint Tactical Radio System (JTRS). MIDS-LVT provides Link 16 capability to platforms that were unable to employ Joint Tactical Information Distribution System due to space and weight constraints. The MIDS-LVT effort is multinational (U.S., France, Germany, Italy, and Spain) with joint Service participation (Navy, Army, and Air Force). The Department of Defense (DoD) established the program to design, develop, and deliver low volume, lightweight tactical information system terminals for U.S. and Allied fighter aircraft, bombers, helicopters, ships, and ground sites. MIDS-LVT provides interoperability with North Atlantic Treaty Organization (NATO) users, significantly increasing force effectiveness and minimizing hostile actions and friend-on-friend engagements. The terminal design is smaller, lighter, highly reliable, interoperable with JTIDS Class 2 terminal, compatible with all the participants' designated platforms, affordable, and re-configurable to individual user needs and budgets.

MIDS JTRS, designed as a Pre-Planned Product Improvement (P3I) and executed as an Engineering Change Proposal (ECP) to the production MIDS-LVT configuration, completed qualification in the first quarter of fiscal year 2010. It facilitated the JTRS incremental approach for fielding advanced JTRS transformational networking capability and transformed the MIDS-LVT into a 4-channel, Software Communications Architecture (SCA) compliant, Joint Tactical Radio. A form-fit-function replacement to MIDS-LVT, MIDS JTRS also adds three programmable 2 Megahertz (MHz) to 2 Gigahertz (GHz) channels capable of hosting the JTRS legacy and networking waveforms. In addition to the Link 16, Tactical Air Navigation, and voice functionality found in MIDS-LVT, MIDS JTRS has four channels and adds capabilities such as Link 16 Enhanced Throughput, Link 16 Frequency Re-mapping, software programmability, Cryptographic Modernization, and Four Net Concurrent

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205604N *I Tactical Data Links*

Multi-Netting with Concurrent Contention Receive(CMN-4). With CMN-4, MIDS JTRS also utilizes Tactical Targeting Network Technology for MIDS JTRS Naval Integrated Fire Control Counter Air and From the Air Advanced Tactical Data Links. These capabilities provide Joint Airborne Network-Tactical Edge functionality to run advanced mission applications in a cross-platform/cross-domain tactical network enterprise and the ability to simultaneously participate in four Link 16 Nets.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	169.875	151.208	127.546	-	127.546
Current President's Budget	162.499	121.680	149.997	-	149.997
Total Adjustments	-7.376	-29.528	22.451	-	22.451
• Congressional General Reductions	-	-0.028			
• Congressional Directed Reductions	-	-29.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.100	-			
• SBIR/STTR Transfer	-5.276	-			
• Program Adjustments	-	-	36.062	-	36.062
• Rate/Misc Adjustments	-	-	-13.611	-	-13.611

Change Summary Explanation

The FY 2016 funding request was reduced by $18.3 million to account for the availability of prior year execution balances.

Schedule:

ATDLS (2126):
LINK16: Link 16 Network Increment II Dynamic Network Management (DNM) (2126): Delays in replicating and identifying correction for the Dynamic Network Management (DNM) Time Slot Reallocation (TSR) issues resulted schedule slip to MOS testing and DNM Initial Operating Capability (IOC).

Link 16 Network Increment II Cryptographic Modernization (CM)/Frequency Remapping (FR) (2126): Additional electromagnetic certification (EMC) requirements resulted schedule slips to testing and acquisition milestones. Delay in the MIDS LVT BU2 schedule resulted in a delay to MOS CM/FR testing milestones. acquisition milestones, delays to the start of software development, and slips in testing schedules.

Command and Control Processor (C2P) (2126): Acquisition and engineering changes resulted in schedule slips to acquisition milestones, delays to the start of software development, and slips in testing schedules. Milestone B was removed by the MDA due to demonstrated technical maturity of the C2P Increment 3 design approach.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205604N *I Tactical Data Links*

Link Monitoring and Management Tool (LMMT) (2126): IOC slipped two quarters due to the availability issue of CVN platform to be used for Operational Test. CD2 BD slipped three quarters due to availability of validated requirements, in turn slipping CD2 IV&V and CD3 BD and FDR.

MIDS (3020): TTNT Full Development (terminal) is delayed one year. CDR is delayed into FY16, pushing CFAQT and Production Representative Terminal delivery (for GFAQT) into FY17. This delay impacts the Platform Integration and Test and delays delivery of the TTNT capability to the fleet by 12 months.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*	Project (Number/Name) 2126 / *ATDLS Integration*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2126: *ATDLS Integration*	622.313	41.465	53.028	45.079	-	45.079	34.957	23.679	25.554	26.231	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops and improves the Navy's Tactical Data Link (TDL) systems. It includes the Advanced Tactical Data Link Systems (ATDLS) Integration Programs, specifically Link 16 Network, Command and Control Processor (C2P) and Link Monitoring and Management Tool (LMMT).

ATDLS Integration Program develops new and improved capabilities for Navy TDL users. The Navy Link 16 Network Increment II consists of Dynamic Network Management (DNM), Cryptographic Modernization (CM) and Frequency Remapping (FR). C2P Technology Refresh (TR) and C2P Interoperability will modernize legacy C2P processing components to address C2P component obsolescence and fleet interoperability issues. C2P is a critical component in the Aegis Ballistic Missile Defense (BMD) architecture. Modernization is a service life extension program required to sustain C2P support of Naval Integrated Air and Missile Defense (IAMD) and BMD capabilities. Link 22 development and integration into the C2P allows for standard data link communication with Coalition forces. LMMT will upgrade commercial off-the-shelf hardware and modernize software operating systems. LMMT will improve TDL performance monitoring and management in support of the Integrated Air & Missile Defense (IAMD) and Ballistic Missile Defense (BMD) missions.

Link 16 Network Increment II funds the following activities: (1) conduct DNM Developmental Test (DT)/Operational Test (OT) and correct DNM deficiencies (2) develop and implement CM and FR mandates as a product improvement into Link 16 terminals and integration into shore sites, ship (NGC2P), and current Navy Joint Tactical Information Distribution System (JTIDS) airborne platforms; (3) DT/OT of Navy platform CM/FR modifications; (4) provide product improvement for continued production capability MIDS-on-ship (MOS) Modernization (MOS Mod) and extensibility to new Tactical Data Link capabilities of shipboard Link 16 terminals.

FY 2016 Justification: Funding will provide for Link 16 DNM testing analysis and preparation for MOS DNM reviews. Conduct government testing of the JTIDS CM/ FR Engineering and Manufacturing Development units and deficiency correction. Prepare for government developmental and operational testing. The E-2C Program Office (PMA-231) will continue software modifications to the E-2C host processing required to implement the CM/FR capability. PMA 231 will prepare and conduct E-2C government testing of JTIDS CM/FR. Funding will also provide for MOS CM/FR to update the MOS software and for testing of the High-Power Amplifier (HPA) Switch necessary for integration of the MIDS LVT Block Updated 2 configuration. JTIDS and MOS CM/FR efforts are in support of NSA (NSA Policy 3-9) and Joint Chiefs of Staff mandates (Chairman of the Joint Chiefs of Staff Instruction Notice 6510.02), for the modernization of the cryptographic algorithm used in Link 16 terminals and the Department of Defense and the Department of Transportation Memorandum of Agreement (Regarding the 960-1215 MHz. Frequency Band, 31 December 2002) for the implementation of a capability to remap any 14 of the existing 51 frequencies in order to remain operable within the United States and its possessions. All Link 16 terminals are required to have this capability to support Link 16 Interoperability. To address continued production capability and extensibility to new Tactical Data Link capabilities, funding will provide for continued MOS Mod development and government testing.

Command and Control Processor (C2P) Technology Refresh (TR) funds a product improvement effort to the legacy C2P hardware components and allows C2P software to execute on modern processors, thereby extending its effective service life. Product improvement efforts will include C2P software development, hardware integration, update of the C2P development environment to promote sustainability and testing to include Developmental Test (DT)/Operational Test (OT) of the C2P TR baseline.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*

C2P, Phase 3, Increment 3 is planned to include Link 22, which is a modernized replacement for Link 11, providing Beyond Line of Sight (BloS) tactical data communication system utilizing fixed frequency or frequency hopping techniques in the High Frequency (HF) (3-30 Megahertz (MHz)) and/or the Ultra High Frequency (UHF) (225-400 MHz) bands.

FY 2016 Justification: Continue C2P Technology Refresh development and Link 22 software builds.

Link Monitoring and Management Tool (LMMT) is a new system delivered on commercial off-the-shelf hardware providing gateway functions for multiple Tactical Data Link (TDL) interface, routing and display of TDL data to include Link 16 and Joint Range Extension. LMMT is also capable of performing TDL network planning, monitoring, management, data forwarding between the TDLs and providing tactical data to the Global Command and Control System for establishing the Common Operational Picture. LMMT requirements will be incrementally developed and delivered in capability drops via the Joint Capabilities Integration Development System (JCIDS) IT Box approach.

FY 2016 Justification: Funding will provide for Capability Drop 1 (CD) Afloat DT/OT leading to an Afloat Fielding Decision in FY 2017. Funding will also provide for commencement of CD 2 development.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Link 16 Network Increment II - Dynamic Network Management (DNM)	0.200	1.102	0.121	-	0.121
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed JTIDS DNM MS C Decision. Corrected critical DNM deficiences.					
FY 2015 Plans: Conduct MOS DNM operational testing. Correct critical DNM test deficiencies.					
FY 2016 Base Plans: Correct JTIDS and MOS DNM test deficiencies. Conduct government review prior to initiating DNM operational capability.					
FY 2016 OCO Plans: N/A					
Title: Link 16 Network Increment II - Cryptographic Modernization (CM) / Frequency Remapping (FR)	17.312	20.754	18.812	-	18.812
Articles:	3	2	5	-	5
FY 2014 Accomplishments: Initiated contractor qualification and certification testing of JTIDS CM/FR on Engineering Manufacturing Development (EMD) unit. Conducted JTIDS/MOS CM/FR shipboard integration effort leading to Preliminary					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Design Review (PDR) and Critical Design Review (CDR). Contract awarded for (3) MOS Mod Engineering Manufacturing Development (EMD) units. Completed design and conducted MOS Mod System Functional Review (SFR). Started JTIDS CM/FR air integration effort with E-2C Program Office (PMA 231) leading to SRR and PDR. Provided Link 16 Network integration logistics support. ***FY 2015 Plans:*** Complete contractor qualification and certification of JTIDS CM/FR on Engineering Manufacturing Development (EMD) unit. Initiate government testing of JTIDS CM/FR including shipboard integration. Continue design and development work for JTIDS Air Integration of CM/FR for E-2C. Develop HPA switch necessary for integration of MIDS LVT Block Update 2 (BU2) into MOS terminal. Complete vendor development, qualification and certification of MOS Mod EMD units. Initiate government testing of MOS Mod EMD units. Continue Link 16 Network integration logistics support. ***FY 2016 Base Plans:*** Continue government testing and correct identified deficiencies in JTIDS CM/FR EMD units including shipboard integration. Test the integration of JTIDS CM/FR with the E-2C. Develop MOS CM/FR software modifications necessary for shipboard integration in support of MIDS LVT BU2 changes being performed by the MIDS Program Office. Complete logistics documentation and conduct testing on HPA switch for MOS CM/FR. Conduct government testing on MOS Modernization terminal. Continue Link 16 Network integration logistics support. ***FY 2016 OCO Plans:*** N/A					
Title: Command and Control Processor (C2P)	18.366	22.364	19.835	-	19.835
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Accomplished C2P Tech Refresh (TR) Systems Requirements Review (SRR) and continued efforts leading to a Preliminary Design Review (PDR), and Critical Design Review (CDR) in FY15. Completed Increment 3 Link 22 SRR, and continued efforts leading to PDR and CDR in FY 2015. ***FY 2015 Plans:*** Complete CDR and PDR and continue C2P TR development in preparation of Developmental Test Readiness Review/Operational Test Readiness Review (DTRR/OTRR) and Developmental Test/Operational Test (DT/OT). Conduct C2P Increment 3 Link 22 PDR and CDR, and commence Link 22 development. ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Complete C2P TR and Link 22 baseline development. Conduct C2P Tech Refresh and Link 22 TRR event and commence IV&V testing. ***FY 2016 OCO Plans:*** N/A					
Title: Link Monitoring and Management Tool (LMMT)	3.387	6.608	6.311	-	6.311
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Demonstrated LMMT system maturity and achieved limited deployment approval of LMMT for three CVNs. ***FY 2015 Plans:*** Conduct LMMT CD 1 IV&V and Shore DT/OT. Conduct CD 2 Build Technical Review (BTR). ***FY 2016 Base Plans:*** Conduct CD 1 Shore FDR. Complete CD 1 ship DT/OT and proceed to CD 1 Ship FDR/IOC. Conduct CD 2 BD and commence CD 2 development and testing efforts. ***FY 2016 OCO Plans:*** N/A					
Title: Joint Aerial Layer Network (JALN)	2.200	2.200	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued activities intended to improve USN TDL capabilities when in a jamming environment. ***FY 2015 Plans:*** Complete activities intended to improve USN TDL capabilities when in a jamming environment. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	41.465	53.028	45.079	-	45.079

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/2614: *ATDLS*	3.836	16.768	23.069	-	23.069	43.284	46.087	44.502	45.433	Continuing	Continuing

Remarks

D. Acquisition Strategy

The JTIDS Crypto Modernization (CM)/Frequency Remapping (FR) development and Low Rate Initial Production (LRIP) contract was awarded to Data Link Solutions (DLS). The associated production contract for JTIDS CM/FR will be competitively awarded after Operational Test. MOS CM/FR will be accomplished through integration of the MIDS LVT Block Upgrade 2 (BU) into the existing MOS cabinet. MOS CM/FR integration will require development of an High-Power Amplifier (HPA) bypass and update to the MOS Terminal Controller software. HPA bypass development is being conducted by SSC Pacific. The MOS Terminal Controller software will be contracted in FY16. MOS MOD contract will provide three Engineering Manufacturing Development (EMD) units for developental and operational testing. The MOS MOD contract will also provide full rate production units.

The C2P Technology Refresh and Link 22 development contract was awarded to Northrop Grumman. The C2P Technology Refresh and Link 22 production contract will be competitively awarded and will support LRIP and Full Rate production units.

The Link Monitoring and Management Tool (LMMT) capability will replace previously-fielded ADSI systems. LMMT will leverage existing Government-off-the-Shelf (GOTS) software and Commercial-off-the-Shelf (COTS) hardware. LMMT capabilities are implemented primarily in software and will be developed in capability drops (CDs). Existing GOTS software will be updated to incorporate network performance monitoring and management capabilities by SPAWAR System Center (SSC). Fielding decisions will be accomplished after CD DT/OT.

E. Performance Metrics

Link 16 Network DNM: Successfully achieve Initial Operational Capability. Successfully conduct Full Deployment Decision Review. Successfully complete Operation Test Readiness Review. Successfully complete Developmental Test / Operational Test.

Link 16 Network Cryptographic Modernization: Successful implementation of updated cryptographic algorithm as specified by National Security Agency (NSA Policy 3-9) Certification in Joint Tactical Information Distribution System (JTIDS), Multifunctional Information Distribution System (MIDS) on Ship (MOS), and MOS Modernization (MOS Mod) Link 16 terminals.

Link 16 Network Frequency Remapping: Successful implementation of a Frequency Remapping capability as specified in Department of Defense/Department of Transportation Memorandum of Agreement regarding the 960-1215 MHz Frequency Band of 31 Dec 02 in Joint Tactical Information Distribution System (JTIDS), Multifunctional Information Distribution System (MIDS) on Ship (MOS) and MOS Modernization (MOS Mod) Link 16 Terminals.

Link 16 Network Production Capability: Production Shipboard Link 16 Terminals available to meet new construction shipboard requirements.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*

Command and Control Processor (C2P): Successfully achieve C2P Technology Refresh Fielding and thereby maintain operational availability.

Link 22: Successfully achieve Link 22 implementation fielding, meeting operational requirement.

LMMT: Successfully meet operational requirements and achieve Fielding Decision Reviews (FDR) for Capability Drops 1, 2 and 3.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ATDLS Product Development and Integration	Various	Various : Various	363.158	-		-		-		-		-	-	363.158	363.158
Link 16 Network Development (JTIDS)	C/CPIF	DLS (BAE/ Rockwell) : Wayne, NJ	50.700	5.009	Mar 2014	5.301	Dec 2014	-		-		-	Continuing	Continuing	Continuing
Link 16 Network Development (MOS)	C/FFP	DLS (BAE/ Rockwell) : Wayne, NJ	0.034	-		-		-		-		-	-	0.034	Continuing
Link 16 Network Development (MIDS LVT/ MIDS J)	WR	MIDS IPO : San Diego, CA	5.750	0.864	Jun 2014	-		0.300	Jun 2016	-		0.300	-	6.914	Continuing
Link 16 Network E-2C Integration	WR	PMA 231 : Pax River, MD	0.000	2.332	Jan 2014	3.564	Oct 2014	2.774	Jan 2016	-		2.774	Continuing	Continuing	Continuing
Link 16 Network Development (MOS MOD)	C/FPIF	DLS (BAE/ Rockwell) : Wayne, NJ	6.899	3.182	Feb 2014	4.206	Dec 2014	2.194	Feb 2016	-		2.194	Continuing	Continuing	Continuing
Link 16 Network Software	WR	SPAWARSYSCEN PAC : San Diego, CA	2.996	-		0.379	Jan 2015	0.408	Oct 2015	-		0.408	Continuing	Continuing	Continuing
Link 16 Network Integrated Logistics Support	C/CPFF	SeaPort-E : San Diego, CA	1.880	0.326	Oct 2013	0.346	Oct 2014	0.220	Oct 2015	-		0.220	Continuing	Continuing	Continuing
Link 16 Network JTIDS Depot Repair Bench Update	WR	Warner Robins Air Logistics Center : Warner Robins, GA	0.000	-		-		5.486	Oct 2015	-		5.486	-	5.486	-
Link 16 Network Technical Design Agents	C/CPFF	SeaPort-E : San Diego, CA	0.000	2.643	Oct 2013	-		2.195	Oct 2015	-		2.195	-	4.838	-
Link 16 Network Systems Engineering	WR	SPAWARSYSCEN PAC : San Diego, CA	43.789	2.569	Oct 2013	5.556	Oct 2014	2.322	Oct 2015	-		2.322	Continuing	Continuing	Continuing
Link 16 Network IV&V	WR	SPAWARSYSCEN PAC : San Diego, CA	1.788	0.681	Oct 2013	0.602	Oct 2014	1.196	Oct 2015	-		1.196	Continuing	Continuing	Continuing
C2P Development (Tech Refresh)	C/IDIQ	Northrop Grumman : San Diego, CA	8.955	3.997	May 2014	6.992	Feb 2015	1.500	Jun 2016	-		1.500	Continuing	Continuing	Continuing
C2P Development (Link 22)	C/IDIQ	Northrop Grumman : San Diego, CA	0.000	0.595	May 2014	2.141	Feb 2015	1.500	Jul 2016	-		1.500	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*	Project (Number/Name) 2126 / *ATDLS Integration*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
C2P Development Data Terminal Set	C/IDIQ	TBD : TBD	0.000	-		1.227	Aug 2015	4.390	Jan 2016	-		4.390	-	5.617	-
C2P Development (Interoperability)	WR	SPAWARSYSCEN PAC : San Diego, CA	6.599	-		-		-		-		-	-	6.599	Continuing
C2P Systems Engineering	WR	SPAWARSYSCEN PAC : San Diego, CA	9.404	0.733	Oct 2013	7.937	Oct 2014	0.742	Oct 2015	-		0.742	Continuing	Continuing	Continuing
C2P IV&V	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	2.336	Oct 2013	2.850	Oct 2014	3.691	Oct 2015	-		3.691	Continuing	Continuing	Continuing
C2P Development & Integration	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	3.711	Oct 2013	0.332	Oct 2014	6.151	Oct 2015	-		6.151	-	10.194	-
C2P Integrated Logistics Support	C/CPFF	SeaPort-E : San Diego, CA	0.000	3.802	Oct 2013	0.457	Oct 2014	0.250	Oct 2015	-		0.250	Continuing	Continuing	Continuing
LMMT Integrated Logistics Support	C/CPFF	SeaPort-E : San Diego, CA	0.000	0.383	Oct 2013	0.300	Oct 2014	0.350	Oct 2015	-		0.350	Continuing	Continuing	Continuing
LMMT Development	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	2.636	Oct 2013	2.471	Oct 2014	2.670	Oct 2015	-		2.670	Continuing	Continuing	Continuing
LMMT Systems Engineering	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	0.697	Oct 2013	2.500	Oct 2014	1.000	Oct 2015	-		1.000	Continuing	Continuing	Continuing
LMMT IV&V	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	-		0.312	Oct 2014	0.667	Oct 2015	-		0.667	Continuing	Continuing	Continuing
JALN Development	WR	AFRL : W. Patterson AFB, OH	2.200	2.200	Mar 2014	2.200	Dec 2014	-		-		-	Continuing	Continuing	Continuing
		Subtotal	504.152	38.696		49.673		40.006		-		40.006	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ATDLS Test and Evaluation	Various	Various : Various	65.171	-		-		-		-		-	-	65.171	65.171
Link 16 Network T&E	WR	SPAWARSYSCEN PAC : San Diego, CA	7.877	0.610	Oct 2013	1.102	Oct 2014	1.264	Oct 2015	-		1.264	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*	Project (Number/Name) 2126 / *ATDLS Integration*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
C2P T&E	WR	SPAWARSYSCEN PAC : San Diego, CA	1.951	-		-		0.150	Jan 2016	-		0.150	-	2.101	Continuing
LMMT T&E	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	0.450	Oct 2013	0.700	Oct 2014	1.250	Oct 2015	-		1.250	Continuing	Continuing	Continuing
		Subtotal	74.999	1.060		1.802		2.664		-		2.664	-	-	-

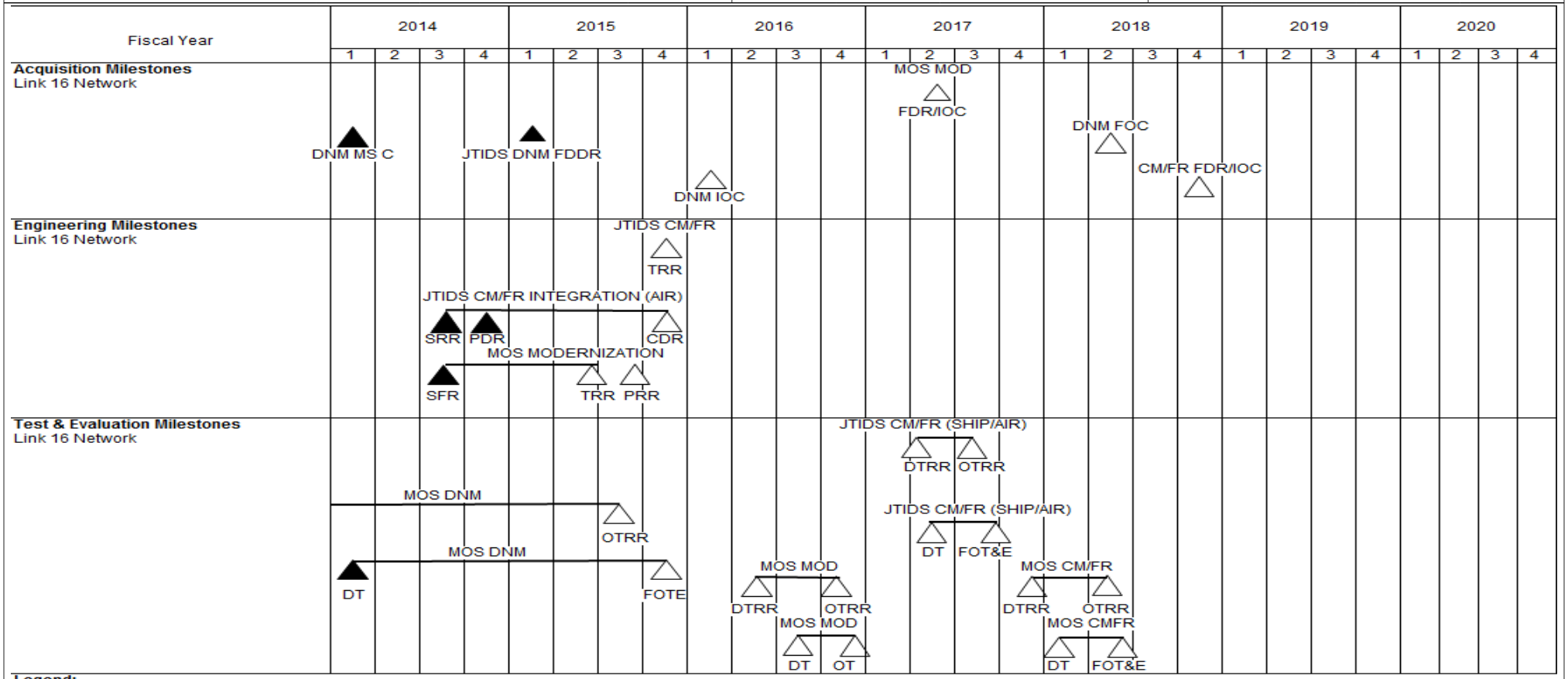
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ATDLS System Engineering Support	Various	Various : Various	20.177	-		-		-		-		-	-	20.177	20.177
Link 16 Network Contractor Engineering Support	C/CPFF	SeaPort-E : San Diego, CA	9.533	-		-		-		-		-	-	9.533	Continuing
Link 16 Network Government Engineering Support	WR	SPAWARSYSCEN PAC : San Diego, CA	6.278	-		-		-		-		-	-	6.278	Continuing
Link 16 Network Program Management Support	C/CPFF	SeaPort-E : San Diego, CA	2.988	0.741	Oct 2013	0.800	Oct 2014	0.573	Oct 2015	-		0.573	Continuing	Continuing	Continuing
C2P Program Management Support	C/CPFF	SeaPort-E : San Diego, CA	4.090	0.693	Oct 2013	0.428	Oct 2014	1.461	Oct 2015	-		1.461	Continuing	Continuing	Continuing
LMMT Program Management Support	C/CPFF	SeaPort-E : San Diego, CA	0.096	0.275	Oct 2013	0.325	Oct 2014	0.375	Oct 2015	-		0.375	Continuing	Continuing	Continuing
		Subtotal	43.162	1.709		1.553		2.409		-		2.409	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	622.313	41.465		53.028		45.079		-		45.079	-	-	-

Remarks

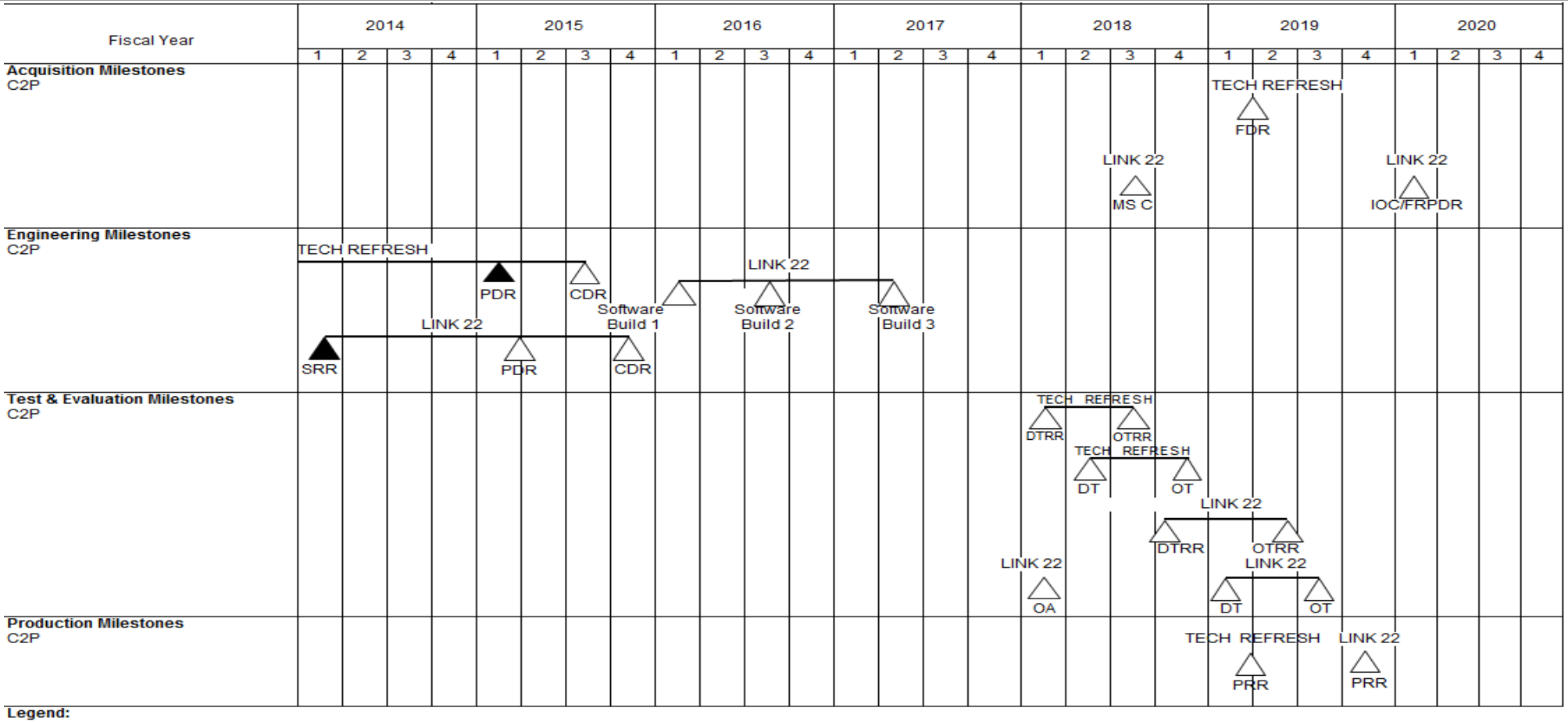
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*



Legend:

CDR - Critical Design Review
CM - Cryptographic Modernization
DT - Developmental Test
DNM - Dynamic Network Management
DTRR - Developmental Test Readiness Review
FDR - Fielding Decision Review
FOT&E - Follow-on Operational Test & Evaluation
FR - Frequency Remapping
FDDR - Full Dep. Decision Review
FOC - Full Operating Capability
IOC - Initial Operating Capability
IOT&E - Initial Operational Test & Evaluation
JTIDS - Joint Tactical Information Distribution System
MS - Milestone
MOS MOD - MOS Modernization
OT - Operational Test
OTRR - Operational Test Readiness Review
MOS - Multifunctional Info. Distribution Sys. (MIDS) On Ship (MOS)
PDR - Preliminary Design Review
PRR - Production Readiness Review
SFR - System Functional Review
SRR - System Requirements Review
TRR - Test Readiness Review

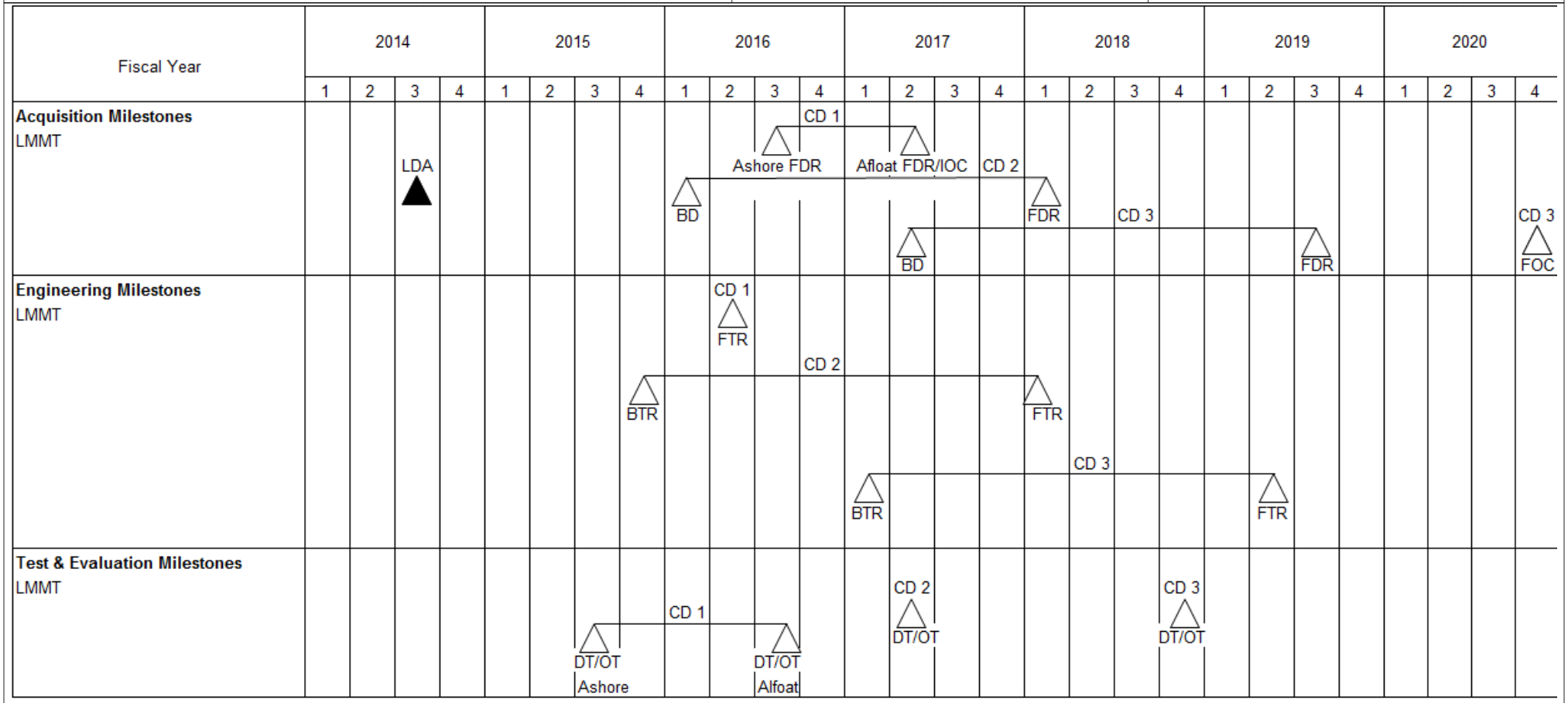
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*



Legend:

C2P - Command and Control Processor
CDR - Critical Design Review
DT - Developmental Test
DTRR - Developmental Test Readiness Review
FDR - Fielding Decision Review
FRPDR - Full Rate Production Decision Review
IOC - Initial Operating Capability
MS B - Milestone B
MS C - Milestone C
OA - Operational Assessment
OT - Operational Test
OT - Operational Test Readiness Review
PDR - Preliminary Design Review
PRR - Production Readiness Review
SRR - System Requirements Review

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*



Legend:

BD - Build Decision	CD - Capability Drop	FDR - Fielding Decision Review	FTR - Fielding Technical Review	LDA - Limited Deployment ADM
BTR - Build Technical Review	DT - Developmental Test	FOC - Full Operational Capability	IOC - Initial Operating Capability	OT - Operational Test

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2126				
C2P Link 22 System Requirements Review	1	2014	1	2014
Link 16 Network DNM Milestone C	1	2014	1	2014
Link 16 Network MOS DNM Developmental Test	1	2014	1	2014
Link 16 Network JTIDS CM/FR Integration (Air) System Requirements Review	3	2014	3	2014
Link 16 Network MOS MODERNIZATION System Functional Review	3	2014	3	2014
LMMT Limited Deployment ADM	3	2014	3	2014
Link 16 Network JTIDS CM/FR Integration (Air) Preliminary Design Review	4	2014	4	2014
C2P Link 22 Preliminary Design Review	1	2015	1	2015
C2P Tech Refresh Preliminary Design Review	1	2015	1	2015
Link 16 Network JTIDS DNM Full Developmental Decision Review	1	2015	1	2015
Link 16 Network MOS MODERNIZATION Test Readiness Review	2	2015	2	2015
Link 16 Network MOS MODERNIZATION Production Readiness Review	3	2015	3	2015
C2P Tech Refresh Critical Design Review	3	2015	3	2015
Link 16 Network MOS DNM Operational Test Readiness Review	3	2015	3	2015
LMMT CD 1 Developmental/Operational Test (Shore)	3	2015	3	2015
Link 16 Network JTIDS CM/FR Integration (Air) Critical Design Review	4	2015	4	2015
Link 16 Network JTIDS CM/FR Test Readiness Review	4	2015	4	2015
LMMT CD 2 Build Technical Review	4	2015	4	2015
C2P Link 22 Critical Design Review	4	2015	4	2015
Link 16 Network MOS DNM Follow-On Operational Test & Evaluation	4	2015	4	2015
LMMT CD 2 Build Decision	1	2016	1	2016
C2P Link 22 Software Build 1	1	2016	1	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Link 16 Network DNM Initial Operating Capability	1	2016	1	2016
LMMT CD 1 Fielding Technical Review	2	2016	2	2016
Link 16 Network MOS MOD Developmental Test Readiness Review	2	2016	2	2016
LMMT CD 1 Fielding Decision Review (Shore)	3	2016	3	2016
LMMT CD 1 Developmental/Operational Test (Afloat)	3	2016	3	2016
C2P Link 22 Software Build 2	3	2016	3	2016
Link 16 Network MOS MOD Developmental Test	3	2016	3	2016
Link 16 Network MOS MOD Operational Test	4	2016	4	2016
Link 16 Network MOS MOD Operational Test Readiness Review	4	2016	4	2016
LMMT CD 3 Build Technical Review	1	2017	1	2017
LMMT CD 3 Build Decision	2	2017	2	2017
LMMT CD 2 Developmental/Operational Test	2	2017	2	2017
LMMT CD 1 Fielding Decision Review/Initial Operating Capability (Afloat)	2	2017	2	2017
C2P Link 22 Software Build 3	2	2017	2	2017
Link 16 Network JTIDS CM/FR (Ship/Air) Developmental Test	2	2017	2	2017
Link 16 Network JTIDS CM/FR (Ship/Air) Developmental Test Readiness Review	2	2017	2	2017
Link 16 Network MOS MOD Fielding Decision Review/Initial Operating Capability	2	2017	2	2017
Link 16 Network JTIDS CM/FR (Ship/Air) Follow-On Operational Test & Evaluation	3	2017	3	2017
Link 16 Network JTIDS CM/FR (Ship/Air) Operational Test Readiness Review	3	2017	3	2017
Link 16 Network MOS CM/FR Developmental Test Readiness Review	4	2017	4	2017
LMMT CD 2 Fielding Decision Review	1	2018	1	2018
LMMT CD 2 Fielding Technical Review	1	2018	1	2018
C2P Link 22 Operational Assessment	1	2018	1	2018
C2P Tech Refresh Developmental Test Readiness Review	1	2018	1	2018
Link 16 Network MOS CM/FR Developmental Test	1	2018	1	2018
C2P Tech Refresh Developmental Test	2	2018	2	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 2126 / *ATDLS Integration*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Link 16 Network DNM Full Operating Capability	2	2018	2	2018
Link 16 Network MOS CM/FR Follow-On Operational Test and Evaluation	2	2018	2	2018
Link 16 Network MOS CM/FR Operational Test Readiness Review	2	2018	2	2018
C2P Link 22 Milestone C	3	2018	3	2018
C2P Tech Refresh Operational Test Readiness Review	3	2018	3	2018
LMMT CD 3 Developmental/Operational Test	4	2018	4	2018
C2P Link 22 Developmental Test Readiness Review	4	2018	4	2018
C2P Tech Refresh Operational Test	4	2018	4	2018
Link 16 Network CM/FR Fielding Decision Review/Initial Operating Capability	4	2018	4	2018
C2P Link 22 Developmental Test	1	2019	1	2019
C2P Tech Refresh Fielding Decision Review	1	2019	1	2019
C2P Tech Refresh Production Readiness Review	1	2019	1	2019
LMMT CD 3 Fielding Technical Review	2	2019	2	2019
C2P Link 22 Operational Test Readiness Review	2	2019	2	2019
LMMT CD 3 Fielding Decision Review	3	2019	3	2019
C2P Link 22 Operational Test	3	2019	3	2019
C2P Link 22 Production Readiness Review	4	2019	4	2019
C2P Link 22 Initial Operating Capability/Full Rate Production Decision Review	1	2020	1	2020
LMMT CD3 Full Operational Capability (FOC)	4	2020	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*				Project (Number/Name) 3020 / *MIDS/JTRS*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
3020: *MIDS/JTRS*	-	112.826	53.946	70.325	-	70.325	59.157	21.479	18.285	18.565	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: 554

Note

In accordance with the Acquisition Decision Memorandum dated 11 July 2012, the Joint Tactical Radio Systems Programs of Record (JTRS PORs) transitioned to a Military Department-managed program. MIDS transitioned to the Navy under PE 0205604N but was formerly in PE 0604280N.

A. Mission Description and Budget Item Justification

The Multifunctional Information Distribution System (MIDS) program consists of two (2) products, MIDS Low Volume Terminal (LVT) and MIDS Joint Tactical Radio System (JTRS). MIDS-LVT provides Link 16 capability to platforms that were unable to employ Joint Tactical Information Distribution System due to space and weight constraints. The MIDS-LVT effort is multinational (U.S., France, Germany, Italy, and Spain) with joint Service participation (Navy, Army, and Air Force). The Department of Defense (DoD) established the program to design, develop, and deliver low volume, lightweight tactical information system terminals for U.S. and Allied fighter aircraft, bombers, helicopters, ships, and ground sites. MIDS-LVT provides interoperability with North Atlantic Treaty Organization (NATO) users, significantly increasing force effectiveness and minimizing hostile actions and friend-on-friend engagements. The terminal design is smaller, lighter, highly reliable, interoperable with JTIDS Class 2 terminal, compatible with all the participants' designated platforms, affordable, and re-configurable to individual user needs and budgets.

MIDS JTRS, designed as a Pre-Planned Product Improvement (P3I) and executed as an Engineering Change Proposal (ECP) to the production MIDS-LVT configuration, completed qualification in the first quarter of fiscal year 2010. It facilitated the JTRS incremental approach for fielding advanced JTRS transformational networking capability and transformed the MIDS-LVT into a 4-channel, Software Communications Architecture (SCA) compliant, Joint Tactical Radio. A form-fit-function replacement to MIDS-LVT, MIDS JTRS also adds three programmable 2 Megahertz (MHz) to 2 Gigahertz (GHz) channels capable of hosting the JTRS legacy and networking waveforms. In addition to the Link 16, Tactical Air Navigation, and voice functionality found in MIDS-LVT, MIDS JTRS has four channels and adds capabilities such as Link 16 Enhanced Throughput, Link 16 Frequency Re-mapping, software programmability, Cryptographic Modernization, and Four Net Concurrent Multi-Netting with Concurrent Contention Receive (CMN-4). With CMN-4, MIDS JTRS also utilizes Tactical Targeting Network Technology for MIDS JTRS Naval Integrated Fire Control Counter Air and From the Air Advanced Tactical Data Links. These capabilities provide Joint Airborne Network-Tactical Edge functionality to run advanced mission applications in a cross-platform/cross-domain tactical network enterprise and the ability to simultaneously participate in four Link 16 Nets.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: MIDS	112.826	53.946	70.325	-	70.325
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continued the development and implementation of CMN-4 for MIDS JTRS. Conducted a successful Critical Design Review (CDR) and Technical Readiness Review. Began hardware and software terminal integration. Began Contractor First Article Qualification Test and Information Assurance (IA) Certification for the CMN-4 MIDS JTRS Terminal. Awarded Production Representative Terminal (PRT) contract. Awarded Lot 3 for MIDS JTRS Production. Awarded the MIDS JTRS Block Cycle 1 retrofit orders. Awarded full development effort for TTNT for MIDS JTRS Naval Integrated Fire Control Counter Air and From the Air Advanced Tactical Data Links. Conducted a successful System Requirements Review and Preliminary Design Review (PDR). Began TTNT hardware and software development. Continued TTNT waveform development to incorporate version 7.0.4 into the detailed hardware design at PDR. Continued the Crypto Modernization (CM)/Frequency ReMapping(FR)/Enhanced Throughput (ET) for Block Upgrade 2 (BU2) capability and enhancement efforts for MIDS-LVT to include finalizing the detailed technical and interface information in the Item Performance Specification and the Interface Control Document. Defined the performance and interface requirements and provided engineering analysis to finalize interface with the Signal Message Processor design. Continued Link 16 CM efforts to replace the current Communications Security/Transmission Security on the SMP to extend the operational lifetime of currently fielded MIDS-LVT terminals. Established a MIDS-LVT(12) variant terminal and conducted the appropriate testing and certifications. Continued MIDS Modernization efforts to include Small Business Innovation Research transition opportunities including a Small Form Factor terminal and new waveforms such as Mutli-Function Advanced Data Link (MADL), Common Data Link (CDL), and others into the MIDS JTRS terminal. Continued MIDS systems engineering, communication security, IA and program management support.					
FY 2015 Plans: Complete the development and implementation of CMN-4 for MIDS JTRS. Begin test and evaluation and collecting Operational Assessment data. Deliver MIDS JTRS CMN-4 PRTs. Award Lot 4 for MIDS JTRS Production. Continue Block Cycle 2 (BC2) (MIDS On Ship Modernization) to include the Link 16 High Powered Amplifier. Merge the BC2 baseline with CMN-4 baseline and upgrade the Crypto Sub System for incorporation into the TTNT development and testing. Continue full development effort for TTNT for MIDS JTRS Naval Integrated Fire Control Counter Air and From the Air Advanced Tactical Data Links. Continue the hardware and software development to include adding the Protected Core Processor Engineering Change Proposal to the baseline.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue the CM/FR/ET for BU2 capability and enhancement efforts for MIDS-LVT to include completing the hardware design and development. Complete the software design and development. Conduct CDR for BU2. Begin qualification and certification efforts and first article qualification testing. Begin software bind to incorporate Block Cycle 9 as the baseline for BU2 terminals. Continue MIDS Modernization efforts to include Small Business Innovation Research transition opportunities including a Small Form Factor terminal. Continue to incorporate new waveforms such as Mutli-Function Advanced Data Link (MADL), Common Data Link (CDL), and others into the MIDS JTRS terminal. Continue MIDS systems engineering, communication security, IA and program management support. ***FY 2016 Base Plans:*** Achieve Operational Assessment and Readiness for CMN-4 in MIDS JTRS. Conduct Full Operational Test and Evaluation. Award Lot 5 for MIDS JTRS Production. Continue full development effort for TTNT for MIDS JTRS Naval Integrated Fire Control Counter Air and From the Air Advanced Tactical Data Links. Conduct Critical Design Review for TTNT. Begin integration and certification efforts to prepare for Contractor First Article Qualification Test. Continue the qualification and certification efforts and first article qualification testing for MIDS-LVT BU2. Complete the software bind to incorporate Block Cycle 9 as the baseline for BU2 terminals. Award MIDS Modernization efforts to include specification development to define the Functional and Allocated baseline requirements. Begin Link 16 waveform development fixes/updates for incorporation into the new MIDS JTRS hardware (CMN-4 and TTNT) terminals. Begin Air Dominance Assured Communications design and development in the Link 16 waveform. Continue to incorporate new waveforms such as MADL, CDL, and others into the MIDS JTRS terminal. Continue MIDS systems engineering, communication security, IA and program management support. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	112.826	53.946	70.325	-	70.325

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

MIDS JTRS development was initiated as a major modification to the MIDS-LVT using an Engineering Change Proposal to the existing production contracts. Development efforts included the Phase 2B Core terminal. The U.S. prime contractors from the MIDS-LVT program, Data Link Solutions (DLS) and ViaSat Inc., cooperatively designed and developed the Core terminal. Each prime contractor built and qualified Production Verification Terminals. The U.S. implemented a continuous competition strategy between DLS and ViaSat that will be maintained throughout the MIDS JTRS production phase. This strategy was successfully used on MIDS-LVT production. The FY16 budget supports the development and implementation of Crypto Modernization, Frequency Remapping, and Enhanced Throughput capabilities for the MIDS-LVT terminal. It also supports the development to incorporate Four Net Concurrent Multi-Netting (CMN) with Concurrent Contention Receive (CCR) (CMN-4), Tactical Targeting Network Technology (TTNT) and the TTNT waveform into MIDS JTRS. It supports the spec development for MIDS Modernization efforts and conducting future Link 16 Waveform development.

E. Performance Metrics

The MIDS-LVT and MIDS JTRS programs are employing mature, software-defined radio technologies and developing hundreds of thousands of lines of code. These software metrics are used to quantify the quality and progress of each software product's development over time. MIDS employs earned value metrics to monitor contract performance on its prime development contracts, as required.

MIDS-LVT: The 11 performance measures are: L16 Waveform Compatibility, L16 Message Standards, L16 IER; Interoperability, L16 Coded Error Message Probability, Weight/Volume, L16 JAM Resistance, L16 Voice Channels, L16 Communication Range Data, L16 Communications Range Voice, L16 Relay.
MIDS JTRS: The 15 performance measures are: L16 Waveform Compatibility, L16 Waveform Standards, L16 Coded Error Message Probability, L16 Jamming Resistance, L16 Communication Range-Data, L16 Communications Range-Voice, L16 Relay, Start-up (Terminal Single Channel), Operational Communications - Passive Synchronization, Operational Communications - Automatic Message Acknowledgement, Operational Communications - Multi-Net, Operational Communications, Crypto Control, Navigation.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*	Project (Number/Name) 3020 / *MIDS/JTRS*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MIDS JTRS NIFCA TTNT Full Development	C/CPFF	DLS : Cedar Rapids, IA	0.000	11.600	Aug 2014	12.000	Jan 2015	18.405	Dec 2015	-		18.405	Continuing	Continuing	Continuing
MIDS JTRS NIFCA TTNT Full Development	C/CPFF	ViaSat : San Diego, CA	0.000	12.559	Aug 2014	7.994	Mar 2015	18.405	Dec 2015	-		18.405	Continuing	Continuing	Continuing
MIDS JTRS NIFCA TTNT Waveform Development	C/CPFF	Rockwell Collins : Wayne, NJ	0.000	7.713	Mar 2014	-		-		-		-	Continuing	Continuing	Continuing
MIDS-LVT BU2 Full Development	C/CPFF	DLS : Cedar Rapids, IA	0.000	17.000	Nov 2013	1.344	Jul 2015	9.439	Dec 2015	-		9.439	Continuing	Continuing	Continuing
MIDS-LVT BU2 Full Development	C/CPFF	ViaSat : San Diego, CA	0.000	23.000	Nov 2013	6.594	Jun 2015	2.557	Dec 2015	-		2.557	Continuing	Continuing	Continuing
MIDS-LVT BU2 Software Full Development	C/CPFF	BAE : Wayne, NJ	0.000	11.400	Nov 2013	7.415	Dec 2014	5.915	Dec 2015	-		5.915	Continuing	Continuing	Continuing
MIDS-LVT LCM	C/FFP	ViaSat : San Diego, CA	0.000	0.095	Jan 2014	1.885	Dec 2014	-		-		-	-	1.980	-
MIDS JTRS CMN-4 Production Representative Terminals (PRT)	C/FFP	DLS : Cedar Rapids, IA	0.000	2.010	Dec 2013	-		-		-		-	-	2.010	-
MIDS JTRS CMN-4 Production Representative Terminals (PRT)	C/FFP	ViaSat : San Diego, CA	0.000	2.020	Dec 2013	-		-		-		-	-	2.020	-
TTNT Risk Red/Tech Dev	C/CPFF	DLS : Cedar Rapids, IA	0.000	2.045	Jan 2014	-		-		-		-	-	2.045	-
TTNT Risk Red/Tech Dev	C/CPFF	ViaSat : San Diego, CA	0.000	2.214	Jan 2014	-		-		-		-	-	2.214	-
TTNT Res Modum	C/CPFF	DLS : Cedar Rapids, IA	0.000	0.325	Feb 2014	-		-		-		-	-	0.325	-
TTNT Res Modum	C/CPFF	ViaSat : San Diego, CA	0.000	0.210	Feb 2014	-		-		-		-	-	0.210	-
MIDS JTRS Block Cycle 1	C/CPFF	ViaSat : San Diego. CA	0.000	0.502	Nov 2013	-		-		-		-	-	0.502	-
MIDS JTRS Block Cycle 1	C/CPFF	DLS : Cedar Rapids, IA	0.000	0.300	Nov 2013	-		-		-		-	-	0.300	-
MIDS-LVT(12) Qual/ Testing	C/CPFF	DLS : Cedar Rapids, IA	0.000	0.089	Apr 2014	-		-		-		-	-	0.089	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*	Project (Number/Name) 3020 / *MIDS/JTRS*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MIDS-LVT(12) Qual/ Testing	C/CPFF	ViaSat : San Diego, CA	0.000	0.160	Mar 2014	-		-		-		-	-	0.160	-
MIDS-LVT(12) Qual/ Testing	C/CPFF	BAE : Wayne, NJ	0.000	0.070	Apr 2014	-		-		-		-	-	0.070	-
MIDS JTRS BC1/CMN-4 Retrofit	C/CPFF	DLS : Cedar Rapids, IA	0.000	2.204	Sep 2014	-		-		-		-	-	2.204	-
MIDS JTRS BC1/CMN-4 Retrofit	C/CPFF	ViaSat : San Diego, CA	0.000	2.202	Sep 2014	-		-		-		-	-	2.202	-
MIDS JTRS Software Merge	TBD	DLS : Cedar Rapids, IA	0.000	-		2.250	Aug 2015	-		-		-	-	2.250	-
MIDS JTRS Software Merge	TBD	ViaSat : San Diego, CA	0.000	-		2.250	Aug 2015	-		-		-	-	2.250	-
MIDS Modernization	TBD	DLS : Cedar Rapids, IA	0.000	-		-		1.500	Dec 2015	-		1.500	-	1.500	-
MIDS Modernization	TBD	ViaSat : San Diego, CA	0.000	-		-		1.500	Dec 2015	-		1.500	-	1.500	-
Link 16 Waveform Development	TBD	TBD : TBD	0.000	-		-		2.000	Dec 2015	-		2.000	-	2.000	-
MIDS JTRS CMN-4	C/CPIF	DLS : Cedar Rapids, IA	0.000	2.238	Oct 2014	0.471	Jan 2015	-		-		-	-	2.709	-
MIDS JTRS CMN-4	C/CPIF	ViaSat : San Diego, Ca	0.000	-		0.729	Jan 2015	-		-		-	-	0.729	-
MIDS JTRS Block Cycle 2 HPA	C/CPFF	DLS : Cedar Rapids, IA	0.000	-		0.198	Nov 2014	-		-		-	-	0.198	-
MIDS JTRS Block Cycle 2 HPA	C/CPFF	VIaSat : San Diego, Ca	0.000	-		0.802	Nov 2014	-		-		-	-	0.802	-
MIDS JTRS/TTNT PCP IOP CSS Respin	TBD	DLS : Cedar Rapids, IA	0.000	-		2.000	Jun 2015	-		-		-	-	2.000	-
MIDS JTRS/TTNT PCP IOP CSS Respin	TBD	ViaSat : San Diego, CA	0.000	-		2.000	Jun 2015	-		-		-	-	2.000	-
Air Dominance Assured Communications L16 WF	TBD	TBD : TBD	0.000	-		-		4.000	Jan 2016	-		4.000	-	4.000	-
		Subtotal	0.000	99.956		47.932		63.721		-		63.721	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*	Project (Number/Name) 3020 / *MIDS/JTRS*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MIDS-LVT BU2 Test Terminals	C/FFP	DLS : Cedar Rapids, IA	0.000	1.762	Feb 2014	-		-		-		-	-	1.762	-
MIDS-LVT BU2 Test Terminals	C/FFP	ViaSat : San Diego, CA	0.000	1.417	Feb 2014	-		-		-		-	-	1.417	-
Modeling and Simulation	WR	NAVAIR : China Lake, CA	0.000	1.275	Nov 2013	1.165	Nov 2014	2.000	Dec 2015	-		2.000	-	4.440	-
Link16 TTNT Lab, Mod/ Sim	WR	SSC : San Diego, CA	0.000	0.223	Apr 2014	0.350	Mar 2015	0.225	Nov 2015	-		0.225	-	0.798	-
MIDS JTRS CMN-4 GFAQT and LAB	WR	SSC : San Diego, CA	0.000	0.984	Jan 2014	-		0.218	Dec 2015	-		0.218	-	1.202	-
TTNT Link 16 Mod/ Simulation	MIPR	Lincoln Labs : Hanscom AFB, MA	0.000	0.370	Jan 2014	0.330	Dec 2014	0.350	Dec 2015	-		0.350	-	1.050	-
		Subtotal	0.000	6.031		1.845		2.793		-		2.793	-	10.669	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Support	MIPR	MITRE : Bedford, MA	0.000	2.857	Nov 2013	1.641	Dec 2014	0.500	Dec 2015	-		0.500	-	4.998	-
Government Engineering Support TTNT	WR	SSC : San Diego, CA	0.000	2.295	Nov 2013	0.794	Mar 2015	2.316	Dec 2015	-		2.316	-	5.405	-
Govt Engineering Support BU2	WR	SSC : San Diego, CA	0.000	0.138	Nov 2013	0.641	Dec 2014	0.396	Dec 2015	-		0.396	-	1.175	-
IA Cert Support	MIPR	NSA : Fort George Meade, MD	0.000	0.290	Nov 2013	0.200	Mar 2015	0.218	Nov 2015	-		0.218	-	0.708	-
Travel	WR	Travel : Pax River, MD /DC	0.000	0.059	Oct 2013	-		-		-		-	-	0.059	-
Govt Program Support NIFC-CA	WR	NAVAIR : Pax River, MD	0.000	0.239	Dec 2013	0.550	Dec 2014	0.381	Dec 2015	-		0.381	-	1.170	-
Govt Eng, Logistics and COR Support	WR	SSC : Charleston, SC	0.000	0.236	Nov 2013	-		-		-		-	-	0.236	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*

Management Services ($ in Millions)

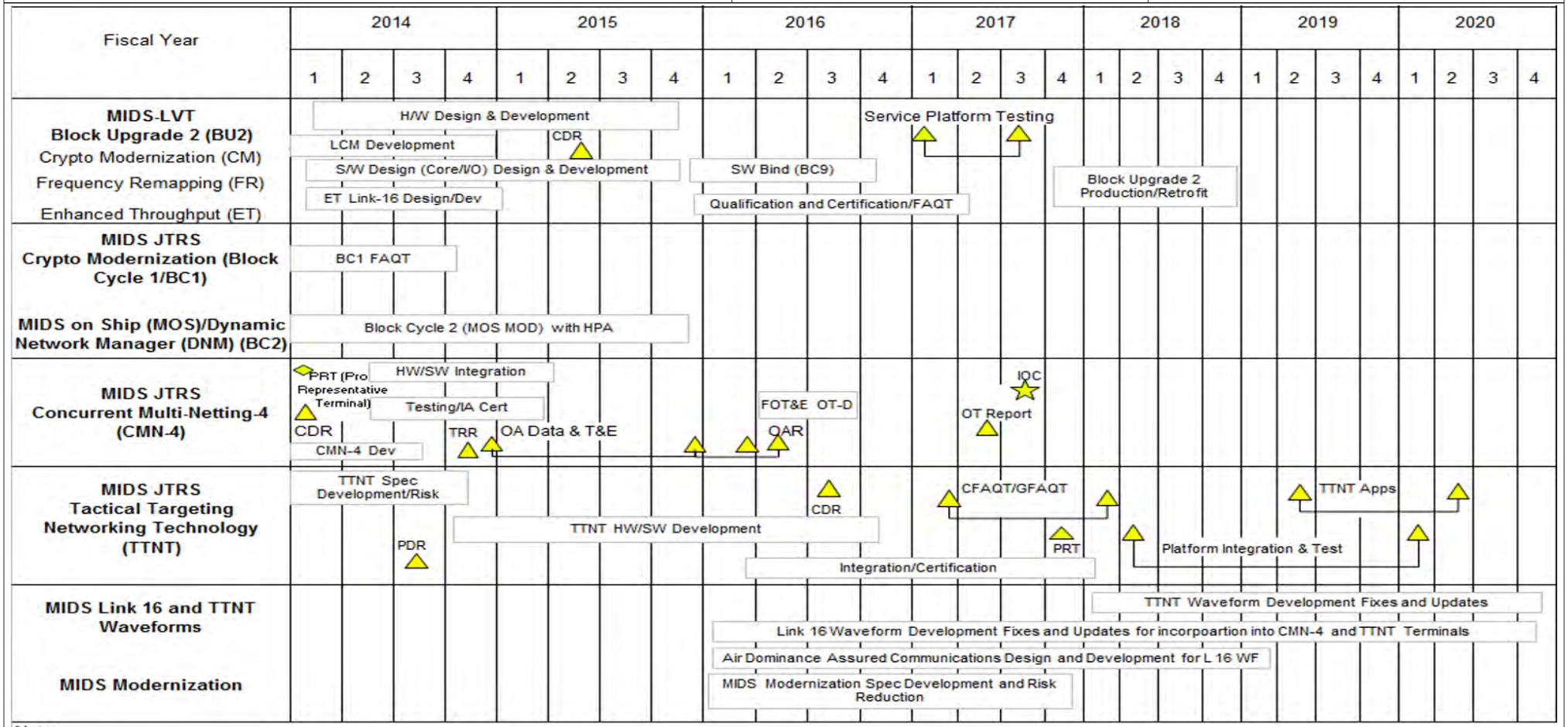
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Fees TTNT Waveform	MIPR	AFRL : Rome, NY	0.000	0.240	Feb 2014	-		-		-		-	-	0.240	-
Support TTNT Waveform	MIPR	DTIC : Ft Belvoir, VA	0.000	0.068	Jul 2014	-		-		-		-	-	0.068	-
Systems/Software Engineering Suppt	C/CPFF	G2 : San Diego, CA	0.000	0.267	Mar 2014	0.323	Mar 2015	-		-		-	-	0.590	-
MIDS IA Support for NSA	C/CPFF	BAH : McLean, VA	0.000	0.150	Apr 2014	-		-		-		-	-	0.150	-
MIDS-LVT BU2 NSA	MIPR	NSA : Fort George Meade, MD	0.000	-		0.020	Dec 2014	-		-		-	-	0.020	-
		Subtotal	0.000	6.839		4.169		3.811		-		3.811	-	14.819	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	112.826		53.946		70.325		-		70.325	-	-	-

Remarks

In accordance with the ADM dated 11 July 2012, the Joint Tactical Radio Systems Programs of Record (JTRS PORs) transitioned to a Military Department-managed program. MIDS transitioned to the Navy under PE 0205604N but was formerly in PE 0604280N.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*



Notes:
In accordance with the ADM dated 11 July 2012, Joint Tactical Radio Systems Programs of Record (JTRS PORs) transitioned to a Military Department-managed program. MIDS transitioned to the Navy under PE 0205604N for FY14-out but was formerly in PE 0604280N.

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MIDS				
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): LCM (LVT Crypto Modernizatoin) Development	1	2014	4	2014
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Hardware (HW) Design and Development	1	2014	4	2015
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): BU2 Critical Design Review	2	2015	2	2015
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Software (SW) Design and Development	1	2014	4	2015
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Enhanced Throughput (ET) Link-16 Design and Development	1	2014	1	2015
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Qualification and Certification/FAQT	4	2015	2	2017
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Software Bind (SW)	4	2015	4	2016
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Service Platform Testing	1	2017	3	2017
MIDS-LVT Block Upgrade 2 (BU2/CM/FR/ET): Block Upgrade 2 Production/Retrofit	4	2017	4	2018
MIDS JTRS Crypto Modernization (Block Cycle 1/BC1): BC1 FAQT & Implementation	1	2014	4	2014
MIDS JTRS MIDS on Ship (MOS)/Dynamic Network Manager (DNM) (BC2): Block Cycle 2 with HPA	1	2014	4	2015
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): CMN-4 Development	1	2014	3	2014
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Critical Design Review	1	2014	1	2014
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Hardware/Software Integration	2	2014	2	2015
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Testing/IA Certification	2	2014	1	2015
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Technical Readiness Review	4	2014	4	2014
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Production Representative Terminal	1	2014	1	2014
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Integration and DT/T&E	4	2014	4	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3020 / *MIDS/JTRS*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): OA Data and T&E/OAR	4	2014	1	2016
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): Full Operational Test and Eval OT-D	2	2016	3	2016
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): OT Report	1	2017	1	2017
MIDS JTRS Concurrent Multi-Netting-4 (CMN-4): IOC (Initial Operational Capability)	3	2017	3	2017
MIDS JTRS Tactical Targeting Networking Technology (TTNT): TTNT Spec Development/Risk Reduction	1	2014	4	2014
MIDS JTRS Tactical Targeting Networking Technology (TTNT): TTNT Hardware/ Software Development	4	2014	4	2016
MIDS JTRS Tactical Targeting Networking Technology (TTNT): Preliminary Design Review	3	2014	3	2014
MIDS JTRS Tactical Targeting Networking Technology (TTNT): Critical Design Review	3	2016	3	2016
MIDS JTRS Tactical Targeting Networking Technology (TTNT): Integration/ Certification	1	2016	1	2018
MIDS JTRS Tactical Targeting Networking Technology (TTNT): CFAQT/GFAQT	1	2017	1	2018
MIDS JTRS Tactical Targeting Networking Technology (TTNT): Production Representative Terminal	4	2017	4	2017
MIDS JTRS Tactical Targeting Networking Technology (TTNT): Platform Integration and Test	2	2018	1	2020
MIDS JTRS Tactical Targeting Networking Technology (TTNT): TTNT Apps	2	2019	2	2020
MIDS Link 16 and TTNT Waveform: Link 16 Waveform Development Fixes and Updates	1	2016	4	2020
MIDS Link 16 and TTNT Waveform: TTNT Waveform Development Fixes and Updates	1	2018	4	2020
MIDS Link 16 and TTNT Waveform: Air Dominance Assured Communications Design and Development for L16 WF	1	2016	1	2020
MIDS Modernization: MIDS Modernization Spec Development	1	2016	1	2019

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy									Date: February 2015			
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*				Project (Number/Name) 3341 / *Network Tactical Common Data Link*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
3341: *Network Tactical Common Data Link*	13.543	3.383	14.706	34.593	-	34.593	33.497	0.368	-	-	-	100.090
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Network Tactical Common Data Link (NTCDL) provides the ability to transmit/receive real-time Intelligence, Surveillance, and Reconnaissance (ISR) data simultaneously from multiple sources (surface, airborne, sub-surface, man-portable), and exchange command and control information (voice, data, imagery, and Full Motion Video) across dissimilar Joint, Service, Coalition, and civil networks. NTCDL provides warfighters with the capability to support multiple, simultaneous, networked operations with currently fielded Common Data Link (CDL)-equipped platforms (e.g. F/ A-18, P-3, and MH-60R), in addition to next generation manned and unmanned platforms (e.g., P-8, Triton, UCLASS, and Fire Scout). NTCDL is a incremental capability (surface, airborne, sub-surface, man-portable) providing a modular, scalable, multiple-link networked communications. NTCDL benefits the fleet by providing horizon extension for line-of-sight sensor systems for use in time critical strike missions. NTCDL counters Anti-Access/Area Denial (A2/AD) through its relay capability, and supports Tasking Collection Processing Exploitation Dissemination (TCPED) through its ISR networking capability. Additionally, NTCDL supports Humanitarian Assistance/Disaster Relief (HA/DR) efforts through its ability to share ISR data across dissimilar Joint, Service, Coalition, and Civil organizations.

Joint Aerial Layer Network-Maritime (JALN-M) is the Navy implementation of the JALN architecture which provides assured communications in any environment, especially A2/AD. With disruption or loss of Space tier communications, JALN-M establishes and/or restores connectivity with the High Capacity Backbone (HCB) tier, the Distribution Access Range Extension (DARE) tier, and the Transition tier in accordance with the JALN-M Initial Capabilities Document (ICD) and the JALN-M Analysis of Alternatives (AoA) Final Report. JALN-M is a robust, assured communications capability providing joint connectivity via the HCB and Navy platform connectivity via a pseudo satellite DARE capability. JALN-M will use the Extended Data Rate (XDR) waveform (Navy Multiband Terminal (NMT)) for intra-battle group DARE communications, a CDL waveform for the HCB cross-link capability, and will leverage enhanced Ultra High Frequency/High Frequency (UHF/HF) waveforms for coalition connectivity. Furthermore, Positioning, Navigation, and Timing (PNT) efforts related to the JALN-M Pod will develop a prototype PNT subsystem that will be integrated into the JALN-M Pod, and will provide position and timing data to other Pod subsystems, both with and without Global Positioning System (GPS) connectivity. Because the Pod is being designed to operate in an A2/AD environment, the Pod HCB and XDR (i.e. NMT) subsystems need to be provided with PNT data in the absence of GPS, and the assured PNT subsystem will provide that data.

FY16 will focus on Contract Award activities; NTCDL development efforts (e.g. NTCDL Engineering Development Models [EDMs]; development of documentation supporting Milestone C; and efforts associated with Increment 2, to include, airborne terminal research and development of High Capacity Backbone (HCB) and air-to-air relay activities in an Anti-Access/Area Denial (A2/AD) environment.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Title: Network Tactical Common Data Link (NTCDL)	3.383	9.506	20.713	-	20.713
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3341 / *Network Tactical Common Data Link*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: Overall program efforts include investigation of emerging technologies through study, development and associated testing for feasibility of program insertion. ***FY 2014 Accomplishments:*** Completed Acquisition documentation, to include the Capability Development Document [CDD], Information Support Plan (ISP), Life Cycle Sustainment Plan (LCSP), Cyber Strategy, Cost Analysis Requirements Document (CARD) and Program Life Cycle Cost Estimate (PLCCE). Continued the development of Acquisition and Contract documentation, to include, Technology Readiness Assessment (TRA), Acquisition Strategy (AS), Acquisition Plan (AP), Should Cost, System Functional Review (SFR), System Engineering Plan (SEP), Test and Evaluation Master Plan (TEMP), NTCDL Statement of Work (SOW), Contract Deliverables Requirements Lists (CDRLs), and System Performance Specification (SPS). ***FY 2015 Plans:*** Complete Acquisition and Contract documentation, (e.g. Acquisition Program Baseline (APB), Clinger Cohen Act (CCA), Technology Readiness Assessment (TRA), Acquisition Strategy (AS), Acquisition Plan (AP), Should Costs, System Functional Review (SFR), System Engineering Plan (SEP), Test and Evaluation Master Plan (TEMP), Statement of Work (SOW), Contract Data Requirements Lists (CDRLs), and System Performance Specification (SPS), achieve Development Request for Proposal Release Decision Review (DRFPR DR) and Milestone B. Release an Request For Proposal (RFP). ***FY 2016 Base Plans:*** Award NTCDL Contract and conduct post award activities, to include Post Award Conference (PAC) and Integrated Baseline Review (IBR). Complete development of CARD and update PLCCE. Initiate preparation for NTCDL development efforts (e.g. NTCDL Engineering Development Models [EDMs]); Preliminary Design Review (PDR) and Critical Design Review (CDR) System Engineering Technical Review (SETR) events; continue development of Milestone C documentation. ***FY 2016 OCO Plans:*** N/A					
Title: Network Tactical Common Data Link (NTCDL) High Capacity Backbone (HCB)	-	5.200	13.880	-	13.880
Articles:	-	-	-	-	-
Description: Network Tactical Common Data Link (NTCDL) High Capacity Backbone (HCB) efforts will support Joint Aerial Layer Network-Maritime (JALN-M) System of Systems development, integration, and testing. Efforts					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
will include the development of capabilities to integrate shipboard NTCDL terminals with the HCB in an Anti-Access/Area Denial (A2/AD) environment. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** Support JALN-M System of Systems development, Integration & Testing, ICD/ECR development, planned procurement for HCB terminals, and labor. Efforts will include the development of capabilities to integrate shipboard NTCDL terminals and Mobile GIG Entry Point (MGEP) with HCB system. Funding will facilitate the development of the design specification of JALN-M requirements for integration into an airborne prototype Pod and into the MGEP and shipboard systems. Funds will also be applied to the planning and execution of JALN-M demonstration scheduled in FY18. ***FY 2016 Base Plans:*** Continue to support JALN-M System of Systems development, Integration &Testing, and FY18 demo planning. Funding will be used to design, develop, and test the High Capacity Backbone (HCB) distributed system of systems (SoS) and the HCB component functional capabilities, interfaces, and supporting elements. Funds will also be applied to the planning and execution of JALN-M demonstration scheduled in FY18. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.383	14.706	34.593	-	34.593

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN, 2950: *Network Tactical Common Data Link (CDL)*	-	-	0.290	-	0.290	-	14.375	25.528	20.912	Continuing	Continuing

Remarks

D. Acquisition Strategy

NTCDL will utilize the evolutionary acquisition approach for: surface, air, sub-surface, man-portable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3341 / *Network Tactical Common Data Link*

E. Performance Metrics

Joint Interoperability Test Command (JITC) certification of CDL waveforms number of simultaneous links: Threshold (T) = 5, Objective (O) = 12. Data rate: minimum one 274 Megabit per second (Mbps) link (T), additional links must be 45Mbps or greater.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*	Project (Number/Name) 3341 / *Network Tactical Common Data Link*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NTCDL Product Development	C/CPIF	UNKNOWN : UNKNOWN	0.000	-		4.666	Jun 2015	16.120	Dec 2015	-		16.120	-	20.786	-
NTCDL HCB Development	C/CPIF	UNKNOWN : UNKNOWN	0.000	-		5.200	Jun 2015	13.880	Dec 2015	-		13.880	-	19.080	-
		Subtotal	0.000	-		9.866		30.000		-		30.000	-	39.866	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NTCDL Systems Engineering	WR	SPAWARSYSCTR : San Diego, CA	4.000	1.601	Oct 2013	2.160	Oct 2014	1.384	Oct 2015	-		1.384	-	9.145	-
NTCDL Systems Engineering	C/IDIQ	SPAWARSYS : San Diego, CA	5.000	0.125	Sep 2014	1.130	Sep 2015	1.353	Jul 2016	-		1.353	-	7.608	-
		Subtotal	9.000	1.726		3.290		2.737		-		2.737	-	16.753	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NTCDL Test and Evaluation	WR	SPAWARSYSCTR : San Diego, CA	2.140	1.127	Oct 2013	0.750	Oct 2014	0.898	Oct 2015	-		0.898	-	4.915	-
NTCDL Test and Review	MIPR	JITC : Fort Huachuca, AZ	0.200	-		0.250	Dec 2014	0.299	Dec 2015	-		0.299	-	0.749	-
NTCDL Waveform certification	MIPR	COMOPTEVFOR : Norfolk, VA	0.200	-		0.050	Dec 2014	0.060	Dec 2015	-		0.060	-	0.310	-
		Subtotal	2.540	1.127		1.050		1.257		-		1.257	-	5.974	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*	Project (Number/Name) 3341 / *Network Tactical Common Data Link*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	WR	SPAWARSYSCTR : San Diego, CA	1.000	-		-		-		-		-	-	1.000	-
Program Management Support	C/CPFF	BAH : San Diego, CA	1.003	0.530	Dec 2013	0.500	Dec 2014	0.599	Dec 2015	-		0.599	-	2.632	-
		Subtotal	2.003	0.530		0.500		0.599		-		0.599	-	3.632	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.543	3.383		14.706		34.593		-		34.593	-	66.225	-

Remarks

Issue Paper submitted to realign $1.7M FY16 and $1.5M FY17 from OMN (1C2C) to RDT&E (3341).

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3341 / *Network Tactical Common Data Link*

NTCDL

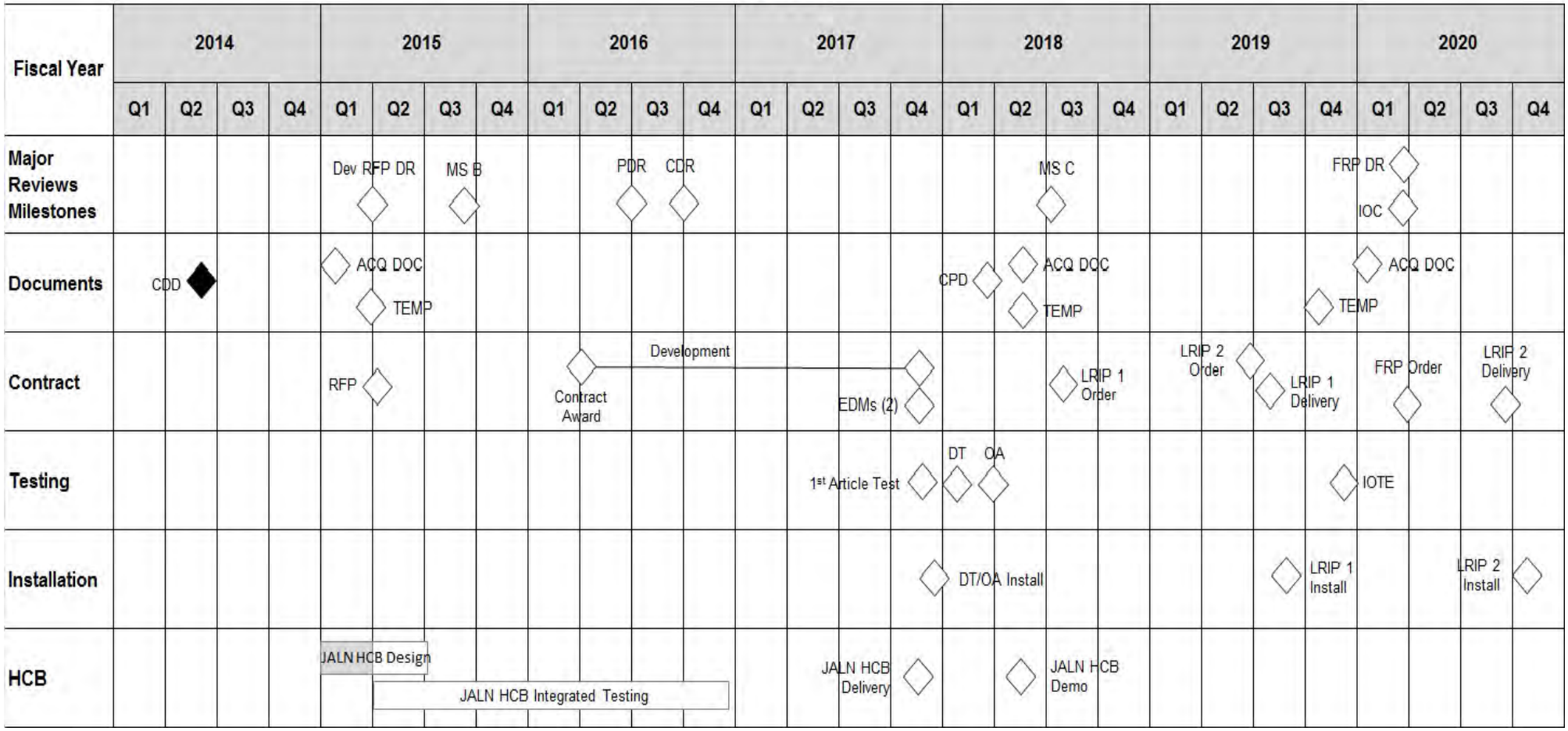

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 3341 / *Network Tactical Common Data Link*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3341				
NTCDL - Capabilities Development Document (CDD)	2	2014	2	2014
JALN HCB Design	1	2015	2	2015
NTCDL - Development Request for Proposal Decision Review (Dev RDP DR)	2	2015	2	2015
JALN HCB Integrated Testing	2	2015	4	2016
NTCDL - Milestone B	3	2015	3	2015
NTCDL - Contract Award	2	2016	2	2016
NTCDL - Development Contract	2	2016	4	2017
NTCDL - Preliminary Design Review (PDR)	3	2016	3	2016
NTCDL - Critical Design Review (CDR)	4	2016	4	2016
JALN HCB Delivery	4	2017	4	2017
NTCDL - Capability Production Document (CPD)	1	2018	1	2018
JALN HCB Demo	2	2018	2	2018
NTCDL - First Article Test	4	2017	4	2017
NTCDL - Development Testing (DT)	1	2018	1	2018
NTCDL - Operational Assessment (OA)	2	2018	2	2018
NTCDL - Milestone C	3	2018	3	2018
NTCDL - Low Rate Initial Production (LRIP) Order	3	2018	3	2018

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*	Project (Number/Name) 4022 / *Other Tactical Data Link Engineering*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
4022: *Other Tactical Data Link Engineering*	31.878	4.825	-	-	-	-	-	-	-	-	-	36.703
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Adjunct Capability Demo (ACD) is a proof-of-concept that will demonstrate the capability to distribute real-time ballistic missile track data over tactical data links. The effort requires the procurement, installation, integration, and test of software onto an existing platform. Radar software will be developed and tested to provide real-time ballistic missile track updates to the tactical data link management system.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Adjunct Capability Demo Product Development	1.172	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Completed software testing and hardware installation. - Completed limited regression testing and software fixes.					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Title: Adjunct Capability Demo Support	1.695	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Supported target scenario DIGISIM development and data analysis.					
FY 2015 Plans: N/A					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 4022 / *Other Tactical Data Link Engineering*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2016 OCO Plans:*** N/A					
Title: Adjunct Capability Demo Test and Evaluation	1.935	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Completed Target Scenario DIGISIM. - Completed Land-Based Link Test regression and a subsequent end-to-end Link Exercise. - Successfully executed Operation Polar Bear to demonstrate proof-of-concept. - Completed issue identification and regression analysis. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Adjunct Capability Demo Management Services	0.023	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Program planning, assessment of technical alternatives, risk identification and mitigation. - Cost and schedule development and execution. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	4.825	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 4022 / *Other Tactical Data Link Engineering*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Execute software development, integration and testing under existing contracts.

E. Performance Metrics

Successfully develop and test system to prove concept to distribute real-time ballistic missile data in real-time over tactical data links on a Fleet platform. System performance metrics under development.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*	Project (Number/Name) 4022 / *Other Tactical Data Link Engineering*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ACD Development and Integration	SS/CPFF	Raytheon : Sudbury, MA	26.206	1.172	May 2014	-		-		-		-	-	27.378	27.529
ACD Development and Integration	WR	SPAWAR : San Diego, CA	0.580	-		-		-		-		-	-	0.580	-
		Subtotal	26.786	1.172		-		-		-		-	-	27.958	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Support	C/CPFF	JHU/APL : Laurel, MD	1.208	0.260	Aug 2014	-		-		-		-	-	1.468	-
Systems Engineering Support	WR	SPAWAR : San Diego, CA	0.735	-		-		-		-		-	-	0.735	-
Systems Engineering Support	MIPR	MIT/LL : Hanscom, MA	0.420	0.185	Jan 2014	-		-		-		-	-	0.605	-
Systems Engineering Support	C/CPAF	Systems, Planning and Analysis : Alexandria, VA	0.337	-		-		-		-		-	-	0.337	-
Systems Engineering Support	MIPR	NSWC/PHD White Sands : Port Hueneme, CA	0.000	1.250	Apr 2014	-		-		-		-	-	1.250	-
		Subtotal	2.700	1.695		-		-		-		-	-	4.395	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ACD Test	SS/CPFF	Raytheon : Subury, MA	2.000	1.935	May 2014	-		-		-		-	-	3.935	4.000
ACD Test	WR	SPAWAR : San Diego, CA	0.300	-	Aug 2014	-		-		-		-	-	0.300	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205604N / *Tactical Data Links*	Project (Number/Name) 4022 / *Other Tactical Data Link Engineering*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	2.300	1.935		-		-		-		-	-	4.235	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPAF	Systems, Planning and Analysis : Alexandria, VA	0.062	-		-		-		-		-	-	0.062	-
TRAVEL	Allot	PEOIWS2I : Washington, DC	0.030	0.010	Feb 2015	-		-		-		-	-	0.040	-
Program Management Support	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.013	Feb 2015	-		-		-		-	-	0.013	-
		Subtotal	0.092	0.023		-		-		-		-	-	0.115	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	31.878	4.825		-		-		-		-	-	36.703	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 4022 / *Other Tactical Data Link Engineering*

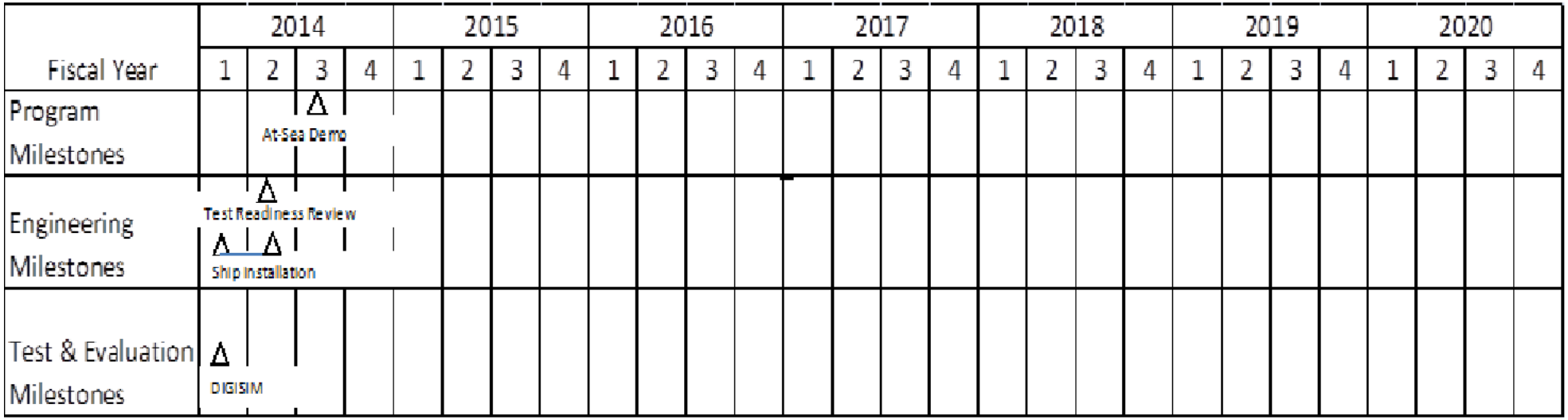

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205604N / *Tactical Data Links*	**Project (Number/Name)** 4022 / *Other Tactical Data Link Engineering*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4022				
Digital Simulation (DIGISIM)	1	2014	1	2014
Ship Installation	1	2014	2	2014
Test Readiness Review	2	2014	2	2014
At-Sea Demo	3	2014	3	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0205620N *I Surface ASW Cmbt Sys Integr*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	159.727	30.985	26.366	24.460	-	24.460	26.409	27.372	27.738	28.313	Continuing	Continuing
1916: *Surface ASW System Improvement*	159.727	30.985	26.366	24.460	-	24.460	26.409	27.372	27.738	28.313	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Navy's Strategy is to remain the preeminent maritime power, providing the U.S. a global expeditionary force committed to security and prosperity, while defending the Nation's interests. Within this vision, Anti-Submarine Warfare (ASW) remains a Navy core competency in a dynamic and uncertain maritime environment. U.S. adversaries continue to develop asymmetric capabilities and capacities to deter, disrupt, or delay the entry of U.S. and allied naval forces, and pose a constant challenge as we implement the Maritime Strategy. Evolving submarine technologies offer enhanced stealth, speed, endurance, weapons, and operational proficiency, trends foretelling that the adversary submarine of the future will have a significantly larger sphere of influence, while presenting less vulnerability to ASW forces. The effective offensive engagement range of the adversary submarine of the future will continue to match or outrange individual U.S. and multinational platform sensors and weapons in many tactical environments. Submarines are an increasing threat to all Naval and Allied ships, particularly modern diesel subs and faster torpedoes. Not only can the presence of potential hostile submarines delay naval combatant action until they are located and neutralized, submarines can also disrupt all seaborne logistics supply for any ground campaign as well as maritime commerce. ASW forces must be effective in all operating environments, ranging from the deep open ocean to the littorals, and are key to countering adversarial anti-access and area denial strategies.

The objective of this Program Element (PE) is to significantly improve existing Surface Ship Undersea Warfare (USW) sonar system capabilities through quick and affordable development/integration of emergent, transformational technologies in support of Littoral ASW, Theater ASW, Mine Reconnaissance, and overall Sea Shield efforts required to pace the threat. Detection and classification play uniquely vital roles in the success of any ASW campaign. To be effective against increasingly stealthy threats in an often ambiguous undersea environment, future sensors must be environmentally adaptive, have very low false alarm rates, and exploit the full range of current and future submarine detection vulnerabilities.

Project 1916's primary mission is to improve AN/SQQ-89(V) Measures Of Performance (MOP) by enhancing passive and active detection, tracking, classification and localization, and torpedo Detection, Classification, and Localization (DCL), sonobuoy data processing and display capabilities, and increasing acoustic sensor frequency bandwidth (Operational Requirements Document #667-76-05 titled 'AN/SQQ-89 Improvement Program', Test and Evaluation Master Plan 802-2 (TEMP 802-2)). Improvements to system simulation, stimulation, Information Assurance (IA), software and network architectures, and safety are included. This project takes advantage of the AN/SQQ-89(V) Open System Architecture (OSA) and Acoustic Rapid Commercial-Off-The-Shelf (COTS) Insertion (ARCI) initiatives to integrate a torpedo DCL and ASW sonar combat system capability improvements. This COTS-based Surface Ship ASW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 (select CG59-73 Baseline 3 and 4 ships) and DDG51 (All DDG and follow FLT I/II/IIA) class ships. The Open Architecture (OA) (level 3 compliant) of the AN/SQQ-89A(V)15 system drives the Advanced Capability Build (ACB) spiral development process and provides budget flexibility to make COTS/OA technology solutions and ARCI-type initiatives affordable. This will be accomplished via the incorporation of select Pre-Planned Product Improvements (P3I) and emergent, transformational ASW technologies delivered to the AN/SQQ-89(V) prime integrator every two years. ASW technology implementation will take advantage of improvements developed under the submarine Advanced Processing Build (APB) and Advanced Surveillance Build (ASB) programs and will in turn share unique

improvements developed under this program with the submarine and surveillance ASW communities. This project will also contribute to the development of Littoral Combat Ship (LCS) ASW Mission Packages.

Project 1916 also includes funding for the Surface Ship Engineering Measurement Program (SSEMP), which will measure the performance of existing and new Surface Ship ASW combat systems and enables data-based assessment of the capabilities and shortfalls in the performance of these systems in realistic scenarios.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	31.863	26.366	25.356	-	25.356
Current President's Budget	30.985	26.366	24.460	-	24.460
Total Adjustments	-0.878	-	-0.896	-	-0.896
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.878	-			
• Program Adjustments	-	-	-0.725	-	-0.725
• Rate/Misc Adjustments	-	-	-0.171	-	-0.171

Change Summary Explanation

The FY 2016 funding request was reduced by $.725 million to account for the availability of prior year execution balances.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205620N / *Surface ASW Cmbt Sys Integr*	Project (Number/Name) 1916 / *Surface ASW System Improvement*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1916: *Surface ASW System Improvement*	159.727	30.985	26.366	24.460	-	24.460	26.409	27.372	27.738	28.313	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Surface ASW Systems Improvements Project will support essential performance enhancements to AN/SQQ-89(V) and Surface Ship Sonar Systems. This project will improve AN/SQQ-89(V) MOP by enhancing active and passive detection, tracking, classification and localization, torpedo DCL, and sonobuoy data processing and display capabilities, and increasing acoustic sensor frequency bandwidth (Operational Requirements Document #667-76-05 titled 'AN/SQQ-89 Improvement Program'), TEMP 802-2.

This project will take advantage of the AN/SQQ-89(V) OSA and ARCI initiatives to integrate a TDCL and ASW sonar and combat system capability improvements. This COTS-based Surface Ship ASW combat system, the AN/SQQ-89A(V)15, is currently planned as a backfit program for both CG47 (select CG59-73 Baseline 3 and 4 ships) and DDG51 (All DDG51 and follow FLT I/II/IIA) class ships. This project has delivered the AN/SQQ-89A(V)15 Pre-Production Prototype, performed installation on board CG73, and conducted subsequent Developmental Test & Evaluation (DT&E) and Initial Operational Test & Evaluation (IOT&E) where the system was found 'Operationally Effective' by Command Operational Test and Evaluation Force (COMOPTEVFOR).

The OSA and high performance COTS processing hardware on ships fielded with the AN/SQQ-89A(V)15 combat system provides an opportunity to integrate select P3I as well as emergent, transformational ASW technological improvements that were previously unachievable. The Undersea Warfare (USW) suites on these ships will require periodic upgrades to remain effective well into the 21st century and to pace the threat. Software upgrades target capability increases in high interest areas as prescribed by the Fleet and captured in campaign analysis. To achieve this, this project will package and deliver incremental upgrades every two years to the AN/SQQ-89A(V)15 production program via an ACB spiral development process (ACB-11, ACB-13, etc.) by inserting maturing USW technologies, such as enhancements to improve USW performance in the littoral, operator efficiency upgrades via the implementation of robust embedded data record and replay capability and active/passive sonar simulation/stimulation, DCL active/passive processing upgrades, passive sonar automated detection and classification processing bell-ringers from the ASW Community-of-Interest, detect and track through maneuvers, integration of MH-60R mission systems with the AN/SQQ-89A(V)15 combat system, integration of Mid-Frequency active detection improvements, false-alarm rate reduction, clutter reduction, integration of ASW Community-of-Interest improved acoustic intercept and small-object avoidance, ASW Multi-Sensor integration (acoustic similar-source fusion and implementation of integrated shipboard system data, and ASW combat display architecture), distributed engagement management (Network Centric Enterprise Services implementation, new displays and decision aids, ASW Community-of-Interest model capabilities implementation), Mid-Frequency Acoustic Communications (MF ACOMMS) between Surface Combatants and Submarines, and upgraded technologies such as algorithm improvements, increased Passive Narrow Band (PNB) frequency, Continuous Active Sonar (CAS), Surface ASW Synthetic Trainer (SAST), and beamformer improvements. A rigorous testing program is also required to ensure that these performance enhancements are operationally effective and suitable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: SQQ-89A(V)15 Surface Ship ASW Advanced Capability Build (ACB) Development	27.035	22.466	20.560	-	20.560
Articles:	-	-	-	-	-

Description: Develop enhancements to the AN/SQQ-89A(V)15 Open System Architecture (OSA) via the integration of transformational technologies through an ACB spiral development process. Items include hull-mounted Acoustic Intercept (ACI) sensor, ACI performance predictions and signal injection capabilities, hull array adaptive beamformer and towed array shape compensated beamformer improvements via the Beamformer Functional Segment (BFFS), Mid-Frequency Active (MFA) Cooperative Organic Mine Defense (COMID) mine avoidance upgrades, MFA rapid replay and multi-waveform tracker, Hull Passive Processing Functional Segment (HPPFS) improvements, Sensor Performance Prediction Functional Segment (SPPFS) improvements, Undersea Warfare Control Functional Segment (UCFS) improvements, Supportability Functional Segment (SupFS)/SAST improvements, Recording Functional Segment (RecFS) improvements, Common System Services/Mission Package Services (CSS/MPS) improvements, full bandwidth towed array passive ASW and automated torpedo DCL algorithm improvements (active/passive) within the Torpedo Recognition and Alertment Functional Segment (TRAFS)/Torpedo Defense Functional Segment (TDFS) necessary to extend detection ranges and reduce false alert/alarm rates, new Undersea Situational Awareness Workstation (USAW) sensor to reduce the number of displays required for system operation, Mid-Frequency Acoustic Communications (MF ACOMMS) development, integration of MH-60R mission systems with the AN/SQQ-89A(V)15 combat system, simplification of displays and active processing, and a Sonar Logger capability to significantly reduce operator data logging requirements. These items will be integrated and delivered to the CG47 and DDG51 class AN/SQQ-89A(V)15 backfit production programs via ACB updates. Import advanced development capabilities from the submarine Advanced Processing Build (APB) and Acoustic Rapid Commercial-off-the-Shelf (COTS) Insertion (ARCI) projects. Export advanced capabilities to submarine and surveillance combat system programs.

Resolve/troubleshoot issues/deficiencies that arise from the AN/SQQ-89(V) Surface Ship ASW Test & Evaluation program. Rapidly address and correct problems/deficiencies in processing, capability or operations within the following areas within the AN/SQQ-89(V) USW combat system architecture; sensor processing, acoustics, fire control, contact management, performance prediction, operator productivity and on-board training, MFTA, Digital Fire Control Interface (DFCI), MFA processing, and adaptive beamforming.

FY 2014 Accomplishments:

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continued development and integration of enhancements to the AN/SQQ-89A(V)15 for ACB-15. Priority candidates currently planned for ACB-15 include: Active Clutter Reduction, Torpedo Defense, Integration of Submarine Passive improvements, and integration of MH-60R mission systems. Conducted independent Step 2 testing of ACB-15 individual technologies to finalize transitions for integration onto the tactical hardware. Following independent testing, began integration of ACB-15 capabilities into the tactical string. Integrated ACB-15 will be used for land-based testing of the full system. Completed Step 3, land-based testing and System Qualification Test (SQT) of ACB-13. ***FY 2015 Plans:*** Complete Aegis Integration Event (AIE) certification and transition of AN/SQQ-89A(V)15 ACB-13. Continue development and integration of enhancements to the AN/SQQ 89A(V)15 for ACB-15. Priority candidates will continue to be assessed during the 4 Step ACB process. Finish the conduct of independent Step 2 testing of ACB-15 individual technologies. Individual capabilities which meet Step 2 requirements will be integrated onto tactical hardware. Prepare data collection and test plans for Step 3 land-based testing as part of 4 Step ACB process. Step 3 includes a peer review by SMEs of fully integrated tactical capability. ***FY 2016 Base Plans:*** Continue development and integration of enhancements to the AN/SQQ-89A(V)15 for ACB-15. Priority candidates will continue to be assessed during the ACB Step process. Step 3 land-based testing of full tactical system will test individual capability and system performance of ACB-15. Complete SQT and AIE certifications. Step 4 at-sea testing of ACB-15 will test system capability with shipboard interfaces prior to production transition. Initiate development of concepts and capabilities for ACB-17. ***FY 2016 OCO Plans:*** N/A					
Title: AN/SQQ-89(V) Surface Ship ASW Test & Evaluation Program	0.700	0.700	0.700	-	0.700
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Finalized test ship and resources in support ACB-11 Operational Test (OT). Completed ACB-13 Step 3, conducted SQT, and conducted Development Test (DT) at the Land-Based Test Site (LBTS) prior to formal SQT. ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Plan ACB-13 At-Sea DT events with lead ships. Update TEMP 802-2 to cover ACB-13 DT/OT requirement. ***FY 2016 Base Plans:*** Finalize test ship and resources in support ACB-13 OT. Complete ACB-15 Step 3, AIE, conduct DT at the LBTS prior to formal SQT. ***FY 2016 OCO Plans:*** N/A					
Title: Surface Ship Enhanced Measurement Program (SSEMP) ***Articles:*** ***Description:*** Analyze the sonar employment in the operational setting and report results for improvement of training/employment guidance. Perform Fleet exercise data reconstruction and post-test analysis each year. Conduct selected at-sea data collection activities by providing planning support, ship riders, and analyst support. Evaluate prototype sonar employment tactics, sonar processing and automation algorithms, and communication protocols for the detection, classification, tracking, and intra-Fleet hand-off to Fleet ASW assets, and provide summary reports to document results. ***FY 2014 Accomplishments:*** Supported analysis of ACB-11/ACB-13 Return On Investment (ROI) test. Supported ACB-11 IOT&E/OT data collection and analysis of operational performance. Planned ACB-11 and ACB-13 lab-based system and operator performance comparison test and continued analysis of SSEMP cases. ***FY 2015 Plans:*** Commence ACB-13 performance assessment and operator at-sea testing and analysis of SSEMP cases. Update lab hardware to support ACB-13 install on ACB-11/TI-12 hardware. Continue analysis of SSEMP cases. ***FY 2016 Base Plans:*** Support analysis of ACB-13/ACB-15 Return On Investment (ROI) test. Support ACB-13 IOT&E/OT data collection and analysis of operational performance. Continue analysis of SSEMP cases. ***FY 2016 OCO Plans:*** N/A	3.250 -	3.200 -	3.200 -	- -	3.200 -
Accomplishments/Planned Programs Subtotals	30.985	26.366	24.460	-	24.460

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/2136: *AN/SQQ-89 Surface ASW Combat System*	83.231	78.802	103.241	-	103.241	98.284	123.474	138.661	135.037	Continuing	Continuing
• OPN/0900: *DDG Modernization*	285.994	324.219	364.157	-	364.157	403.782	570.886	507.745	521.562	Continuing	Continuing
• OPN/0960: *CG Modernization*	10.539	-	-	-	-	84.251	108.996	103.036	105.183	Continuing	Continuing

Remarks

D. Acquisition Strategy

- Via an ACB spiral development process, incorporate evolutionary and transformational technologies into AN/SQQ-89A(V)15 production systems.
- Utilize the Small Business Innovative Research (SBIR) program and full and open competition for new and improved innovative capability development.

E. Performance Metrics

- Deliver incremental capability increases in high interest areas, as prescribed by the Fleet and captured in campaign analysis, every two years to the AN/SQQ-89A(V)15 production program via an ACB spiral development process (ACB-09, ACB-11, ACB-13, etc.) by inserting maturing USW technologies.
- Conduct system qualification testing (SQT) and AEGIS Integration Events (AIE) for all fielded variants of ACB.
- Completed AN/SQQ-89A(V)15 ACB-11 Surface Ship ASW Combat System, performed installation, conducted DT&E, and initial IOT&E.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205620N / *Surface ASW Cmbt Sys Integr*	Project (Number/Name) 1916 / *Surface ASW System Improvement*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SQQ-89 S/W Development/Integration	C/CPFF	AAC : NY	5.923	0.115	Dec 2013	0.540	Jan 2015	0.540	Dec 2015	-		0.540	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	ALION : IL	1.673	2.750	Jan 2014	1.250	Jan 2015	1.250	Dec 2015	-		1.250	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	AM : VA	13.722	0.850	Dec 2013	0.160	Jan 2015	0.150	Dec 2015	-		0.150	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	GD-AIS : VA	11.322	-		-		-		-		-	-	11.322	-
SQQ-89 S/W Development/Integration	C/CPFF	In-Depth Engineering : VA	2.975	-		-		-		-		-	-	2.975	-
SQQ-89 S/W Development/Integration	C/CPFF	JHU/APL : MD	16.511	5.800	Feb 2014	4.265	Dec 2014	4.317	Dec 2015	-		4.317	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	METRON : VA	1.500	0.950	Dec 2013	1.100	Jan 2015	1.100	Dec 2015	-		1.100	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	Lockheed Martin : NY	10.205	-		-		-		-		-	-	10.205	-
SQQ-89 S/W Development/Integration	C/CPFF	Lockheed Martin : VA	6.203	3.750	Jan 2014	2.950	Dec 2014	3.152	Dec 2015	-		3.152	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	WR	NSWC/Carderock : MD	4.277	3.250	Dec 2013	2.150	Nov 2014	2.150	Nov 2015	-		2.150	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	WR	NSWC/Dahlgren : VA	1.440	-		-		-		-		-	-	1.440	-
SQQ-89 S/W TDA Support	WR	NUWC/Newport : RI	7.912	1.150	Dec 2013	1.850	Nov 2014	1.650	Nov 2015	-		1.650	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	SEDNA : VA	3.550	0.750	Jan 2014	0.100	Jan 2015	0.100	Dec 2015	-		0.100	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	UT/ARL : TX	8.887	2.450	Feb 2014	2.565	Jan 2015	1.701	Dec 2015	-		1.701	Continuing	Continuing	Continuing
SQQ-89 S/W Development/Integration	C/CPFF	VAR : VAR*	12.342	4.960	Dec 2013	5.227	Dec 2014	4.142	Dec 2015	-		4.142	Continuing	Continuing	Continuing
SAST Development/ Integration	C/CPFF	JHU/APL : MD	8.302	-		-		-		-		-	-	8.302	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SAST Development/ Integration	WR	NSWC/Carderock : MD	11.265	-		-		-		-		-	-	11.265	-
SAST Development/ Integration	WR	NUWC/Newport : RI	2.950	-		-		-		-		-	-	2.950	-
SAST Development/ Integration	C/CPFF	SEDNA : VA	4.792	-		-		-		-		-	-	4.792	-
SAST Development/ Integration	C/CPFF	UT/ARL : TX	1.652	-		-		-		-		-	-	1.652	-
SAST Development/ Integration	C/CPFF	VAR : VAR*	0.380	-		-		-		-		-	-	0.380	-
		Subtotal	137.783	26.775		22.157		20.252		-		20.252	-	-	-

Remarks

*Consists of multiple performing activities with funding for each not greater than $1M per year.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SSEMP ConductTest/Data Evaluation	C/CPFF	JHU/APL : MD	9.865	2.100	Feb 2014	2.100	Dec 2014	2.100	Dec 2015	-		2.100	Continuing	Continuing	Continuing
SSEMP Conduct/Test/ Data Evaluation	WR	NUWC/Newport : RI	2.412	0.500	Nov 2013	0.500	Nov 2014	0.500	Nov 2015	-		0.500	Continuing	Continuing	Continuing
SSEMP Conduct/Test/ Data Evaluation	C/CPFF	UT/ARL : TX	3.078	0.600	Feb 2014	0.600	Jan 2015	0.600	Dec 2015	-		0.600	Continuing	Continuing	Continuing
SQQ-89 IV&V/SAT/TEMP Assess./Update	WR	NUWC/Newport : RI	1.626	0.400	Nov 2013	0.400	Nov 2014	0.400	Nov 2015	-		0.400	Continuing	Continuing	Continuing
SQQ-89 DT/OT/ Miscellaneous T&E	WR	VAR : VAR*	1.785	0.300	Dec 2013	0.300	Dec 2014	0.300	Dec 2015	-		0.300	Continuing	Continuing	Continuing
		Subtotal	18.766	3.900		3.900		3.900		-		3.900	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

*Consists of multiple performing activities with funding for each not greater than $1M per year.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPAF	BAE Systems : MD	2.499	0.250	Jan 2014	0.250	Nov 2014	0.250	Dec 2015	-		0.250	Continuing	Continuing	Continuing
Program Office Travel	Allot	NAVSEA PEO IWS5 : DC	0.679	0.060	Feb 2014	0.059	Jan 2015	0.058	Oct 2015	-		0.058	Continuing	Continuing	Continuing
		Subtotal	3.178	0.310		0.309		0.308		-		0.308	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	159.727	30.985		26.366		24.460		-		24.460	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205620N / *Surface ASW Cmbt Sys Integr*	**Project (Number/Name)** 1916 / *Surface ASW System Improvement*

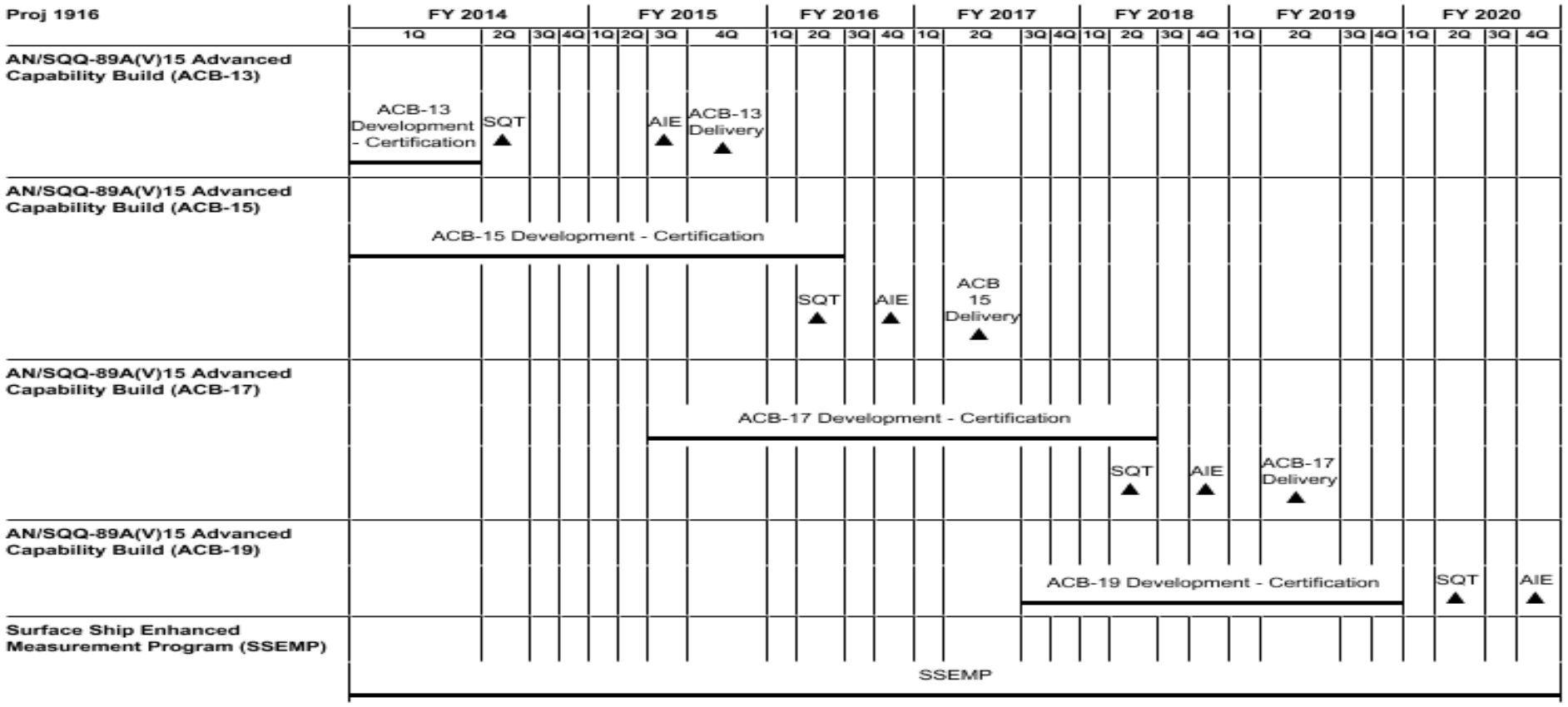

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205620N / *Surface ASW Cmbt Sys Integr*	**Project (Number/Name)** 1916 / *Surface ASW System Improvement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1916				
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-13): SQQ-89A(V)15 ACB-13 Dev./ Step Eval./PRT/Integ./Cert. (continued)	1	2014	1	2014
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-13): SQQ-89A(V)15 ACB-13 System Qualification Test (SQT)	2	2014	2	2014
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-13): SQQ-89A(V)15 ACB-13 Aegis Integration Event (AIE)	3	2015	3	2015
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-13): SQQ-89A(V)15 ACB-13 Prdtn. S/W Delivery to Integrator	4	2015	4	2015
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-15): SQQ-89A(V)15 ACB-15 Dev./ Step Eval./PRT/Integ./Cert. (continued)	1	2014	2	2016
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-15): SQQ-89A(V)15 ACB-15 System Qualification Test (SQT)	2	2016	2	2016
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-15): SQQ-89A(V)15 ACB-15 Aegis Integration Event (AIE)	4	2016	4	2016
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-15): SQQ-89A(V)15 ACB-15 Prdtn. S/W Delivery to Integrator	2	2017	2	2017
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-17): SQQ-89A(V)15 ACB-17 Dev./ Step Eval./PRT/Integ./Cert.	3	2015	2	2018
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-17): SQQ-89A(V)15 ACB-17 System Qualification Test (SQT)	2	2018	2	2018
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-17): SQQ-89A(V)15 ACB-17 Aegis Integration Event (AIE)	4	2018	4	2018
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-17): SQQ-89A(V)15 ACB-17 Prdtn. S/W Delivery to Integrator	2	2019	2	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205620N / *Surface ASW Cmbt Sys Integr*	**Project (Number/Name)** 1916 / *Surface ASW System Improvement*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-19): SQQ-89A(V)15 ACB-19 Dev./ Step Eval./PRT/Integ./Cert.	3	2017	4	2019
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-19): SQQ-89A(V)15 ACB-19 System Qualification Test (SQT)	2	2020	2	2020
AN/SQQ-89A(V)15 Advanced Capability Build (ACB-19): SQQ-89A(V)15 ACB-19 Aegis Integration Event (AIE)	4	2020	4	2020
Surface Ship Enhanced Measurement Program (SSEMP): Surface Ship Enhanced Measurement Program (SSEMP) (continued)	1	2014	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0205632N *I MK-48 ADCAP*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	217.170	10.050	25.952	42.206	-	42.206	38.351	65.689	92.237	90.559	Continuing	Continuing
0366: *MK 48 ADCAP*	217.170	10.050	25.952	42.206	-	42.206	38.351	65.689	92.237	90.559	Continuing	Continuing

A. Mission Description and Budget Item Justification

MK48 ADCAP (Advanced Capability) Research, Development, Test and Evaluation (RDT&E) program executes incremental development of weapon performance improvements in three development product areas: (1) Common Broadband Advanced Sonar System (CBASS), (2) Advanced Processor Builds (APBs), and (3) torpedo technology insertion. The budget enables Acquisition Category (ACAT) III development to address Chief of Naval Operations (CNO) defined capability-based requirements and mission needs. This program is tied to development programs that leverage a joint United States/Australia Armaments Cooperative Project (ACP) to develop MK48 ADCAP CBASS; and Future Naval Capability (FNC) technologies developed by the Office of Naval Research (ONR).

Countermeasure (CM) sophistication and availability on the open market directly affects ADCAP kill probability and its ability to counter rapidly evolving threats. The focus of the MK-48 ADCAP torpedo program from FY 2001 and out shifted from being primarily concentrated on software block upgrade efforts towards coordinated hardware upgrades, rapid Commercial-Off-the-Shelf (COTS) insertion, and APBs to rapidly upgrade the ADCAP to counter evolving threats and maintain robust performance. The CBASS program developed and fielded a broadband sonar capable of identifying CMs and discriminating them from the target. CBASS Phase I achieved IOC in FY 2006 and Phase II was achieved in 2013. The Commonwealth of Australia Royal Navy (RAN) is jointly participating to develop CBASS APB5 to improve shallow water performance under a signed Memorandum of Agreement (MOA) extension November 2009. The MOA extension expires Nov 2019.

The MK48 ADCAP torpedo program focuses on two specific areas near term; torpedo APBs and hardware tech insertions. The CNO continues to stress shallow water (less than 600 feet) as a critical operating area to counter third world diesel electric submarines. Torpedo testing in shallow water has demonstrated that in-service ADCAP has less than full capability in this difficult environment. However, this testing, in conjunction with laboratory simulation efforts, has shown that significant performance improvements can be made by implementing changes to weapon tactics and software algorithms. Development, implementation, and testing of these changes is being accomplished under the torpedo APB program. The APB program also leverages the RAN joint torpedo program and FNC technologies developed by the ONR in the areas of torpedo broadband signal processing, tactics processing, and alertment. The torpedo tech insertion program will leverage the MK54 Lightweight Torpedo (LWT) algorithms. Further hardware investment involves development of Guidance & Control (G&C) replacement required to support ordinance requirements and development of automated test equipment replacement to improve comprehensive system testing of full up CBASS torpedoes.

The torpedo technology insertion program will provide for evolutionary torpedo improvements and upgrades (including the transition and testing of advanced technologies from the Science and Technology community). This approach will incorporate developmental testing of the FNC transitioning technologies for ADCAP upgrades in the areas of torpedo sensors, weapon/platform connectivity, warhead lethality, speed and endurance. These efforts will continue torpedo development investment at a lower cost and shorter term than traditional torpedo programs.

APB5 software upgrades are currently in process for MK-48 ADCAP torpedoes.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205632N *I MK-48 ADCAP*

Both FNC technologies and MK-54 LWT developments will be transitioned into ADCAP through APBs and technology insertion packages. Priorities for APBs and technology insertion are: (1) improved torpedo effectiveness through advanced processing algorithms, (2) advanced counter-countermeasure capability, and (3) a new array to improve torpedo effectiveness.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	10.080	25.952	30.876	-	30.876
Current President's Budget	10.050	25.952	42.206	-	42.206
Total Adjustments	-0.030	-	11.330	-	11.330
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.006	-			
• SBIR/STTR Transfer	-0.024	-			
• Program Adjustments	-	-	12.600	-	12.600
• Rate/Misc Adjustments	-	-	-1.270	-	-1.270

Change Summary Explanation

The FY 2016 funding request was reduced by $1.266 million to account for the availability of prior year execution balances.

FY16 was increased to fund the transition of the MK48 Fuze and MK48 ASuW upgrade FNC's which includes requirement documentation to be completed, model updates, software integration, in-water and land-based testing, and performance matrix testing. Hardware and software requirements including: critical item performance specifications, system requirements specification, interface control drawings and interface requirement specifications. Additional in-water run testing and software updates are required as well as Weapons Analysis Facility (WAF) modeling and software updates will have to be incorporated and validated.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205632N / *MK-48 ADCAP*	Project (Number/Name) 0366 / *MK 48 ADCAP*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0366: *MK 48 ADCAP*	217.170	10.050	25.952	42.206	-	42.206	38.351	65.689	92.237	90.559	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

MK48 ADCAP program executes incremental development of weapon performance improvements in two development product areas: (1) APBs, and (2) torpedo technology insertion. The budget enables ACAT III development to address CNO defined capability-based requirements and mission needs. This program is tied to development programs that leverage a joint United States/Australia ACP to develop MK48 ADCAP; and FNC technologies being developed by the ONR.

APB software upgrades will improve torpedo performance in challenging water and countered environments through incorporation of new algorithms designed to address broadband, multiband, classifications and tactics processing changes. Hardware technology insertions will improve weapon performance against slow/low doppler targets. It provides improved target detection at long and short ranges and improved counter measure rejection in countered and shallow water scenarios. Availability will be improved through development of a G&C replacement and an ATE replacement.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: TORPEDO APB	6.269	11.089	24.576	-	24.576
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed development of G&C replacement. Continued APB 5 software development. Continued development of ATE replacement.					
FY 2015 Plans: Continue APB 5 development. Complete development of ATE replacement.					
FY 2016 Base Plans: Continue APB 5 development. Start transition of Fuze and ASuW FNC products to include requirement documentation to be completed, model updates, software integration, in-water and land-based testing, and performance matrix testing.					
FY 2016 OCO Plans: N/A					
Title: TEST & EVALUATION	3.781	14.863	17.630	-	17.630
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205632N / *MK-48 ADCAP*	**Project (Number/Name)** 0366 / *MK 48 ADCAP*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: Continued APB 5 developmental testing ***FY 2015 Plans:*** Conduct 2 APB 5 in-water engineering events, each with 15 torpedo firings over 5 days at sea and follow-on analysis and reports. Conduct 3 Demos (GPS Coms, Payload Launch Module, and Long Range Propulsion) ***FY 2016 Base Plans:*** Start APB 5 Developmental Testing (DT); 2 major DT events with 38 firings over ~14 days at sea as well as follow-on analysis and reports for each event. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	10.050	25.952	42.206	-	42.206

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN/3225: *MK-48 Torpedo ADCAP Mods*	48.503	40.863	63.317	-	63.317	39.543	44.411	45.234	46.154	Continuing	Continuing

Remarks

D. Acquisition Strategy

Sole source production contract awarded in FY 2004 for MK48 ADCAP MODS, MK-54 LWT, and CBASS kits, including RAN units. A full and competitive procurement for MK48 Mod 7 CBASS production kits was awarded in March 2011 with a FY 2010/2011 base year and four option years for FY 2012-2015. A new FY16 competitive contract will be awarded to continue procurement of CBASS Kits.

E. Performance Metrics

Milestone reviews.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205632N / *MK-48 ADCAP*	**Project (Number/Name)** 0366 / *MK 48 ADCAP*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Software Development - Sprial 4 / PY Development	WR	NUWC NPT : Newport RI	31.839	-		-		-		-		-	-	31.839	-
Primary Software Development - APB 5	WR	NUWC NPT : Newport RI	0.000	2.388	Oct 2013	5.984	Oct 2014	13.132	Oct 2015	-		13.132	Continuing	Continuing	Continuing
Primary Hardware Development - Spiral 4 / PY Development	WR	NUWC NPT : Newport RI	31.201	-		-		-		-		-	-	31.201	-
Primary Hardware Development - APB 5	WR	NUWC NPT : Newport RI	0.000	2.255	Dec 2013	5.500	Oct 2014	7.125	Jan 2016	-		7.125	Continuing	Continuing	Continuing
Primary Software Development - IM	WR	Indian Head : Indian Head	0.000	0.450	Oct 2013	-	Oct 2014	0.450	Oct 2015	-		0.450	Continuing	Continuing	Continuing
		Subtotal	63.040	5.093		11.484		20.707		-		20.707	-	-	-

Remarks

Funds torpedo, modeling and simulation hardware and software development, including the engineering and project manager's costs. Software development for APB5 increased in FY16 to support completion of APB5 by IOC 2020. Hardware development increased due to fully funding the transition of the FUZE and ASuW FNCs.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	NUWC NPT : Newport RI	19.147	0.752	Oct 2013	3.353	Oct 2014	3.353	Oct 2015	-		3.353	Continuing	Continuing	Continuing
Software Development	Various	Various : Not Specified	36.317	-		-		-		-		-	Continuing	Continuing	Continuing
Integrated Logistics Support	WR	NUWC NPT : Newport RI	2.243	-		-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering WCF	WR	NUWC NPT : Newport RI	17.750	-		-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering	Various	NUWC NPT : Newport RI	0.676	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	76.133	0.752		3.353		3.353		-		3.353	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205632N / *MK-48 ADCAP*	Project (Number/Name) 0366 / *MK 48 ADCAP*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
Funds activity program support costs, post test and evaluation WAF analysis, and WAF facilities costs.															

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation - Spiral 4 / PY	WR	NUWC NPT : Newport RI	17.086	-		-		-		-		-	Continuing	Continuing	Continuing
Test & Evaluation - APB 5	WR	NUWC NPT : Newport RI	0.000	0.932	Oct 2013	2.986	Oct 2014	-		-		-	Continuing	Continuing	Continuing
Developmental Testing - APB 5	WR	NUWC NPT : Newport RI	0.000	-		-		5.418	Oct 2015	-		5.418	Continuing	Continuing	Continuing
Test & Evaluation	WR	Operational Test Force : Norfolk VA	8.411	0.409	Nov 2013	0.450	Oct 2014	0.545	Jul 2016	-		0.545	Continuing	Continuing	Continuing
Modeling & Simulation	WR	NUWC NPT : Newport RI	9.745	-		-		-		-		-	Continuing	Continuing	Continuing
Modeling & Simulation	C/CPFF	ARL / PSU : State College PA	8.700	0.830	Dec 2013	1.584	Dec 2014	1.476	Apr 2016	-		1.476	Continuing	Continuing	Continuing
Test & Evaluation - Spiral 4 / PY	WR	NUWC Keyport (KPT) : Keyport WA	29.437	-		-		-		-		-	Continuing	Continuing	Continuing
Test & Evaluation - APB 5	WR	NUWC Keyport (KPT) : Keyport WA	0.000	1.609	Oct 2013	5.548	Oct 2014	-		-		-	Continuing	Continuing	Continuing
Developmental Testing - APB 5	WR	NUWC Keyport (KPT) : Keyport WA	0.000	-		-		10.190	Oct 2015	-		10.190	Continuing	Continuing	Continuing
		Subtotal	73.379	3.780		10.568		17.629		-		17.629	-	-	-

Remarks

Funds in-water run costs and personnel to support such events and modeling and simulation performance evaluation. NUWC Newport increase in FY16 is due to the program conducting the Developmental Test runs in support of ENG-C, DT-A, and DT-B. NUWC Keyport increase in FY16 is due to the increased number of weapon turns and in water support for ENG-C, DT-A, and DT-B.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205632N / *MK-48 ADCAP*	Project (Number/Name) 0366 / *MK 48 ADCAP*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/FFP	Alion Science : Mclean VA	3.531	0.405	Oct 2013	0.454	Oct 2014	0.468	Oct 2015	-		0.468	Continuing	Continuing	Continuing
Travel	WR	NAVSEA : Washington DC	1.087	0.020	Oct 2013	0.093	Oct 2014	0.049	Oct 2015	-		0.049	Continuing	Continuing	Continuing
		Subtotal	4.618	0.425		0.547		0.517		-		0.517	-	-	-

Remarks

Funds program support, program travel, and OPTEVFOR travel.

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	217.170	10.050		25.952		42.206		-		42.206	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		**Date:** February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205632N / *MK-48 ADCAP*	**Project (Number/Name)** 0366 / *MK 48 ADCAP*

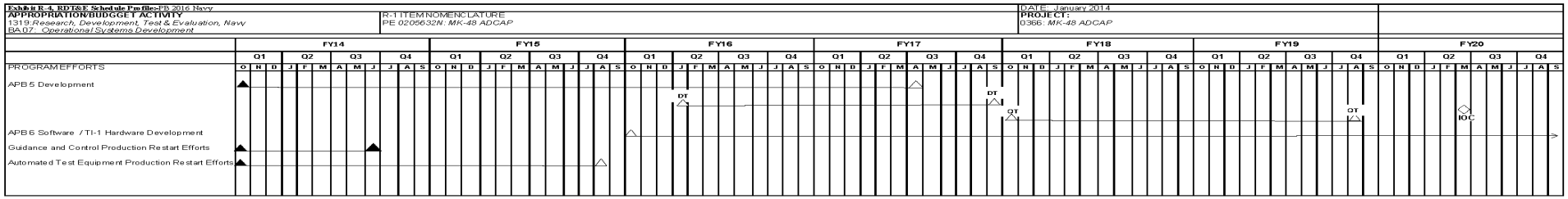

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205632N / *MK-48 ADCAP*	**Project (Number/Name)** 0366 / *MK 48 ADCAP*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0366				
APB 5 Development: APB 5 Development	1	2014	3	2017
APB 5 Development: APB 5 Developmental Test (DT)	2	2016	4	2017
APB 5 Development: APB 5 Operation Test (OT)	1	2018	4	2019
APB 5 Development: APB 5 IOC	2	2020	2	2020
APB 6 Software / TI-1 Hardware Development: APB 6 Development	1	2016	4	2020
Guidance and Production Restart Efforts: Guidance and Production Restart Efforts	1	2014	3	2014
Automated Test Equipment Production Restart Efforts: Automated Test Equipment Production Restart Efforts	1	2014	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0205633N *I Aviation Improvements*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	1,077.716	76.009	85.037	117.759	-	117.759	126.325	137.405	123.909	126.483	Continuing	Continuing
0601: *Acft Handling & Service Equip*	27.328	0.229	2.626	2.606	-	2.606	2.672	2.704	2.769	2.826	Continuing	Continuing
0852: *Consolidated Auto Support System*	139.870	8.346	6.533	6.550	-	6.550	6.697	6.809	6.957	7.102	Continuing	Continuing
1041: *Acft Equip Repl/Maint Prog*	40.176	3.229	3.243	3.322	-	3.322	3.465	3.485	3.516	3.588	Continuing	Continuing
1355: *Propulsion and Power Component Improvement Program*	862.163	59.037	60.251	87.008	-	87.008	95.416	109.427	110.667	112.967	Continuing	Continuing
2269: *Expeditionary Airfield Improvements*	8.179	5.168	12.384	18.273	-	18.273	18.075	14.980	-	-	-	77.059

A. Mission Description and Budget Item Justification

Project 0601 - Common Ground Equipment is a Naval Aviation Project to apply new technology to common support equipment necessary to support multiple aircraft.

Project 0852 - Consolidated Automated Support System is a standardized Automated Test Equipment with computer assisted, multi-function capabilities to support the maintenance of aircraft subsystems and missiles.

Project 1041 - Aircraft Equipment Reliability/Maintainability Improvement Program is the only Navy program that provides engineering support for in-service out-of-production aircraft equipment, and provides increased readiness at reduced operational and support cost.

Project 1355 - Aircraft Engine Component Improvement Program develops reliability and maintainability and safety enhancements for in-service Navy aircraft engines, transmissions, propellers, starters, auxiliary power units, electrical generating systems, fuel systems, fuels, and lubricants.

Project 2269 - The Expeditionary Airfields (EAF) program designs, develops, tests and fields a sustainment lighting system to replace existing obsolete legacy EAF lighting system.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*			R-1 Program Element (Number/Name) PE 0205633N *I Aviation Improvements*		
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	78.608	106.936	120.820	-	120.820
Current President's Budget	76.009	85.037	117.759	-	117.759
Total Adjustments	-2.599	-21.899	-3.061	-	-3.061
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-26.899			
• Congressional Rescissions	-	-			
• Congressional Adds	-	5.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.690	-			
• SBIR/STTR Transfer	-1.910	-			
• Program Adjustments	-	-	1.500	-	1.500
• Rate/Misc Adjustments	0.001	-	-4.561	-	-4.561

Change Summary Explanation

The FY 2016 funding request was reduced by $2.703 million to account for the availability of prior year execution balances.

Cost:

Project 2269: Funding was added to the Expeditionary Airfields budget in FY 2015 for the "Center of Excellence" which includes an airfield to be used by USA/ USAF and USMC for exercises (including joint) and potentially expeditionary airfield installation/removal drills. Funding was added to the Expeditionary Airfields budget in FY 2016 by $4.0 million, FY 2017 by $5.5 million and FY 2018 by $14.9 million to properly price the Sustainment Lighting System effort.

Schedule:

Project 0601: Aircraft Spotting Dolly and Carrier/Amphibious Assault Ship Crash Crane schedule delayed as a result of the majority of funding being re-directed to a higher priority program within Project 0852.

Project 0852: eCASS Full Rate Production Decision Review/Full Rate Procurement moved to 3rd Quarter FY 2016 due to the acceleration of DT-C2 Testing which concludes in 2nd Quarter FY 2016.

Project 1041: Wiring Diagnostics & Prognostics and Subsystem Improvement Iniatives were extended from 4th Quarter FY 2016 to 4th Quarter FY 2020. Corrosion Prevention & Control and Advanced Methods of Structural Repair are extended from 4th Quarter FY 2015 to 4th Quarter FY 2020. Extensions are due to continuation of reliability, maintainability and safety improvements.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205633N *I Aviation Improvements*

Project 2269: Milestone B moved from third quarter of fiscal year 2014 to first quarter of 2015 due to contract negotiation delays. As a result the other milestones, reviews and testing schedules were updated to support the Milestone B decision

Technical: Not Applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 0601 / *Acft Handling & Service Equip*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0601: *Acft Handling & Service Equip*	27.328	0.229	2.626	2.606	-	2.606	2.672	2.704	2.769	2.826	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Common Ground Equipment is a Naval Aviation project to apply new technology to common support equipment necessary to support multiple systems/aircraft within the Navy. The common support equipment items developed with this budget are briefed to the Air Force, Army and Coast Guard for possible use in joint procurement in the production phase.

New Programs are Aircraft Spotting Dolly (ASD) and Carrier/Amphibious Assault Ship Crash Crane (CV/AACC) in FY15. ASD is an R&D program to develop next generation ASD. New ASD requires low profile and alternative power to allow safe spotting of all aircraft aboard carrier/amphibious class ships. CV/AACC is required to remove damaged aircraft from the flight line. R&D resources are needed to identify not only replacements, but new technologies, which can increase the reliability and maintainability of this flight ops critical piece of equipment.

Funding supports the evaluation, testing and integration to develop Portable Electronic Maintenance Aids (PEMA) Commercial Off the Shelf solution for portable device deployments across the Naval Aviation Enterprise. PEMA is a portable device utilized by maintainers with the implementation of digital maintenance capabilities (digital publications, Interactive Electronic Technical Manuals, Internet Protocol based data uploads, Binary digit data downloads, automated diagnostics, and planeside Naval Aviation Logistics Command/Management Information System. PEMAs are a mandatory display device supporting modern day Automated Maintenance Environment implemented for weapon systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Aircraft Spotting Dolly (ASD)	-	0.616	1.091	-	1.091
Articles:	-	-	1	-	1
Description: There are no commercially available towing vehicles that could even be modified to replace the capabilities of the present SD-2. An R & D effort will be required to design its replacement. Advances in batteries and alternating current motor drive systems in the past decade have made it feasible to design an electrically powered vehicle for the CV, CVN, and L-Class hanger deck spotting missions. Such a vehicle will be inherently more reliable, reduce maintenance, and eliminate the fumes and noise generated by a diesel engine. An electrically driven vehicle will provide much greater motion control for slow speeds to aid in the engagement to the aircraft nose gear. Proximity sensors will be incorporated to automatically stop the spotting dolly prior to accidental impact with the aircraft, other support equipment or bulkheads, increasing the safety of the spotting					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0601 / *Acft Handling & Service Equip*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
operations. The legacy ASD is close to thirty years old and experiencing parts obsolescence issues and general efficiency degradation. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** Coordinate requirements definition; perform market research and analysis of alternatives. ***FY 2016 Base Plans:*** Perform source selection, award prototype contract, and begin prototype phase. ***FY 2016 OCO Plans:*** N/A					
Title: Carrier/Amphibious Assault Ship Crash Crane (CV/AACC)	0.059	1.565	1.070	-	1.070
Articles:	-	-	-	-	-
Description: CV/AACC are required to remove damaged aircraft from the flight line. In 2004, a solicitation for a commerical off the shelf replacement for the existing shipboard crash crane was issued. Two bids were received, and after a complete evaluation with many rounds of discussions with the companies bidding, both proposals were found to be technically inadequate and the procurement effort was discontinued. As a result, the crash cranes have continued operation unchanged. Designed in the late 1980's, major systems are beginning to experience the obsolescence of spare parts and are in need of updating. R&D resources are needed to identify not only replacements, but new technologies, which can increase the reliability and maintainability of this flight ops critical piece of equipment. Systems updates would include the engine/generator and electrical updates to the motor drive/control system. An exploration of power sources other than diesel engines would be considered and a corrosion resistant boom. ***FY 2014 Accomplishments:*** Initiate requirements definition. ***FY 2015 Plans:*** Continue requirements definition, market research and analysis of alternatives. ***FY 2016 Base Plans:*** Prepare source selection documentation, prepare test plan documents and initiate source selection. ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0601 / *Acft Handling & Service Equip*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: Portable Electronic Maintenance Aid (PEMA)	0.170	0.445	0.445	-	0.445
Articles:	-	-	-	-	-
Description: Portable Electronic Maintenance Aid (PEMA) funding supports the evaluation, testing and integration to develop PEMA Commercial Off-the-Shelf (COTS) solution for portable device deployments across the Naval Aviation Enterprise. PEMA is a portable device utilized by maintainers with the implementation of digital maintenance capabilities (digital publications, Interactive Electronic Technical Manuals, Internet Protocol based data uploads, Binary digit data downloads, automated diagnostics, and planeside Naval Aviation Logistic Command Management Information System. PEMAs are a mandatory display device supporting modern day Automated Maintenance Environment implemented for weapon systems. ***FY 2014 Accomplishments:*** Evaluate, test and integrate evolving COTS solutions. Conduct test & evaluation of Type/Model/Series (T/M/S) peculiar software/hardware requirements and network connectivity compliance across the Global Information Grid (GIG) prior to deployment to the fleet by a yearly release cycle. ***FY 2015 Plans:*** Evaluate, test and integrate evolving COTS solutions. Conduct test & evaluation of T/M/S peculiar software/ hardware requirements and network connectivity compliance across the GIG prior to deployment to the fleet by a yearly release cycle. ***FY 2016 Base Plans:*** Evaluate, test and integrate evolving COTS solutions. Conduct test & evaluation of T/M/S peculiar software/ hardware requirements and network connectivity compliance across the GIG prior to deployment to the fleet by a yearly release cycle. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.229	2.626	2.606	-	2.606

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN/0705: *Ground Support Equipment*	108.080	120.361	120.665	-	120.665	125.221	126.348	128.879	131.404	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0601 / *Acft Handling & Service Equip*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/4264: *Portable Electronic Maintenance Aids*	7.969	-	-	-	-	-	-	-	-	-	39.499
• OPN/4268: *Aviation Support Equipment*	-	7.746	7.762	-	7.762	7.547	7.717	7.884	8.050	Continuing	Continuing

Remarks

D. Acquisition Strategy

Common Ground Equipment: This is a non ACAT program. Field activities propose tentative projects. Internal panel merits and selects projects. Field activities develop projects and submit results. Operational Advisory Group process selects projects to transition to procurement.

Portable Electronic Maintenance Aids: The management approach includes the Program Management Office residing at NAVAIR with Milestone Decision Authority delegated to the Naval Air Systems Command Chief Information Officer. The evolutionary development approach will be used to execute requirements. Contracting for the prime integrator will be via competitively awarded Indefinite Delivery/Indefinite Quantity contracts.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 0601 / *Acft Handling & Service Equip*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Dev--ASD	C/FFP	TBD : TBD	0.000	-		0.316	May 2015	0.441	Mar 2016	-		0.441	Continuing	Continuing	Continuing
Systems Engineering-ASD	WR	NAWCAD : LAKEHURST, NJ	0.000	-		0.150	Nov 2014	0.550	Nov 2015	-		0.550	Continuing	Continuing	Continuing
Systems Engineering-CV/AACC	WR	NAWCAD : LAKEHURST, NJ	0.000	0.059	Nov 2013	0.485	Nov 2014	0.870	Nov 2015	-		0.870	Continuing	Continuing	Continuing
Primary Hardware Dev-CV/AACC	C/FFP	TBD : TBD	0.000	-		0.537	Mar 2015	-		-		-	Continuing	Continuing	Continuing
Prior year Prod Dev cost no longer funded in the FYDP	Various	Various : Various	17.517	-		-		-		-		-	-	17.517	-
		Subtotal	17.517	0.059		1.488		1.861		-		1.861	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Support cost no longer funded in the FYDP	Various	Various : Various	8.857	-		-		-		-		-	-	8.857	-
		Subtotal	8.857	-		-		-		-		-	-	8.857	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational T & E - PEMA	WR	NAWCAD : PAX RIVER, MD	0.454	0.170	Nov 2013	0.445	Nov 2014	0.445	Nov 2015	-		0.445	Continuing	Continuing	Continuing
C&G Test - ASD	WR	NAWCAD : PAX RIVER, MD	0.000	-		0.150	Nov 2014	0.100	Nov 2015	-		0.100	Continuing	Continuing	Continuing
C&G Test - CV/AACC	WR	NAWCAD : PAX RIVER, MD	0.000	-		0.543	Nov 2014	0.200	Nov 2015	-		0.200	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 0601 / *Acft Handling & Service Equip*	

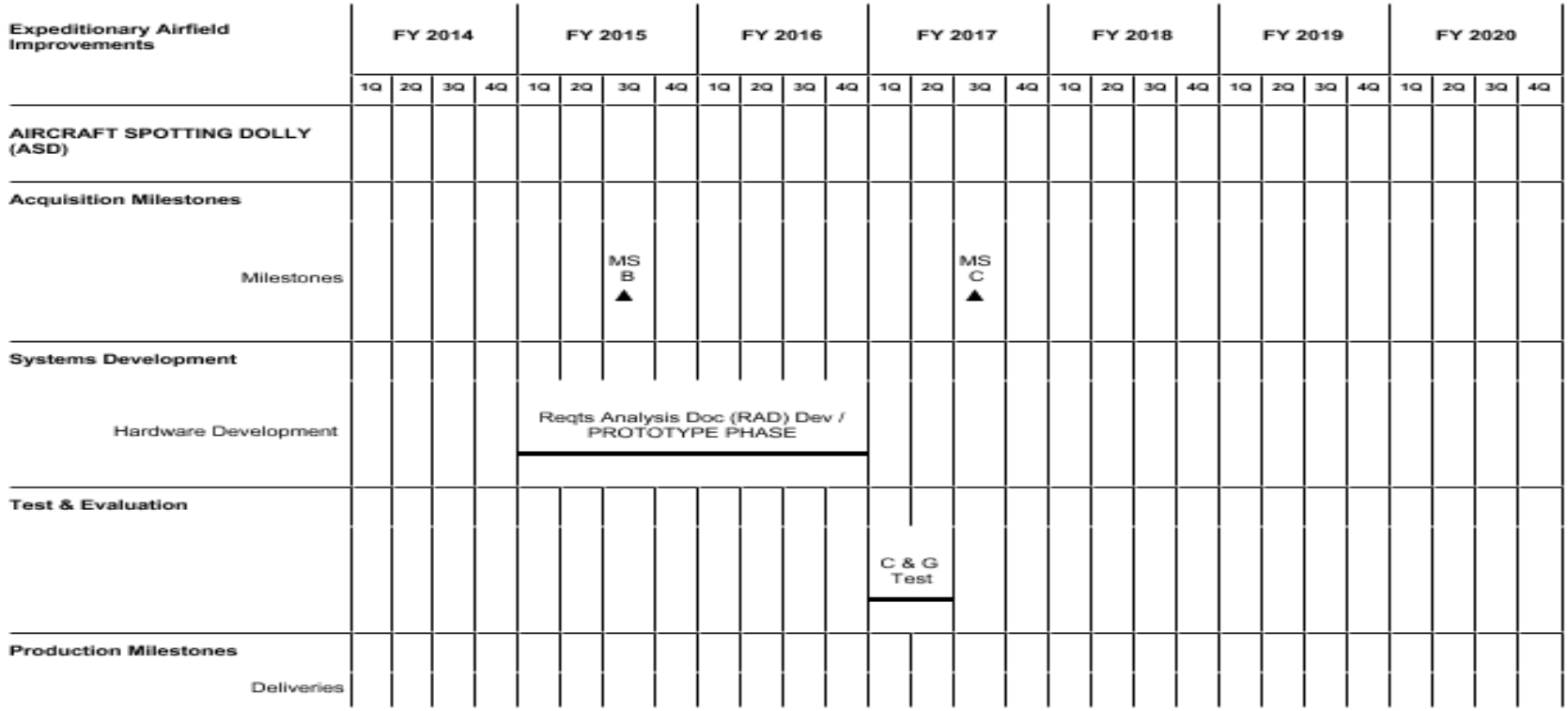
Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year T&E cost no longer funded in the FYDP	Various	Various : Various	0.500	-		-		-		-		-	-	0.500	-
		Subtotal	0.954	0.170		1.138		0.745		-		0.745	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	27.328	0.229		2.626		2.606		-		2.606	-	-	-

Remarks

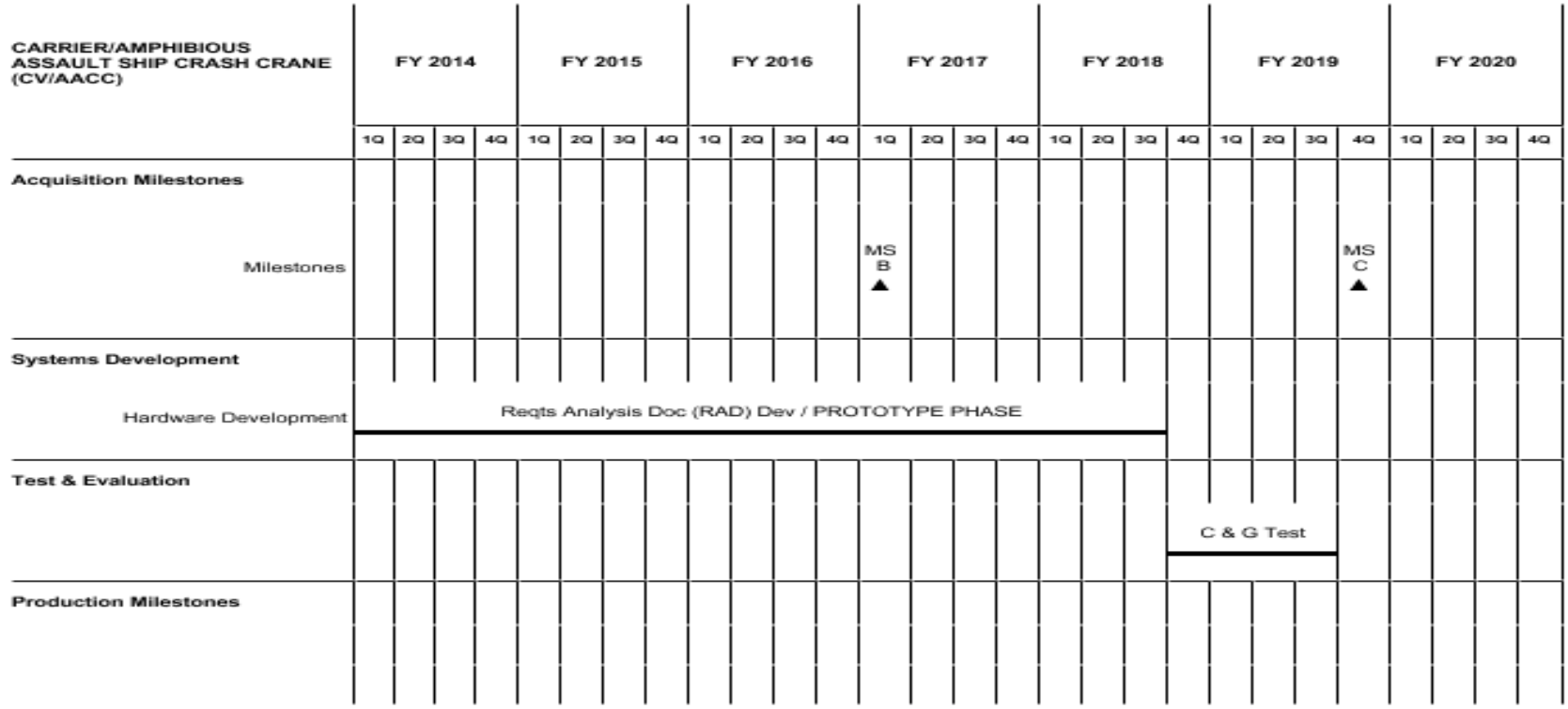
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0601 / *Acft Handling & Service Equip*



2016PB - 0205633N - 0601

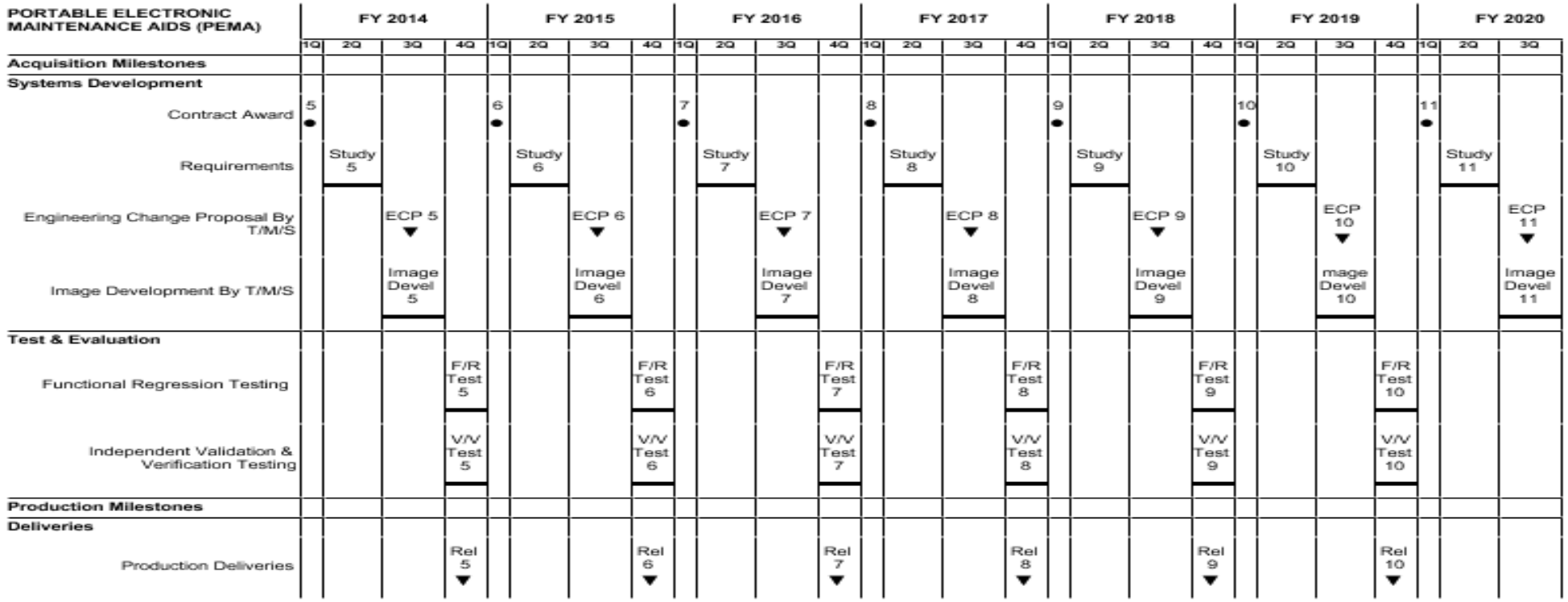
Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0601 / *Acft Handling & Service Equip*

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0601 / *Acft Handling & Service Equip*



2016PB - 0205633N - 0601

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0601 / *Acft Handling & Service Equip*



2016PB - 0205633N - 0601

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0601 / *Acft Handling & Service Equip*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Expeditionary Airfield Improvements				
Acquisition Milestones: Milestones: ASD-MILESTONE B	3	2015	3	2015
Acquisition Milestones: Milestones: ASD-MILESTONE C	3	2017	3	2017
Systems Development: Hardware Development: ASD - Reqts Analysis Doc (RAD) Dev / PROTOTYPE PHASE	1	2015	4	2016
Test & Evaluation: ASD - CONTRACTOR AND GOVT RUN TESTING	1	2017	2	2017
CARRIER/AMPHIBIOUS ASSAULT SHIP CRASH CRANE (CV/AACC)				
Acquisition Milestones: Milestones: MILESTONE B	1	2017	1	2017
Acquisition Milestones: Milestones: MILESTONE C	4	2019	4	2019
Systems Development: Hardware Development: CV/AACC-Reqts Analysis Doc (RAD) Dev / PROTOTYPE PHASE	1	2014	3	2018
Test & Evaluation: CV/AACC-CONTRACTOR AND GOVT RUN TESTING	4	2018	3	2019
PORTABLE ELECTRONIC MAINTENANCE AIDS (PEMA)				
Systems Development: Contract Award: Contract Award 5	1	2014	1	2014
Systems Development: Contract Award: Contract Award 6	1	2015	1	2015
Systems Development: Contract Award: Contract Award 7	1	2016	1	2016
Systems Development: Contract Award: Contract Award 8	1	2017	1	2017
Systems Development: Contract Award: Contract Award 9	1	2018	1	2018
Systems Development: Contract Award: Contract Award 10	1	2019	1	2019
Systems Development: Contract Award: Contract Award 11	1	2020	1	2020
Systems Development: Requirements: Requirements Study Complete 5	2	2014	2	2014
Systems Development: Requirements: Requirements Study Complete 6	2	2015	2	2015
Systems Development: Requirements: Requirements Study Complete 7	2	2016	2	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0601 / *Acft Handling & Service Equip*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Development: Requirements: Requirements Study Complete 8	2	2017	2	2017
Systems Development: Requirements: Requirements Study Complete 9	2	2018	2	2018
Systems Development: Requirements: Requirements Study Complete 10	2	2019	2	2019
Systems Development: Requirements: Requirements Study Complete 11	2	2020	2	2020
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 5	3	2014	3	2014
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 6	3	2015	3	2015
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 7	3	2016	3	2016
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 8	3	2017	3	2017
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 9	3	2018	3	2018
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 10	3	2019	3	2019
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 11	3	2020	3	2020
Systems Development: Image Development By T/M/S: Image Development By T/M/S 5	3	2014	3	2014
Systems Development: Image Development By T/M/S: Image Development By T/M/S 6	3	2015	3	2015
Systems Development: Image Development By T/M/S: Image Development By T/M/S 7	3	2016	3	2016
Systems Development: Image Development By T/M/S: Image Development By T/M/S 8	3	2017	3	2017
Systems Development: Image Development By T/M/S: Image Development By T/M/S 9	3	2018	3	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0601 / *Acft Handling & Service Equip*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Development: Image Development By T/M/S: Image Development By T/M/S 10	3	2019	3	2019
Systems Development: Image Development By T/M/S: Image Development By T/M/S 11	3	2020	3	2020
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 5	4	2014	4	2014
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 6	4	2015	4	2015
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 7	4	2016	4	2016
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 8	4	2017	4	2017
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 9	4	2018	4	2018
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 10	4	2019	4	2019
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 11	4	2020	4	2020
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 5	4	2014	4	2014
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 6	4	2015	4	2015
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 7	4	2016	4	2016
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 8	4	2017	4	2017
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 9	4	2018	4	2018
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 10	4	2019	4	2019
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 11	4	2020	4	2020
Deliveries: Production Deliveries: Production Delivery, Release 5	4	2014	4	2014
Deliveries: Production Deliveries: Production Delivery, Release 6	4	2015	4	2015
Deliveries: Production Deliveries: Production Delivery, Release 7	4	2016	4	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0601 / *Acft Handling & Service Equip*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Deliveries: Production Deliveries: Production Delivery, Release 8	4	2017	4	2017
Deliveries: Production Deliveries: Production Delivery, Release 9	4	2018	4	2018
Deliveries: Production Deliveries: Production Delivery, Release 10	4	2019	4	2019
Deliveries: Production Deliveries: Production Delivery, Release 11	4	2020	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy										Date: February 2015		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*				Project (Number/Name) 0852 / *Consolidated Auto Support System*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
0852: *Consolidated Auto Support System*	139.870	8.346	6.533	6.550	-	6.550	6.697	6.809	6.957	7.102	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The electronic Consolidated Automated Support System (eCASS) project is the system design and development of the latest generation of the US Navy's CASS family of automatic test systems. The legacy CASS system was designed and developed in the 1980's and commenced fielding in 1992. As such, it is reaching the end of its useful life due to obsolescence issues. eCASS is the replacement system for legacy CASS systems, which provides Naval aircraft avionics component maintenance and repair support at Intermediate and Depot maintenance facilities both shore-based and afloat. As a CASS replacement program, the eCASS program objectives remain the same as that of CASS. Specifically: (1) increase material readiness; (2) reduce life cycle costs; (3) improve tester sustainability at depot and intermediate maintenance levels; (4) reduce proliferation of unique test equipment, and (5) provide test capability for existing and emerging avionics/electronics aircraft weapon systems.

The Test Technology Development project involves analysis, application, maturation, integration and testing of emerging electronic, mechanical and optical test technologies for potential military utility in support of Naval avionics testing and repair. Specific technologies being developed include synthetic instruments, new Advanced Targeting Forward Looking Infrared electro-optics capabilities, multi-analog test capability to enable functional testing, and modernization elements for the CASS family of automatic test systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Title: eCASS Development	8.246	6.233	5.333	-	5.333
Articles:	-	-	-	-	-
Description: Develop, integrate and test an Automatic Test System (ATS) to replace legacy CASS systems. The new ATS will be compatible with and capable of hosting the hundreds of existing Test Programs that are currently utilized on legacy CASS at the Intermediate and Depot levels of maintenance, as well as any emerging Test Programs that may require greater test capability than provided by legacy CASS.					
FY 2014 Accomplishments: Conduct Milestone C Review. Conduct test events. Award LRIP Option(s) (APN-7).					
FY 2015 Plans: Continue test events.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0852 / *Consolidated Auto Support System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue test events. ***FY 2016 OCO Plans:*** N/A					
Title: Test Technology Development	0.100	0.300	1.217	-	1.217
Articles:	-	-	-	-	-
Description: Develops, integrates, and evolves enhanced test capabilities and technologies for insertion into the Consolidated Automated Support System (CASS) family of test systems. As weapon system electronics evolve, new test capabilities are required to support advanced systems. Existing test capabilities must be extended in range, accuracy, time and frequency domains in order to sustain the required test accuracy ratios for weapon systems support (the automatic test system must be four times as accurate as the asset being tested). ***FY 2014 Accomplishments:*** Continue to develop, integrate, and evolve enhanced test capabilities and technologies for insertion into the CASS family of test systems. ***FY 2015 Plans:*** Continue to develop, integrate, and evolve enhanced test capabilities and technologies for insertion into the CASS family of test systems. ***FY 2016 Base Plans:*** Continue to develop, integrate, and evolve enhanced test capabilities and technologies for insertion into the CASS family of test systems. Emphasis will be placed on development and studies for the replacement of the CASS Electro-Optics console. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	8.346	6.533	6.550	-	6.550

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN/0705: *Consolidated Automated Support System*	89.662	80.908	103.016	-	103.016	94.405	96.012	97.904	99.862	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0852 / *Consolidated Auto Support System*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

Formal test technology reviews with industry are conducted annually (cooperative Joint Services initiative) to define maturity of needed technologies. Further studies are conducted as needed. Procurement strategy is determined by market survey and cooperative opportunities.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 0852 / *Consolidated Auto Support System*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Dev eCASS	C/CPIF	Lockheed Martin : Orlando, FL	86.799	7.847	Dec 2013	4.161	Oct 2014	3.400	Dec 2015	-		3.400	Continuing	Continuing	Continuing
Primary Hdw Dev Test Technology	C/CPFF	Various : Various	0.882	0.100	Dec 2013	0.250	Jan 2015	1.166	Dec 2015	-		1.166	Continuing	Continuing	Continuing
Prior Year Prod Dev no longer funded in the FYDP	Various	Various : Various	28.397	-		-		-		-		-	-	28.397	-
		Subtotal	116.078	7.947		4.411		4.566		-		4.566	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
eCASS Support	WR	Various : Various	2.989	0.050	Dec 2013	0.627	Oct 2014	0.816	Dec 2015	-		0.816	Continuing	Continuing	Continuing
eCASS Support	WR	NAWC AD : Lakehurst, NJ	5.365	0.324	Dec 2013	1.359	Oct 2014	1.029	Dec 2015	-		1.029	Continuing	Continuing	Continuing
Prior Year Support cost no longer funded in the FDYP	Various	Various : Various	12.853	-		-		-		-		-	-	12.853	-
		Subtotal	21.207	0.374		1.986		1.845		-		1.845	-	-	-

Management Services ($ in Millions)

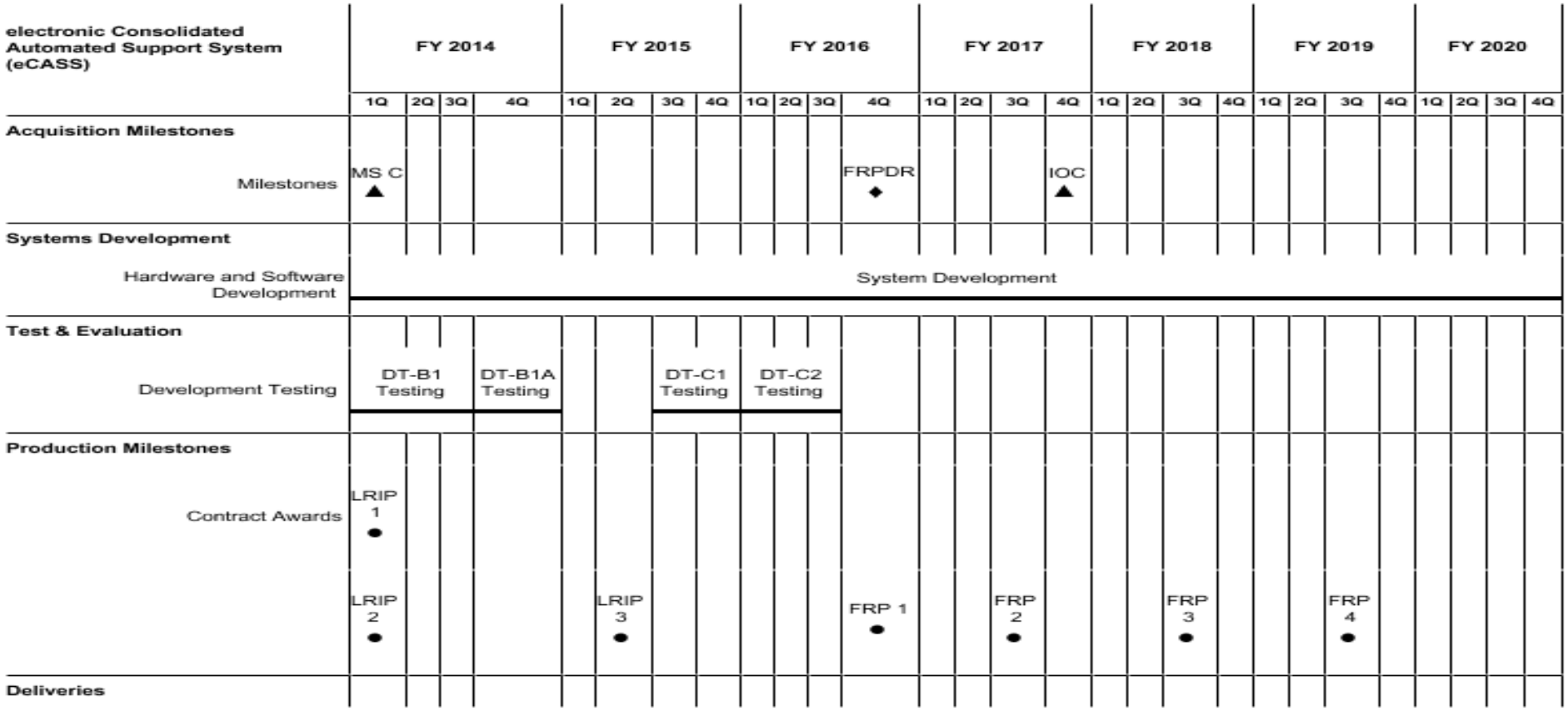
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
eCASS Travel	WR	Various : Various	0.716	0.025	Nov 2013	0.086	Nov 2014	0.088	Nov 2015	-		0.088	Continuing	Continuing	Continuing
Test Tech Travel	WR	Various : Various	0.200	-		0.050	Nov 2014	0.051	Nov 2015	-		0.051	Continuing	Continuing	Continuing
Prior Year Mgmt cost no longer funded in the FYDP	Various	Various : Various	1.669	-		-		-		-		-	-	1.669	-
		Subtotal	2.585	0.025		0.136		0.139		-		0.139	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 0852 / *Consolidated Auto Support System*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	139.870	8.346		6.533		6.550		-		6.550	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0852 / *Consolidated Auto Support System*



2016PB - 0205633N - 0852

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 0852 / *Consolidated Auto Support System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
electronic Consolidated Automated Support System (eCASS)				
Acquisition Milestones: Milestones: Milestone C	1	2014	1	2014
Acquisition Milestones: Milestones: Full Rate Production Decision Review	4	2016	4	2016
Acquisition Milestones: Milestones: Initial Operating Capability	4	2017	4	2017
Systems Development: Hardware and Software Development: eCASS System Development	1	2014	4	2020
Test & Evaluation: Development Testing: eCASS DT-B1 Testing	1	2014	3	2014
Test & Evaluation: Development Testing: eCASS DT-B1A Testing	4	2014	4	2014
Test & Evaluation: Development Testing: eCASS DT-C1 Testing	3	2015	4	2015
Test & Evaluation: Development Testing: eCASS DT-C2 Testing	1	2016	3	2016
Production Milestones: Contract Awards: eCASS LRIP 1-APN	1	2014	1	2014
Production Milestones: Contract Awards: eCASS LRIP 2-APN	1	2014	1	2014
Production Milestones: Contract Awards: eCASS LRIP 3-APN	2	2015	2	2015
Production Milestones: Contract Awards: eCASS FRP 1-APN	4	2016	4	2016
Production Milestones: Contract Awards: eCASS FRP 2-APN	3	2017	3	2017
Production Milestones: Contract Awards: eCASS FRP 3-APN	3	2018	3	2018
Production Milestones: Contract Awards: eCASS FRP 4-APN	3	2019	3	2019

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 1041 / *Acft Equip Repl/Maint Prog*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1041: *Acft Equip Repl/Maint Prog*	40.176	3.229	3.243	3.322	-	3.322	3.465	3.485	3.516	3.588	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP) is the only Navy program which provides Research, Development, Test & Evaluation engineering support specifically for in-service, out-of-production aircraft equipment. AERMIP increases readiness through reliability, maintainability, and safety improvements to existing systems and equipment installed in Naval aircraft. It also provides a transition vehicle to deploy Total Ownership Cost reduction initiatives through flight-test support and Fleet Test & Evaluation. It meets affordable readiness objectives by providing a cost-effective solution to obsolescence problems encountered when service lives are extended. AERMIP promotes commonality and standardization across aircraft platform lines and among the services through extension of application and use of non-developmental items. AERMIP also decreases life cycle costs through reduced operational and support costs. AERMIP facilitates the Operational, Safety and Improvement Program by applying proven low-risk solutions to current fleet problems. AERMIP also funds high-priority flight testing which is not associated with any acquisition or development program under the Flight Test General task.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Avionics and Wiring	0.596	0.534	0.550	-	0.550
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Perform sustained operational testing on materials, equipment, and the procedures/process required for their implementation, continuing to refine their operation in real-world environments, including off-board equipment for diagnostics and prognostics. Pursue next-generation technologies that reduce maintenance burden, including diagnosis and prognostics methods, and prove the applicability to Naval aviation. Address emergent avionics and wiring-related reliability issues impacting multiple aircraft platforms.					
FY 2015 Plans: Qualify additional material or pieces of equipment and the procedures or processes required for implementation. Test and evaluate equipment for effectiveness of wiring diagnostics and prognostics. Purse technology advances in ultra-high density power storage from industry. Address avionics related reliability/maintainability issues impacting multiple aircraft platforms while continuing to investigate high value return on investment initiatives. Begin to review and investigate high speed data connector reliability in aircraft subsystems.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 1041 / *Acft Equip Repl/Maint Prog*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Test and evaluate equipment for effectiveness of wiring diagnostics and prognostics. Continue pursuit of technology advances in ultra-high density power storage from industry. Address avionics related reliability/ maintainability issues impacting multiple aircraft platforms while continuing to investigate high value return on investment initiatives. Qualify additional material or pieces of equipment and the procedures or processes required for implementation. Continue to review and investigate high speed data connector reliability in aircraft subsystems. ***FY 2016 OCO Plans:*** N/A					
Title: Air Vehicle	1.790	1.821	1.858	-	1.858
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Perform sustained operational testing on materials, equipment, and the procedures/process required for their implementation, continuing to refine their operation in real-world environments. Continue development of expanded methods of structural repair with focus on low cost and reduced labor procedures that can be done in fleet environments. Continue expansion of human factors focus and advanced materials and coatings in corrosion prevention control. Based on advancement in technology, test and qualify new materials or equipment and the procedures/process required for their implementation to improve operational reliability, while containing cost growth. Begin efforts addressing rapid composite tooling, multi-layer sacrificial film laminates, and expanded qualification of electro-discharge machine drilling. ***FY 2015 Plans:*** Based on advancement in technology, test and qualify new materials or equipment and the procedures/process required for their implementation to improve operational reliability, while containing cost growth. Continue development of expanded methods of structural repair with focus on low cost and reduced labor procedures that can be done in fleet environments. Address rapid composite tooling and expansion of human factors focus through enhanced maintainer performance. Continue to qualify multi-layer sacrificial film laminates, expanded qualification of electro-discharge machine drilling and advanced materials/coatings for corrosion prevention control. Address subsystem related reliability/maintainability issues impacting multiple aircraft platforms while continuing to investigate high value return on investment initiatives. Begin efforts to qualify improved cold spray component repair, high performance paint strippers, structural adhesive bond primer, structural component life improvement through cold-work, and maintainability of aircraft slip resistant surface treatment. ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 1041 / *Acft Equip Repl/Maint Prog*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Based on advancement in technology, test and qualify new materials or equipment and the procedures/process required for their implementation to improve operational reliability, while containing cost growth. Provide human factors focus to improve maintainability through enhanced maintainer performance. Begin development of sensor fusion for advanced prognostics with focus on low cost and reduced labor procedures that can be done in fleet environments. Continue to qualify improved corrosion preventative compounds. Address subsystem related reliability/maintainability issues impacting multiple aircraft platforms while continuing to investigate high value return on investment initiatives. Maintain efforts to qualify improved methods of cold spray component repair. ***FY 2016 OCO Plans:*** N/A					
Title: Systems Engineering Revitalization	0.843	0.888	0.914	-	0.914
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Perform continuous and systematic update of the Systems Engineering Technical Review (SETR) web-downloadable checklist tool. Continue to identify critical limitations and implement changes and improvements within the tool to increase the effectiveness and efficiency of the tool. Continue to investigate systems engineering processes and tools across Naval Air Systems Command domains, inclusive of the end item performance derivation from operational requirements and the associated concept of operations, with the derivation remaining relevant to the mission and system architectures and the goals of improving operational reliability while containing life-cycle costs. ***FY 2015 Plans:*** First, continue improvements in the SETR process by adopting Model Based Systems Engineering techniques and begin socializing changes with functional engineering competencies gaining support. Second, continue checklist implementation and maintenance. Improve user interfaces, possible cloud hosting, update checklist to every changing policy direction, and explore implementation on SIPRNET. Third, develop, improve, and maintain the NAVAIR Systems Engineering (SE) Web Portal to assist in dissemination of SE Policy, SE Tools and Checklists. ***FY 2016 Base Plans:*** First, continue improvements in the SE process through model-centric analysis and design techniques in an attempt to shorten acquisition timelines and "Speed to the Fleet" at the system program of record level. Second, correct any deficiencies in the conversion to web based checklist tool, implement tool in SIPRNET, and					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 1041 / *Acft Equip Repl/Maint Prog*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
execute future upgrades. Third checklist questions will be updated to account for ever changing policy direction and streamlined across the acquisition lifecycle to focus the review on its core elements. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.229	3.243	3.322	-	3.322

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This is a non-ACAT program. Procurement strategy is determined by market survey and cooperative opportunities.

E. Performance Metrics

The Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP) program will, at a minimum, fund 8 to 15 projects a year that investigate and evaluate reliability and maintainability improvements to in-service, out-of-production aircraft equipment. AERMIP projects will have a greater than 75% success rate of insertion into Department of the Navy warfighting systems or support infrastructure.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 1041 / *Acft Equip Repl/Maint Prog*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Sys Eng - Avionics/Wiring	WR	NAWCAD : Patuxent River, MD	5.444	0.144	Oct 2013	0.399	Oct 2014	0.411	Oct 2015	-		0.411	Continuing	Continuing	Continuing
Sys Eng - Avionics/Wiring	C/FFP	Various : Various	0.555	-		0.050	Feb 2015	0.050	Mar 2016	-		0.050	-	0.655	0.655
Sys Eng - Avionics/Wiring	C/FFP	GEM Power : Redlands, CA	0.060	-		-		-		-		-	-	0.060	0.060
Sys Eng - Avionics/Wiring	C/FFP	PCKA : West Lafayette, IN	0.080	-		-		-		-		-	-	0.080	0.080
Sys Eng - Avionics/Wiring	WR	FRC-E : Cherry Point, NC	0.100	-		-		0.020	Nov 2015	-		0.020	-	0.120	-
Sys Eng - Avionics/Wiring	WR	FRC-SE : Jacksonville, FL	0.000	-		-		0.010	Nov 2015	-		0.010	-	0.010	-
Sys Eng - Avionics/Wiring	WR	FRC-SW : San Diego, CA	0.000	-		-		0.030	Nov 2015	-		0.030	-	0.030	-
Sys Eng - Air Vehicle	WR	NAWCAD : Patuxent River, MD	7.449	1.012	Oct 2013	0.810	Oct 2014	0.919	Oct 2015	-		0.919	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	WR	FRC-SW : San Diego, CA	0.864	0.373	Nov 2013	0.180	Nov 2014	0.200	Nov 2015	-		0.200	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	WR	FRC-E : Cherry Point, NC	0.909	0.475	Nov 2013	0.311	Nov 2014	0.300	Nov 2015	-		0.300	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	WR	FRC-SE : Jacksonville, FL	0.798	0.055	Nov 2013	0.230	Nov 2014	0.240	Nov 2015	-		0.240	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	C/FFP	Various : Various	0.962	-		0.170	Dec 2014	0.080	Feb 2016	-		0.080	-	1.212	1.212
Sys Eng - Air Vehicle	C/CPFF	Innovative Technology, Inc. : Santa Barbara, CA	0.000	0.106	Oct 2014	-		-		-		-	-	0.106	0.106
Sys Eng - SE Revitalization	WR	NAWCAD : Patuxent River, MD	0.798	0.003	Oct 2013	0.003	Oct 2014	0.003	Oct 2015	-		0.003	Continuing	Continuing	Continuing
Sys Eng - SE Revitalization	C/FFP	Engility Corp. : Chantilly, VA	3.356	0.571	Jan 2014	0.885	Jan 2015	0.854	Jan 2016	-		0.854	-	5.666	5.666
Sys Eng - SE Revitalization	C/CPFF	Stevens Inst of Technology : Hoboken, NJ	0.260	0.286	Apr 2014	-		-		-		-	-	0.546	0.546

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 1041 / *Acft Equip Repl/Maint Prog*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Sys Eng NAE/ Prod Dev no longer funded in the FYDP	Various	Various : Various	2.467	-		-		-		-		-	-	2.467	2.467
		Subtotal	24.102	3.025		3.038		3.117		-		3.117	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Support cost no longer funded in the FYDP	Various	Various : Various	12.480	-		-		-		-		-	-	12.480	-
		Subtotal	12.480	-		-		-		-		-	-	12.480	-

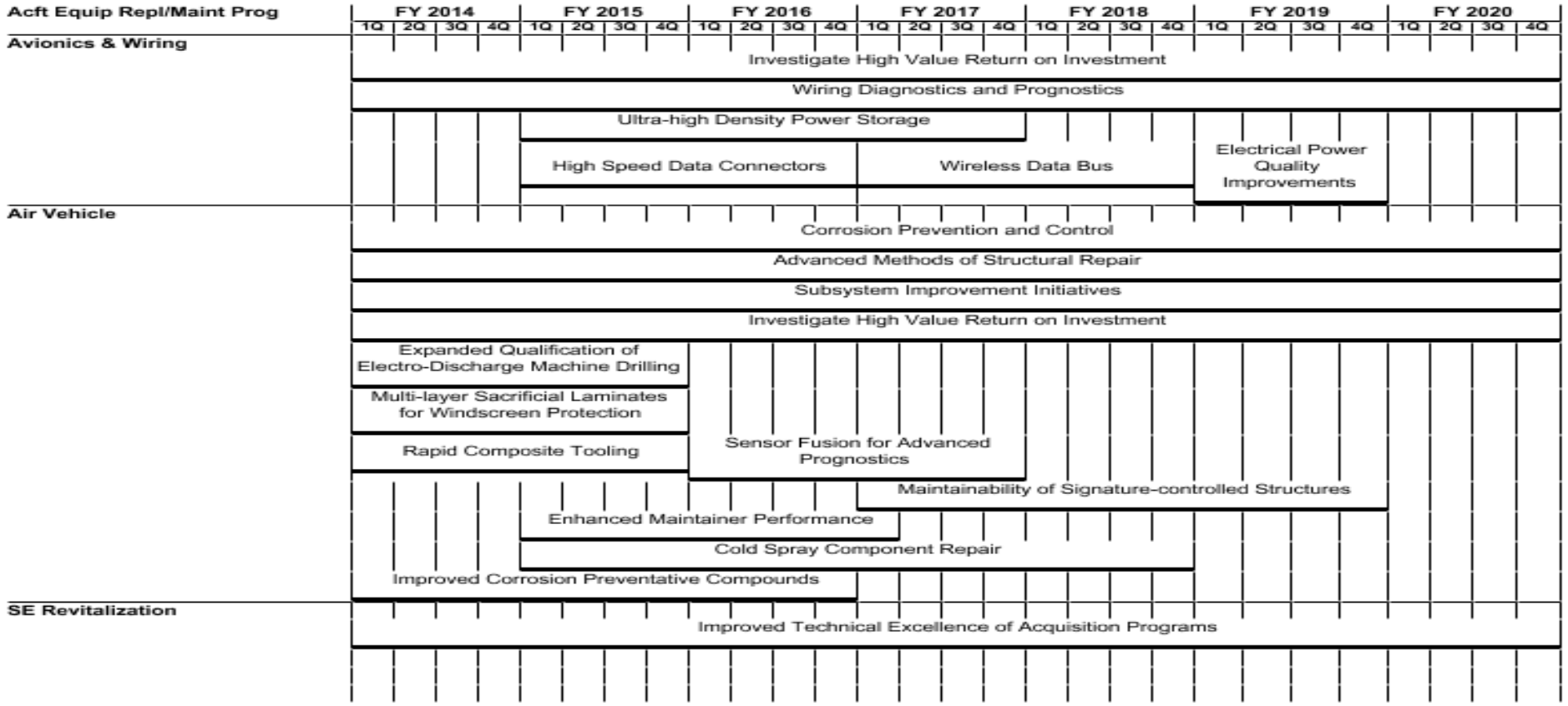
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	1.623	0.204	Oct 2013	0.200	Oct 2014	0.205	Oct 2015	-		0.205	Continuing	Continuing	Continuing
Travel	WR	NAVAIR : Patuxent River, MD	0.094	-		0.005	Jan 2015	-		-		-	Continuing	Continuing	Continuing
Prior Year Mgmt cost no longer funded in the FYDP	Various	Various : Various	1.877	-		-		-		-		-	-	1.877	-
		Subtotal	3.594	0.204		0.205		0.205		-		0.205	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	40.176	3.229		3.243		3.322		-		3.322	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 1041 / *Acft Equip Repl/Maint Prog*



2016PB - 0205633N - 1041

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 1041 / *Acft Equip Repl/Maint Prog*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acft Equip Repl/Maint Prog				
Avionics & Wiring: Investigate High Value Return on Investment	1	2014	4	2020
Avionics & Wiring: Wiring Diagnostics and Prognostics	1	2014	4	2020
Avionics & Wiring: Ultra-high Density Power Storage	1	2015	4	2017
Avionics & Wiring: Wireless Data Bus	1	2017	4	2018
Avionics & Wiring: Electrical Power Quality Improvements	1	2019	4	2019
Avionics & Wiring: High Speed Data Connectors	1	2015	4	2016
Air Vehicle: Corrosion Prevention and Control	1	2014	4	2020
Air Vehicle: Advanced Methods of Structural Repair	1	2014	4	2020
Air Vehicle: Subsystem Improvement Initiatives	1	2014	4	2020
Air Vehicle: Investigate High Value Return on Investment	1	2014	4	2020
Air Vehicle: Expanded Qualification of Electro-Discharge Machine Drilling	1	2014	4	2015
Air Vehicle: Multi-layer Sacrificial Laminates for Windscreen Protection	1	2014	4	2015
Air Vehicle: Rapid Composite Tooling	1	2014	4	2015
Air Vehicle: Sensor Fusion for Advanced Prognostics	1	2016	4	2017
Air Vehicle: Maintainability of Signature-controlled Structures	1	2017	4	2019
Air Vehicle: Enhanced Maintainer Performance	1	2015	1	2017
Air Vehicle: Cold Spray Component Repair	1	2015	4	2018
Air Vehicle: Improved Corrosion Preventative Compounds	1	2014	4	2016
SE Revitalization: Improved Technical Excellence of Acquisition Programs	1	2014	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 1355 / *Propulsion and Power Component Improvement Program*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1355: *Propulsion and Power Component Improvement Program*	862.163	59.037	60.251	87.008	-	87.008	95.416	109.427	110.667	112.967	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Propulsion and Power (P&P) Component Improvement Program (CIP) provides the only source of critical design and development engineering support to resolve safety, reliability and maintainability deficiencies of in-service Navy and Marine Corps aircraft propulsion systems. The highest priority issues P&P CIP addresses concern safety-of-flight deficiencies, which account for approximately 80% of P&P CIP efforts. The program also corrects service-revealed deficiencies, improves Operational Readiness and Reliability and Maintainability, and reduces platform Life Cycle Cost. Budgets are allocated across platform-specific teams and multi-platform product support teams based upon long term strategies to achieve safety and affordable readiness goals; the R-3 exhibit details annual portions of those long-term strategies. P&P CIP tasks have reduced the rate of in-flight aborts, safety incidents, non-mission capable rates, scheduled and unscheduled engine removals, maintenance work hours, and overall cost of ownership. This is accomplished through the maintenance and validation of specification performance, testing to qualify engineering changes, verifying life limits, and improving the inherent reliability of the propulsion and power systems as an integral part of Reliability Centered Maintenance initiatives. Historically, the missions, tactics, and environmental exposure of military aircraft systems change to meet new threats or operational demands, and often result in unforeseen problems, which if not corrected, can cause critical safety/readiness degradation, such as those experienced during OPERATIONS DESERT SHIELD/DESERT STORM, ENDURING FREEDOM, and IRAQI FREEDOM due to sand erosion. In addition, new problems arise through actual fleet deployment and usage of the aircraft. System development programs, while geared to resolve as many problems as possible before deployment, cannot duplicate actual operations or account for the vast array of environmental and usage variables, particularly when aircraft missions vary from those that the aircraft was designed to perform. Therefore, it has been found that P&P CIP can provide an immediate engineering response to these flight-critical problems and accelerated engine testing can avoid potential problems. P&P CIP starts after development and Navy acceptance of the first production article and addresses usage and life problems not covered by warranties. P&P CIP addresses engines, transmissions, propellers, starters, auxiliary power units, electrical generating systems, aircraft wiring, and fuel and lubricant systems. These efforts continue over the system's life, gradually decreasing to a minimum level sufficient to maintain the reliability, and decrease the operating costs, of older inventory. P&P CIP is a highly leveraged and cooperative tri-service program with Foreign Military Sales participation.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: P3, E2, C2, C130 (T56)	6.786	9.050	7.500	-	7.500
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Develop requirements and initiate design for an engine oil health monitoring system. Initiate design of more robust external scavenge pump. Continue development and testing of compressor blade/vane coating to					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 1355 / *Propulsion and Power Component Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
improve corrosion and erosion resistance. Complete redesign and qualification of 3-4 turbine spacer. Complete qualification and begin incorporation of new reduction gearbox assembly planet gear bearing assembly. Complete incorporation of front compressor bearing labyrinth seal. Complete down-select program for new propeller brake. Complete redesign and begin incorporation of new front turbine bearing cage. Complete improvement and being incorporation of front turbine bearing support. ***FY 2015 Plans:*** Qualify and incorporate redesigned 3-4 turbine spacer to eliminate vibrational response at low-speed ground idle. Complete qualification and begin incorporation of compressor blade erosion corrosion-resistive coating. Complete qualification of oil health monitoring system. Begin redesign of fuel nozzles to eliminate coking and prevent hot section component damage. ***FY 2016 Base Plans:*** Complete prop shaft repair qualification effort and release repair to depot. Complete turbine clearance effort and release new limits to depot. Begin effort to evaluate pull-criteria and standardize engine performance measurement to ensure consistent, reliable, and accurate results are achieved by operators. Complete incorporation of scavenge filter assemblies and Y-fittings to alleviate oil loss caused by high scavenge back pressure. Complete engine qualification testing and submit engineering changes for production 3-4 turbine spacer, propeller brake redesign, planet gear bearing assembly, front turbine bearing cage, and front turbine bearing support redesigns. Complete reduction gearbox qualification testing for propeller brake redesign to improve reliability. ***FY 2016 OCO Plans:*** N/A					
Title: E2/C2/C130/P3 (Props)	2.935	1.930	2.750	-	2.750
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Conduct flight testing of NP2000 modernized pump housing. Complete Fleet service evaluation of NP2000 blade erosion film. Continue to investigate all service revealed deficiencies. Begin fleet incorporation of P-3/C-130 taper bore plug. ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 1355 / *Propulsion and Power Component Improvement Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Complete flight testing of NP2000 modernized pump housing. Complete research and testing of potential NP2000 blade erosion prevention. Continue to investigate all service revealed deficiencies. ***FY 2016 Base Plans:*** Complete fleet incorporation of the NP2000 feather modification to eliminate a failure mode that caused an E-2C mishap. Begin fleet introduction of the NP2000 modernized pump housing and the actuator valve module with new transfer tube configuration. Begin field service evaluation of NP2000 blade erosion protection film. Continue fleet incorporation of NP2000 front spinner with repairable mounting hole. Begin field service evaluation of a new propeller anti/de-icing brush block for the C-130 and P-3 propeller. ***FY 2016 OCO Plans:*** N/A					
Title: EA-6B (J52)	1.565	1.410	1.050	-	1.050
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Incorporate thermal barrier coating combustion chambers into the fleet assets. Implement and continue updating repair and inspection criteria for fielded components. Implement fuel flow-meter bracket redesign. ***FY 2015 Plans:*** Implement and continue updating repair and inspection criteria for fielded components. Manage parts obsolescence issues. ***FY 2016 Base Plans:*** Implement and continue updating repair and inspection criteria for fielded components. Manage parts obsolescence issues. ***FY 2016 OCO Plans:*** N/A					
Title: SH-60B/F, HH-60H, MH-60R/S (T700)	2.183	4.090	2.750	-	2.750
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Implement safety changes (Stage 1 Blades, Dual Auto-Contingency). Develop and qualify corrosion reduction efforts on the H-60 intermediate and tail gearboxes. Develop new Li-Polymer battery for the H-60 to decrease maintenance man-hour requirements and total ownership costs. ***FY 2015 Plans:*** Continue redesign work to reduce impact of cost and readiness drivers for the T700 engine. Initiate T700 accelerated simulated mission endurance testing to demonstrate newly redesigned ceramic matrix composite shrouds and cutback diffuser. Conduct lithium battery development testing. ***FY 2016 Base Plans:*** Continue redesign work to reduce impact of cost and readiness drivers for the T700 engine. Complete T700 accelerated simulated mission endurance testing to demonstrate newly redesigned ceramic matrix composite shrouds and cutback diffuser. Complete lithium battery qualification. Complete air turbine starter qualification. ***FY 2016 OCO Plans:*** N/A					
Title: H-1 (T400/T700)	0.917	1.080	0.700	-	0.700
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Complete qualification of T700-401 engine harness tester. Continue support of common T700 engine projects. ***FY 2015 Plans:*** Continue support of common T700 engine and air turbine starter projects. Complete qualification and safety testing of the AH-1W lithium battery. ***FY 2016 Base Plans:*** Continue support of common T700 engine and air turbine starter projects. Complete project to address obsolescence for non-volatile random access memory chip in T700-401C Digital Engine Control Unit. ***FY 2016 OCO Plans:*** N/A					
Title: AV-8B (F402)	8.417	5.640	7.125	-	7.125
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Complete Low Pressure Compressor 1 blade redesign program, complete effort for low plasticity burnishing of low pressure compressor stage two and three blades, prepare for accelerated simulated mission endurance test, and prepare engine performance recovery plan. ***FY 2015 Plans:*** Complete flight test evaluation of redesigned low pressure compressor stage one blade and damper. Complete evaluation and qualification of engine variable inlet control system hydromechanical unit permanent magnet alternator ceramic bearing. Complete tasking for application of low plasticity burnishing on low pressure compressor stage two and three blades. ***FY 2016 Base Plans:*** Complete tasking for application of low plasticity burnishing on low pressure compressor stage two and three blades. Redesign #4 bearing insulating blanket. Update engine performance deterioration study. Assess mission profile analysis for life management plan update. ***FY 2016 OCO Plans:*** N/A					
Title: H-53/H-46/H-3 (T58/T64)	2.488	4.940	4.250	-	4.250
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Complete fuel control reliability and main engine carbon seal improvement programs. Continue life management analysis and reliability centered maintenance efforts. Continue to develop inspection and repair criteria for fielded components. ***FY 2015 Plans:*** H-46/H-3 (T58) Continue to develop inspection and repair criteria for fielded components. H-53 (T64) Continue life management analysis and reliability centered maintenance efforts. Continue to develop inspection and repair criteria for fielded components. Continue cost of ownership reduction programs. Complete accessory gearbox free-wheel unit lubrication improvement. ***FY 2016 Base Plans:*** H-46/H-3 (T58) Continue to develop inspection and repair criteria for fielded components.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
H-53 (T64) Continue life management analysis and reliability centered maintenance efforts. Continue to develop inspection and repair criteria for fielded components. Continue cost of ownership reduction programs. Qualify and implement accessory gearbox free-wheel unit lubrication design improvement. Complete main rotor shaft low-cycle fatigue analysis. ***FY 2016 OCO Plans:*** N/A					
Title: F-18 C/D/E/F (F414/F404)	18.086	13.960	14.286	-	14.286
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Test cell performance management process to improve operability and reduce unscheduled engine removals, Variable Exhaust Nozzle (VEN) pump cover life improvement, pilot spraybar flow optimization to improve light off times, AB spraybar heat shield durability improvements, fuel nozzle life increase, alternate compressor blade rub coats to improve repairability and blade tip sealing performance, low plasticity burnishing qualification complete and approved for future stage 2 fan blade procurements, improved VEN pump and anti-ice valve qualified and available to Fleet. ***FY 2015 Plans:*** Complete test cell performance management process to improve operability and reduce unscheduled engine removals. Complete Variable Exhaust Nozzle pump cover life improvement, pilot spraybar flow optimization to improve light off times, and afterburner spraybar heat shield durability improvements. Implement fuel nozzle life increase, alternate compressor blade rub coats to improve repairability, and blade tip sealing performance. ***FY 2016 Base Plans:*** Complete U.S. Navy F404 mission analysis and assess changes to part lives. Complete engine pressure ratio measurement accuracy improvement and develop an implementation strategy. Reduce non-recoverable in-flight shutdown by identifying key contributors and addressing the top five reasons. Reduce in-flight aborts by identifying key contributors and addressing the top five reasons. Monitor test cell performance reports from fleet and assess changes required. Finalize design for removing life limit main fuel manifold, complete outer bypass duct (OBD) delamination preliminary design, and complete and implement OBD improved anchor nut durability. Complete preliminary design and down-select candidate to improve N2 shroud durability, complete preliminary design, down-select candidate to eliminate VEN actuator wear/binding, and test and verify full-authority digital electronic control 4NH software changes to reduce stalls. Redesign VEN boost pump rear cover					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
to eliminate a life limit, improve fuel tube Rosan joint fittings to eliminate external fuel leaks, and identify oil system improvements to reduce unscheduled removals. ***FY 2016 OCO Plans:*** N/A					
Title: T-45 (F405)	5.900	3.700	2.750	-	2.750
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continue redesign work to reduce impact of cost and readiness drivers for the F405 engine based on service revealed deficiencies and address safety issues reported from fleet. Complete component testing and initiate engine testing of low pressure compressor blade improvements to mitigate blade root cracking in-service and reduce scrap rate at overhaul. Complete high pressure compressor redesigns to improve corrosion resistance and continue redesigns to improve performance retention. Continue redesign of engine correct rotation system to reduce high failure rate and reduce cost of ownership. ***FY 2015 Plans:*** Continue redesign work to reduce impact of cost and readiness drivers for the F405 engine based on service revealed deficiencies and address safety issues reported from fleet. Complete component testing and initiate engine testing of low pressure compressor blade improvements to mitigate blade root cracking in-service, and reduce scrap rate at overhaul. Complete high pressure compressor redesigns to improve corrosion resistance and continue redesigns to improve performance retention. Continue redesign of engine correct rotation system to reduce high failure rate and reduce cost of ownership. ***FY 2016 Base Plans:*** Continue redesign work to reduce impact of cost and readiness drivers for the F405 engine based on service revealed deficiencies and address safety issues reported from fleet. Complete high pressure compressor seal redesign to improve performance retention, and reduce scrap rate at overhaul. Complete high and low pressure turbine seal redesign to improve safety and performance retention, and reduce scrap rate at overhaul. Initiate high pressure turbine redesign to reduce scrap rate at overhaul. Initiate comparison of flight profiles and engine duty cycles between T-45 operating sites to evaluate differences in engine rejection causes and parts usage. ***FY 2016 OCO Plans:*** N/A					
Title: V-22 Propulsion	2.037	0.850	1.750	-	1.750

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continue to support the V-22 propulsion system in funding valid propulsion and power component improvement program efforts to address safety, reliability, and/or maintainability issues. ***FY 2015 Plans:*** Begin implementation of nacelle blower and machined impellers to mitigate safety issue and increase scheduled maintenance interval by 2x. Upgrade engine control hardware-in-the-loop (HWIL) simulation with updated engine control software and transition to "Software" full authority digital engine control to reduce future costs of maintaining the HWIL capability. Kick off auxiliary power unit redesign efforts per FY14 trade study. ***FY 2016 Base Plans:*** Implement nacelle blower and machined impellers design changes. Validate engine control hardware-in-the-loop (HWIL) simulation with updated engine control software and transition to "Software" full authority digital engine control to reduce future costs of maintaining the HWIL capability. Continue development of monitoring algorithms and addition of high frequency vibration monitoring to drive system gearboxes for trend monitoring. Continue prop rotor gearbox design improvements to reduce disengagement events. Improve engine air particle separator scavenge flow to decrease sand ingestion into the engine for additional engine reliability. ***FY 2016 OCO Plans:*** N/A					
Title: Adversary (J85) (F100)	0.585	1.200	1.160	-	1.160
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continue contribution to common Component Improvement Program (CIP) with the USAF and Foreign Military Sales group for the J85 engine. The most prevalent tasks for the J85 engine are Stage 1 turbine nozzle durability, compressor life cycle fatigue life update, and high-pressure turbine second-stage shroud heat shield. ***FY 2015 Plans:*** Continue contributing to the common CIP with the USAF and Foreign Military Sales group for the J85 engine. Investigate improvements on support equipment, revision of the life cycle fatigue life of rotating components,					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
definition of optimal maintenance and schedule requirements, and optimization of engine functional and trim procedures and software. ***FY 2016 Base Plans:*** Continue contributing to the J85 and F100 common CIP with the USAF and Foreign Military Sales group. Perform validation and life assessment of life cycle fatigue components, including hardware inspection data, mission mix analysis, advanced fracture mechanics, and stress models to provide a revised J85 life cycle fatigue life update. Investigate and approve a turbine nozzle activated diffusion healing repair procedure, and support equipment upgrades and other repair procedures. Approve F100 main fuel control seal durability improvement, first blade/second stage vane durability improvement, and combustion chamber stiffener improvement. Analyze CIP benefits, updated mission, and components life extension. ***FY 2016 OCO Plans:*** N/A					
Title: Joint Strike Fighter (F135 Engine)	-	5.000	32.477	-	32.477
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** Work with Joint Program Office and U.S. Air Force (USAF) to prioritize and develop engineering project descriptions that resolve Fleet revealed deficiencies that are not part of system development. In concert with the USAF, support Joint service Lead-the-Fleet (LTF) engine testing on the conventional takeoff and landing/aircraft carriers system. Procure the short takeoff/vertical landing hardware to initiate LTF testing. ***FY 2016 Base Plans:*** Continue to work with Joint Program Office and USAF to prioritize and develop engineering project descriptions that resolve Fleet revealed deficiencies that are not part of system development. In concert with the USAF, support Joint service LTF engine testing on the conventional takeoff and landing/aircraft carriers system. Continue the procurement of the short takeoff/vertical landing hardware to initiate LTF testing. ***FY 2016 OCO Plans:*** N/A					
Title: P-8A (CFM56 Engine)	-	-	1.150	-	1.150

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Develop out-year program engine management planning and operational/readiness metric baselines. Develop engine operational usage mission spectrum for use in original equipment manufacturer (OEM) engine life-limited component updates. Perform maturation of engine management planning activities with inputs from age exploration tasks: field service bore-scoping of high-time engines, engine component part condition assessments on first engine depot inductions and continued review of operational usage data. Evaluate leading indicators, service-revealed deficiencies, and emergent issues from fleet operational usage on all subsystems (engine, auxiliary power unit, fuel, electrical, electrical wiring). Evaluate OEM partial cycle analysis for use with engine life limited parts. ***FY 2016 OCO Plans:*** N/A					
Title: Multi-Platform Product Support Teams	7.138	7.401	7.310	-	7.310
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continue projects to provide common support to multiple platforms in the areas of improved drive systems; secondary power and mechanical systems; improved tools for performance analysis, modeling and simulation, diagnostics, engine reliability assessment, and structural integrity; improved products and processes for fuels, lubricants, and refueling equipment; and improved electrical system product support, wiring, and battery systems. Includes funding for Government Furnished Equipment fuel provided in support of engine developmental and qualification testing. ***FY 2015 Plans:*** Continue projects to provide common support to multiple platforms in the areas of improved drive systems, secondary power, and mechanical systems; improve tools for performance analysis, modeling and simulation, diagnostics, engine reliability assessment, and structural integrity; improve products and processes for fuels, lubricants, and refueling equipment; and improve electrical system product support, wiring, and battery systems.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Includes funding for Government Furnished Equipment fuel provided in support of engine developmental and qualification testing. Study data system solutions for the Naval Power Avionics Thermal and Hydraulics Lab and install full control system solution. Provide support for growing modeling capability with large storage solutions for the research, development, test, and evaluation connected devices. ***FY 2016 Base Plans:*** Continue projects to provide common support to multiple platforms in the areas of improved drive systems, secondary power, and mechanical systems; improve tools for performance analysis, modeling and simulation, diagnostics, engine reliability assessment, and structural integrity; improve products and processes for fuels, lubricants, and refueling equipment; and improve electrical system product support, wiring, and battery systems. Includes funding for Government Furnished Equipment fuel provided in support of engine developmental and qualification testing. Study data system solutions for the Naval Power Avionics Thermal and Hydraulics Lab and install full control system solution. Provide support for growing modeling capability with large storage solutions for the research, development, test, and evaluation connected devices. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	59.037	60.251	87.008	-	87.008

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This is a NON-ACAT program. Procurement strategy is determined by market survey and cooperative opportunities.

E. Performance Metrics

The Propulsion and Power Component (P&P) Improvement Program (CIP) will support engineering design and development efforts for 100% of the safety of flight issues on in-service propulsion and power systems covered under the program. Over the past two years, this equated to more than 275 individual Engineering Project Descriptions (EPDs). P&P CIP will also address reliability and maintainability deficiencies equating to at least another 100 individual EPDs. Similar projects have increased the aggregate engine reliability across the USN/USMC fleet, as measured by the mean flight hours between engine removals, by 40% over the past eight years.

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Program execution will be actively managed on 100% of the projects via contractor earned value data and overall obligation and expenditure rates as reflected in Navy ERP. Data will be analyzed and measured against OSD/FMB benchmarks on a monthly basis.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Sys Eng T56 Engine Program	WR	NAWCAD : Patuxent River, MD	28.917	3.000	Nov 2013	3.050	Oct 2014	3.500	Nov 2015	-		3.500	Continuing	Continuing	Continuing
Sys Eng T56 Engine Program	SS/CPFF	Rolls Royce : Indianapolis, IN	42.952	3.048	Jan 2014	5.500	Jan 2015	3.500	Jan 2016	-		3.500	-	55.000	55.000
Sys Eng T56 Engine Program	WR	FRC-E : Cherry Point, NC	0.914	0.484	Nov 2013	0.300	Oct 2014	0.200	Nov 2015	-		0.200	Continuing	Continuing	Continuing
Sys Eng T56 Engine Program	WR	FRC-SE : Jacksonville, FL	0.422	0.215	Nov 2013	0.200	Oct 2014	0.250	Nov 2015	-		0.250	Continuing	Continuing	Continuing
Sys Eng T56 Engine Program	WR	FRC-SW : North Island, CA	0.036	0.039	Nov 2013	-		0.050	Nov 2015	-		0.050	Continuing	Continuing	Continuing
Sys Eng Props Program	SS/CPFF	Hamilton Sundstrand : Windsor Locks, CT	19.170	2.935	Mar 2014	1.930	Jan 2015	2.750	Jan 2016	-		2.750	-	26.785	26.785
Sys Eng J52 Engine Program	WR	NAWCAD : Patuxent River, MD	12.759	0.870	Nov 2013	0.500	Oct 2014	0.300	Nov 2015	-		0.300	Continuing	Continuing	Continuing
Sys Eng J52 Engine Program	SS/CPFF	UTC Pratt & Whitney : East Hartford, CT	39.775	0.520	Feb 2014	0.910	Jan 2015	0.550	Jan 2016	-		0.550	-	41.755	41.755
Sys Eng J52 Engine Program	WR	FRC-E : Cherry Point, NC	0.035	0.050	Nov 2013	-		0.050	Nov 2015	-		0.050	Continuing	Continuing	Continuing
Sys Eng J52 Engine Program	WR	FRC-SE : Jacksonville, FL	0.150	0.125	Feb 2014	-		0.150	Nov 2015	-		0.150	Continuing	Continuing	Continuing
Sys Eng T700 Engine Program	WR	NAWCAD : Patuxent River, MD	12.221	1.430	Nov 2013	1.090	Oct 2014	1.500	Nov 2015	-		1.500	Continuing	Continuing	Continuing
Sys Eng T700 Engine Program	SS/CPFF	General Electric : Lynn, MA	27.445	0.083	Jan 2014	3.000	Jan 2015	1.250	Jan 2016	-		1.250	-	31.778	31.778
Sys Eng T700 Engine Program	WR	FRC-E : Cherry Point, NC	0.000	0.075	Feb 2014	-		-		-		-	Continuing	Continuing	Continuing
Sys Eng T700 Engine Program	SS/CPFF	Nat'l Ctr for Manuf Sciences : Ann Arbor, MI	0.000	0.475	Jun 2014	-		-		-		-	-	0.475	0.475
Sys Eng T700 Engine Program	SS/CPFF	Honeywell : Tempe, AZ	0.000	0.120	Jul 2014	-		-		-		-	-	0.120	0.120

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Sys Eng T400 Engine Program	WR	NAWCAD : Patuxent River, MD	0.625	0.442	Nov 2013	0.400	Oct 2014	0.700	Nov 2015	-		0.700	Continuing	Continuing	Continuing
Sys Eng T400 Engine Program	SS/CPFF	UTC Pratt & Whitney : East Hartford, CT	5.210	-		0.680	Jan 2015	-		-		-	-	5.890	5.890
Sys Eng T400 Engine Program	SS/CPFF	Bell Helicopter Textron : Hurst, TX	0.000	0.577	Sep 2014	-		-		-		-	-	0.577	0.577
Sys Eng F402 Engine Program	WR	NAWCAD : Patuxent River, MD	13.988	1.924	Nov 2013	1.775	Oct 2014	1.750	Nov 2015	-		1.750	Continuing	Continuing	Continuing
Sys Eng F402 Engine Program	SS/CPFF	Rolls Royce : Bristol, England, UK	63.529	6.000	Feb 2014	3.700	Jan 2015	5.225	Jan 2016	-		5.225	-	78.454	78.454
Sys Eng F402 Engine Program	WR	FRC-E : Cherry Point, NC	0.227	0.250	Dec 2013	0.165	Oct 2014	0.150	Nov 2015	-		0.150	Continuing	Continuing	Continuing
Sys Eng F402 Engine Program	C/CPFF	UTC : Dayton, OH	0.020	0.180	Jul 2014	-		-		-		-	-	0.200	0.200
Sys Eng F402 Engine Program	WR	NAWCWD : China Lake, CA	0.000	0.083	May 2014	-		-		-		-	Continuing	Continuing	Continuing
Sys Eng T58/T64 Engine Program	WR	NAWCAD : Patuxent River, MD	30.079	1.000	Nov 2013	2.000	Oct 2014	1.750	Nov 2015	-		1.750	Continuing	Continuing	Continuing
Sys Eng T58/T64 Engine Program	SS/CPFF	General Electric : Lynn, MA	79.680	1.488	Jan 2014	2.940	Jan 2015	2.500	Jan 2016	-		2.500	-	86.608	86.608
Sys Eng F414/F404 Engine Program	WR	NAWCAD : Patuxent River, MD	24.904	6.771	Nov 2013	5.000	Oct 2014	5.500	Nov 2015	-		5.500	Continuing	Continuing	Continuing
Sys Eng F414/F404 Engine Program	SS/CPFF	General Electric : Lynn, MA	116.950	10.804	Dec 2013	8.560	Jan 2015	8.536	Jan 2016	-		8.536	-	144.850	144.850
Sys Eng F414/F404 Engine Program	WR	FRC-SE : Jacksonville, FL	0.026	0.107	Nov 2013	0.400	Oct 2014	0.250	Nov 2015	-		0.250	Continuing	Continuing	Continuing
Sys Eng F414/F404 Engine Program	SS/CPFF	Honeywell : Tempe, AZ	0.000	0.404	Jul 2014	-		-		-		-	-	0.404	0.404
Sys Eng F405 Engine Program	WR	NAWCAD : Patuxent River, MD	5.056	2.650	Nov 2013	0.700	Oct 2014	1.250	Nov 2015	-		1.250	Continuing	Continuing	Continuing

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Sys Eng F405 Engine Program	SS/CPFF	Rolls Royce : Bristol, England, UK	30.436	3.181	Sep 2014	3.000	Jan 2015	1.500	Jan 2016	-		1.500	-	38.117	38.117
Sys Eng V-22 Propulsion Program	WR	NAWCAD : Patuxent River, MD	0.135	-		-		0.750	Nov 2015	-		0.750	Continuing	Continuing	Continuing
Sys Eng V-22 Propulsion Program	SS/FFP	Bell- Boeing : Ft. Worth, TX	3.977	1.952	Feb 2014	0.850	Jan 2015	0.500	Jan 2016	-		0.500	-	7.279	7.279
Sys Eng V-22 Propulsion Program	SS/CPFF	Rolls Royce : Indianapolis, IN	0.000	0.080	Jul 2014	-		0.500	Jan 2016	-		0.500	-	0.580	0.580
Sys Eng V-22 Propulsion Program	WR	FRC-E : Cherry Point, NC	0.000	0.005	Jan 2014	-		-		-		-	Continuing	Continuing	Continuing
Sys Eng Adversary J85 Engine Program	WR	NAWCAD : Patuxent River, MD	0.952	0.304	Nov 2013	0.680	Oct 2014	0.660	Nov 2015	-		0.660	Continuing	Continuing	Continuing
Sys Eng Adversary J85 Engine Program	WR	FRC-SE : Jacksonville, FL	0.018	-		0.020	Oct 2014	-		-		-	Continuing	Continuing	Continuing
Sys Eng Adversary J85 Engine Program	SS/CPFF	General Electric : Lynn, MA	0.991	0.281	Feb 2014	0.500	Jan 2015	0.500	Jan 2016	-		0.500	-	2.272	2.272
Sys Eng JSF Engine Program	WR	NAWCAD : Patuxent River, MD	0.000	-		5.000	Oct 2014	5.000	Nov 2015	-		5.000	Continuing	Continuing	Continuing
Sys Eng JSF Engine Program	SS/FFP	UTC Pratt & Whitney : East Hartford, CT	0.000	-		-		27.477	Jan 2016	-		27.477	-	27.477	27.477
Sys Eng P-8A Engine Program	WR	NAWCAD : Patuxent River, MD	0.000	-		-		1.150	Nov 2015	-		1.150	Continuing	Continuing	Continuing
Sys Eng Lab Fld Activity-1.0 or more	WR	NAWCAD : Patuxent River, MD	192.391	6.283	Nov 2013	6.595	Oct 2014	6.500	Nov 2015	-		6.500	Continuing	Continuing	Continuing
Sys Eng Other In-House Spt	Various	Various : Various	20.017	0.200	Nov 2013	0.200	Nov 2014	0.200	Nov 2015	-		0.200	Continuing	Continuing	Continuing
GFE*	Reqn	DES/DLA : Various	13.428	0.114	Jul 2014	0.200	Jan 2015	0.200	Jan 2016	-		0.200	Continuing	Continuing	Continuing
Prior Year Prod Dev costs no longer funded in the FYDP	Various	Various : Various	60.943	-		-		-		-		-	-	60.943	-
		Subtotal	848.378	58.549		59.845		86.598		-		86.598	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 1355 / *Propulsion and Power Component Improvement Program*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

GFE includes expected cost of fuel necessary to support engine development and qualification testing.
Total may be off due to rounding.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various : Various	7.933	0.067	Mar 2014	0.300	Oct 2014	0.300	Nov 2015	-		0.300	Continuing	Continuing	Continuing
Development Support	WR	FRC-SW : North Island, CA	0.218	0.185	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	8.151	0.252		0.300		0.300		-		0.300	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	Various	Various : Various	3.332	0.060	Mar 2014	0.050	Oct 2014	0.050	Nov 2015	-		0.050	Continuing	Continuing	Continuing
Development Test & Evaluation	WR	NSWC : Crane, IN	0.210	0.148	Nov 2013	-		-		-		-	-	0.358	-
		Subtotal	3.542	0.208		0.050		0.050		-		0.050	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	NAVAIR : Patuxent River, MD	0.645	0.028	Feb 2014	0.056	Oct 2014	0.060	Oct 2015	-		0.060	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 1355 / *Propulsion and Power Component Improvement Program*

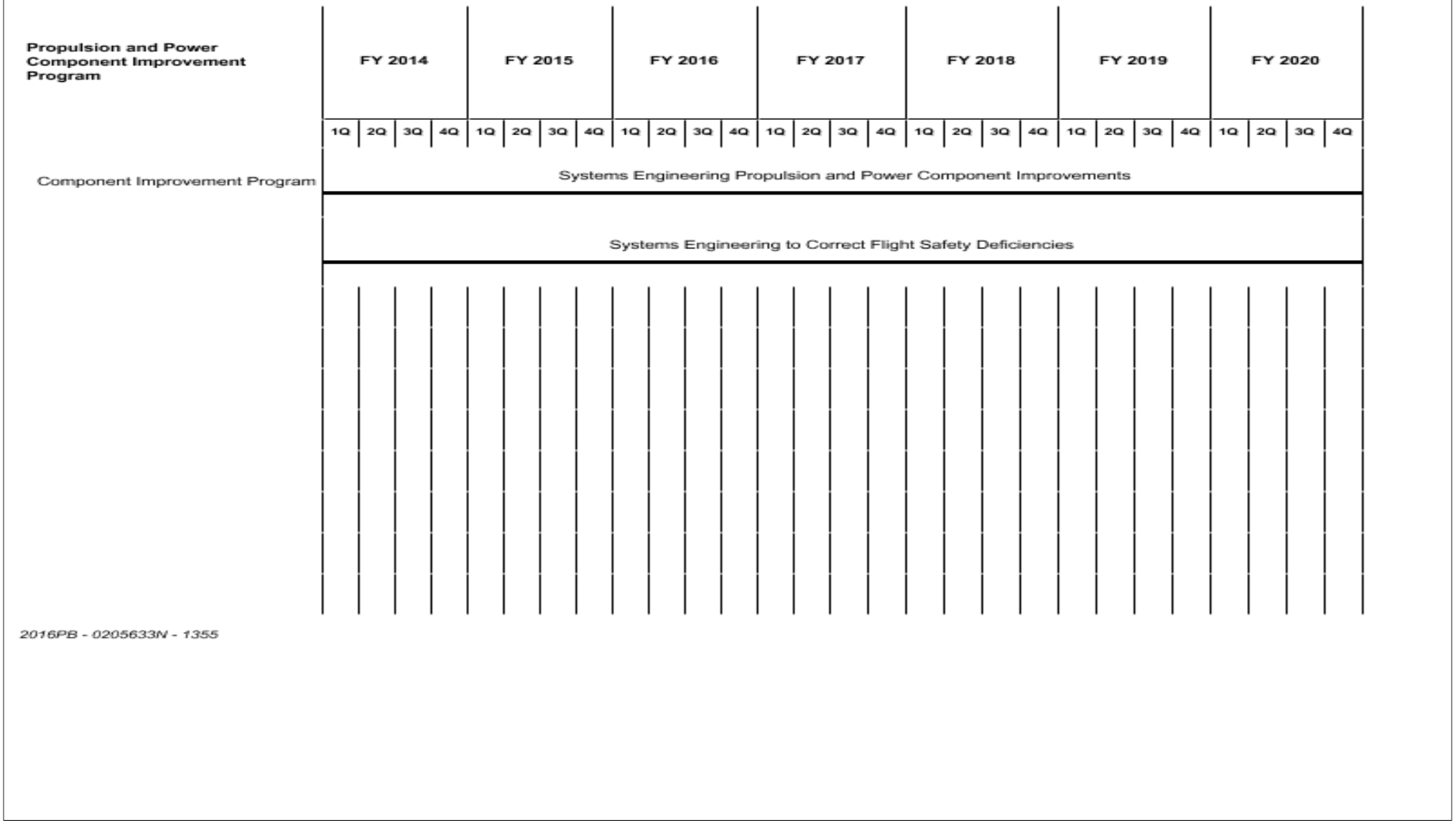
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Mgmt cost no longer funded in the FYDP	Various	Various : Various	1.447	-		-		-		-		-	-	1.447	-
		Subtotal	2.092	0.028		0.056		0.060		-		0.060	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	862.163	59.037		60.251		87.008		-		87.008	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 1355 / *Propulsion and Power Component Improvement Program*



2016PB - 0205633N - 1355

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 1355 / *Propulsion and Power Component Improvement Program*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Propulsion and Power Component Improvement Program				
Component Improvement Program: Engine Improvements	1	2014	4	2020
Component Improvement Program: Power & Propulsion	1	2014	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 2269 / *Expeditionary Airfield Improvements*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2269: *Expeditionary Airfield Improvements*	8.179	5.168	12.384	18.273	-	18.273	18.075	14.980	-	-	-	77.059
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Expeditionary Airfields (EAF) program was a FY2012 New Start, with funding released to the project in May 2012. The EAF program designs, develops and tests a Sustainment Lighting System (SLS) to replace the obsolete legacy EAF lighting system. This system will provide EAF Marine Aircraft Wing Support Squadrons with the required EAF equipment to install Forward Operating Bases and Forward Arming and Refueling Points. With the deployment of this equipment, the Marine Aircraft Wing Support Squadrons can support all United States Marine Corps (USMC) aircraft allowing the Combatant Commanders the flexibility to deploy Aircraft Combat Elements to meet anticipated threats. Milestone B moved from third quarter of fiscal year 2014 to first quarter of 2015 due to contract negotiation delays.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Expeditionary Airfields Improvements	5.168	12.384	18.273	-	18.273
Articles:	-	-	-	-	-
Description: The EAF program designs, develops, tests and fields a Sustainment Lighting System (SLS) to replace the obsolete legacy EAF lighting system. This system will provide EAF Marine Aircraft Wing Support Squadrons with the required EAF equipment to install Forward Operating Bases and Forward Arming and Refueling Points. With the deployment of this equipment the Marine Aircraft Wing Support Squadron can support all USMC aircraft allowing the Combatant Commanders the flexibility to deploy Aircraft Combat Elements to meet anticipated threats.					
FY 2014 Accomplishments: Evaluate offer proposals for the SLS leading to contract award. Conduct efforts working towards Milestone B (MS B) with Milestone Decision Approval.					
FY 2015 Plans: Achieve MS B with Milestone Decision Approval. Begin the design, development and integration of the SLS program leading to a System Requirement Review (SRR) and Preliminary Design Review (PDR). Additional funding provided for the EAF Center of Excellence.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 2269 / *Expeditionary Airfield Improvements*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue the design, development, and integration of the SLS program leading to Critical Design Review (CDR), Test Readiness Review (TRR), and Developmental Testing (DT). ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	5.168	12.384	18.273	-	18.273

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/4208: *Expeditionary Airfields.*	4.676	-	-	-	-	-	-	-	-	-	288.569
• OPN/4213: *ASE-Expeditionary Airfields*	-	7.423	8.425	-	8.425	8.223	8.349	8.534	8.714	Continuing	Continuing

Remarks

D. Acquisition Strategy

Expeditionary Airfields (EAF): Cost Plus Incentive Fee contract for the system design, development, integration and testing of the Sustainment Lighting System awarded in December 2014.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 2269 / *Expeditionary Airfield Improvements*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCAD : Lakehurst, NJ	5.199	2.116	Nov 2013	5.694	Nov 2014	0.874	Nov 2015	-		0.874	1.945	15.828	-
Primary Hardware Development	WR	NAWCAD : Patuxent River, MD	1.700	-		-		-		-		-	-	1.700	-
Primary Hardware/ Software Development	C/CPIF	Tactical Lighting Systems, Inc : Addison, Illinois	0.000	2.500	Dec 2014	3.321	Apr 2015	13.618	Dec 2015	-		13.618	20.530	39.969	39.969
Primary Hardware/ Software Development	C/IDIQ	Specialty Systems, Inc : Toms River, NJ	0.000	-		2.500	Apr 2015	-		-		-	-	2.500	2.500
		Subtotal	6.899	4.616		11.515		14.492		-		14.492	22.475	59.997	-

Remarks

$5M added in FY15 for the "Center of Excellence" for EAF, which includes an airfield to be used by USA/USAF and USMC for exercises (including joint) and potentially expeditionary airfield installation/removal drills. Funding was added to the EAF budget in FY16 by $4.0M, FY17 by $5.5M and FY18 by $14.9M to properly price the Sustainment Lighting System effort.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics	WR	NAWCAD : Lakehurst, NJ	0.459	0.179	Nov 2013	0.226	Nov 2014	1.657	Nov 2015	-		1.657	2.968	5.489	-
Technical/Engr support	WR	NAWCAD : Lakehurst, NJ	0.050	-		-		-		-		-	-	0.050	-
		Subtotal	0.509	0.179		0.226		1.657		-		1.657	2.968	5.539	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	WR	NAWCAD : Lakehurst, NJ	0.440	0.199	Nov 2013	0.269	Nov 2014	1.751	Nov 2015	-		1.751	5.384	8.043	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0205633N / *Aviation Improvements*	Project (Number/Name) 2269 / *Expeditionary Airfield Improvements*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Opeval Test Support	WR	COMOPTEVFOR : Norfolk, VA	0.012	0.057	Nov 2013	0.058	Nov 2014	0.057	Nov 2015	-		0.057	1.597	1.781	-
		Subtotal	0.452	0.256		0.327		1.808		-		1.808	6.981	9.824	-

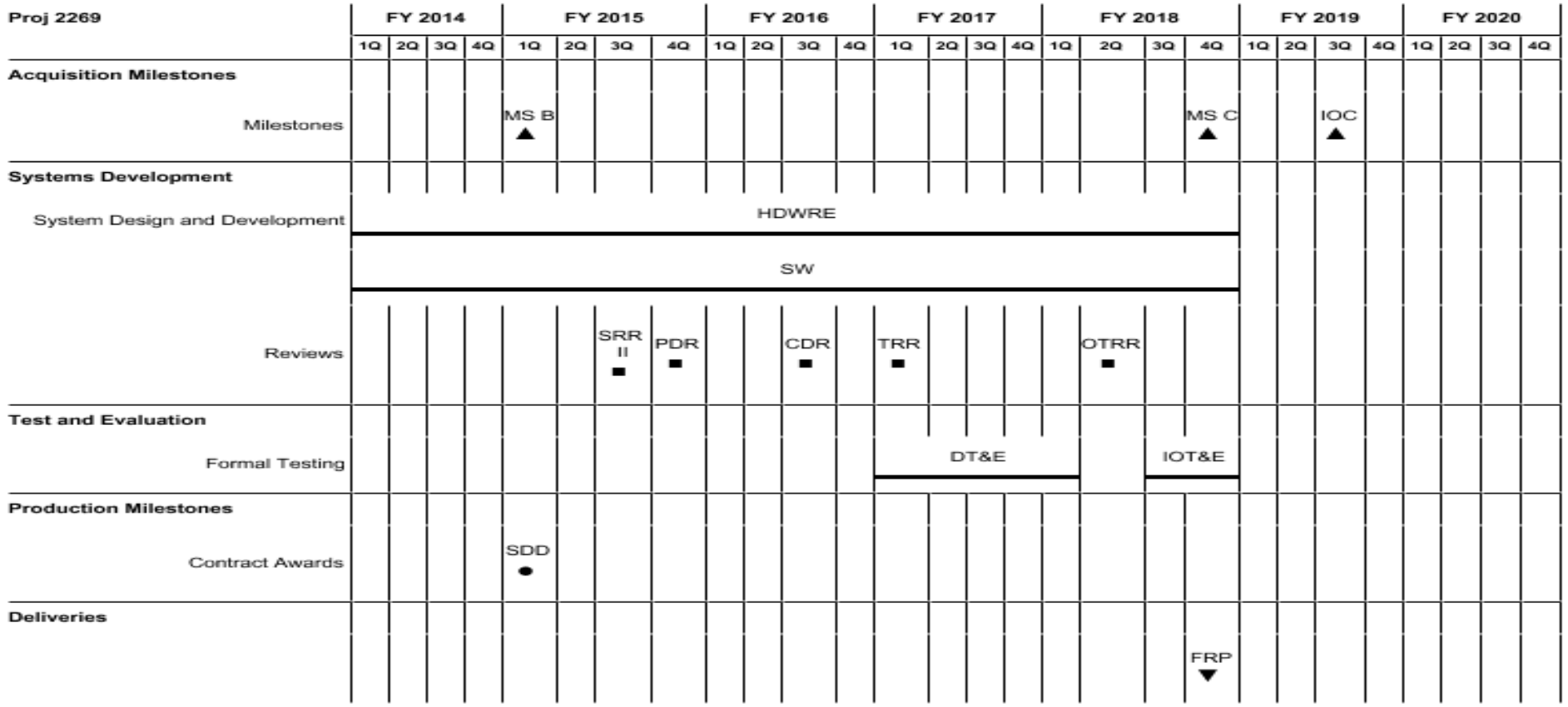
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support Services	SS/FFP	Various : Various	0.319	0.117	Dec 2013	0.316	Dec 2014	0.316	Dec 2015	-		0.316	0.631	1.699	1.699
		Subtotal	0.319	0.117		0.316		0.316		-		0.316	0.631	1.699	1.699

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.179	5.168		12.384		18.273		-		18.273	33.055	77.059	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 2269 / *Expeditionary Airfield Improvements*



2016PB - 0205633N - 2269

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0205633N / *Aviation Improvements*	**Project (Number/Name)** 2269 / *Expeditionary Airfield Improvements*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2269				
Acquisition Milestones: Milestones: Milestone B	1	2015	1	2015
Acquisition Milestones: Milestones: Milestone C	4	2018	4	2018
Acquisition Milestones: Milestones: IOC	3	2019	3	2019
Systems Development: System Design and Development: Hardware Development	1	2014	4	2018
Systems Development: System Design and Development: Software Development	1	2014	4	2018
Systems Development: Reviews: Systems Requirements review	3	2015	3	2015
Systems Development: Reviews: Preliminary Design Review	4	2015	4	2015
Systems Development: Reviews: Critical Design Review	3	2016	3	2016
Systems Development: Reviews: Test Readiness Review	1	2017	1	2017
Systems Development: Reviews: Operational Test Readiness Review	2	2018	2	2018
Test and Evaluation: Formal Testing: Tech Eval/Dev T&E	1	2017	1	2018
Test and Evaluation: Formal Testing: Operational Evaluation Initial Test and Evaluation	3	2018	4	2018
Production Milestones: Contract Awards: Contract Award	1	2015	1	2015
Deliveries: Delivery: Lot 1	4	2018	4	2018

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0205675N *I Operational Nuclear Power Sys*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	0.000	116.928	104.023	101.323	-	101.323	103.605	126.445	116.412	105.940	Continuing	Continuing
1303: *Operational Nuclear Power System*	0.000	116.928	104.023	101.323	-	101.323	103.605	126.445	116.412	105.940	Continuing	Continuing

A. Mission Description and Budget Item Justification

The details of this program element are classified CONFIDENTIAL and are submitted annually to Congress in the classified budget justification books.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	116.928	104.023	102.138	-	102.138
Current President's Budget	116.928	104.023	101.323	-	101.323
Total Adjustments	-	-	-0.815	-	-0.815
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	-0.815	-	-0.815

Change Summary Explanation

Technical: Not applicable.
Schedule: Not applicable.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0206313M *I Marine Corps Comms Systems*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	1,104.767	157.438	73.982	67.763	-	67.763	78.512	74.120	76.391	76.885	Continuing	Continuing
2270: *Exp Indirect Fire Gen Supt Wpn Sys*	193.056	31.143	27.422	24.226	-	24.226	26.687	27.427	27.064	27.628	Continuing	Continuing
2273: *Air Ops Cmd & Control (C2) Sys*	339.085	66.090	8.767	7.772	-	7.772	11.076	5.702	8.950	9.128	Continuing	Continuing
2274: *Command & Control Warfare Sys*	17.198	7.919	7.053	8.951	-	8.951	6.769	8.233	8.347	7.156	Continuing	Continuing
2275: *Marine Corps Tactical Radio Systems*	21.120	15.188	4.007	3.384	-	3.384	5.012	2.765	2.747	2.810	Continuing	Continuing
2276: *Comms Switching and Control Sys*	31.185	8.992	3.697	2.434	-	2.434	2.698	3.120	3.163	3.232	Continuing	Continuing
2277: *System Engineering and Integration*	27.412	12.101	5.117	5.161	-	5.161	4.921	4.921	4.922	5.322	Continuing	Continuing
2278: *Air Defense Weapons System*	37.701	3.580	3.453	1.721	-	1.721	1.821	1.826	2.919	2.967	Continuing	Continuing
2510: *MAGTF CSSE & SE*	268.552	3.120	4.124	3.031	-	3.031	2.372	1.228	0.946	0.977	Continuing	Continuing
3099: *Radar System*	169.458	9.305	10.342	11.083	-	11.083	17.156	18.898	17.333	17.665	Continuing	Continuing
MDAP/MAIS Code: **Other MDAP/MAIS Code(s):** 582												

A. Mission Description and Budget Item Justification

This program element provides funding to develop the command and control (C2) support and information infrastructures for the Fleet Marine Force and supporting establishment. Doctrinally, the C2 support system and the information infrastructure form two parts of a triad of capabilities which permits command and control systems to be transformed into a complete operating system. The third element of the triad is command and control organization and is not covered in this program element. USMC command and control is divided into seven functional areas and one supporting functional area as follows: intelligence C2, fire support C2, air operations C2, radio systems C2, combat service support C2, warfare C2, radar systems C2, and C2 support (information processing and communications).

Within this program element, subprojects have been grouped by C2 functional area for more efficient planning. Air defense weapons systems have been added to facilitate planning and a separate project is used for systems assigned to the supporting establishment. Subprojects which support the Commander's decision processes

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0206313M *I Marine Corps Comms Systems*

have been collected into the Command Post Systems project since these systems must work in close cooperation to ensure effective C2 of Marine Air Ground Task Forces.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	160.773	77.398	75.412	-	75.412
Current President's Budget	157.438	73.982	67.763	-	67.763
Total Adjustments	-3.335	-3.416	-7.649	-	-7.649
• Congressional General Reductions	-	-0.276			
• Congressional Directed Reductions	-	-3.140			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-3.333	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	2.577	-	2.577
• Rate/Misc Adjustments	-0.002	-	-10.226	-	-10.226

Change Summary Explanation

The funding decrease from FY14 to FY15 can be attributed to the Common Aviation Command and Control System (CAC2S) program moving into PE 0206335M, other programs transitioning beyond RDT&E needs, and the realignment of resources to other Marine Corps priorities. The funding decrease from PB15 in FY16 can be attributed to the completion of RDT&E efforts for some programs, and the realignment of resources to other Marine Corps priorities, and extending the development timeline in programs such as MAGTF Command and Control Systems.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2270: *Exp Indirect Fire Gen Supt Wpn Sys*	193.056	31.143	27.422	24.226	-	24.226	26.687	27.427	27.064	27.628	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Marine Air Ground Task Force (MAGTF) Command and Control (C2) Systems and Applications (MAGTF C2 SA) - MAGTF C2 SA merges the development, integration and testing of 45 existing C2 systems and applications into one common enterprise capability. They reside in all Combat Operations Centers (COCs) and related USMC C2 platforms. This effort provides greater economies of scale/affordability with system developers, technical design agents, integration agents and individual program offices. MAGTF C2S efforts are in alignment with the combat developers requirements for: Net-Centric systems, Development of reusable Open Architecture components, Data exposure, Enhancing the Warfighter's Situational Awareness and Increasing/Maximizing the Commander's decision space.

Joint Battle Command - Platform (JBC-P) Family of Systems (FoS) - JBC-P FoS is an Army led ACAT II program of JRCO interest, formerly known as the Blue Force Tracker (BFT) FoS. It is comprised of L-Band SATCOM and is a digital, battle command information FoS that provides integrated, on the move, timely, relevant Command and Control Situational Awareness (C2SA) information to tactical combat, combat support and combat service support commanders, leaders, and key C2 nodes. JBC-P FoS will provide JROC mandated C2SA convergence across aircraft, ground vehicles and dismounted personnel.

Global Command and Control System - Tactical Command Operations System (GCCS-TCO) - GCCS-TCO is the principal tool within the Marine Air Ground Task Force (MAGTF) for situational awareness through distribution of the Common Tactical Picture (CTP). It supports tactical operations providing information via high speed computer systems in a timely manner and includes the Intel Operations Workstations/Servers. R&D funds provide science and technology advanced concepts to be applied to the system for an increase in functional capabilities to the warfighter, to include Joint Command and Control (JC2) development efforts within Tactical Service Oriented Architecture (TSOA).

Identity Dominance System-MC (IDS-MC) - IDS-MC is a multi-modal (fingerprint, iris and face) biometric collection system that provides the USMC a reliable and effective capability to collect, share, match, access, verify and store identity information. IDS-MC will enable the Marine to collect appropriate biometric, biographical and reference information on an individual and match this locally developed information with pre-existing information available to the expeditionary force. The system will display match results with linkage to the respective individual's biographical and reference information as well as help analyze the response, update records as appropriate, create reports and disseminate updated information in accordance with current MAGTF policy. The primary mission of IDS-MC is to provide the MAGTF with the means to identify persons encountered in the battle space. While IDS-MC is not an intelligence analysis system, it does provide identification information in support of military intelligence and law enforcement operations by providing positive identification of persons of interest. IDS-MC is an enabler in the areas of detainee management and questioning, base access, counterintelligence screening, border control, law enforcement, displaced persons' management and aiding in humanitarian assistance missions. IDS-MC supports the tactical application of identity dominance and fully supports a forward presence, crisis response and contingency response capability.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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Advanced Field Artillery Tactical Data Family of Systems (AFATDS FoS) - AFATDS FoS consists of three programs, AFATDS, Back Up Computer System (BUCS) and Mobile Tactical Shelter (MTS). The AFATDS automates the fire planning, tactical fire direction, and fire support coordination required to support maneuver from the sea and subsequent operations ashore. AFATDS integrates all supporting arms assets within the MAGTF such as mortars, cannon artillery, rockets and missiles, close air support, and naval surface fire support systems. BUCS is a hand-held computer system designed to provide a backup to the AFATDS in computing ballistic firing solutions, as well as provide survey and Meteorological functions in support of artillery. Additionally BUCS is the primary ballistic firing solution system during Ship To Objective Maneuver (STOM) and for the Expeditionary Fire Support System (EFSS). The MTS is a Lightweight Multi-purpose Shelter mounted on a High Mobility Multipurpose Wheeled Vehicle (HMMWV) which protects both the AFATDS and operators from the environment. MTS enables rapid emplacement and displacement of fire support elements and provides networked communications on the move.

Target Hand-Off System (THS) - The THS addressed a Marine Corps operational requirement for a lightweight, handheld, and accurate target acquisition engagement coordination system. THS provides MAGTF Commanders with the only man-portable target location capability that allows Air Officers and Fire Support Coordinators to prosecute identified targets. The THS' advance interoperability capability provides the MAGTF Commander with the only portable target acquisition system able to interoperate with all target prosecution platforms available in the battlefield. The THS is designed for the Forward Air Controllers (FACs), Forward Observers (FOs), Fire Support Teams (FSTs), Firepower Control Teams (FCTs), Tactical Air Control Parties (TACPs) and Reconnaissance Teams to quickly acquire targets in day, night and near-all-weather visibility conditions, in order to conduct precise, rapid indirect surface fire support, Naval Surface Fire Support (NSFS) and Close Air Support (CAS).

Handheld Command and Control (H2C2) - This is a new start for FY2015. H2C2 project vision outlines a collective and efficient mobile computing Acquisition Strategy to ensure economies of scale and scope. The H2C2 portfolio consists of two specific capabilities - secure wireless access to multiple networks and handheld communication platforms. The handheld capability provides low cost (commercially available) platforms (smartphones and tablets) for use on every network regardless of the operational environment. The emerging technologies will enable access to both classified and unclassified systems on a single device. The secure wireless capability enables Marines burdened by wired implementations an option to leverage wireless mediums. This capability provides wireless communication between a variety of devices.

The funding decrease from FY15 to FY16 can be attributed to the Marine Air Ground Task Force (MAGTF) Command and Control (C2) (MAGT C2S) increase to product development schedule and the Target Hand-Off System (THS) completion of Analysis of Alternative (AoA) activities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: MAGTF C2: Product Development	11.205	8.017	5.340	-	5.340
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Completed the improved and enhanced MAGTF interoperability using the service oriented architecture provided by the TSOA. This greatly enhanced the efficiency of data distribution between architecturally disparate tactical data systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continued developing presentation layer applications in conjunction with Warfighter input using the Rapid Response and Integration (R2I) process. -Completed transition of selected Command and Control Personal Computer (C2PC)/Joint Common Operational Picture Tactical Workstation (JTCW) application functionality into services hosted on the TSOA framework and C2 software packages. -Continued research and development for transfer of legacy stove-piped MAGTF C2 systems to modern interoperable applications resulting in a more efficient Joint and Coalition C2 environment for the MAGTF. ***FY 2015 Plans:*** -Complete Deployment of build 6 and initiate and deploy build 7, continuing to improve and enhance MAGTF interoperability by reducing inefficiencies between disparate tactical data systems by linking them via the TSOA. -Continue presentation layer application development in conjunction with Warfighter input via the Rapid Response and Integration (R2I) process. -Continue Select Command and Control Personal Computer (C2PC)/Joint Common Operational Picture Tactical Workstation (JTCW) application functionality to be transitioned into services hosted on the Tactical Service Oriented Architecture framework and C2 software packages. -Continue research and development to transfer legacy stove-piped MAGTF C2 systems and functionality to interoperable applications in order to create more efficient Joint and Coalition C2 environment for the MAGTF. JTCW support, development, improvement and transition to TSOA environment. ***FY 2016 Base Plans:*** -Continue improving and enhancing MAGTF interoperability using the service oriented architecture provided by the TSOA. This greatly enhances the efficiency of data distribution between architecturally disparate tactical data systems. -Continue developing presentation layer applications in conjunction with Warfighter input using the Rapid Response and Integration (R2I) process. -Complete transition of selected Command and Control Personal Computer (C2PC)/Joint Common Operational Picture Tactical Workstation (JTCW) application functionality into services hosted on the TSOA framework and C2 software packages. -Continue research and development for transfer of legacy stove-piped MAGTF C2 systems to modern interoperable applications resulting in a more efficient Joint and Coalition C2 environment for the MAGTF. The					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
decrease in funding from FY15 to FY16 is attributed to stretching product development. Funding will provide for the development of one major release and one R2I application. ***FY 2016 OCO Plans:*** N/A					
Title: MAGTF C2: Support Costs	2.206	1.091	1.022	-	1.022
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued system engineering support for system integration, configuration management and technical assessments. ***FY 2015 Plans:*** Continue system engineering support for system integration, configuration management and technical assessments. ***FY 2016 Base Plans:*** Continue system engineering support for system integration, configuration management and technical assessments. ***FY 2016 OCO Plans:*** N/A					
Title: MAGTF C2: Test and Evaluation	1.462	1.064	1.000	-	1.000
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Initiated test support for the Joint Tactical Common Operational (COP) Workstation (JTCW). -Initiated developmental testing of JTCW and Joint interoperability testing in conjunction with the Joint Interoperability Test Command (JITC). -Continued working in technical working groups in support of test and engineering. -Continued to provide technical assistance to other programs supported by Marine Corps Tactical Systems Support Activity (MCTSSA) that involve the use of these systems as well as through the Operating forces Tactical Systems Support Center (OFTSSC) trouble calls. ***FY 2015 Plans:*** -Continue test support for the Joint Tactical Common Operational (COP) Workstation (JTCW).					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue conducting developmental testing of JTCW and Joint interoperability testing in conjunction with the Joint Interoperability Test Command (JITC). -Continue to participate in technical working groups in support of test and engineering. -Continue to provide technical assistance to other programs supported by Marine Corps Tactical Systems Support Activity (MCTSSA) that involve the use of these systems as well as through the Operating forces Tactical Systems Support Center (OFTSSC) trouble calls. ***FY 2016 Base Plans:*** -Continue test support for the Joint Tactical Common Operational (COP) Workstation (JTCW). -Continue conducting developmental testing of JTCW and Joint interoperability testing in conjunction with the Joint Interoperability Test Command (JITC). -Continue to participate in technical working groups in support of test and engineering. -Continue to provide technical assistance to other programs supported by Marine Corps Tactical Systems Support Activity (MCTSSA) that involve the use of these systems as well as through the Operating forces Tactical Systems Support Center (OFTSSC) trouble calls. ***FY 2016 OCO Plans:*** N/A					
Title: MAGTF C2: Management Services	2.988	1.939	1.000	-	1.000
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued software engineering support to provide appropriate government direction in design and development of software, conduct of source code reviews and prime vendor oversight was provided by Federally Funded Research and Development Center (FFRDC). ***FY 2015 Plans:*** Continue to receive software engineering support to provide appropriate government direction in design and development of software, conduct of source code reviews and prime vendor oversight from Federally Funded Research and Development Center (FFRDC). ***FY 2016 Base Plans:*** Continue to receive software engineering support to provide appropriate government direction in design and development of software, conduct of source code reviews and prime vendor oversight from Federally					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Funded Research and Development Center (FFRDC). The funding decrease from FY15 to FY16 is attributed to stretching planning for future Rapid Response and Integration (R2I) common client architectures. ***FY 2016 OCO Plans:*** N/A					
Title: GCCS-TCO: Product Development	0.507	1.066	0.650	-	0.650
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated and developed services linking the Common Operating Picture (COP) from GCCS-TCO to other COP viewing tools as a service inside the Combat Operations Center. The GCCS-TCO software will improve interoperability with the Tactical Service Oriented Architecture, allowing COP and Situational Awareness data to be shared between the GCCS-TCO and other C2 systems. ***FY 2015 Plans:*** Continue the development of services linking the COP from GCCS-TCO to other COP viewing tools as a service inside the Combat Operations Center. The GCCS-TCO software will improve interoperability with the Tactical Service Oriented Architecture, allowing COP and Situational Awareness data to be shared between the GCCS-TCO and other C2 systems. ***FY 2016 Base Plans:*** Continue the development of services linking the COP from GCCS-TCO to other COP viewing tools as a service inside the Combat Operations Center. The GCCS-TCO software will improve interoperability with the Tactical Service Oriented Architecture, allowing COP and Situational Awareness data to be shared between the GCCS-TCO and other C2 systems. ***FY 2016 OCO Plans:*** N/A					
Title: GCCS-TCO: Test and Evaluation	0.974	0.983	0.431	-	0.431
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued testing and validation of advanced concepts and technologies. ***FY 2015 Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue testing and validation of advanced concepts and technologies. ***FY 2016 Base Plans:*** Continue testing and validation of advanced concepts and technologies. ***FY 2016 OCO Plans:*** N/A					
Title: AFATDS: Software Development and Integration	3.247	3.798	5.834	-	5.834
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated and developed USMC capabilities and interface enhancments with other C2 systems. Limited interoperability testing. ***FY 2015 Plans:*** Initiate development of 6.8.1.1, adding USMC capabilities and interface enhancements with other C2 systems and initiate interoperability testing for AFATDS and Back Up Computer System (BUCS) (Centaur and Sensor Programs) software. ***FY 2016 Base Plans:*** -Initiate development of 7.0, adding USMC capabilities and interface enhancements with other C2 systems. -Initiate interoperability testing for AFATDS and BUCS (Centaur and Sensor Programs) software. ***FY 2016 OCO Plans:*** N/A					
Title: AFATDS: Test and Evaluation	0.200	0.225	0.246	-	0.246
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued Information Assurance Certification and Accreditation activities to ensure confidentiality, integrity, and availability of AFATDS/BUCS S/W and MTS Accreditation. ***FY 2015 Plans:*** Continued Information Assurance Certification and Accreditation activities to ensure confidentiality, integrity, and availability of AFATDS/BUCS S/W and MTS Accreditation. ***FY 2016 Base Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Initiate interoperability testing for AFATDS and BUCS software ***FY 2016 OCO Plans:*** N/A					
Title: THS: Product Development	0.731	2.570	2.843	-	2.843
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Completed StrikeLink version 1.2 software development. -Completed capability requirements analysis and validation. ***FY 2015 Plans:*** Initiate Analysis of Alternatives (AoA) of prototypes and first article test models to determine viable hardware candidates capable of hosting a future THS software application. ***FY 2016 Base Plans:*** -Initiate development of emerging requirements and incorporate software patches to improve interoperability. -Continue capability requirements analysis and validation and conduct analysis of future interoperability and capability requirements. ***FY 2016 OCO Plans:*** N/A					
Title: THS: System Engineering Support	0.272	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated Engineering Support to plan and document test events, provide safety testing support and provide systems engineering and software engineering support ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: THS: Testing and Evaluation	0.366	0.606	0.295	-	0.295
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Completed Government Assessment Testing (GAT) of StrikeLink version 1.2 software. -Completed software Certification and Accreditation activities to obtain ATO to operate new major software releases on the Marine Corps Enterprise Network (MCEN). ***FY 2015 Plans:*** Continue testing of software interoperability resolutions. ***FY 2016 Base Plans:*** -Continue interoperability testing of software on new hardware configuration. -Initiate and conduct Information Assurance Vulnerability Assessment (IAVA) activities. ***FY 2016 OCO Plans:*** N/A					
Title: THS: Management Services	0.244	0.536	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued engineering support to conduct capability requirements analysis and validation provided by a Federally Funded Research and Development Center (FFRDC). ***FY 2015 Plans:*** Continue Federally Funded Research and Development Center (FFRDC) engineering support to conduct capability requirements analysis and validation. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: JBC-P: Software Development/Integration	0.895	0.940	1.190	-	1.190
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: -Continued the coordination with the software development team at the Software Engineering Directorate in Huntsville, AL in order to assist in the development and integration of the JBC-P software capability. -Continued Federally Funded Research and Development Center (FFRDC) software engineering support which provided appropriate government direction in design and development of software. Existing documentation and logistics support analyzed for supportability of JBC-P and follow on increments of the capability. ***FY 2015 Plans:*** -Continue the coordination with the software development team at the Software Engineering Directorate in Huntsville, AL and other agencies to assist in the development and integration of the JBCP and handheld/end user device (EUD) software capability and associated testing. -Continue Federally Funded Research and Development Center (FFRDC) software engineering support to provide appropriate government direction in design and development of software. Support provided to assist and serve as subject matter experts in this effort. Existing documentation and logistics support will be analyzed for supportability of JBC-P and follow on increments of the capability. ***FY 2016 Base Plans:*** -The funding increase in FY16 is to develop a training package for the handheld device. -Continue coordination with the software development team at the Software Engineering Directorate in Huntsville, AL and other agencies to assist in the development and integration of the JBCP and handheld/end user device (EUD) software capability and associated testing. -Continue Federally Funded Research and Development Center (FFRDC) software engineering support to provide appropriate government direction in design and development of software. Existing documentation and logistics support will be analyzed for supportability of JBC-P and follow on increments of the capability. ***FY 2016 OCO Plans:*** N/A					
Title: JBC-P: Test and Evaluation	2.510	1.693	1.411	-	1.411
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued laboratories integration with Huntsville Software Engineering Directorate (SED) and Marine Corps Tactical Systems Support Activity (MCTSSA) to facilitate test and network integration test events.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continued Marine Corps Operational Test & Evaluation Activity (MCOTEA) DT/OT evaluation and documentation. -Completed developmental test, and multi-service operational test and evaluation for JBC-P. -Completed information assurance activities to support certification and accreditation efforts of JBC-P software. ***FY 2015 Plans:*** -Continue laboratories integration with Huntsville SED, MCTSSA, and other agencies to facilitate test and network integration test events. -Continue MCOTEA support for developmental test (DT) and planning/support for operational test (OT)of JBC-P handheld device. -Continue information assurance activities to support certification and accreditation efforts of JBC-P software. ***FY 2016 Base Plans:*** -Continue laboratories integration with Huntsville SED, MCTSSA, and other agencies to facilitate test and network integration test events. -Continue MCOTEA support for developmental test (DT) and planning/support for operational test (OT) of the JBC-P handheld device. ***FY 2016 OCO Plans:*** N/A					
Title: JBC-P: Management Services	0.367	0.430	0.390	-	0.390
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued to provide Engineering Support personnel and travel. ***FY 2015 Plans:*** Continue to provide Engineering Support personnel and travel. ***FY 2016 Base Plans:*** Continue to provide Engineering Support personnel and travel. ***FY 2016 OCO Plans:*** N/A					
Title: IDS: Product Development	1.256	-	0.400	-	0.400
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: Continued software development. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Continue to provide software development and hardware integration. ***FY 2016 OCO Plans:*** N/A					
Title: IDS: Support	1.514	0.264	0.447	-	0.447
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued to utilize NAVSEA PMS-408 and NSWC for product support. ***FY 2015 Plans:*** Continue to utilize NAVSEA PMS-408 and NSWC for product support. ***FY 2016 Base Plans:*** Continue IDS product support. ***FY 2016 OCO Plans:*** N/A					
Title: IDS: Test and Evaluation	0.199	0.500	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued software development testing and validation/verification testing. ***FY 2015 Plans:*** Continue software development testing and validation/verification testing. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: H2C2: Integration Engineering	-	1.700	1.727	-	1.727
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: -This is a new start for FY15. -Initiate development, design, and integration of various emerging capabilities across the H2C2 portfolio. -Initiate support for sustained engagement with various industry providers, quick look technology excursions, and experimentation demonstrations for high risk emerging technology.					
FY 2016 Base Plans: -Continue to develop, design, and integrate various emerging capabilities across the H2C2 portfolio. -Continue to provide support for sustained engagement with various industry providers, quick look technology excursions, and experimentation demonstrations for high risk emerging technology.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	31.143	27.422	24.226	-	24.226

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/6468AA: *GCCS-TCO*	0.111	0.118	-	-	-	-	-	-	-	-	0.229
• PMC/6438BB: *IDS-MC*	-	1.654	1.183	-	1.183	0.501	0.501	1.008	1.028	-	5.875
• PMC/4631CC: *GCCS-TCO*	7.963	11.692	8.456	-	8.456	6.406	5.077	9.141	9.298	Continuing	Continuing
• PMC/4630DD: *GCCS-TCO*	1.113	1.265	-	-	-	-	-	-	-	-	2.552
• PMC/4631DD: *AFATDS*	20.959	6.049	2.722	-	2.722	2.854	15.636	15.349	15.663	Continuing	Continuing
• PMC/4631FF: *JBC-P*	9.714	10.685	12.552	-	12.552	15.815	10.263	8.479	8.648	Continuing	Continuing
• PMC/4631GG: *THS*	0.509	6.427	4.001	-	4.001	-	-	2.408	2.456	Continuing	Continuing

Remarks

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D. Acquisition Strategy

MAGTF C2 SA: MAGTF C2 SA is delivering command and control capabilities through bi-annual software releases with major releases in FY14 and FY15 through multiple programs of record. In FY16 there will be one major release. Currently the initial focus is developing the Tactical Service Oriented Architecture (TSOA) software, which provides a common software infrastructure through which services and applications from other programs of record can begin the process of interfacing with in order to maximize software commonality across echelons and missions. The long term goal is a software capability that will enable data discovery and data sharing across mission areas, a common standards-based viewer, core services and applications, and access to the GIG and other Joint networks, data and services.

JBC-P: JBC-P FoS is leveraging the Army's development of the JBC-P and handheld software, and the Marine Corps' program is contingent upon the Army's development and acquisition strategy. The Army will fund research and development for JBC-P unless there are Service unique requirements, which the Marine Corps program office will fund. The Marine Corps' program office will participate in all design and readiness reviews and joint operational testing events.

GCCS-TCO: Contracting is performed with various vendors for software test and integration, Commercial-Off-The-Shelf (COTS) evaluation and documentation to develop advanced concepts and additional functional capabilities. The Program Management Office conducts quarterly performance reviews. Specific hardware is also procured for test purposes which include environmental, shock, compatibility, and interoperability testing.

Identity Dominance System (IDS): Currently, the IDS-MC Program Office acquisition strategy is to leverage the Navy's IDS Program and provide funding to meet Marine Corps requirements. The Marine Corps' program office will participate in all design and technical reviews as well as the FOT&E activities. The long-term goal is to equip the Marine with a user-friendly biometric authentication technology that will be employed throughout DoD to deny the enemy freedom of movement within the populace and positively identify known insurgents within an Area of Responsibility (AOR). R&D efforts will be a combined effort between the S/W developers (Aware), the Navy PM and the USMC for S/W enhancement for the next planned increments of IDS-MC and for the quarterly updates.

AFATDS: AFATDS is a Cost Plus Award Fee contract through Army CECOM, Aberdeen Proving Ground, MD. R&D efforts will be a combined effort between the software developer (Raytheon), the Army PM and the USMC of software enhancements for the next planned versions of AFATDS.

THS: The acquisition of components (software/hardware) for the THS initiative will maximize the use of existing COTS, Government-Off-The-Shelf (GOTS), Non-Developmental Item (NDI), and Government Furnished Equipment (GFE). Software development is conducted utilizing a sole source small-business contract. Software must maintain compatibility with five Programs of Record (POR) and seven Operational Flight Programs (OFP).

H2C2: H2C2 will use an evolutionary approach for technology insertion. The approach will leverage and mature COTS and NDI technologies to rapidly transition a handheld data capability to other acquisition programs. H2C2 inserts mature technology into existing programs in order to fill capability gaps and requirement shortfalls. These technologies will be inserted at different times along gaining program acquisition cycles. This strategy will apply to available technology at different proposed technology insertion points for each gaining program.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MAGTF C2	C/CPFF	SPAWAR : Charleston, SC	41.679	2.992	Jan 2014	2.961	Jan 2015	1.217	Nov 2015	-		1.217	Continuing	Continuing	Continuing
MAGTF C2	WR	NSWC : Panama City, FL	0.460	0.276	Nov 2013	-		0.250	Nov 2015	-		0.250	Continuing	Continuing	Continuing
MAGTF C2	WR	NSWC : Dahlgren, VA	4.275	3.322	Nov 2013	1.148	Feb 2015	1.500	Jan 2016	-		1.500	Continuing	Continuing	Continuing
MAGTF C2	C/CPFF	SPAWAR : San Diego, CA	1.063	2.048	May 2014	2.677	Jan 2015	1.123	Mar 2016	-		1.123	Continuing	Continuing	Continuing
MAGTF C2	WR	SSC A : Charleston, SC	1.262	1.917	Nov 2013	1.231	Mar 2015	1.250	Nov 2015	-		1.250	Continuing	Continuing	Continuing
MAGTF C2	WR	ARL : Washington, DC	0.000	0.650	Sep 2014	-		-		-		-	-	0.650	-
GCCS-TCO	C/CPFF	SPAWAR : Charleston, SC	4.743	0.507	Jan 2015	1.066	Jun 2015	0.650	Mar 2016	-		0.650	Continuing	Continuing	Continuing
AFATDS	MIPR	PM Mission Cmd (Army) : Aberdeen Proving Ground, MD	24.672	3.247	Jan 2014	4.023	Jan 2015	5.834	Jan 2016	-		5.834	Continuing	Continuing	Continuing
THS	SS/CPFF	Stauder Tech : St. Louis, MO	23.037	0.732	Feb 2014	1.042	Feb 2015	1.250	Feb 2016	-		1.250	Continuing	Continuing	Continuing
THS	C/CPFF	MCSC : Quantico, VA	0.000	-		1.148	Mar 2015	1.313	Mar 2016	-		1.313	Continuing	Continuing	Continuing
THS	WR	NSWC : Dahlgren, VA	0.000	-		0.380	Nov 2014	0.280	Nov 2015	-		0.280	-	0.660	-
JBC-P	WR	SPAWAR : Charleston, SC	2.481	0.230	Nov 2013	0.273	Feb 2015	0.490	Feb 2016	-		0.490	Continuing	Continuing	Continuing
JBC-P	C/CPFF	SPAWAR2 : Charleston, SC	0.000	0.665	Feb 2014	0.667	Jun 2015	0.700	Dec 2015	-		0.700	-	2.032	-
IDS	MIPR	NAVSEA/PMS-408 : Washington, DC	0.715	1.256	Nov 2013	-		0.400	Nov 2015	-		0.400	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	Various : Various	64.782	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	169.169	17.842		16.616		16.257		-		16.257	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

IDS FY14-FY16: IDS-MC will utilize NAVSEA/PMS408 to provide software development, information assurance updates and engineering change proposals in support of USMC requirements.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MAGTF C2	WR	SPAWAR : San Diego, CA	0.905	2.126	May 2014	1.091	Mar 2015	1.022	Mar 2016	-		1.022	Continuing	Continuing	Continuing
MAGTF C2	WR	DLA : Philadelphia, PA	0.000	0.080	May 2014	-		-		-		-	-	0.080	-
THS	WR	NSWC Crane : Crane, IN	0.000	0.272	Feb 2014	-		-		-		-	-	0.272	-
IDS	WR	NAVSEA-PMS408 : Washington-DC	0.173	0.158	Sep 2014	0.158	Mar 2015	-		-		-	-	0.489	-
IDS	WR	NSWC Dahlgren : Dahlgren, VA	1.322	1.356	Jan 2014	0.106	May 2015	0.447	May 2016	-		0.447	-	3.231	-
H2C2 Integration Eng	WR	SPAWAR : Charleston, SC	0.000	-		1.039	Jan 2015	1.053	Jan 2016	-		1.053	Continuing	Continuing	Continuing
H2C2 Integration Eng	C/FFP	SPAWAR : Charleston, SC	0.000	-		0.661	Jan 2015	0.674	Jan 2016	-		0.674	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	Various : Various	4.983	-		-		-		-		-	-	4.983	-
		Subtotal	7.383	3.992		3.055		3.196		-		3.196	-	-	-

Remarks

IDS FY14-FY16: IDS-MC will utilize NSWC Dahlgren to provide engineering support, research studies, validation and verification of software and engineering change proposals.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MAGTF C2	WR	NRL : Washington, DC	0.879	0.530	Mar 2014	0.414	Apr 2015	0.250	Dec 2015	-		0.250	Continuing	Continuing	Continuing
MAGTF C2	C/ FFPLOE	MCTSAA : Camp Pendleton, CA	0.910	0.932	Dec 2013	0.650	Dec 2014	0.750	Dec 2015	-		0.750	Continuing	Continuing	Continuing
GCCS-TCO	C/CPFF	SSC-Lant : Charleston, SC	0.325	0.957	Sep 2014	0.798	Jun 2015	-		-		-	Continuing	Continuing	Continuing
GCCS-TCO	MIPR	DISA/JITC : Ft. Huachuca, AZ	0.675	-		0.150	Apr 2015	-		-		-	Continuing	Continuing	Continuing
GCCS-TCO	WR	SPAWAR : Charleston, SC	0.000	0.017	Jun 2014	0.035	May 2015	0.431	Mar 2016	-		0.431	Continuing	Continuing	Continuing
AFATDS	WR	SPAWAR : Charleston, SC	2.786	0.200	Dec 2013	-		0.246	Dec 2015	-		0.246	Continuing	Continuing	Continuing
THS	WR	SPAWAR : Charleston, SC	2.080	0.208	Dec 2013	-		-		-		-	Continuing	Continuing	Continuing
THS	MIPR	DISA/JITC : Ft. Huachuca, AZ	0.373	0.115	Feb 2014	0.240	Feb 2015	0.035	Feb 2016	-		0.035	Continuing	Continuing	Continuing
THS	WR	NAWCD China Lake : China Lake, CA	0.153	0.008	Apr 2014	-		-		-		-	Continuing	Continuing	Continuing
THS	WR	46th Test Squadron : Eglin AFB, FL	0.039	0.034	Apr 2014	-		-		-		-	Continuing	Continuing	Continuing
THS	WR	NSWC : Dahlgren, VA	0.000	-		-		0.260	Nov 2015	-		0.260	-	0.260	-
THS	WR	NSWC : Crane, IN	0.000	-		0.366	Oct 2014	-		-		-	-	0.366	-
JBC-P	C/CPFF	MCTSAA : Camp Pendleton, CA	0.121	0.324	Feb 2014	0.434	Nov 2014	0.400	Dec 2015	-		0.400	Continuing	Continuing	Continuing
JBC-P	WR	SPAWAR : Charleston, SC	1.554	0.100	Dec 2013	0.173	Feb 2015	0.235	Dec 2015	-		0.235	Continuing	Continuing	Continuing
JBC-P	MIPR	DISA/JITC : Ft Huachuca, AZ	0.025	0.105	Mar 2014	0.088	Mar 2015	0.105	Mar 2016	-		0.105	Continuing	Continuing	Continuing
JBC-P	MIPR	EPG : Ft. Huachuca, AZ	0.195	0.137	Mar 2014	-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBC-P	C/CPFF	MCOTEA : Quantico, VA	0.889	0.151	Dec 2013	-		0.080	Dec 2015	-		0.080	Continuing	Continuing	Continuing
JBC-P	C/CPFF	SPAWAR2 : Charleston, SC	0.000	0.250	Jul 2014	0.118	Dec 2014	-		-		-	-	0.368	-
JBC-P	MIPR	TSMO : Redstone Aresenal, AL	0.000	0.391	Apr 2014	-		-		-		-	-	0.391	-
JBC-P	MIPR	OTC/CTS : Ft Hood, TX	0.000	0.137	Mar 2014	-		-		-		-	-	0.137	-
JBC-P	MIPR	ARL : Aberdeen Proving Ground, MD	0.000	0.110	Mar 2014	-		-		-		-	-	0.110	-
JBC-P	Various	MCSC2 : Quantico, VA	0.000	0.142	Sep 2014	-		-		-		-	-	0.142	-
JBC-P	WR	NSWC Crane : Crane, IN	0.000	0.663	May 2014	0.880	Apr 2015	0.591	Dec 2015	-		0.591	-	2.134	-
IDS	C/FFP	NAVSEA : Washington, DC	2.252	0.199	Nov 2013	0.500	Mar 2015	-		-		-	-	2.951	-
		Subtotal	13.256	5.710		4.846		3.383		-		3.383	-	-	-

Remarks

IDS FY14-15: IDS-MC will utilize NAVSEA/COTF to conduct DT&E and IOT&E

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MAGTF C2	C/CPFF	CECOM, LCMC : APG, Maryland	1.746	2.988	Nov 2013	1.939	Jan 2015	1.000	Dec 2015	-		1.000	Continuing	Continuing	Continuing
THS	C/CPFF	CECOM/MITRE : Ft. Monmouth, NJ	0.000	0.244	Nov 2013	0.536	Nov 2014	-		-		-	Continuing	Continuing	Continuing
JBC-P	C/CPFF	CECOM/MITRE : Ft. Monmouth, NJ	1.258	-		0.430	Jan 2015	0.290	Jan 2016	-		0.290	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JBC-P	Various	MCSC : Quantico, VA	0.169	0.367	Sep 2014	-		0.100	Mar 2016	-		0.100	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	Various : Various	0.075	-		-		-		-		-	-	0.075	-
		Subtotal	3.248	3.599		2.905		1.390		-		1.390	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	193.056	31.143		27.422		24.226		-		24.226	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

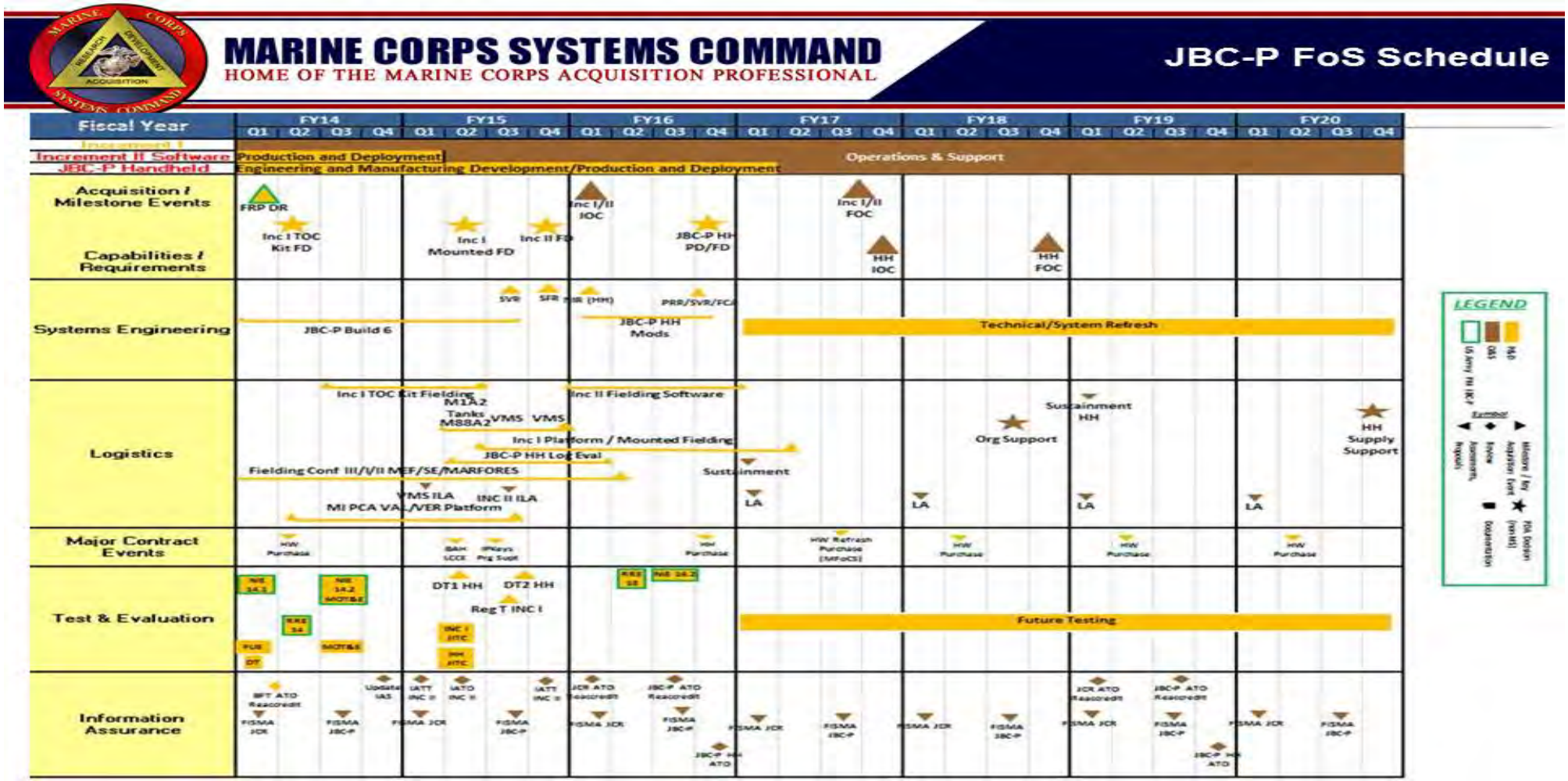

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

IDS-MC SCHEDULE

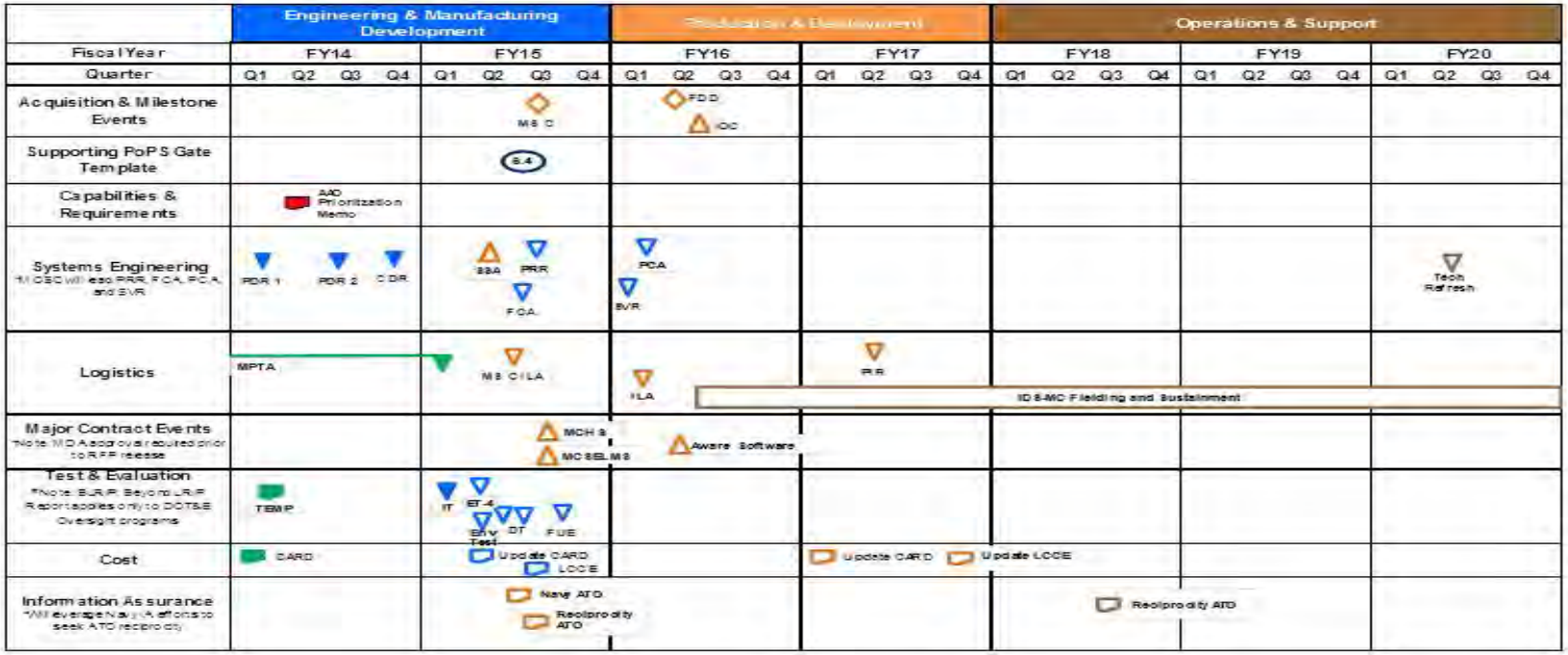

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

Program Schedule H2C2

Date Updated: 19 Jun 2014

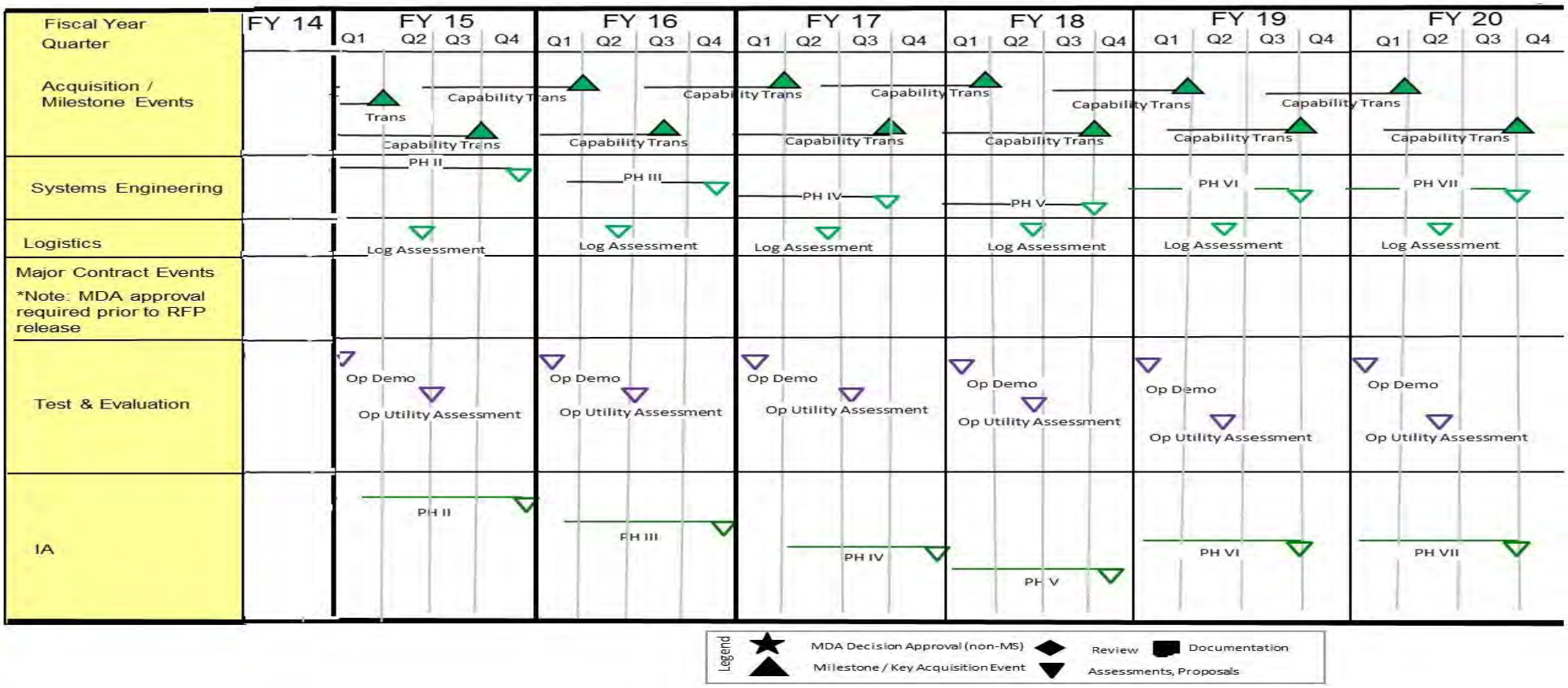

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

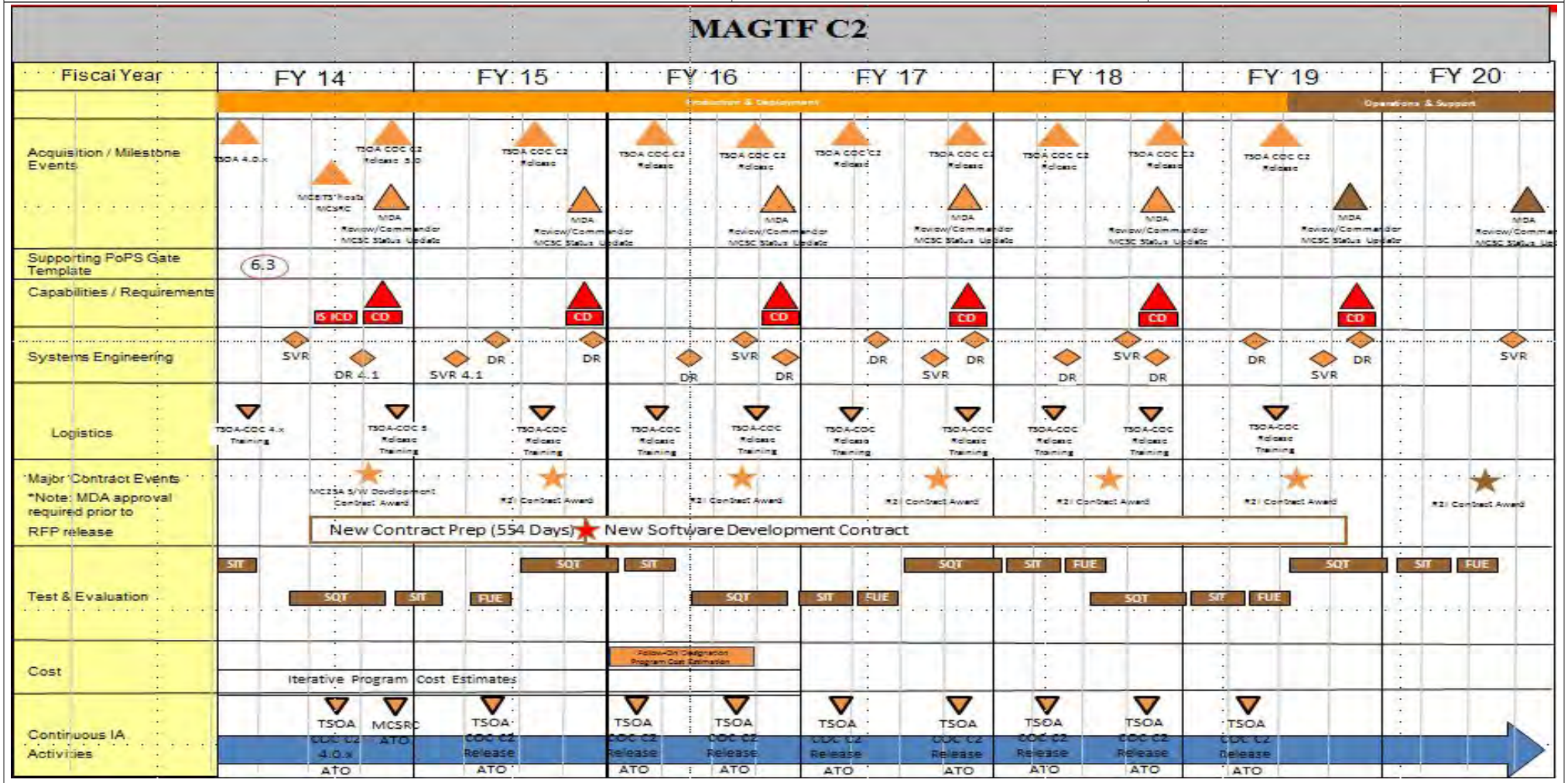

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

THS (MCPC 240498) - Schedule

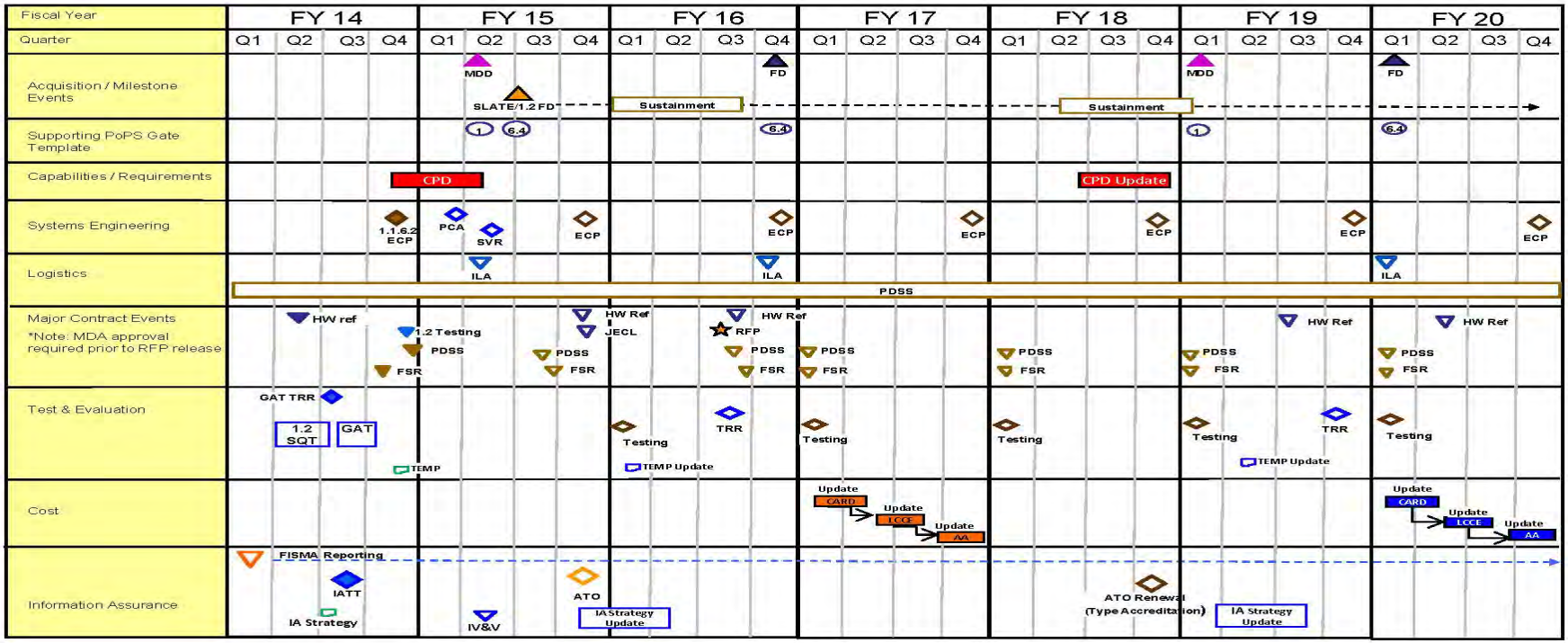

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

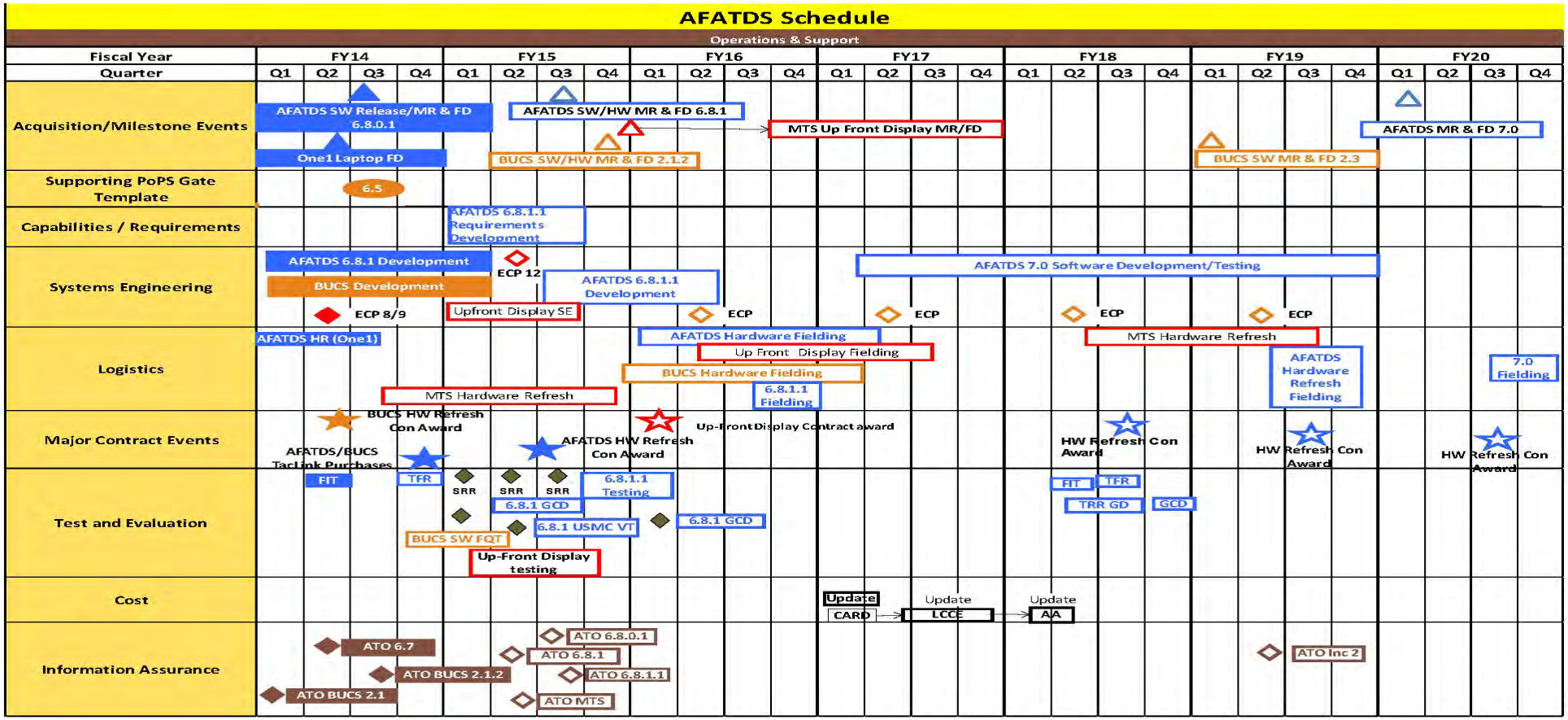

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

Program Schedule – GCCS-TCO

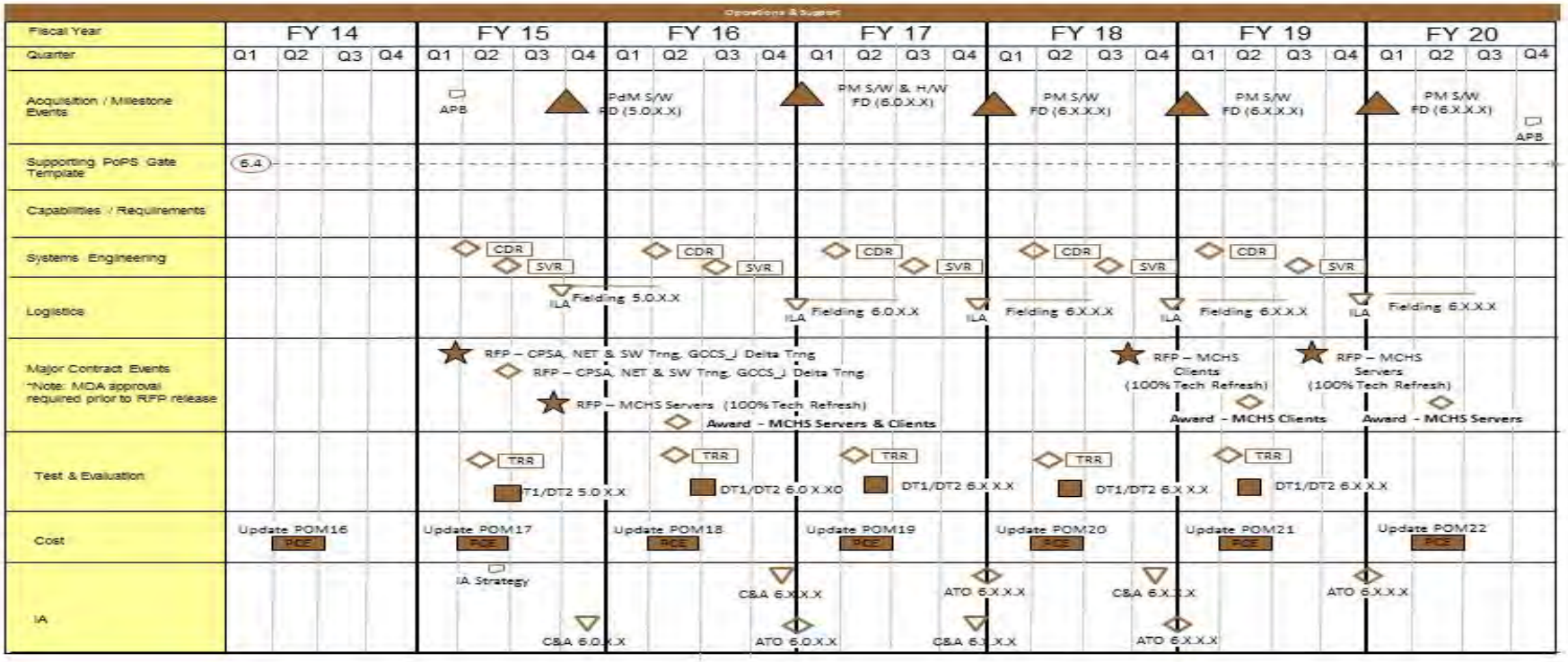

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2270 / *Exp Indirect Fire Gen Supt Wpn Sys*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2270				
MAGTF C2 SA TSOA Release 4	1	2014	1	2014
MAGTF C2 SA TSOA Release 5	4	2014	4	2014
MAGTF C2 SA TSOA Release 6	3	2015	3	2015
MAGTF C2 SA TSOA Release 7	1	2016	1	2016
GCCS-TCO SW FD (5.0.0.0)	4	2015	1	2016
GCCS-TCO SW/HW FD (6.0.0.0)	1	2017	2	2017
AFATDS MTS Fielding	3	2014	4	2015
AFATDS BUCS Fielding	4	2015	1	2017
AFATDS HW Fielding	1	2016	2	2017
THS 1.2 S/W Fielding Decision	3	2015	3	2015
THS HW Refresh Fielding Decision	3	2016	3	2016
JBC-P FoS Inc I TOC Kit Fielding Decision	2	2014	2	2014
JBC-P FoS Operational Test NIE 14.2	3	2014	3	2014
JBC-P FoS Inc I Platform Fielding Decision	2	2015	2	2015
JBC-P FoS Inc II Software Fielding Decision	4	2015	4	2015
JBC-P FoS HH Procurement Decision/Fielding Decision	4	2016	4	2016
H2C2 Transition (POR) 1	3	2015	3	2015
H2C2 Transition (POR) 2	3	2016	3	2016
IDS-MC Milestone C	3	2015	3	2015
IDS-MC DevelopmentalTesting (DT)	3	2015	3	2015

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*				Project (Number/Name) 2273 / *Air Ops Cmd & Control (C2) Sys*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
2273: *Air Ops Cmd & Control (C2) Sys*	339.085	66.090	8.767	7.772	-	7.772	11.076	5.702	8.950	9.128	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: 582

Note

Funding for the Common Aviation Command and Control System (CAC2S) program was moved to PE 0206335M Common Aviation Command and Control System (CAC2S), Project 3373 beginning in FY15. Prior Year funding and FY14 funding is located in PE 0206313M Marine Corps Comms Systems, Project 2273 Air Ops Cmd & Control (C2) Sys.

A. Mission Description and Budget Item Justification

Common Aviation Command and Control System (CAC2S) - A coordinated modernization effort to replace the existing aviation command and control equipment of the Marine Air Command and Control System (MACCS) and to provide the Aviation Combat Element (ACE) with the necessary hardware, software, equipment, and facilities to effectively command, control, and coordinate aviation operations. The CAC2S system will accomplish the MACCS missions with a suite of operationally scalable modules to support the Marine Air Ground Task Force (MAGTF), Joint, and Coalition Forces. The CAC2S integrates the functions of aviation command and control into an interoperable system that will support the core competencies of all Marine Corps warfighting concepts. The CAC2S, in conjunction with MACCS organic sensors and weapons systems, supports the tenets of Expeditionary Maneuver Warfare and fosters joint interoperability. CAC2S Increment I will replace legacy aviation command and control systems in the following Marine aviation agencies: Direct Air Support Center (DASC), Tactical Air Command Center (TACC), and Tactical Air Operations Center (TAOC). CAC2S Funding for FY15 through the FYDP is in PE 0206335M, Project 3373.

Theater Battle Management Core System (TBMCS) - Joint mandated Air War planning tool for the generation, dissemination and execution of the Air Tasking Order (ATO). TBMCS is an Air Force led program, which provides the automated tools necessary to manage tactical air operations, execute area air defense and airspace management in the tactical area of operation, and coordinate operations with components of other military services. TBMCS is located at the Tactical Air Command Center (TACC), with remotes located throughout the Marine Air Ground Task Force (MAGTF). It is scalable, allowing for joint, coalition and service specific operations. It is an evolutionary acquisition program.

Composite Tracking Network (CTN) - Provides the Marine Air Ground Task Force (MAGTF) Commander a ground based sensor netting solution that significantly improves situational awareness by correlating sensor measurement data (target position, speed, heading, Identification Friend and Foe (IFF), etc.) from local and remote radars in the Cooperative Engagement Capability (CEC) network, which is then provided to the warfighter in the form of composite, real-time, air surveillance tracks. AN/MSQ-143A (V)I - funding will allow CTN to execute transportability testing and conduct a Field User Evaluation (FUE) of this system configuration. These events will complete the testing for this configuration and allow the CTN Program Office to go to the Milestone Decision Authority (MDA) for a fielding decision for this system configuration.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

The Marine Air Command and Control System (MACCS) Sustainment - Consists of various command and control agencies designed to provide the Aviation Combat Element (ACE) commander with the ability to monitor, supervise and influence the application of Marine aviation assets in support of Marine Air Ground Task Force (MAGTF) operations. The MACCS Sustainment provides funding to keep these fielded systems ready, relevant and capable until their functions are replaced by the Common Aviation Command and Control System (CAC2S). The funding decrease ($0.995) from FY15 to FY16 is due to the completion of the MACCS Mobile Tactical Air Operations Module (MTAOM) Commercial off the Shelf (COTS) refresh.

Combat Operations Center (COC) - AN/TSQ-239 (V)1/2/3/4 are a deployable, self-contained, modular, centralized and scalable facility ((V)1 MEF-size, (V)2 MSC/Div-size, (V)3 Regiment-size, (V)4 Ballatlion-size) which provides digital, shared Command and Control/Situational Awareness functionalities to enhance the Common Operational Picture (COP) for the Command Element, Ground Command Element, Air Combat Element, and Logistics Combat Element. It is a commercial-off-the-shelf integrated hardware solution using unit provided radios, re-hosted tactical data systems, and available Marine Corps prime movers to transport the system. Funds support testing and Information Assurance (IA) certification activities, integration of emerging technology, and On The Move (OTM) capabilities. The increase of $1.920M from FY15 to FY16 will fund market research, test and software integration efforts needed to align with other C2 systems.

Remote Video Viewing Terminal (RVVT) - Consists of Commercial Off-The-Shelf (COTS) Video Down-Link (VDL) products such as the VideoScout Mobile Configuration 2 (VS-MC/2), VideoScout Mobile Configuration 3 (VS-MC/3), Man Portable Video Down-Link (MPVDL), and RVVT (Future System) that allow for the viewing and exploitation of Full Motion Video (FMV) from Intelligence, Surveillance and Reconnaissance (ISR) assets. VDL systems are mission critical for Command and Control, coordination of direct and indirect fires and the prevention of fratricide. These systems provide the warfighter with video and metadata from all USMC manned and unmanned aircraft to include but not limited to Raven B, Puma, Micro-UAS, Shadow, Predator, Fire Scout, and Litening Pod on P-3, AV8-B, and F/A-18. Data is displayed to Forward Observers (FO), Joint Terminal Attack Coordinators (JTAC), and Forward Air Controller (FAC).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: CAC2S - Product Development	31.160	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued development and integration of the Aviation Command and Control Subsystem -Continued EDM data and information fusion -Initiated system validation and verification of the four (4) Engineering and Development Models (EDMs)					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: CAC2S - Support and Management Services	9.789	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued program management support including business support, engineering support, and logistical support. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: CAC2S - Test and Evaluation	6.248	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued support of phase 2 in Information Assurance certification test scans and initiate CAC2S developmental testing of the Engineering and Develpment Models (EDMs). ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: COC: Continued Capability Solution	3.375	1.619	3.517	-	3.517
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continued to conduct analysis of technologies for integration in COC Baseline. Performed analysis to support Size Weight Power Reduction efforts. ***FY 2015 Plans:*** Continue to conduct analysis of technologies and software interoperability for integration in COC Baseline. ***FY 2016 Base Plans:*** Initiate market research, test and software integration efforts needed to align with other C2 systems. ***FY 2016 OCO Plans:*** N/A					
Title: Composite Tracking Network (CTN): Support and Management Services	4.972	0.960	0.458	-	0.458
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Initiated S/W Maintenance Support. - Initiated USG-4B Analysis/Extraction Updates, Data Analysis, Safety, System Engineering. - Completed Wrap Around Simulation Program (WASP) S/W Updates, Data Analysis, Safety, System Engineering. - Continued Data Collection and Analysis. - Continued travel, engineering support, test support, and S/W support. - Continued systems engineering and updates to the S/W baseline.					
FY 2015 Plans: - Complete USG-4B Analysis/Extraction - Continue S/W Maintenance Support, USG-4B Analysis/Extraction, Data Analysis, Safety, System Engineering. - Continue Data Collection and Analysis. - Continue systems engineering and updates to the software baseline. - Continue travel, engineer support, test support, and S/W support.					
FY 2016 Base Plans: - Continue Software Maintenance Support. - Continue Data Collection and Analysis. - Continue systems engineering and updates to the software baseline.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Continue travel, engineer support, and test support. ***FY 2016 OCO Plans:*** N/A					
Title: Composite Tracking Network (CTN): Certification of Interfaces	0.626	0.220	0.150	-	0.150
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Initiated Common Array Block - Expeditionary (CAB-E) testing/verification support. - Continued to support testing/verification/updates for Accelerated Mid-term Interoperability Improvement Program - Initiated ramp up System-to-System engineering to support interface with CAC2S and G/ATOR. ***FY 2015 Plans:*** - Continue Common Array Block (CAB-E) testing/verification/updates - Continue to support updates for Accelerated Mid-term Interoperability Improvement Program - Continue System-to-System developmental engineering to support interface with CAC2S and G/ATOR. ***FY 2016 Base Plans:*** - Continue Common Array Block (CAB-E) testing/verification/updates - Continue to support updates for Accelerated Mid-term Interoperability Improvement Program - Continue System-to-System developmental engineering to support interface with CAC2S and G/ATOR. ***FY 2016 OCO Plans:*** N/A					
Title: Composite Tracking Network (CTN): Engineering Development Model	3.024	1.188	0.686	-	0.686
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Initiated Common Array Block - Expeditionary (CAB-E) Antenna Development for USMC under USN CAB Joint Program. - Initiated Network Status Display development for G/ATOR. - Initiated integration and developmental testing with CAC2S and G/ATOR. - Initiated Systems Engineering for AN/USG-4B, TPN-59 regression testing and Information Assurance. - Continued Information Assurance (IA) developmental activities.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Completed WASP Software development. ***FY 2015 Plans:*** - Continue CAB-E Antenna Developmental Activities. - Continue integration and developmental testing with CAC2S and G/ATOR. - Continue Information Assurance (IA) developmental activities ***FY 2016 Base Plans:*** - Continue Common Array Block-Expeditionary (CAB-E) antenna testing/verification/updates and developmental Activities. - Continue integration and developmental testing with CAC2S and G/ATOR. - Continue Information Assurance (IA) developmental activities ***FY 2016 OCO Plans:*** N/A					
Title: Marine Air Command and Control System (MACCS) Service Life Extension Program (SLEP)/Sustainment: Product Development, Support and Mgmt Services, and T&E	3.755	1.266	0.494	-	0.494
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Continued TACC and TAOC Life Cycle Support through ongoing Post Development Software Support (PDSS) activities. - Continued active refresh of obsolete hardware items. - Continued to develop and procure ECPs for MTAOM. - Initiated Commercial off the Shelf (COTS) refresh for MTAOM to include completion of a Production Ready Model and Developmental Testing. - Initiated Information Assurance updates (tri-annual drops). ***FY 2015 Plans:*** - Continue TACC and TAOC Life Cycle Support through ongoing Post Development Software Support (PDSS) activities. - Continue active refresh of obsolete hardware items from MACCS systems. - Complete production of COTS Refresh kit for the Mobile Tactical Air Operations Module (MTAOM) and fielding to the Operational Forces. - Complete the Operational Assessment for the MTAOMs COTS refresh activities.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Initiate and complete software updates including delivery of new OS. - Continue Information Assurance updates (tri-annual drops). ***FY 2016 Base Plans:*** - Continue TACC and TAOC Life Cycle Support through ongoing Post Development Software Support (PDSS) activities. - Continue active refresh of obsolete hardware items from MACCS systems. - Continue Information Assurance updates (tri-annual drops). ***FY 2016 OCO Plans:*** N/A					
Title: RVVT: Preparation	-	1.090	1.183	-	1.183
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** Initiate Analysis of Alternatives (AOA) and development for the next generation of a RVVT COC static variant. ***FY 2016 Base Plans:*** Complete Analysis of Alternatives (AOA) for future RVVT systems. ***FY 2016 OCO Plans:*** N/A					
Title: RVVT: Support and Management Services	0.207	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Developed engineering documentation in support of Engineer Change Proposal to upgrade the VideoScout MC/2 host Operating System (OS) from Microsoft Windows XP to Microsoft Windows 7. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2016 OCO Plans:*** N/A					
Title: TBMCS - Test and Evaluation and Management Services	2.934	2.424	1.284	-	1.284
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Continued test and evaluation support for TBMCS upgrades for Joint Interoperability. - Initiated development and fielding of software and hardware engineering change proposals for Information Assurance (IA). ***FY 2015 Plans:*** -Continue test and evaluation support for TBMCS upgrades for Joint Interoperability. ***FY 2016 Base Plans:*** - Continue test and evaluation support for TBMCS upgrades for Joint Interoperability. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	66.090	8.767	7.772	-	7.772

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/4640CT: *CTN*	0.304	1.494	0.015	-	0.015	-	-	-	-	-	51.041
• PMC/4640CU: *MACCS Sustainment*	7.223	0.916	0.884	-	0.884	0.283	0.062	0.050	0.051	Continuing	Continuing
• PMC/4640DX: *TBMCS*	4.420	3.837	2.417	-	2.417	3.362	3.552	3.609	3.622	Continuing	Continuing
• PMC/419000: *COC*	13.480	9.178	13.109	8.221	21.330	15.183	1.403	13.831	9.794	Continuing	Continuing
• PMC/464023: *RVVT*	5.842	1.755	0.204	-	0.204	10.531	10.636	8.135	8.297	Continuing	Continuing
• PMC/4640DY: *CAC2S*	2.246	-	-	-	-	-	-	-	-	-	92.311
• PMC/4630DX: *TBMCS*	0.855	-	-	-	-	-	-	-	-	-	0.855
• PMC/700000: *CAC2S*	-	1.698	-	-	-	-	-	-	-	-	1.698
• PMC/4630CU: *MACCS*	-	0.079	-	-	-	-	-	-	-	-	8.718

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/464400: *CAC2S*	-	12.272	35.147	-	35.147	61.184	52.769	53.722	54.809	Continuing	Continuing
• 0206335M/3373: *CAC2S*	-	32.495	13.431	-	13.431	10.629	3.323	3.403	3.483	Continuing	Continuing

Remarks

D. Acquisition Strategy

CAC2S will employ an evolutionary acquisition strategy utilizing an incremental and phased approach for development and fielding of the CAC2S. The Capability Production Document (CPD) identifies two increments to achieve the full requirements of CAC2S. The current acquisition strategy addresses Increment I of the CAC2S development process and focuses on the requirements that will modernize the assault and air support, air defense and control, and Aviation Combat Element (ACE) battle management capabilities of the Marine Air Command and Control System (MACCS). Increment I of the CAC2S will be accomplished through a two phased approach. Phase 1 will address the requirements to establish the baseline CAC2S capabilities for the MACCS and improve Air Command and Control (AC2) performance and effectiveness. Phase 2 will address the requirements for remaining ACE Battle Management Command & Control (BMC2) requirements. Funding for FY15 through the FYDP is contained in PE 0206335M and Project 3373.

TBMCS is an ACAT III, USAF Program with joint interest/oversight. It was mandated by the Chairman, Joint Chiefs of Staff in July 93 for Air Tasking Order (ATO) Interoperability among all services. USMC will continue following the USAF lead when fielding only the joint modules of TBMCS. As USMC unique requirements are identified the USMC will deviate accordingly when required to sufficiently sustain systems. Over the course of the FYDP, TBMCS is to separately manage the development and fielding of software and hardware engineering change proposals for Information Assurance (IA) and functionality updates to ensure daily direct support of the Air Battle Plan in joint theaters of operation.

MACCS SUSTAINMENT - The acquisition strategy implemented by the MACCS Sustainment Program Office is to maintain the readiness, relevance, and capabilities of the portfolio of post-Milestone C systems through Post Deployment Software Support (PDSS) activities, active refresh of obsolete hardware items, and the implementation of system improvements/modifications in accordance with approved systems engineering processes. Engineering changes to the systems make maximum use of Commercial Off-The-Shelf (COTS), Government Off-The-Shelf (GOTS), and Non-Developmental Items (NDI) in order to decrease risk, leverage developed capabilities and support apparatus, and minimize investment expenditures. These activities are performed by Original Equipment Manufacturer (OEM) commercial entities under contract to Marine Corps Systems Command (MCSC) or by Naval Surface Warfare Center (NSWC) Crane as the MACCS Sustainment Program In-Service Engineering Agent (ISEA). The next major milestone for the MACCS Sustainment Programs is Phase-out or Disposal as the replacement Common Aviation Command and Control System (CAC2S) reaches full operational capability.

CTN - The USMC's CTN acquisition strategy is to participate in the USN's Cooperative Engagement Capability (CEC) program procurement and testing, making necessary modifications to support the Marine Corps' requirement. The next major milestones is the development of the Common Array Block-Expeditionary (CAB-E) Antenna to replace the Composite Solid State Antenna (CSSA), which will become obsolete in FY18, and complete interfaces to Ground/Air Task Oriented Radar (G/ATOR).

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RVVT - The RVVT acquisition strategy is to continually improve the Video Down-Link (VDL) products by enhancing the encryption, range, and reducing the power and weight requirements through competition. Long term efforts are to initiate an Analysis of Alternatives (AOA) beginning FY15 for a competitive solution for the next generation RVVT. The future RVVT system will be procured via a full and open competition and will provide the USMC with mutually supporting COC and dismounted VDL variants.

COC - The COC AN/TSQ-239 (V)2/3/4 is the foundation of USMC C2, meeting near term communications and network requirements across the OpFor and supports pre-deployment training requirements in support of OEF. There is a continuing developmental effort to evolve the COC into a fully integrated MAGTF C2 capability. FY15 supports continual tech refresh, technology insertion, modernization and software upgrade releases and alignment with associated Command and Control programs as required by OpFor Commanders.

E. Performance Metrics

N/A

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	93.783	-		-		-		-		-	-	93.783	-
CAC2S	WR	NSWC : Crane, IN	23.615	1.615	Nov 2013	-		-		-		-	-	25.230	-
CAC2S	WR	NSWC : Dahlgren, VA	35.601	6.584	Nov 2013	-		-		-		-	-	42.185	-
CAC2S	C/FPIF	General Dynamics - Phase 2 Contractor : Scottsdale, AZ	60.312	21.527	Nov 2013	-		-		-		-	-	81.839	-
CAC2S	MIPR	NAVSEA : Washington, DC	0.756	1.434	Mar 2014	-		-		-		-	-	2.190	-
CTN	C/CPFF	NAVSEA PEO IWS : Washington, DC	10.110	3.024	Feb 2014	1.188	Feb 2015	0.686	Feb 2016	-		0.686	Continuing	Continuing	Continuing
MACCS Sustainment	WR	NSWC : Crane, IN	2.111	0.029	Jan 2014	0.200	Nov 2014	-		-		-	-	2.340	-
MACCS Sustainment	C/FFP	KATMAI : Van Nuys, CA	3.581	2.585	Aug 2014	-		-		-		-	-	6.166	-
COC	WR	NSWC : Dahlgren,VA	4.448	0.587	Jan 2014	0.200	Feb 2015	0.585	Jan 2016	-		0.585	-	5.820	-
COC	C/FFP	NSWC : Dahlgren, VA	0.000	-		-		1.147	Jan 2016	-		1.147	-	1.147	-
COC	WR	NSWC : Panama City, FL	1.451	0.310	Dec 2013	-		-		-		-	-	1.761	-
COC	C/FFP	NSWC : Panama City, FL	0.000	0.070	Apr 2014	-		-		-		-	-	0.070	-
COC Energy Initiatives	C/FFP	NSWC : Crane, IN	0.000	0.036	Apr 2014	-		0.300	Apr 2016	-		0.300	-	0.336	-
COC Energy Initiatives	WR	NSWC : Crane, IN	0.000	0.312	Jan 2014	-		0.545	Jan 2016	-		0.545	-	0.857	-
COC	WR	SSC-LANT : Charleston, SC	0.000	-		1.229	Dec 2014	0.700	Dec 2015	-		0.700	-	1.929	-
COC SIM/STIM	C/FFP	NSWC : Dahlgren, VA	0.000	0.180	Mar 2014	-		0.240	Mar 2016	-		0.240	-	0.420	-
COC Test Plan	WR	NSWC : Dahlgren, VA	0.000	0.202	Jun 2014	0.190	Feb 2015	-		-		-	-	0.392	-

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RVVT	MIPR	ARDEC : Picatinny, NJ	0.000	-		1.090	Mar 2015	1.183	Dec 2015	-		1.183	Continuing	Continuing	Continuing
		Subtotal	235.768	38.495		4.097		5.386		-		5.386	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	24.485	-		-		-		-		-	-	24.485	-
CAC2S	WR	Travel-TAD : Various	1.276	0.765	Sep 2014	-		-		-		-	-	2.041	-
CAC2S	C/CPAF	AMSSA : APG, Maryland	0.260	0.330	Nov 2013	-		-		-		-	-	0.590	-
CAC2S	WR	SPAWAR : Charleston, SC	0.110	0.559	Nov 2013	-		-		-		-	-	0.669	-
CAC2S	WR	JITC : Fort Huachuca, AZ	1.016	0.100	Apr 2014	-		-		-		-	-	1.116	-
CAC2S	WR	MCTSSA : Camp Pendleton, CA	2.778	0.387	Nov 2013	-		-		-		-	-	3.165	-
CAC2S	WR	NSWC Corona : Corona, CA	3.462	1.715	Nov 2013	-		-		-		-	-	5.177	-
CAC2S	Allot	MCSC - Safety : Quantico, VA	0.482	0.528	Feb 2014	-		-		-		-	-	1.010	-
CAC2S	MIPR	Redstone : Redstone Arsenal, AL	0.000	0.320	Feb 2014	-		-		-		-	-	0.320	-
CTN	WR	NSWC : Dahlgren, VA	1.913	2.644	Jan 2014	0.800	Jan 2015	0.231	Jan 2016	-		0.231	Continuing	Continuing	Continuing
CTN	WR	NSWC : PHD, CA	0.259	0.118	Dec 2013	0.138	Feb 2015	0.054	Feb 2016	-		0.054	Continuing	Continuing	Continuing
CTN	WR	NSWC : Crane, IN	0.400	0.801	Feb 2014	-		0.150	Nov 2015	-		0.150	-	1.351	-
CTN	Various	Travel-TAD : Not Specified	0.955	0.100	Sep 2014	0.022	Sep 2015	0.023	Sep 2016	-		0.023	Continuing	Continuing	Continuing

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CTN	WR	SPAWAR : Charleston, SC	0.435	0.192	Nov 2013	-		-		-		-	-	0.627	-
CTN	C/CPFF	NAVSEA PEO IWS : Washington DC	1.243	1.117	Apr 2014	-		-		-		-	-	2.360	-
MACCS Sustainment	WR	NSWC : Crane, IN	1.038	-		0.300	Nov 2014	0.031	Nov 2015	-		0.031	Continuing	Continuing	Continuing
MACCS Sustainment	Reqn	NGES : Woodland Hills, CA	1.300	0.584	Sep 2014	0.400	Sep 2015	0.364	Sep 2016	-		0.364	Continuing	Continuing	Continuing
MACCS Sustainment	C/FFP	SPAWAR Charleston : Charleston, SC	0.963	0.036	Jul 2014	0.246	Nov 2014	0.076	Nov 2015	-		0.076	Continuing	Continuing	Continuing
		Subtotal	42.375	10.296		1.906		0.929		-		0.929	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	10.567	-		-		-		-		-	-	10.567	-
CAC2S	WR	NSWC Port Hueneme : Port Hueneme, CA	0.712	1.622	Nov 2013	-		-		-		-	-	2.334	-
CAC2S	WR	MCOTEA : Quantico, VA	7.421	1.500	Apr 2014	-		-		-		-	-	8.921	-
CAC2S	WR	MACS-2 : Cherry Point, NC	0.000	2.201	Apr 2014	-		-		-		-	-	2.201	-
CAC2S	C/FFP	APX : Wahington, DC	0.000	0.750	May 2014	-		-		-		-	-	0.750	-
CAC2S	MIPR	NAWX : Patuxent River, MD	0.000	0.175	Jul 2014	-		-		-		-	-	0.175	-
TBMCS	C/FFP	Lockheed Martin : Colorado Springs, CO	2.564	2.545	Jul 2014	2.082	Mar 2015	1.067	Mar 2016	-		1.067	Continuing	Continuing	Continuing

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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TBMCS	MIPR	Englin AFB : Englin AFB, FL	0.504	-		0.342	Jun 2015	0.217	Jun 2016	-		0.217	Continuing	Continuing	Continuing
TBMCS	MIPR	DTIC : Fort Belvoir, VA	0.000	0.225	Apr 2014	-		-		-		-	-	0.225	-
CTN	C/BA	JITC : PHD, CA	0.000	0.033	Mar 2014	-		-		-		-	-	0.033	-
CTN	WR	NSWC Corona : Corona, CA	1.424	0.133	Nov 2013	-		-		-		-	-	1.557	-
CTN	WR	NSWC DD : Dahlgren, VA	1.262	-		0.220	Jan 2015	0.150	Jan 2016	-		0.150	-	1.632	-
CTN	C/CPFF	NAVSEA PEO IWS : Washington DC	0.333	-		-		-	Nov 2015	-		-	-	0.333	-
CTN	WR	JITC : Fort Huachuca, AZ	0.058	0.060	Dec 2013	-		-		-		-	-	0.118	-
CTN	WR	MCOTEA : Quantico VA	1.344	0.200	Aug 2014	-		-		-		-	-	1.544	-
CTN	WR	MCSC : Quantico, VA	3.876	0.200	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
MACCS Sustainment	Reqn	NGES : Woodland Hills, CA	3.419	0.500	Sep 2014	0.100	Sep 2015	-		-		-	Continuing	Continuing	Continuing
MACCS Sustainment	MIPR	DISA : Washington, DC	0.737	0.021	Jan 2014	0.020	Jan 2015	0.023	Jan 2016	-		0.023	-	0.801	-
RVVT	WR	SPAWAR : Charleston, SC	1.952	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	36.173	10.165		2.764		1.457		-		1.457	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	5.556	-		-		-		-		-	-	5.556	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CAC2S	C/FFP	QNA: Stafford, VA : Quantico, VA	15.150	5.085	Nov 2013	-		-		-		-	-	20.235	-
TBMCS	C/FFP	QNA: Stafford, VA : Quantico, VA	2.309	0.164	Apr 2014	-		-		-		-	-	2.473	-
RVVT	WR	NSWC Dahlgren : Dahlgren, VA	0.200	0.207	Nov 2013	-		-		-		-	-	0.407	-
COC Engineering Support	FFRDC	U.S. Army, MITRE : Stafford, VA	1.554	1.678	Jan 2014	-		-		-		-	-	3.232	-
		Subtotal	24.769	7.134		-		-		-		-	-	31.903	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	339.085	66.090		8.767		7.772		-		7.772	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

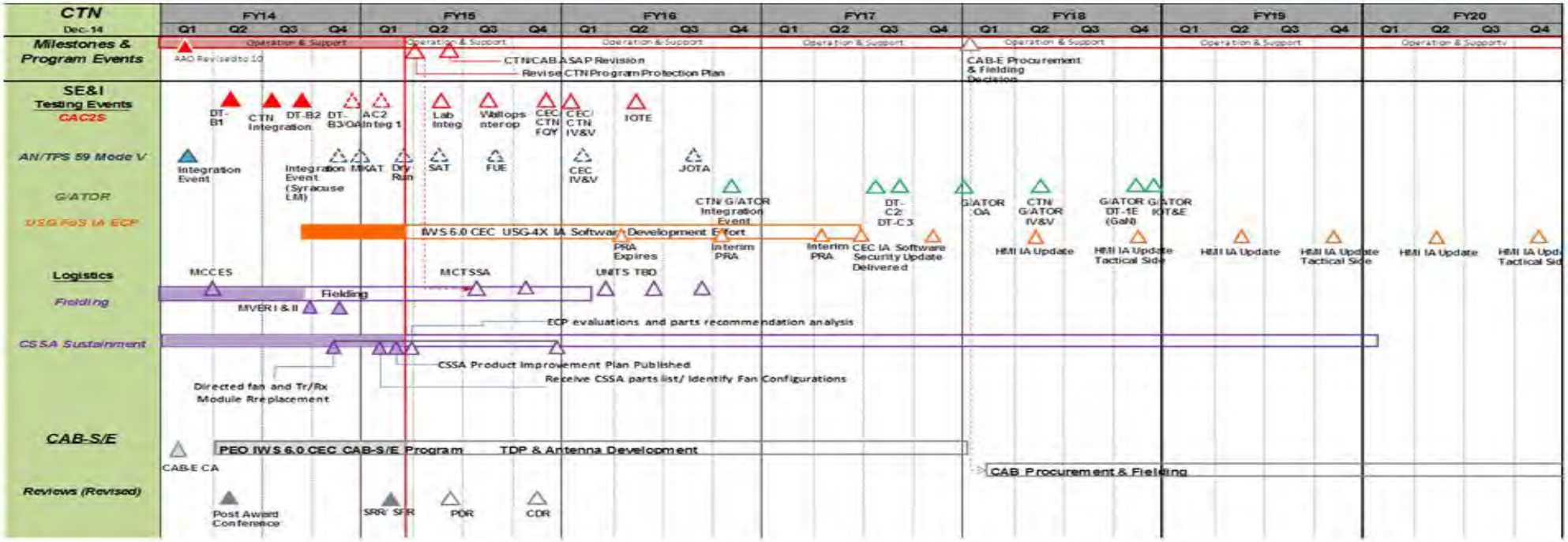

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

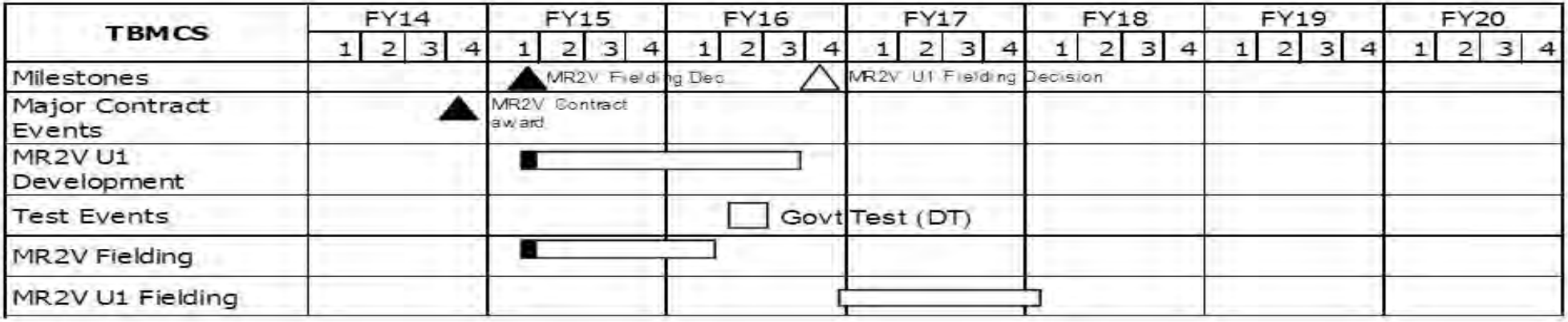

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

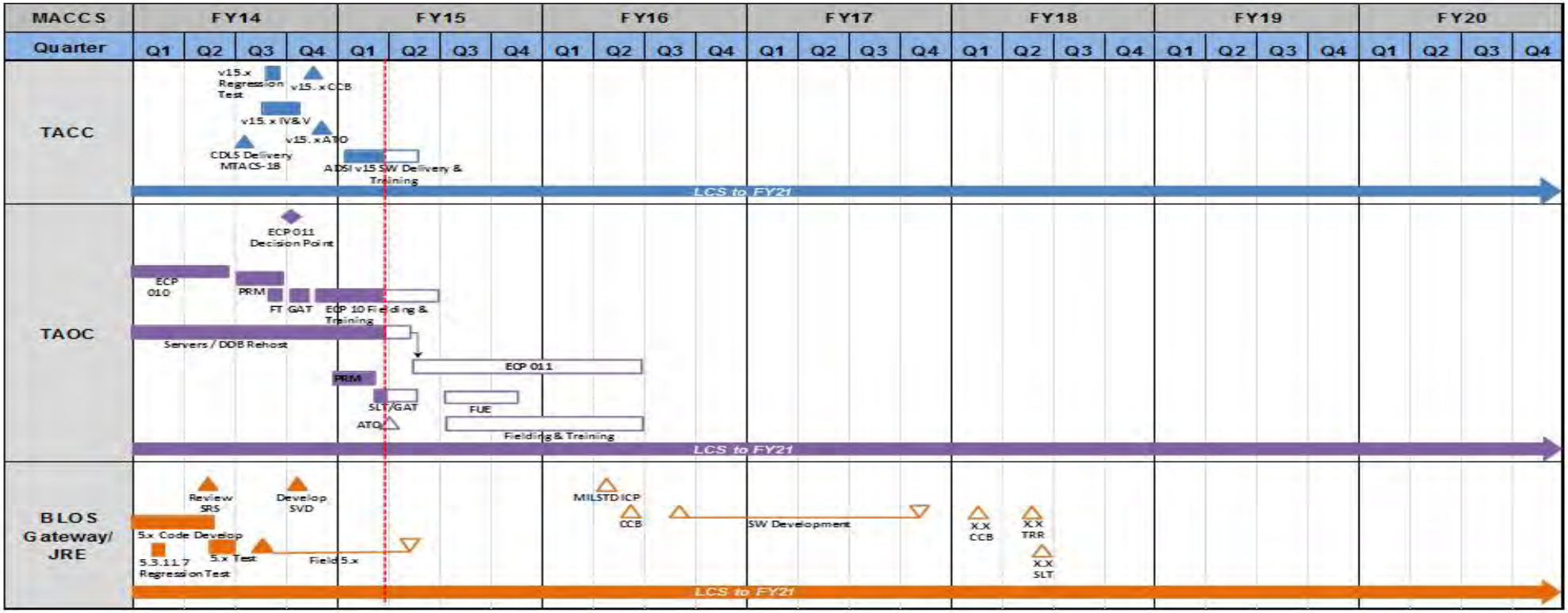

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

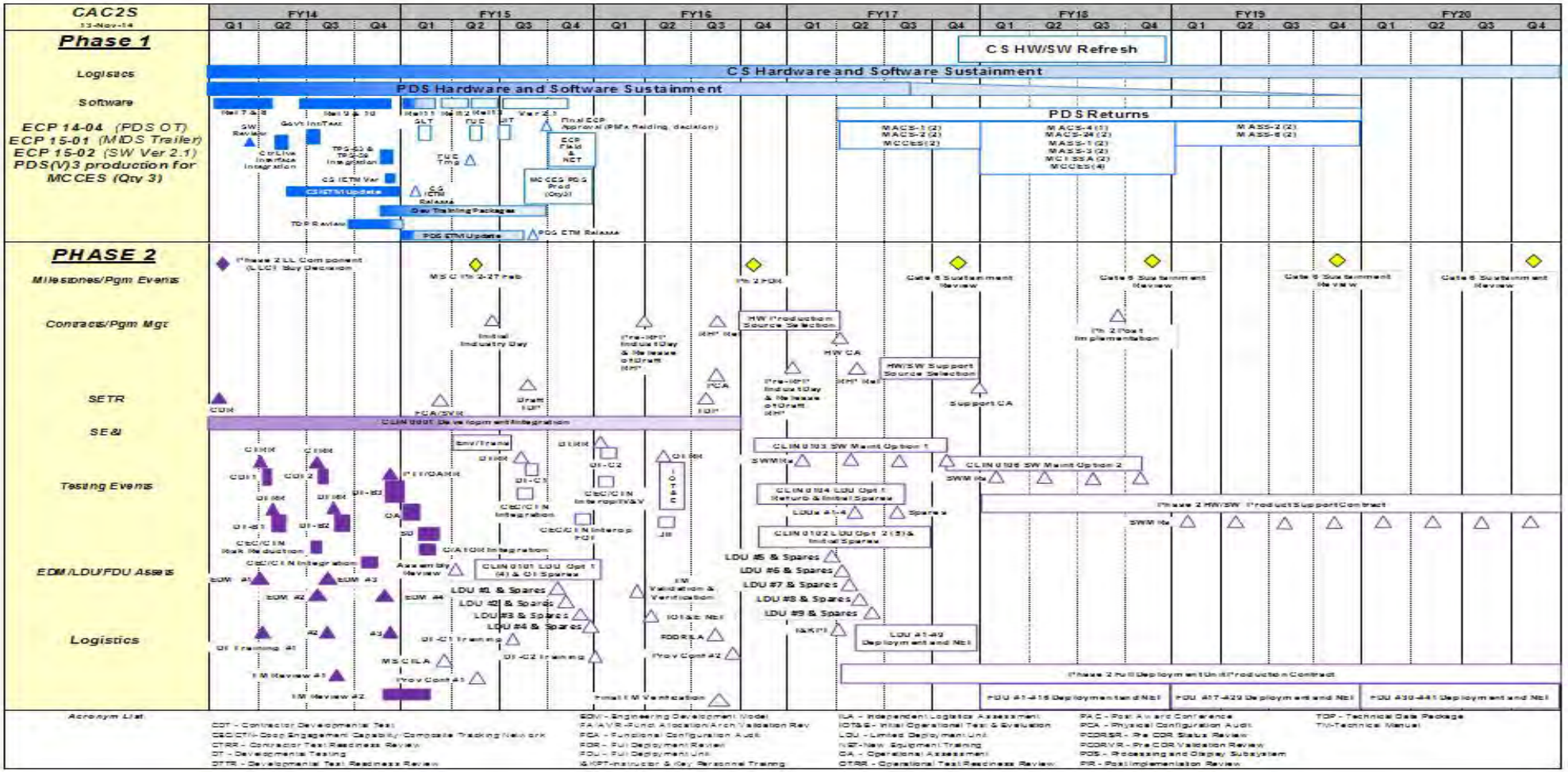

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

COC Program Schedule

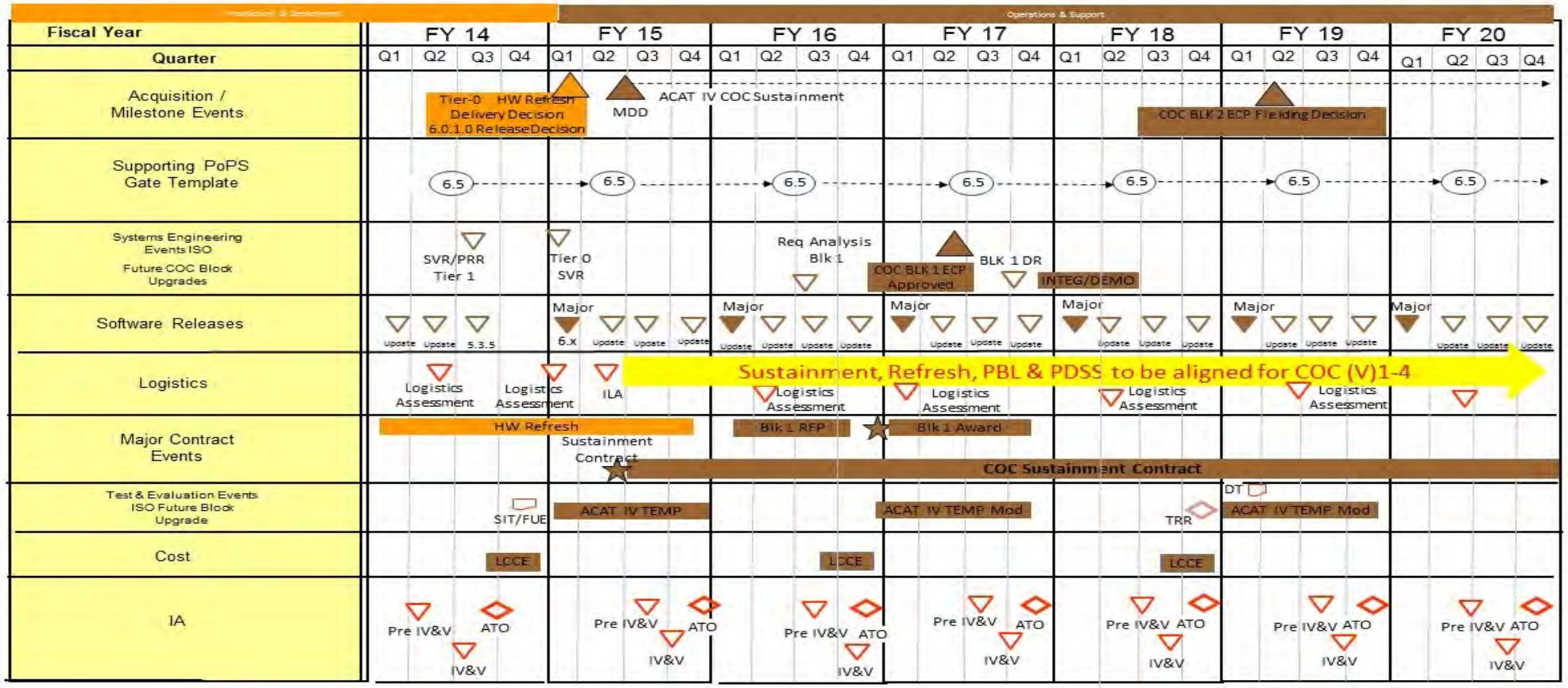

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

Remote Video Viewing Terminal Program Schedule

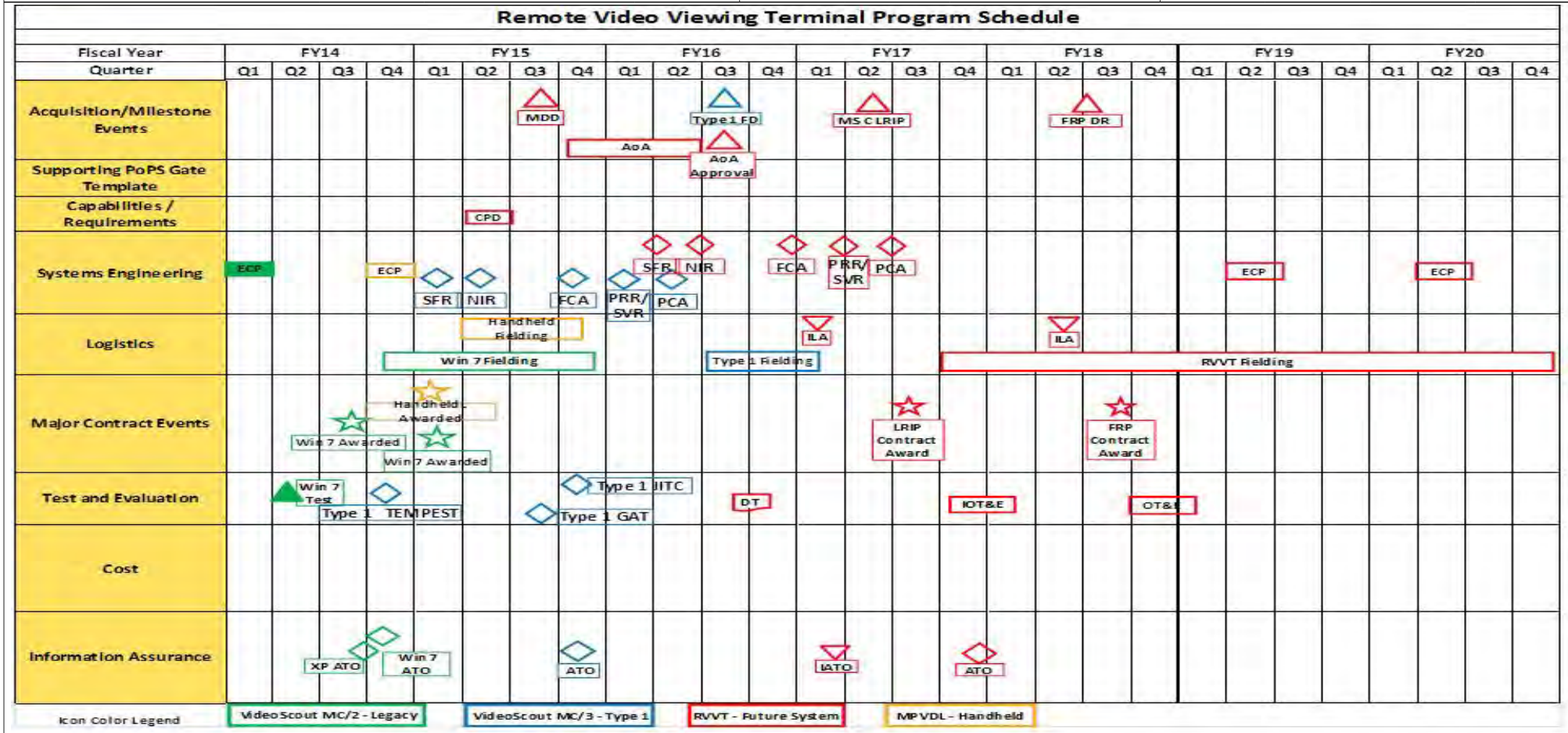

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2273 / *Air Ops Cmd & Control (C2) Sys*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2273				
COC Block 1 Engineering Change Proposal (ECP) Approved	2	2017	2	2017
RVVT MC/3 Government Acceptance Test (GAT)	3	2015	3	2015
RVVT Analysis of Alternatives Approved	3	2016	3	2016
RVVT MC/3 Fielding Decision (FD)	3	2016	3	2016
RVVT Future System Developmental Test (DT)	3	2016	4	2016
RVVT Future System Milestone C	2	2017	2	2017
CAC2S: CLIN 0001 Development/Integration	1	2014	3	2016
CAC2S: Critical Design Review	1	2014	1	2014
CAC2S: Developmental Test - B1	2	2014	2	2014
CAC2S: Developmental Test - B2	3	2014	3	2014
CAC2S: Developmental Test - B3	4	2014	4	2014
CAC2S: Operational Assessment	1	2015	1	2015
CAC2S: Milestone C	2	2015	2	2015
CAC2S: Coop Engagement Capability/Composite Tracking Network Certification	2	2015	2	2015
CAC2S: Limited Deployment Units (LDU) Build (PMC BL 464400)	2	2015	1	2016
CAC2S: Developmental Test Readiness Review	3	2015	3	2015
CAC2S: Developmental Test - C1	3	2015	3	2015
CAC2S: Developmental Test - C2	1	2016	1	2016
CAC2S: Operational Test Readiness Review	2	2016	2	2016
CAC2S: Initial Operational Test and Evaluation	2	2016	2	2016
CAC2S: Full Deployment Review	4	2016	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2274 / *Command & Control Warfare Sys*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2274: *Command & Control Warfare Sys*	17.198	7.919	7.053	8.951	-	8.951	6.769	8.233	8.347	7.156	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

COUNTER RADIO-CONTROLLED IMPROVISED EXPLOSIVE DEVICE (RCIED) ELECTRONIC WARFARE (USMC CREW) SYSTEMS are vehicle mounted and dismounted modular programmable multi-band radio frequency jammers designed to deny enemy use of selected portions of the radio frequency spectrum in the vicinity of the jammer to counter the RCIED threat. The mounted and dismounted systems provide Marines in vehicle convoys and on foot with the necessary protection from the continued and evolving threat of deadly RCIEDs. Legacy CREW systems are currently deployed to meet threats in the multiple theaters of operation and fielded to selected MEUs in support of worldwide deployment. To continue to support the various worldwide missions, each CREW unit receives customized programming (load-sets) to counter the area's RCIED threats. The testing, programming development, and product improvement research are funded with the CREW's RDTE,N funding and prioritized to meet the demand of all deployed CREW assets. The increase of $1.877M from FY15 to FY16 will fund development and testing of additional software waveform load sets.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: *USMC CREW - Product Development	1.937	2.706	3.360	-	3.360
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued development of waveform load sets for the Modi system while continuing the development of waveform/load sets for all other existing CREW systems. Increased the Universal Test Set (UTS) waveform development to include the Modi system and updated its current programming for all improvement to legacy CREW systems. -Continued support efforts to provide custom load sets for each type of CREW systems for MEU/Marine Expeditionary Force (MEF) to counter RCIED technology around the globe. -Continued to develop custom vehicle installation kits for the CVRJ(V)2 upgrade in order to support the integration and installation of the upgrade kits onto Marine Corps vehicle platform. -Completed the design changes to improve the Modi transportability issues that minimizes the Marine's fatigue during deployment.					
FY 2015 Plans: -Continue the development of waveform load sets will include the development of the CREW MEU mounted and dismounted system's waveform load sets into the group of required CREW systems to support. The increase in					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
system variants will also result in the need to continue the development of waveform/load sets for UTS across multiple deployment theaters. -Continue to develop vehicle installation kits for the MEU(SOC) Phase II and MARCENT mounted systems in order to support the integration and installation of the upgrade kits into Marine Corps vehicle platform while completing the development of the CVRJ(V)2 integration kits. ***FY 2016 Base Plans:*** -Continue development of software waveform load sets including CREW MEU mounted and dismounted system's waveform load sets. -Continue software waveform load sets for Universal Test Sets (UTS) across multiple deployment theaters. -Continue the development of the CVRJ(V)2 mounted and Thor III dismounted system's waveform threat load sets in support of CREW MEU systems to support. -Continue development of additional software threat loads to defeat evolving RCIED threats world wide. -Continue to develop vehicle installation kits for the CREW MEU mounted systems in order to support the integration and installation of the upgrade kits into Marine Corps vehicle platform while completing the development of additional CVRJ(V)2 integration kits for new vehicle platforms. ***FY 2016 OCO Plans:*** N/A					
Title: *USMC CREW - Support	0.500	0.595	0.622	-	0.622
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued to conduct necessary systems engineering and integration support required for the mounted CREW, CVRJ (V)1 and (V)2 integrations into Marine Expeditionary Units (MEU)/Marine Expeditionary Force (MEF) mission profiles by developing vehicle installation kits for the CVRJ units. -Continued system support for CVRJ (V)1 and (V)2, Thor III, Modi systems and the Universal Test Sets by analyzing CREW performance impacts resulting from compatibility and environmental risk impacts. ***FY 2015 Plans:*** -Continue to conduct systems engineering and integration support required for the mounted CREW integrations into Marine Expeditionary Units (MEU)/Marine Expeditionary Force (MEF) mission profiles by developing vehicle installation kits for these mounted units.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue system support for CVRJ (V)1 and (V)2, Thor III, CREW MEU, Modi systems, and the Universal Test Sets by analyzing CREW performance impacts resulting from compatibility and environmental risk impacts. ***FY 2016 Base Plans:*** -Continue to conduct systems engineering and integration support required for the mounted CREW, CVRJ (V)2, and MEU(SOC) integrations into Marine Expeditionary Units (MEU)/Marine Expeditionary Force (MEF) mission profiles by developing vehicle installation kits for these mounted units. -Continue system support for CVRJ (V)2, Thor III, MEU(SOC) Modi systems, MARCENT systems and the Universal Test Sets by analyzing CREW performance impacts resulting from compatibility and environmental risk impacts. ***FY 2016 OCO Plans:*** N/A					
Title: *USMC CREW - Test and Evaluation	3.479	0.420	1.472	-	1.472
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued to conduct test events in support of the CVRJ (V)1 and (V)2, Thor III, CREW MEU, Modi and Universal Test Set (UTS) systems regarding its ability to defeat the RCIED threat in multiple worldwide locations. Tested the Modi dismounted and MEU production units that will be fielded for MEU use. -Completed compatibility testing against USMC devices to ensure Marine Corps CREW systems maintained required performance capabilities. -Completed Characterized operational limitations regarding the CREW systems and standoff restrictions for its operation. -Completed Modi carriage improvements testing to distinguish possible design limitations that can be improved to optimize the Marine use of the system. -Completed validating alternate testing methods to reduce test cost of multiple waveform across all CREW systems. ***FY 2015 Plans:*** -Continue to conduct test events in support of the CVRJ (V)1 and (V)2, Thor III, CREW MEU, Modi and Universal Test Set (UTS) systems regarding its ability to defeat the RCIED threat in multiple worldwide locations. -Complete the testing of the CREW MEU production units that will be fielded for MEU use. -Continue to conduct compatibility testing against USMC and other services devices to ensure Marine Corps CREW systems maintained required performance capabilities.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue to characterize operational limitations regarding the CREW systems and standoff restrictions for its operation. -Complete mounted and dismounted CREW improvements testing to distinguish possible design limitations that can be improved to optimize the Marine use of the system. ***FY 2016 Base Plans:*** -Continue test events in support of the CVRJ (V)2, Thor III, CREW MEU, Modi and Universal Test Set (UTS) systems regarding its ability to defeat the RCIED threat in multiple worldwide locations. -Continue testing of the mounted and dismounted CREW production units that will be fielded for MEU use. -Continue compatibility testing against USMC and other services devices to ensure Marine Corps CREW systems maintained required performance capabilities. -Complete characterizing operational limitations regarding the CREW systems and standoff restrictions for its operation. -Complete mounted and dismounted CREW improvements testing to distinguish possible design limitations that can be improved to optimize the Marine use of the system. ***FY 2016 OCO Plans:*** N/A					
Title: *USMC CREW - Management	2.003	3.332	3.497	-	3.497
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued to manage the new techniques, improve capabilities, enhance software and upgrades to counter the evolving threat and prevent technology obsolescence for CVRJ (V)1 and (V)2, Thor III, CREW MEU, Modi, and Universal Test Set systems. ***FY 2015 Plans:*** -Continue to manage the new techniques, improve capabilities, enhance software and upgrades to counter the evolving threat and prevent technology obsolescence for CVRJ (V)1 and (V)2, Thor III, Modi, CREW MEU mounted/dismounted systems, and the Universal Test Set systems. ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue to manage the new techniques, improve capabilities, enhance software and upgrades to counter the evolving threat and prevent technology obsolescence for CVRJ (V)2, Thor III, Modi, CREW MEU mounted/ dismounted systems, and the Universal Test Set systems. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	7.919	7.053	8.951	-	8.951

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

COUNTER RADIO-CONTROLLED IMPROVISED EXPLOSIVE DEVICE (RCIED) ELECTRONIC WARFARE (USMC CREW): CREW mounted and dismounted systems provide Marines in vehicle convoys and on foot with the necessary protection from the continued and evolving threat of deadly RCIEDs in all current and future operations. The program will continue to develop new techniques, improve capabilities, enhance software and develop upgrades to counter evolving threats and prevent technology obsolescence. Activities include waveform development, non-recurring engineering for system enhancements, capability upgrades, and installation kits, integration of the enhancements/Vehicle Installation Kits (VIKs) and the tests/government studies required to support these changes. 3100 CVRJ(V1) mounted systems were upgraded to a Band C (V2) capability beginning in FY12 and are being fielded to selected MEU units starting in FY13. The Thor III are dismounted systems fielded to OEF in FY12 and are also being fielded to selected MEU units starting in FY13. The Modi is a dismounted system which commences initial replacement of the Thor III. 40 Modi were procured in FY13 with partial delivery in FY14 and the remaining expected in early FY15. The CREW MEU program consists of 150 mounted and 360 dismounted systems and was initiated as an ongoing effort to develop new techniques, improve capabilities, enhance software and develop waveform load sets to counter evolving threats and prevent technology obsolescence for both mounted and dismounted systems. The 150 mounted and 360 dismounted systems are planned to be procured in FY15 with expected delivery in FY16.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	MIPR	ARL/MILTECH : WRIGHT-PATTERSON, OH	0.571	0.300	Jan 2014	-		-		-		-	-	0.871	-
USMC CREW	WR	NSWC CD : CRANE IN	1.058	1.322	Nov 2013	1.656	Jun 2015	2.487	Feb 2016	-		2.487	Continuing	Continuing	Continuing
USMC CREW	SS/FFP	NAVSEA : BALTIMORE, MD	5.089	0.100	Jul 2014	0.600	Jan 2015	0.423	Jan 2016	-		0.423	Continuing	Continuing	Continuing
USMC CREW	WR	SSC-A : CHARLESTON, SC	0.763	0.215	Jul 2014	0.450	Jun 2015	0.450	Feb 2016	-		0.450	Continuing	Continuing	Continuing
		Subtotal	7.481	1.937		2.706		3.360		-		3.360	-	-	-

Remarks

USMC CREW FY14 - FY16: USMC CREW utilized NSWC CRANE (CRANE, IN) and NAVSEA (Johns Hopkins University Applied Physics Laboratories) to develop waveform load sets for all CREW systems to continue to counter the evolving RCIED Threats.
USMC CREW FY14 - FY16: USMC CREW Will utilize SSC-A (SPAWAR, Charleston) to develop mounting solutions in order to integrate mounted systems into Marine Corps Vehicle platforms.
USMC CREW FY14 - FY16: USMC CREW will utilize NSWC CRANE (Crane, IN) to design, develop and contract engineering changes to the CREW systems via the Original Equipment Manufacturer (OEM)

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	WR	SSC-A : CHARLESTON, SC	0.258	0.295	Nov 2013	0.295	Jan 2015	0.308	Jan 2016	-		0.308	Continuing	Continuing	Continuing
USMC CREW	WR	NSWC DD : DAHLGREN, VA	0.803	0.205	Nov 2013	0.300	Jan 2015	0.314	Jan 2016	-		0.314	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	MIPR	VARIOUS : VARIOUS	3.800	-		-		-		-		-	-	3.800	-
		Subtotal	4.861	0.500		0.595		0.622		-		0.622	-	-	-

Remarks

USMC CREW NSWC Dahlgren: RADHAZ (Radio Hazard) Studies and Configuration Management Support

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW SSC-Atlantic: System Engineering and validation and verification															

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	WR	SSC-A : CHARLESTON, SC	1.115	0.030	Nov 2013	0.020	Nov 2014	0.013	Apr 2016	-		0.013	-	1.178	-
USMC CREW	MIPR	YPG : YUMA, AZ	1.754	2.067	Jan 2014	0.400	Dec 2014	1.100	Apr 2016	-		1.100	-	5.321	-
USMC CREW	WR	NSWC CD : CRANE, IN	0.000	0.162	Aug 2014	-		-		-		-	-	0.162	-
USMC CREW	MIPR	APG : ABERDEEN PROVING GROUND, MD	0.000	0.007	Apr 2014	-		-		-		-	-	0.007	-
USMC CREW	TBD	VARIOUS : TBD	0.000	1.090	Aug 2014	-		0.359	Apr 2016	-		0.359	-	1.449	-
USMC CREW	WR	PMS 408 : INDIAN HEAD, MD	0.000	0.055	May 2014	-		-		-		-	-	0.055	-
USMC CREW	WR	NSWC DD : DAHLGREN, VA	0.000	0.068	May 2014	-		-		-		-	-	0.068	-
Prior Years Cumulative Funding	Various	VARIOUS : VARIOUS	0.819	-		-		-		-		-	-	0.819	-
		Subtotal	3.688	3.479		0.420		1.472		-		1.472	-	9.059	-

Remarks

USMC CREW FY14 - FY16: USMC CREW utilized YPG (Yuma Proving Grounds, AZ) to provide test ranges and results analysis for all CREW systems.
USMC CREW FY14 - FY16: USMC CREW will utilize SSC-A (SPAWAR, Charleston) to provide test ranges and results analysis for all CREW systems.
USMC CREW FY14 - FY16: USMC CREW will utilize NSWC CD to provide results analysis and validation and verification tasks for all CREW Systems.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2274 / *Command & Control Warfare Sys*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
USMC CREW	WR	NSWC CD : CRANE, IN	1.168	1.168	Jan 2014	2.635	Jan 2015	2.769	Jan 2016	-		2.769	Continuing	Continuing	Continuing
USMC CREW	WR	NSWC DD : DAHLGREN, VA	0.000	0.480	Feb 2014	0.697	Dec 2014	0.728	Jan 2016	-		0.728	Continuing	Continuing	Continuing
USMC CREW	WR	SSC-A : CHARLESTON, SC	0.000	0.355	Dec 2013	-		-		-		-	-	0.355	-
		Subtotal	1.168	2.003		3.332		3.497		-		3.497	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	17.198	7.919		7.053		8.951		-		8.951	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

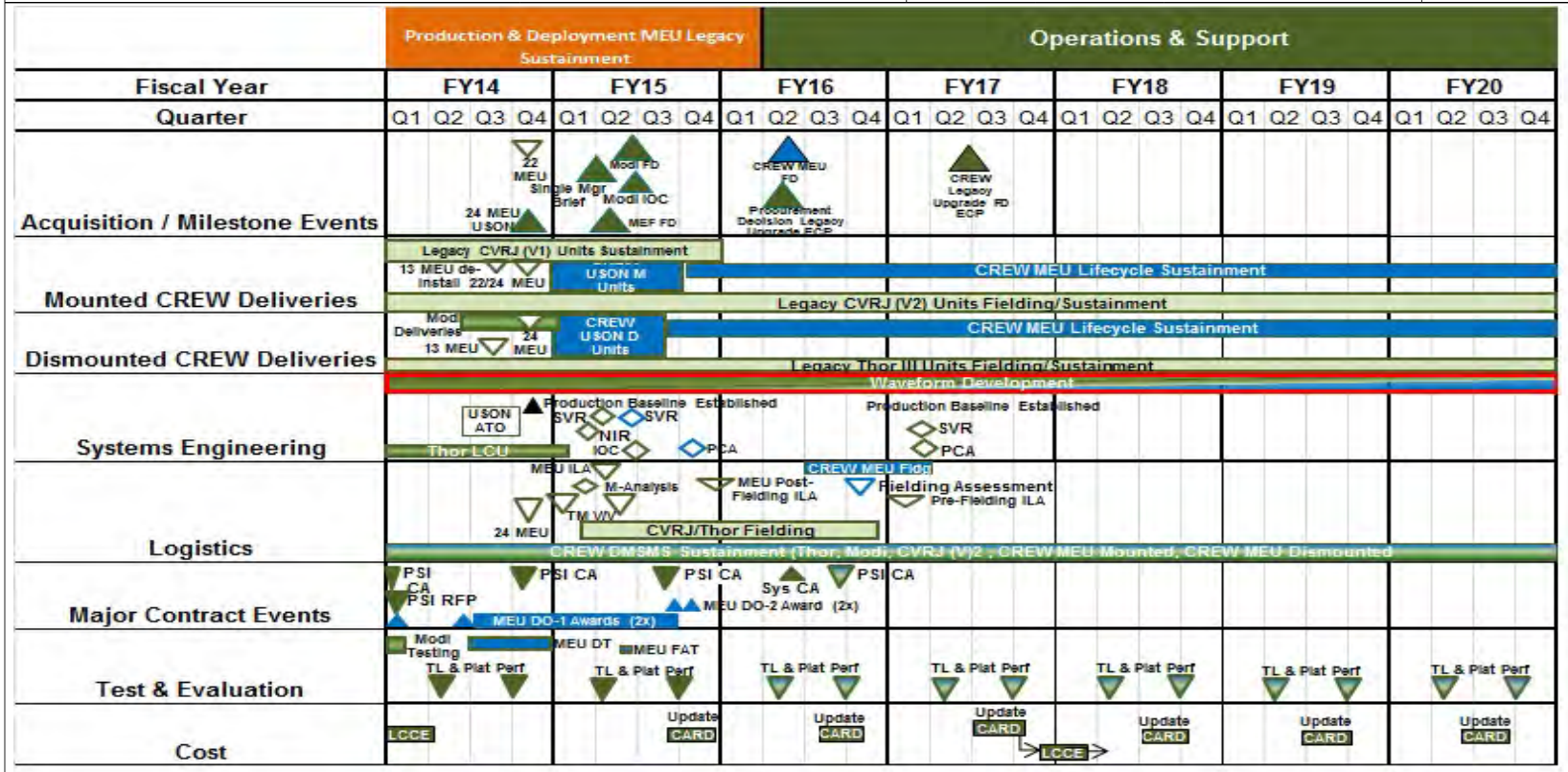

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2274 / *Command & Control Warfare Sys*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2274				
USMC CREW Waveform Development	1	2014	4	2020
USMC CREW MODI IOC	2	2015	2	2015
USMC CREW MEU(SOC) FIELDING DECISION	2	2016	2	2016
CREW MEF Fielding Decision	2	2015	2	2015

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*				Project (Number/Name) 2275 / *Marine Corps Tactical Radio Systems*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
2275: *Marine Corps Tactical Radio Systems*	21.120	15.188	4.007	3.384	-	3.384	5.012	2.765	2.747	2.810	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

(U) Tactical Communications Modernization (TCM): TCM was established to procure interim radio systems to bridge the gap between legacy systems and forecasted deliveries from the Joint Tactical Radio System (JTRS) program. The program schedule and budget profile for TCM procures leading edge radio systems to support the primary operational voice and data communications requirements for mounted and dismounted forces. TCM procurements enable an initial joint networking capability and support National Security Agency (NSA) Communications Security (COMSEC) Modernization requirements. Funding provides engineering and test support for both the Mobile User Objective System (MUOS) requirement, and AN/MRC-145B service life extension program. The decrease in RDT&E funds by $1.1M from FY14 to FY15 is due to finalizing the development, testing and evaluation of the Tactical Radio Manager for the MUOS capability in FY14. Additional testing and evaluation of the MUOS capability is planned 4QFY15 - 1QFY16.

(U) Networking on the Move (NOTM): NOTM provides a robust command and control (C2) capability by integrating tactical data systems with on the move satellite communications (SATCOM) for beyond line-of-sight ability that allows battlefield commanders to have uninterrupted two-way access to digital data, anywhere on the battlefield. NOTM provides MAGTF commanders and staffs with full Common Operational Picture (COP) access, virtually unlimited situational awareness and a powerful ability to issue digital orders (fires, maneuver, planning) to GCE, ACE and LCE units at all echelons while on-the-move or at-the-halt. NOTM also provides Marine units the capability to link with and extend Defense Information System Network (DISN) services; SIPRNet, NIPRNet, and Defense Switched Networks (DSN). Integrated full motion video (receipt and retransmission), tactical voice communications plus three options for secure wireless local area network (LAN) connectivity between staff members makes this amphibious capability a crucial asset to all elements of the MAGTF. NOTM achieved initial operational capability at I MEF in March 2013 and continued fielding a total of 56 systems at I MEF, II MEF, III MEF and the support establishment through August 2014. The decrease in funding of $0.141M from FY15 to FY16 due to reduction of SWaP development efforts.

(U) Very Small Aperture Terminal (VSAT): VSAT is an integrated Commercial Off-the-Shelf (COTS) satellite communications terminal with a modular architecture that supports drop and insert architecture through scalable and flexible applications. VSAT uses commercial Ku and military Ka frequency bands to provide beyond line-of-sight (BLOS) connectivity to support intra-Marine Air-Ground Task Force (MAGTF) communications (NIPRNET, SIPRNET, and telephony) down to the battalion/ squadron level. The VSAT Family of Systems (FoS) comes in three modular variants, dependent on MAGTF-size and mission. The increase of $0.035M from FY15 to FY16 aligns funds with efforts to complete the SATCOM transition.

(U) Lightweight Multiband Satellite Terminal (LMST)/PHOENIX are quad-band Super High Frequency (SHF) satellite terminals mounted in transit cases and High Mobility Multipurpose Wheeled Vehicles (HMMWVs) and can be used as either the hub or spoke terminal in a SATCOM network. LMST/PHOENIX provide SHF SATCOM transmissions to any size MAGTF and can be deployed as a "first in" communications source across the entire spectrum of conflict via various deployment configurations. With the signing of the SATCOM Collapse (20 May 2011), the Marine Corps will consolidate three programs: Lightweight Multiband Satellite Terminal

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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(LMST), Phoenix Tactical SHF Satellite Terminal (TSST), and the Very Small Aperture Terminal Large (VSAT-L) into one requirement defined as the Universal Satellite Access Tactical Terminal (USATT). RDT&E funding will be utilized to research/integrate VSAT X-Band development during the SATCOM Collapse transition process.

(U) Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T): SMART-T provides tactical users with protected data and voice via Advanced Extremely High Frequency (AEHF) satellite communications. The SMART-T system is transported on High Mobility Multipurpose Wheeled Vehicles (HMMWVs), providing MAGTF Commanders a secure, survivable, long-haul, low/medium data rate communications link not subject to terrain masking and horizon limitations. The SMART-T is also capable of operation when removed from the HMMWV. SMART-T is currently undergoing an upgrade to be interoperable with the new Advanced Extremely High Frequency (AEHF) constellation and will require certification testing and a Multi-service Operational Test and Evaluation (MOT&E). FY16 funding supports development and testing of a tech refresh.

(U) Terrestrial Wideband Transmission Systems (TWTS) is a capabilities portfolio of terrestrial based wideband transmission systems (formerly known as an TRC-170). Portfolio includes Beyond Line Of Sight (BLOS) system (AN/TRC-170) and Line Of Sight (LOS) systems (AN/MRC-142 Family of Systems (FOS), and Wireless Point-to-Point-Link version D (WPPL-D)). The AN/TRC-170 is a transportable BLOS, terrestrial, self-enclosed troposcatter terminal (multichannel) capable of transmitting and receiving digital data over varying distances up to 100 miles. AN/MRC-142 FoS consists of the AN/MRC-142B (ship to shore) and C variants to provide LOS, two-way, secure voice and data communications up to 35 miles. WPPL-D is an integrated communications system consisting of Commercial Off-the-Shelf (COTS) radios, antennas, and IP networking equipment that provides NIPR/SIPRNet data connectivity, voice and video services. TEAMS is a 34-meter telescopic mast system, extending support to various organic LOS systems (AN/MRC-142 and TSSR) by increasing operational reach by overcoming obstacles to communications. The decrease of $.242M from FY14 to FY15 reflects completion of research and development of the MRC-142 Engineering Change Proposal (ECP). The decrease of $0.515M from FY15 to FY16 reflects a reduction in obsolescence and research studies for the TRC-170 system.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: TCM:Product Development	0.741	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed. Funding supported development of the Tactical Radio Manager (TRM) and MRC-145B A kit. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: TCM Engineering Program Support	0.412	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed. Funding provided for Engineering and Program Support. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: TCM: Test and Evaluation Support	0.451	0.500	0.500	-	0.500
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed test and evaluation support for the MRC-145B. ***FY 2015 Plans:*** Initiate test and evaluation support for the Mobile User Objective System (MUOS). ***FY 2016 Base Plans:*** Complete test and evaluation support for the Mobile User Objective System (MUOS) and initiate engineering and test and evaluation support for the High Frequency Modernization. ***FY 2016 OCO Plans:*** N/A					
Title: NOTM: Product Development	6.858	0.397	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued product development to reduce Size, Weight, and Power (SWaP) and incorporated Engineering Change Proposals (ECPs) that will provide system efficiencies. ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue product development to reduce Size, Weight, and Power (SWaP) and incorporated Engineering Change Proposals (ECPs) that will provide system efficiencies for shipboard integration. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: NOTM: Engineering and Program Support	1.549	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated product improvements/Engineering Change Proposals (ECPs) and engineering support. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: NOTM: Test and Evaluation Support	2.264	0.370	0.626	-	0.626
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated test and evaluation support and testing. ***FY 2015 Plans:*** Continue test and evaluation support and testing. ***FY 2016 Base Plans:*** Continue test and evaluation support and testing. ***FY 2016 OCO Plans:*** N/A					
Title: VSAT: Engineering and Program Support	-	0.681	0.716	-	0.716
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** Initiate support for Engineering Change Proposals (ECP) to include X-band capability in addition to upgrading ancillary subsystems and ensuring interoperable with US Army, and continues Information Assurance support. ***FY 2016 Base Plans:*** Initiate support for ECPs that include interoperable with US Army, modem modernization and continued Information Assurance support. ***FY 2016 OCO Plans:*** N/A					
Title: VSAT: Test and Evaluation	0.337	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed the development of Window 7 Graphic User Interface and MRT and Shock/drop testing in support of the SATCOM Consolidation. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: LMST: Engineering Program Support	0.289	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed engineering analysis during the SATCOM Collapse (20 May 2011), the Marine Corps will consolidate three programs: Lightweight Multiband Satellite Terminal (LMST), Phoenix Tactical SHF Satellite Terminal					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
(TSST), and the Very Small Aperture Terminal Large (VSAT-L) into one requirement defined as the Universal Satellite Access Tactical Terminal (USATT). ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: SMART-T: Engineering and Program Support	0.100	0.193	0.191	-	0.191
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated support of engineering and technical analysis for SMART-T system upgrades that included upgrades of the new Advanced Extremely High Frequency (AEHF) constellation and required certification testing and a Multi-service Operational Test and Evaluation (MOT&E). ***FY 2015 Plans:*** -Continue technical support for SMART-T system upgrades that include the Handheld Terminal Unit (HTU) and the Remote Operator Unit (ROU). -Continue Information Assurance support through Army CECOM. ***FY 2016 Base Plans:*** Initiate support of the SMART-T Engineering Change Proposals (ECP) that include Fiber Optic interface modification to ensure interoperability with other Agencies equipment and USMC equipment, and continued Information Assurance. ***FY 2016 OCO Plans:*** N/A					
Title: SMART-T: Test and Evaluation Support	0.079	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed the Multi-service Operational Test and Evaluation (MOT&E) for the Advanced Extremely High Frequency					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
(AEHF) upgrade at PM WIN-T in Abeerden, MD. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: TWTS: Product Development	-	-	0.950	-	0.950
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Initiate development of a Next Generation Tropo (NGT) prototype. ***FY 2016 OCO Plans:*** N/A					
Title: TWTS: Engineering and Program Support	2.108	0.978	0.200	-	0.200
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated engineering support for the AN/MRC-142 to develop a multiplexer bypass cable and reconfiguring transit cases to reduce size and weight. ***FY 2015 Plans:*** Continue to provide engineering support to finalize and approve engineering change proposals (ECPs) for AN/MRC-142. ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Initiate engineering support for the Next Generation Tropo (NGT). ***FY 2016 OCO Plans:*** N/A					
Title: TWTS: Test and Evalution Support	-	0.888	0.201	-	0.201
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** Complete test and evaluation for the AN/MRC-142 ECP to verify operational capability of the multiplexer bypass cable. ***FY 2016 Base Plans:*** Initiate Next Generation Tropo (NGT) prototype testing. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	15.188	4.007	3.384	-	3.384

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/4633-1: *LMST*	1.430	-	-	-	-	-	-	0.001	-	-	15.601
• PMC/4633-2: *VSAT*	2.915	7.271	2.004	-	2.004	2.010	1.069	3.080	3.155	Continuing	Continuing
• PMC/4633-3: *TCM*	59.052	49.215	69.593	-	69.593	31.725	23.053	40.259	55.315	Continuing	Continuing
• PMC/4633-4: *SMART-T*	1.621	0.417	0.491	-	0.491	0.544	0.555	0.577	0.599	Continuing	Continuing
• PMC/4633-5: *TWTS*	2.181	6.046	7.400	-	7.400	9.017	9.901	3.011	3.089	Continuing	Continuing
• PMC/4631: *NOTM*	18.547	3.229	1.418	-	1.418	1.418	1.488	1.644	1.677	Continuing	Continuing
• PMC/7000: *SMART-T Spares*	0.174	0.197	0.198	-	0.198	0.201	0.205	0.209	0.213	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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D. Acquisition Strategy

(U) Tactical Communications Modernization (TCM): Will be testing and evaluating the next generation tactical radio systems supporting: MUOS terminals and the High Frequency Radios. TCM will continue to procure and field MRC-145B's. Additionally, TCM will be procuring AN/PRC-148A(V)3 to replace the existing and obsolete AN/PRC-148A(V)1. Finally, TCM will be replacing the existing ENM laptop to be Windows 7 compliant. All other systems are currently in sustainment.

(U) Networking on the Move (NOTM): NOTM will use an evolutionary acquisition strategy and pursue a competitive contract that leverages Commercial-Off-The-Shelf (COTS) and Government-Off-The-Shelf (GOTS) technology to procure, sustain and meet emerging requirements. The design of the system provides for internal growth capability through an open system architecture enabling technology refresh to extend the system's life, maintain interoperability, Information Assurance (IA) compliance, and reduce costs due to Diminishing Manufacturing Sources and Material Shortages (DMSMS). It is envisioned that technology refresh will occur on the NOTM hardware and software periodically due to component obsolescence, user-driven requests for improvements, IA compliance, and mission-related requirements. Refresh will include investments to incorporate evolving capability to ensure compatibility with other systems, create lighter more efficient equipment, and keep pace with evolving software requirements. End-of-life equipment refresh is expected throughout the program's life cycle and may be managed through kit purchases, replacement through Engineering Change Proposals (ECPs), or as replacement parts as equipment is repaired.

(U) Very Small Aperture Terminal (VSAT): VSAT systems are currently in fielding and sustainment phases. VSAT systems primarily support operations on costly commercial SATCOM bandwidth. Some additional military SATCOM frequencies (Ka-band) have already been incorporated into the large, trailer mounted VSAT systems to alleviate reliance on commercial SATCOM bandwidth procurements. Additional military Ka-band upgrades to smaller variants of VSAT systems are pending. Additionally, VSAT systems have been recently identified as the platform required to support operations on military X-band SATCOM frequencies as other X-band capable systems reach obsolescence. In order to subsume the capabilities lost in the phase out of the obsolete systems, VSAT systems require ECPs to incorporate X-band capability in addition to upgrading ancillary subsystems. ECPs will involve procurement of COTS upgrade kits that are designed and integrated in accordance with government owned drawings and specifications. Contract delivery orders will be awarded to competent bidders on US Army PM Warfighter Information Network-Tactical multi-award IDIQ contracts on a FFP basis. The majority of candidate upgrade kits and components exist as previously awarded CLINs on current contracts. Upon determination of final configuration of upgraded SATCOM terminal, program office will use the same U.S. Army contracting vehicles to procure the approved quantity of new terminals to replace the obsolete terminals being phased out.

(U) Lightweight Multiband Satellite Terminal (LMST)/PHOENIX: With the signing of the SATCOM Collapse (20 May 2011), the Marine Corps will consolidate three programs: Lightweight Multiband Satellite Terminal (LMST), Phoenix Tactical SHF Satellite Terminal (TSST), and the Very Small Aperture Terminal Large (VSAT-L) into one requirement defined as the Universal Satellite Access Tactical Terminal (USATT). The acquisition strategy for the Lightweight Multi-band Satellite Terminal (LMST) and Phoenix program is to sustain terminals to maintain joint interoperability through FY17.

(U) Secure Mobile Anti-Jam Reliable Tactical-Terminal (SMART-T): SMART-T is an Army led, ACAT II program. The Marine Corps SMART-T has fielded the full Authorized Acquisition Objective (AAO) of 42 terminals and 32 AN/PSQ-17 Network Planning tools. SMART-T will be upgraded for compatibility with Advanced Extremely High Frequency (AEHF) waveforms and data rates and will replace the legacy SMART-T terminals. Out of warranty repair for legacy components will be executed, when necessary, using the Army National Maintenance Contract.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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(U) Tactical Wideband Communication Systems (TWTS): Funding provides for obsolescence mitigation of the TRC-170 and the MRC-142 systems. Developmental activities include durability (life), interoperability, performance and operational testing for the TRC-170 and MRC-142.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : Various	1.243	-		-		-		-		-	-	1.243	-
NOTM Development	C/FFP	SSC-LANT : Charleston, SC	0.000	1.101	May 2014	-		-		-		-	-	1.101	-
NOTM Development CBT Modules	C/FFP	MCSC, Patricio : Stafford, VA	2.180	0.030	Jun 2014	-		-		-		-	-	2.210	-
NOTM-Product Improvements	C/FFP	SSC-Pacific : San Diego, CA	0.984	1.550	Mar 2014	0.090	Mar 2015	-		-		-	-	2.624	-
NOTM Development	WR	SSC-LANT : Charleston, SC	0.000	1.871	Nov 2013	-		-		-		-	-	1.871	-
NOTM	WR	NSWC : Dahlgren, VA	0.000	0.108	Nov 2013	-		-		-		-	-	0.108	-
NOTM	C/FFP	NSWC : Dahlgren, VA	0.000	0.726	Jan 2014	-		-		-		-	-	0.726	-
NOTM Research and Development	WR	NAWCAD : Patuxent River, MD	0.000	0.031	Dec 2013	-		-		-		-	-	0.031	-
NOTM Research and Development	C/FFP	NAWCAD : Patuxent River, MD	0.000	0.607	Jan 2014	-		-		-		-	-	0.607	-
NOTM	MIPR	DTIC : Fort Belvoir	0.000	0.178	Jul 2014	-		-		-		-	-	0.178	-
NOTM SWAP Reduction	WR	NSWC : Indian Head, MD	0.000	0.027	Apr 2014	-		-		-		-	-	0.027	-
NOTM SWAP Reduction Initiatives	C/FFP	NSWC : Indian Head, MD	0.000	0.629	Jun 2014	0.307	Mar 2015	-		-		-	-	0.936	-
TWTS (NGT)	TBD	TBD : TBD	0.000	-		-		0.950	Feb 2016	-		0.950	-	0.950	-
TCM Software Development	C/FFP	SSC-LANT : Charleston, SC	0.000	0.555	Nov 2014	-		-		-		-	-	0.555	-
TCM MRC 145B A Kit	C/FFP	SSC-LANT : Charleston, SC	0.000	0.186	Jan 2015	-		-		-		-	-	0.186	-
		Subtotal	4.407	7.599		0.397		0.950		-		0.950	-	13.353	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : Various	3.819	-		-		-		-		-	-	3.819	-
NOTM Program Management	WR	SSC-LANT : Charleston, SC	0.352	0.185	Mar 2014	-		-		-		-	-	0.537	-
NOTM Support	C/FFP	NSWC Dahlgren : Dahlgren, VA	0.023	0.020	Apr 2014	-		-		-		-	-	0.043	-
NOTM Support	WR	NSWC : Dahlgren, VA	0.000	0.213	Feb 2014	-		-		-		-	-	0.213	-
VSAT IA Support	MIPR	CECOM : Aberdeen, MD	0.000	-		0.400	Aug 2015	0.400	Aug 2016	-		0.400	-	0.800	-
SMART-T Support	WR	SSC-LANT : Charleston, SC	0.000	-		0.100	Feb 2015	0.100	Feb 2016	-		0.100	-	0.200	-
TCM Support	WR	SSC-LANT : Charleston, SC	0.000	0.412	Apr 2014	-		-		-		-	-	0.412	-
TWTS Support	WR	SSC-LANT : Charleston, SC	0.000	0.538	Feb 2014	0.978	Feb 2015	0.200	Feb 2016	-		0.200	-	1.716	-
TWTS Support	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.030	May 2014	-		-		-		-	-	0.030	-
TWTS AoA Support	C/FFP	SSC-LANT : Charleston, SC	0.000	1.144	May 2014	-		-		-		-	-	1.144	-
TWTS BLOS Support	C/FFP	NSWC Dahlgren : Dahlgren, VA	0.000	0.146	Jun 2014	-		-		-		-	-	0.146	-
TWTS Engineering Support	WR	SSC-LANT : Charleston, SC	0.000	0.250	Oct 2014	-		-		-		-	-	0.250	-
		Subtotal	4.194	2.938		1.478		0.700		-		0.700	-	9.310	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : Various	3.135	-		-		-		-		-	-	3.135	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2275 / *Marine Corps Tactical Radio Systems*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TCM MRC-145B Testing	MIPR	Aberdeen : Aberdeen, Md	0.000	0.238	Apr 2014	-		-		-		-	-	0.238	-
TCM MUOS Testing	WR	SSC-Lant : Charleston, SC	0.000	-		0.500	Jun 2015	0.250	Jun 2016	-		0.250	-	0.750	-
TCM Test Support	WR	MCTSSA : Camp Pendleton,California	0.000	0.139	Apr 2014	-		-		-		-	-	0.139	-
TCM EMI Testing	WR	NSWC Dahlgren : Dahlgren, VA	0.000	0.074	Aug 2014	-		-		-		-	-	0.074	-
TCM-HF Testing	Various	SSC-LANT : Charleston, SC	0.000	-		-		0.250	Jun 2016	-		0.250	-	0.250	-
NOTM Environmental Testing	C/CPFF	SSC-LANT : Charleston, SC	0.000	2.000	Sep 2014	-		-		-		-	-	2.000	-
NOTM Test Support	Allot	MCTSSA : Camp Pendleton, CA	0.514	0.264	Mar 2014	-		-		-		-	-	0.778	-
NOTM Vehicle Integration Testing	WR	SSC-LANT : Charleston, SC	0.000	-		0.291	Apr 2015	0.626	Jan 2016	-		0.626	-	0.917	-
NOTM Tech Insertion	WR	SSC-PAC : San Diego, CA	0.000	-		0.079	Oct 2014	-		-		-	-	0.079	-
SMART-T	MIPR	US Army, PM WIN-T : Aberdeen, MD	0.000	0.079	Mar 2014	-		-		-		-	-	0.079	-
TWTS (NGT)	TBD	TBD : TBD	0.000	-		-		0.201	May 2016	-		0.201	-	0.201	-
TWTS (MRC-142)	MIPR	SSC-LANT : Charleston, SC	0.000	-		0.888	May 2015	-		-		-	-	0.888	-
VSAT	WR	SSC-LANT : Charleston, SC	0.000	0.186	Aug 2014	-		-		-		-	-	0.186	-
VSAT	MIPR	US Army, CECOM : Aberdeen, MD	0.000	0.151	Dec 2014	-		-		-		-	-	0.151	-
		Subtotal	3.649	3.131		1.758		1.327		-		1.327	-	9.865	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2275 / *Marine Corps Tactical Radio Systems*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LMST Engineering Support	FFRDC	US Army, MITRE : Stafford, VA	2.617	0.289	Dec 2013	-		-		-		-	Continuing	Continuing	Continuing
SMART-T Engineering Suppor	FFRDC	US Army, MITRE : Stafford, VA	0.286	0.100	Dec 2013	0.093	Sep 2015	0.091	Sep 2016	-		0.091	Continuing	Continuing	Continuing
VSAT Engineering Support	FFRDC	US Army, MITRE : Stafford, VA	4.692	-		0.281	Sep 2015	0.316	Sep 2016	-		0.316	Continuing	Continuing	Continuing
NOTM Engineering Support	FFRDC	US Army, MITRE : Stafford, VA	1.275	1.131	Dec 2013	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	8.870	1.520		0.374		0.407		-		0.407	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	21.120	15.188		4.007		3.384		-		3.384	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2275 / *Marine Corps Tactical Radio Systems*

Program Schedule-SMART-T

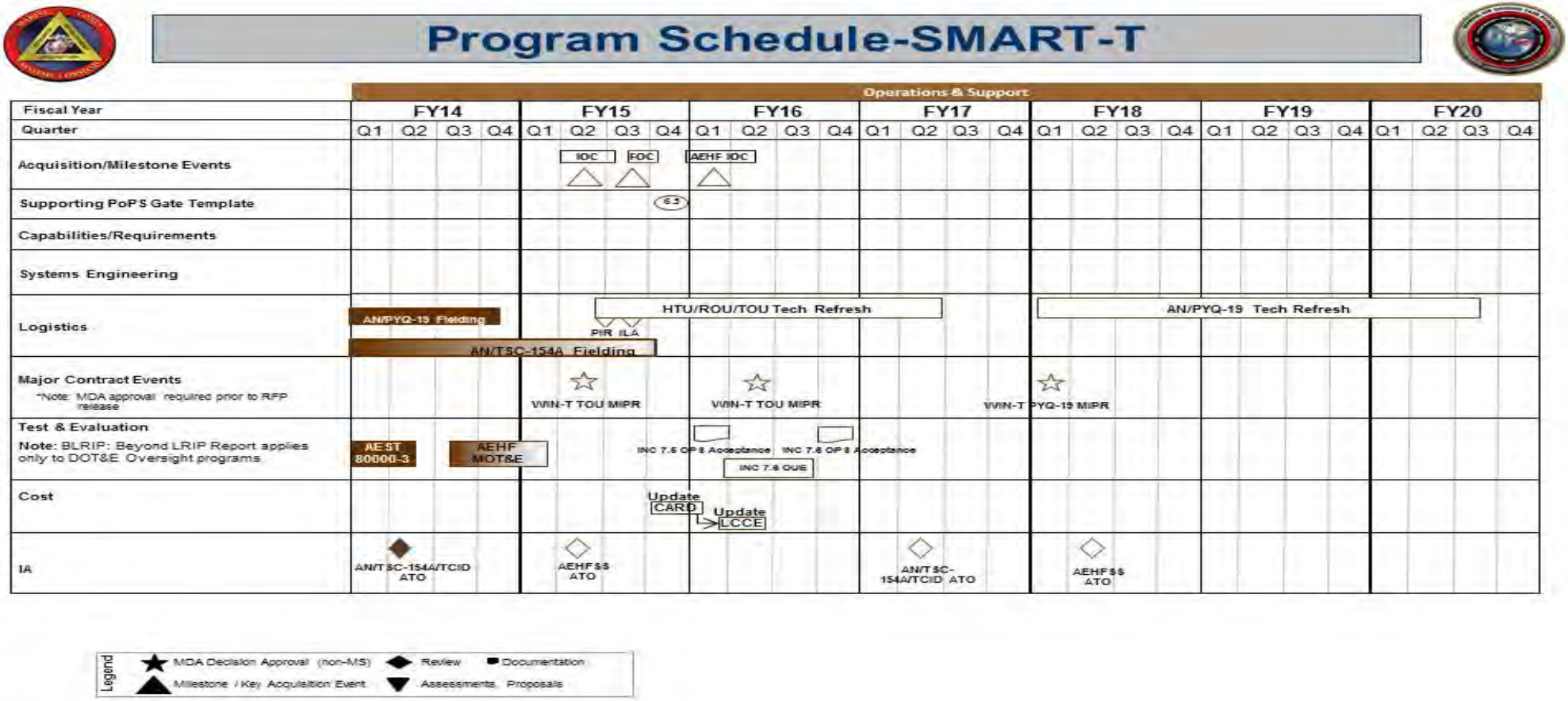

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2275 / *Marine Corps Tactical Radio Systems*

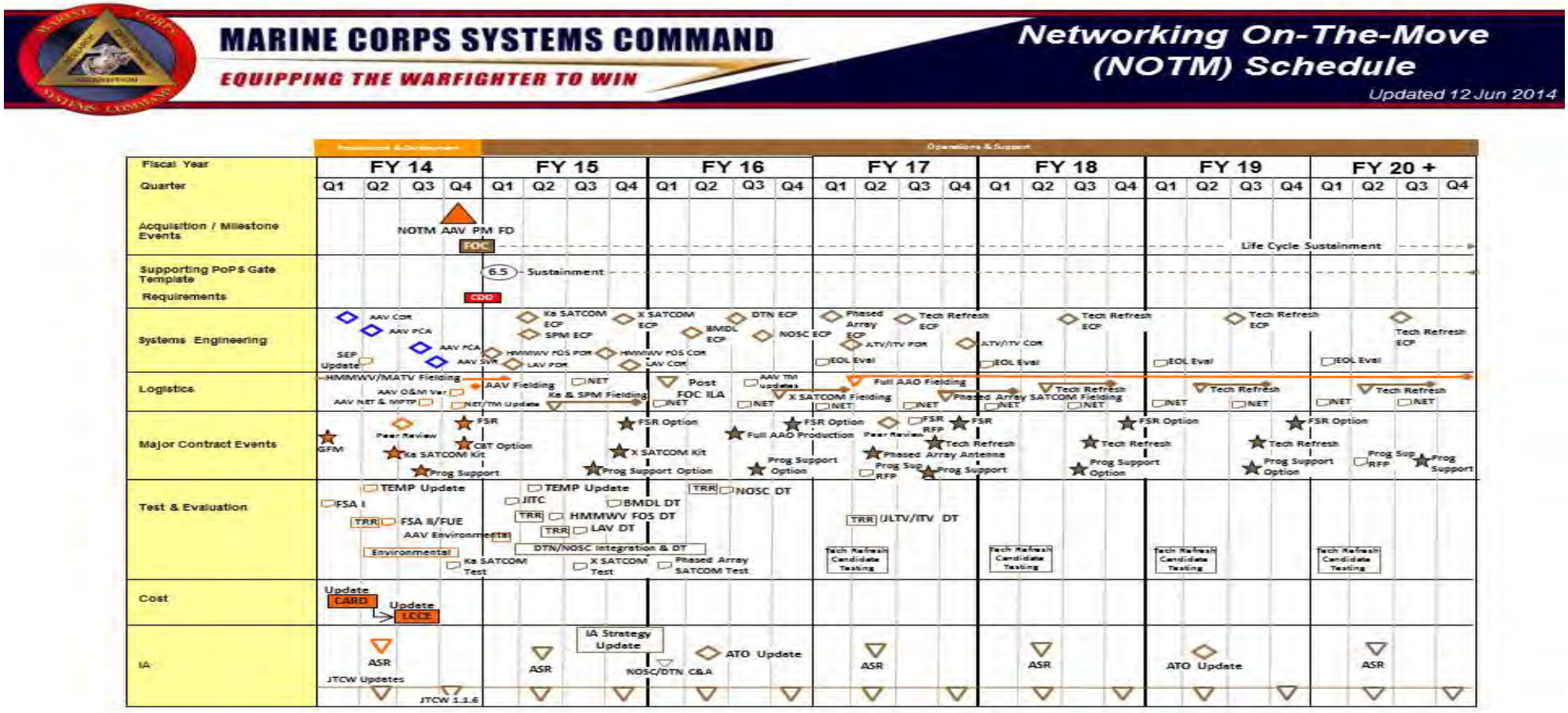

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2275 / *Marine Corps Tactical Radio Systems*

Very Small Aperture Terminal Schedule

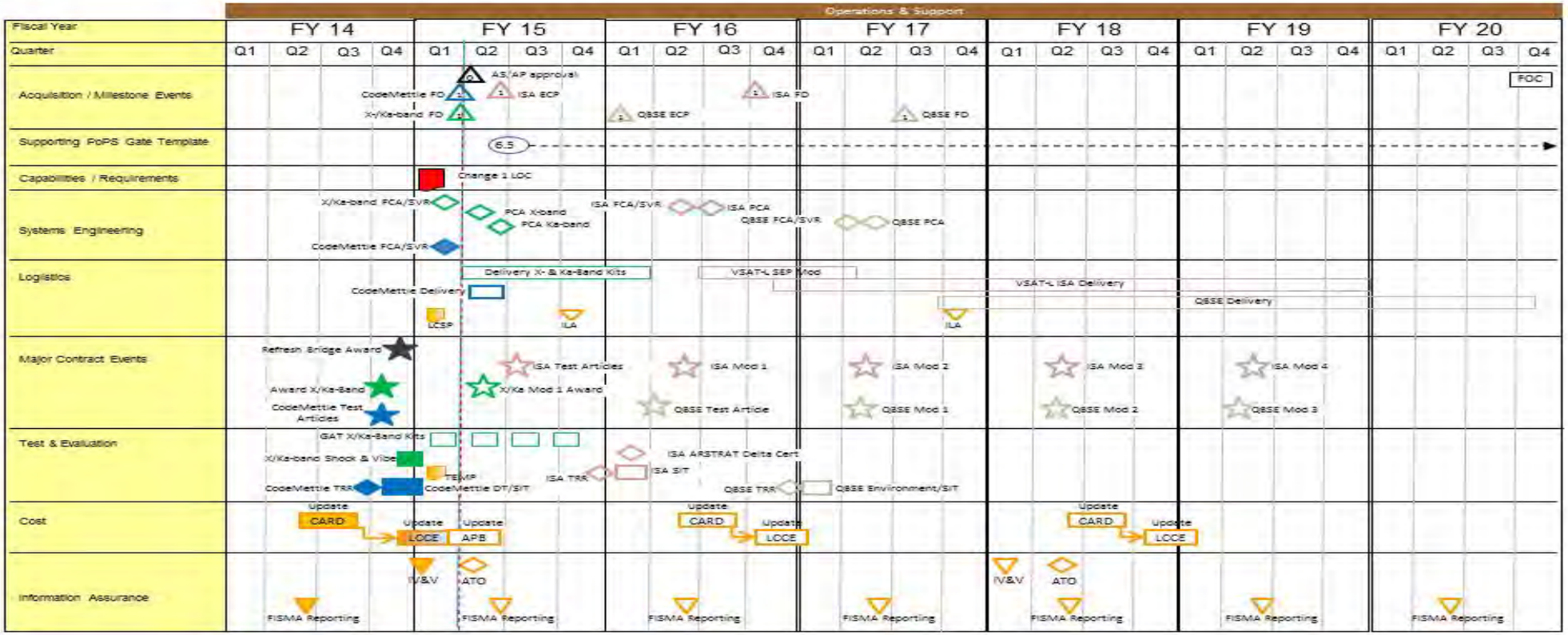

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2275 / *Marine Corps Tactical Radio Systems*

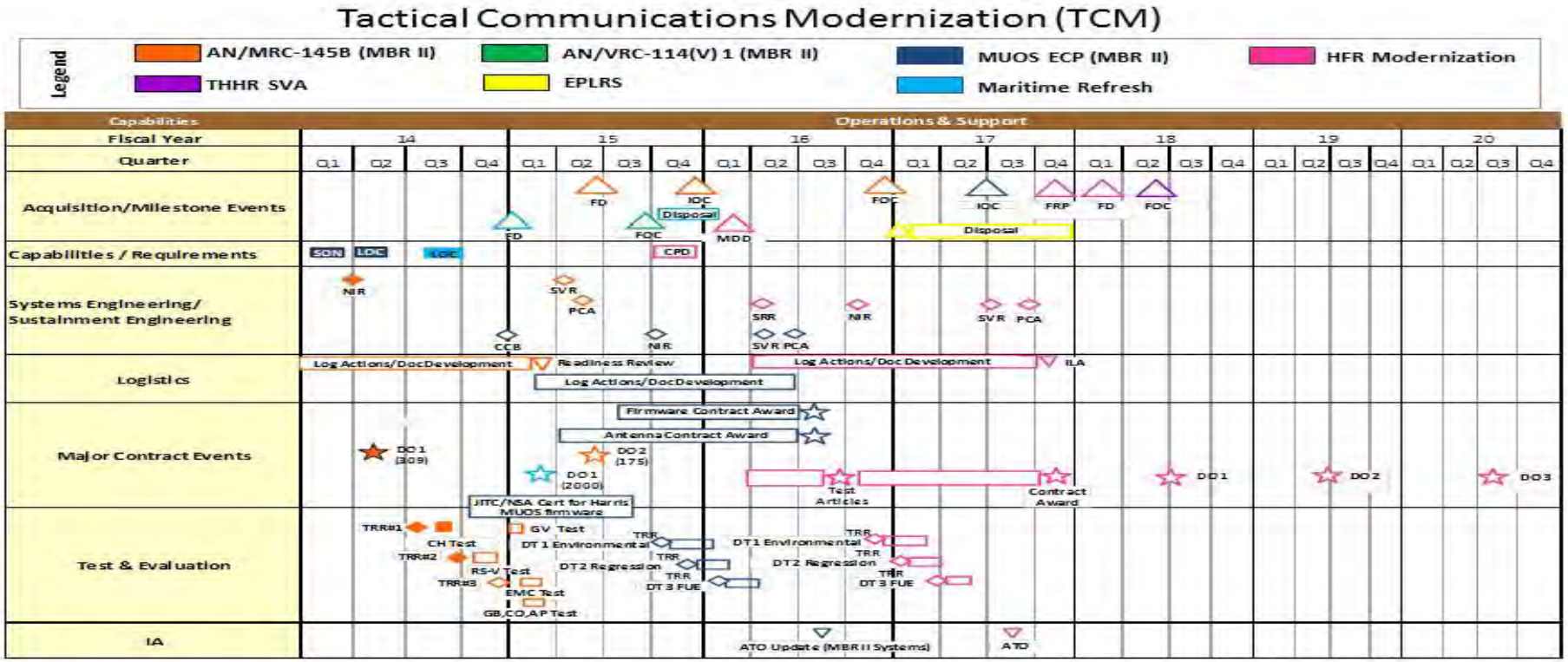

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2275 / *Marine Corps Tactical Radio Systems*

Program Schedule-LMST/Phoenix

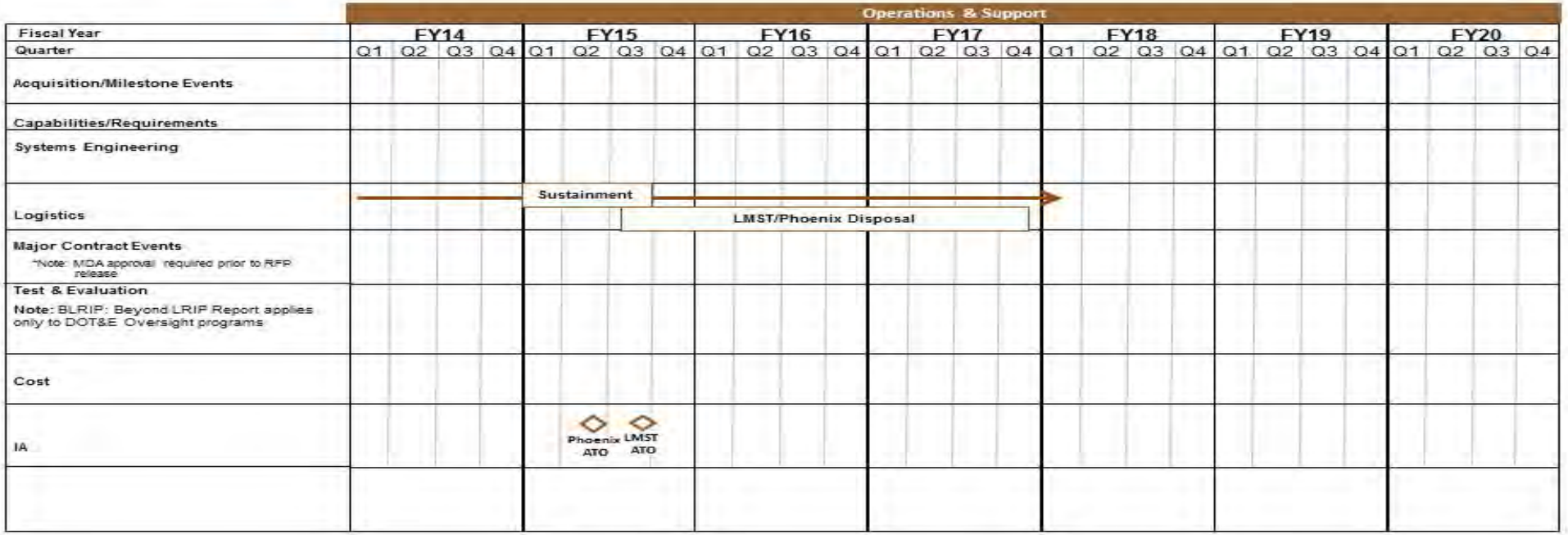

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2275 / *Marine Corps Tactical Radio Systems*

TWTS Portfolio Schedule

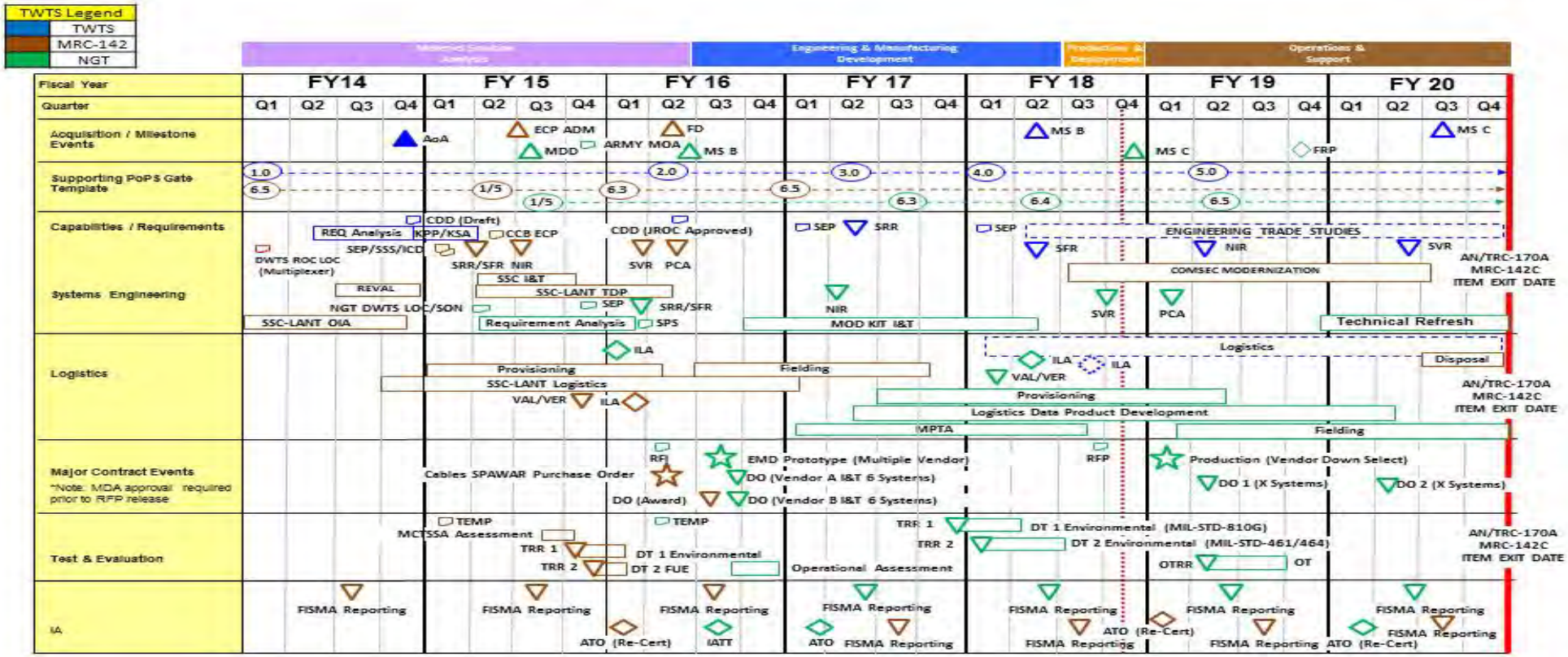

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2275 / *Marine Corps Tactical Radio Systems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2275				
SMART-T MOT&E AEHF	3	2014	1	2015
VSAT FOC	4	2020	4	2020
TCM MRC-145B Fielding Decision	2	2015	2	2015
TCM Maritime FOC	4	2015	4	2015
TCM MRC-145B IOC	4	2015	4	2015
TCM MRC-145B FOC	4	2016	4	2016
TCM VRC-114V1 FOC	3	2015	3	2015
NOTM USON FOC	4	2014	4	2014
NOTM Ka SATCOM ECP	2	2015	2	2015
NOTM LAV Developmental Test (DT)	3	2015	3	2015
NOTM Phase Array SATCOM Test	1	2016	1	2016
NOTM FY17 Tech Refresh ECP	3	2017	3	2017
NOTM FY18 Tech Refresh ECP	3	2018	3	2018
NOTM FY19 Tech Refresh ECP	3	2019	3	2019
TWTS AoA	4	2014	1	2020
TWTS MRC-142 ADM	2	2015	1	2020
TWTS NGT MDD	3	2015	1	2020
TWTS MRC-142 FD	2	2016	1	2020
TWTS NGT MS B	2	2016	1	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*				Project (Number/Name) 2276 / *Comms Switching and Control Sys*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
2276: *Comms Switching and Control Sys*	31.185	8.992	3.697	2.434	-	2.434	2.698	3.120	3.163	3.232	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

(U) Network Planning & Management (NPM), is a portfolio of communications planning and Network Management applications for use throughout the Marine Air-Ground Task Force (MAGTF). NPM consists of items such as the Systems Planning Engineering and Evaluation Device (SPEED). NPM provides the Marine Forces (MARFOR) component planners with the ability to conduct high-level planning; detailed planning and engineering; monitoring; control and reconfiguration; and spectrum planning and management in support of Combatant Commander (COCOM) and Commander, Joint Task Force (CJTF) operations. SPEED provides High Frequency (HF) predictions, Line of Site (LOS) propagation, Radio Coverage Analysis (RCA), Satellite planning, Command and Control Personal Computer (C2PC) track interface, interference and de-confliction analysis, spectrum management, Radio Guard Charts, Comm-On-The-Move (COTM), and T/E (training & education) and force structure management. Decrease of $0.016M from FY14 to FY15 is due to completion of added capabilities and functional improvements. FY15 and FY16 funds will support software development to continue providing the newest version of the SPEED software to the user community.

(U) Tactical Voice Switching System (TVSS): Formerly known as Transition Switch Module (TSM), TVSS consists of three systems that provide a flexible Unit Level Switch that replaces legacy Tri-Tac switches with current commercial technology, providing maneuver elements with improved voice/data switching, data transport and bandwidth management capabilities. This program maintains USMC joint interoperability as all Services transition to Commercial Off-The-Shelf (COTS) switching technologies.

(U) Expeditionary Command and Control Suite (ECCS): Provides reach back capability to the Global Information Grid (GIG) to access the Defense Switch Network (DSN), Defense Information System Network (DISN) Secret Internet Protocol Router Network (SIPRNET), Non-secure Internet Protocol Router Network (NIPRNET), and DISN Video Services (DVS), enabling a small advance force/liaison team to communicate with a Marine Air-Ground Task Force (MAGTF), Joint Task Force (JTF) or other Joint Force Commander, and to maintain situational awareness. ECCS is not funded after FY14 due to program cancellation.

(U) Tactical Data Network (TDN) Data Distribution System - Modular (DDS-M): The DDS-M provides the Commander a modular, integrated, and interoperable Internet Protocol (IP)- based LAN and WAN data networking capability that forms the data communications backbone and data communications support to organizations within a MAGTF. The DDS-M provides extension of the Defense Information System Network (DISN), Secret Internet Protocol Router Network (SIPRNet), and Sensitive But Unclassified (SBU) Non-secure Internet Protocol Router Network (NIPRNet) as well as a Coalition networking capability and access to strategic, supporting establishments, joint and other service component tactical data networks for Marine Corps Tactical Data Systems (TDSs) and other DDS-Ms. The DDS-M provides Marine Corps maneuver elements with a modular and scalable IP data transport capability that will replace, supplement and be used with existing legacy data systems through the integration of computers, routers, data switches and cabling, Enhanced Position Location and Reporting System (EPLRS) radio net interface units, MODEMS, link encryption devices, and patch panels. Uninterrupted Power Supplies (UPS) provide for emergency power and continuity of operations. The DDS-M can operate from the SBU up to the TOP SECRET/SENSITIVE COMPARTMENTED INFORMATION (TS/SCI) level and contains integral In-line Network Encryption

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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(INE) device supporting IP Security (IPSec) and Virtual Private Networking (VPN). Decrease of $2.941M from FY14 to FY15 is a result of completion of research and development for the Session Boundary Controller in FY14.

(U) Joint Enhanced Core Communications System (JECCS): Formerly known as First In Command and Control System (FICCS). JECCS is the Joint Task Force (JTF) enabler "first in" integrated, processor-controlled communications and management system that provides C2 capabilities supporting a Marine Expeditionary Unit (MEU) deployment ashore of the early phases of a deployment by a larger command element such as a Marine Air-Ground Task Force (MAGTF) or JTF Commander's mission into an Area of Operation. The JECCS is easily scalable and capable of "fly-away" deployment. It is a system of systems composed of Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) equipment. It provides the primary interface between subscriber equipment/systems and the long-haul multi-channel transmission systems. The JECCS facilitates secure and non-secure voice and data communications, switching functions, network routing, and management functions. The JECCS augments the current and planned communications architectures and provides technical control and network management services for the broad range of switching and radio connectivity requirements. JECCS is not funded beyond FY15 due to program cancellation.

(U) Digital Technical Control (DTC): DTC and other communications are a switch network infrastructure which provides voice, SIPR, NIPR, coalition, data, and video services. DTC provides the deployed warfighter with a standard data and voice architecture that is interoperable with joint and other services' communications systems. DTC is not funded beyond FY14 due to program cancellation.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: NPM: Product Development	0.103	0.761	0.985	-	0.985
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued to provide additional enhancements and capabilities within the System Planning Engineering and Evaluation Device (SPEED) software testing, and research on additional software applications to be utilized within Network Planning Mangement (NPM). ***FY 2015 Plans:*** Continue to provide additional enhancements and capabilities within the System Planning Engineering and Evaluation Device (SPEED) software testing. ***FY 2016 Base Plans:*** Continue to provide additional enhancements and capabilities within the System Planning Engineering and Evaluation Device (SPEED) software testing. ***FY 2016 OCO Plans:*** N/A					
Title: NPM: Management Services	0.993	0.319	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued engineering and program support. ***FY 2015 Plans:*** Continues engineering and program support. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: TVSS: Management Services	0.300	0.261	0.265	-	0.265
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued engineering and technical support. ***FY 2015 Plans:*** Continue engineering and technical support for a network migration plan. ***FY 2016 Base Plans:*** Continue engineering and technical support for a network migration plan. ***FY 2016 OCO Plans:*** N/A					
Title: ECCS: Management Services	0.844	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed systems engineering, interoperability analysis, integration support, and development of technical data packages for VSAT as required for Satellite Communication (SATCOM) Consolidation. ECCS has no funding beyond FY14. ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2276 / *Comms Switching and Control Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: DDS-M Product Development	3.193	0.436	0.418	-	0.418
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued support of the Edge Boundary Controller initiative (DISA mandated) that provides a proxy service for real-time services which include VTC and Voice Over IP (VoIP), engineering and techical support, and testing. ***FY 2015 Plans:*** Continue to support research, development, and implementation of required hardware updates (routers and switches); software integration and regression testing (information assurance mandates). ***FY 2016 Base Plans:*** Continue to support research, development, and implementation of required hardware updates (routers and switches); software integration and regression testing (information assurance mandates). ***FY 2016 OCO Plans:*** N/A					
Title: DDS-M: Management Services	0.275	0.156	0.491	-	0.491
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued Federally Funded Research and Development Center (FFRDC) support for systems engineering, interoperability analysis, acquisition planning, support for technology research and obsolescence, and support for the integration of the Session Boundary Controller. ***FY 2015 Plans:*** Continue FFRDC support for systems engineering, interoperability analysis, acquisition planning, support for technology research and obsolescence. ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2276 / *Comms Switching and Control Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue FFRDC support for systems engineering, interoperability analysis, acquisition planning, support for technology research and obsolescence. ***FY 2016 OCO Plans:*** N/A					
Title: DDS-M: Engineering and Program Support	0.657	0.704	0.200	-	0.200
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued support for systems engineering, interoperability analysis, acquisition planning, support for technology research and obsolescence, and support for the integration of the Session Boundary Controller. ***FY 2015 Plans:*** Continue to support systems engineering, interoperability analysis, acquisition planning and integration, and support for technology research and obsolescence. ***FY 2016 Base Plans:*** Continue to support systems engineering, interoperability analysis, acquisition planning and integration, and support for technology research and obsolescence. ***FY 2016 OCO Plans:*** N/A					
Title: DDS-M: Test and Evaluation Support	0.202	0.090	0.075	-	0.075
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued testing of Defense Information Systems Network-Tactical Edge (DISN-TE) demonstration of converged voice, video, and data services over Internet Protocol (IP) using the DDS-M System (adding Quality of Service, various transmission systems, updated internal DDS-M equipment), IPv6 validation in line with updated hardware internal to DDS-M and continued joint interoperability test certification efforts demonstrated through DoD Interoperability Communication Exercises. ***FY 2015 Plans:*** Continue to support joint interoperability test certification efforts demonstrated through DoD Interoperability Communication Exercises. ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2276 / *Comms Switching and Control Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue to support joint interoperability test certification efforts demonstrated through DoD Interoperability Communication Exercises. ***FY 2016 OCO Plans:*** N/A					
Title: JECCS: Engineering and Program Support	0.445	0.555	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued engineering and program support. ***FY 2015 Plans:*** Complete engineering and program support. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: JECCS: Management Services	0.524	0.415	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued FFRDC engineering and program support. ***FY 2015 Plans:*** Continue FFRDC engineering and program support. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: DTC: Engineering and Program Support	0.383	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Completed engineering and development of additional IP/Black Core routing, Engineering Change Proposals. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: DTC: Management Services	1.026	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed FFRDC engineering and technical support. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: DTC: Test and Evaluation Support	0.047	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed integration and testing. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2276 / *Comms Switching and Control Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Accomplishments/Planned Programs Subtotals	8.992	3.697	2.434	-	2.434

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/4634-1: *TVSS*	23.422	-	6.011	-	6.011	21.647	14.156	10.220	10.433	Continuing	Continuing
• PMC/4634-2: *ECCS*	10.027	-	-	-	-	-	-	-	-	-	20.603
• PMC/4634-5: *DDS-M*	13.593	59.039	57.705	-	57.705	57.824	57.138	47.548	48.521	Continuing	Continuing
• PMC/4634-6: *DTC*	3.620	1.899	1.091	-	1.091	0.347	-	-	-	-	26.934
• PMC/4634-7: *JECCS*	1.034	1.245	-	-	-	-	-	-	0.010	-	6.230
• PMC/4630-1: *TVSS/CCR*	1.151	-	-	-	-	-	-	-	-	-	1.151

Remarks

D. Acquisition Strategy

(U) Network Planning and Management (NPM): NPM will maximize use of existing COTS and GOTS products. NPM will continue to be upgraded as technology advances. Major focus will be on the incorporation of additional capabilities and functionality into the SPEED software to meet user requirements. R&D effort will focus on the development, integration, and testing of improved versions of existing capabilities.

(U) Tactical Voice Switching System (TVSS) (formerly Transition Switch Module (TSM)): TVSS will maximize use of existing COTS, GOTS, and GFE. TVSS hardware and software will continue to be upgraded and improved as technology advances. Major focus will be on interoperability and compatibility with existing systems and components in the Marine Corps, as well as Joint and Coalition forces. R&D effort will focus on integration and testing of improved versions of existing components.

(U) Expeditionary Command and Control Suite (ECCS): ECCS has been reduced in scope. FY14 funds provided for engineering support for the Network and Satellite Communications portfolio. There is no funding after FY14 due to program cancellation.

(U) TDN Data Distribution System - Modular (DDS-M): DDS-M will maximize use of existing COTS, GOTS, and GFE. DDS-M hardware and software will continue to be upgraded and improved as technology advances. Major focus will be on interoperability and compatibility with existing systems and components in the Marine Corps, as well as Joint and Coalition forces. R&D effort will focus on integration and testing of improved versions of existing components. DDS-M may reuse other Services' development and utilize external contracts that satisfy requirements and analysis of alternatives.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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(U) Joint Enhanced Core Communications System-Refresh (JECCS): JECCS will use existing funds to retrograde and dispose of all systems in the inventory. Select components will be de-integrated and reused elsewhere in the networking portfolio. In May 2014 the Program Office was relieved of the requirement to maintain the JECCS capability by the end of FY15.

(U) Digital Technical Control (DTC): DTC will use existing funds to retrograde and dispose of all systems in the inventory. Select components will be de-integrated and reused elsewhere in the networking portfolio. The DTC capability will not be maintained beyond FY17.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2276 / *Comms Switching and Control Sys*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NPM (SPEED S/W Development)	WR	SPAWAR : Charleston, SC	8.934	0.103	Dec 2013	-		-		-		-	Continuing	Continuing	Continuing
NPM (SPEED S/W Development)	C/FFP	MCSC : TBD	0.000	-		0.761	Sep 2015	0.985	Jan 2016	-		0.985	Continuing	Continuing	Continuing
DDS-M CARD	RO	SSC-LANT : Charleston, SC	0.000	0.046	Feb 2014	-		-		-		-	-	0.046	-
DDS-M Amphibious	RO	NSWC : Indian Head, MD	0.000	0.966	Jul 2014	-		-		-		-	-	0.966	-
DDS-M Amphibious Integration	WR	NAVAIR : Patuxent River, MD	0.000	1.200	Aug 2014	-		-		-		-	-	1.200	-
DDS-M Amphibious Integration Support	RO	NAVAIR : Patuxent River, MD	0.000	0.566	Sep 2014	-		-		-		-	-	0.566	-
DDS-M ECP	RO	SSC-LANT : Charleston, SC	1.360	0.415	Oct 2014	0.436	Feb 2015	0.418	Apr 2016	-		0.418	-	2.629	-
Prior Year Cumulative Funding	Various	Various : Various	14.338	-		-		-		-		-	-	14.338	-
		Subtotal	24.632	3.296		1.197		1.403		-		1.403	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DDS-M technical support	WR	SSC-LANT : Charleston, SC	0.000	0.382	Feb 2014	-		-		-		-	-	0.382	-
DDS-M Engineering and Program Support	WR	SSC-LANT : Charleston, SC	2.256	0.275	Sep 2014	0.704	May 2015	0.200	May 2016	-		0.200	-	3.435	-
JECCS Engineering and Program Support	WR	SSC-LANT : Charleston, SC	0.000	0.261	Dec 2014	0.555	Feb 2015	-		-		-	-	0.816	-
JECCS Support	Various	Various : Various	0.000	0.184	Sep 2014	-		-		-		-	-	0.184	-
DTC Engineering and Program Support	WR	SSC-LANT : Charleston, SC	0.141	0.383	Dec 2013	-		-		-		-	-	0.524	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : Various	0.750	-		-		-		-		-	-	0.750	-
		Subtotal	3.147	1.485		1.259		0.200		-		0.200	-	6.091	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DDS-M Testing	MIPR	JSEC : Aberdeen Proving Ground, MD	0.000	0.043	Sep 2014	-		-		-		-	-	0.043	-
DDS-M T&E	MIPR	JITC : Ft. Huachuca, AZ	0.117	0.159	Apr 2014	0.090	Mar 2015	0.075	Mar 2016	-		0.075	-	0.441	-
DTC T&E	MIPR	JITC : Ft. Huachuca, AZ	0.000	0.047	Apr 2014	-		-		-		-	-	0.047	-
Prior Year Cumulative Funding	Various	Various : Various	1.266	-		-		-		-		-	-	1.266	-
		Subtotal	1.383	0.249		0.090		0.075		-		0.075	-	1.797	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NPM Engineering Support	FFRDC	MITRE : Stafford, VA	0.000	0.993	Oct 2014	0.319	Aug 2015	-		-		-	-	1.312	-
TVSS Engineering Support	FFRDC	MITRE : Stafford, VA	0.734	0.300	Oct 2014	0.261	Feb 2015	0.265	Dec 2015	-		0.265	-	1.560	-
DDS-M Engineering Support	FFRDC	MITRE : Stafford, VA	0.000	0.275	Oct 2014	0.156	Feb 2015	0.491	Dec 2015	-		0.491	-	0.922	-
ECCS Engineering Support	FFRDC	MITRE : Stafford, VA	0.409	0.844	Dec 2013	-		-		-		-	-	1.253	-
JECCS Engineering Support	FFRDC	MITRE : Stafford, VA	0.035	0.524	Oct 2014	0.415	Feb 2015	-		-		-	-	0.974	-
DTC Engineering Support	FFRDC	MITRE : Stafford, VA	0.000	1.026	Oct 2014	-		-		-		-	-	1.026	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2276 / *Comms Switching and Control Sys*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : Various	0.845	-		-		-		-		-	-	0.845	-
		Subtotal	2.023	3.962		1.151		0.756		-		0.756	-	7.892	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	31.185	8.992		3.697		2.434		-		2.434	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2276 / *Comms Switching and Control Sys*

Program Schedule-ECCS RRK

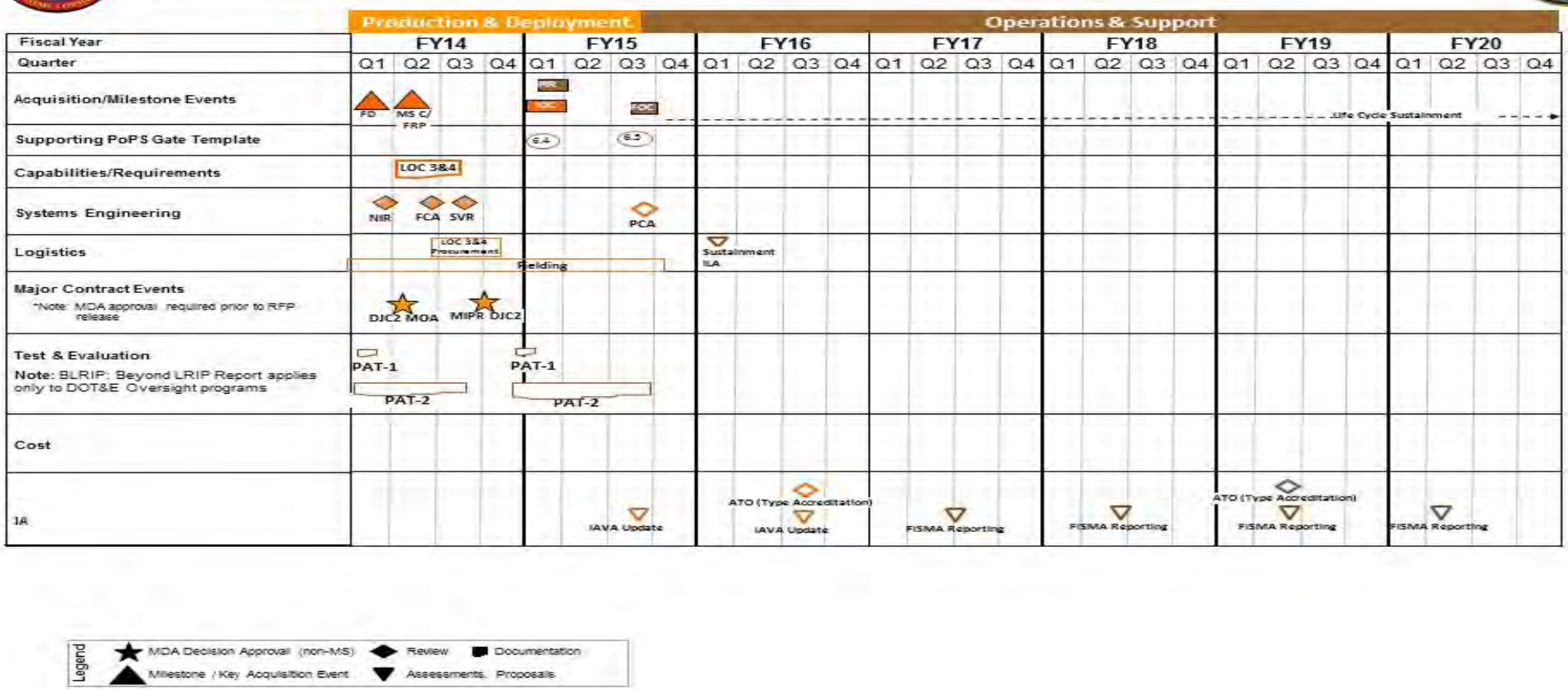

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2276 / *Comms Switching and Control Sys*

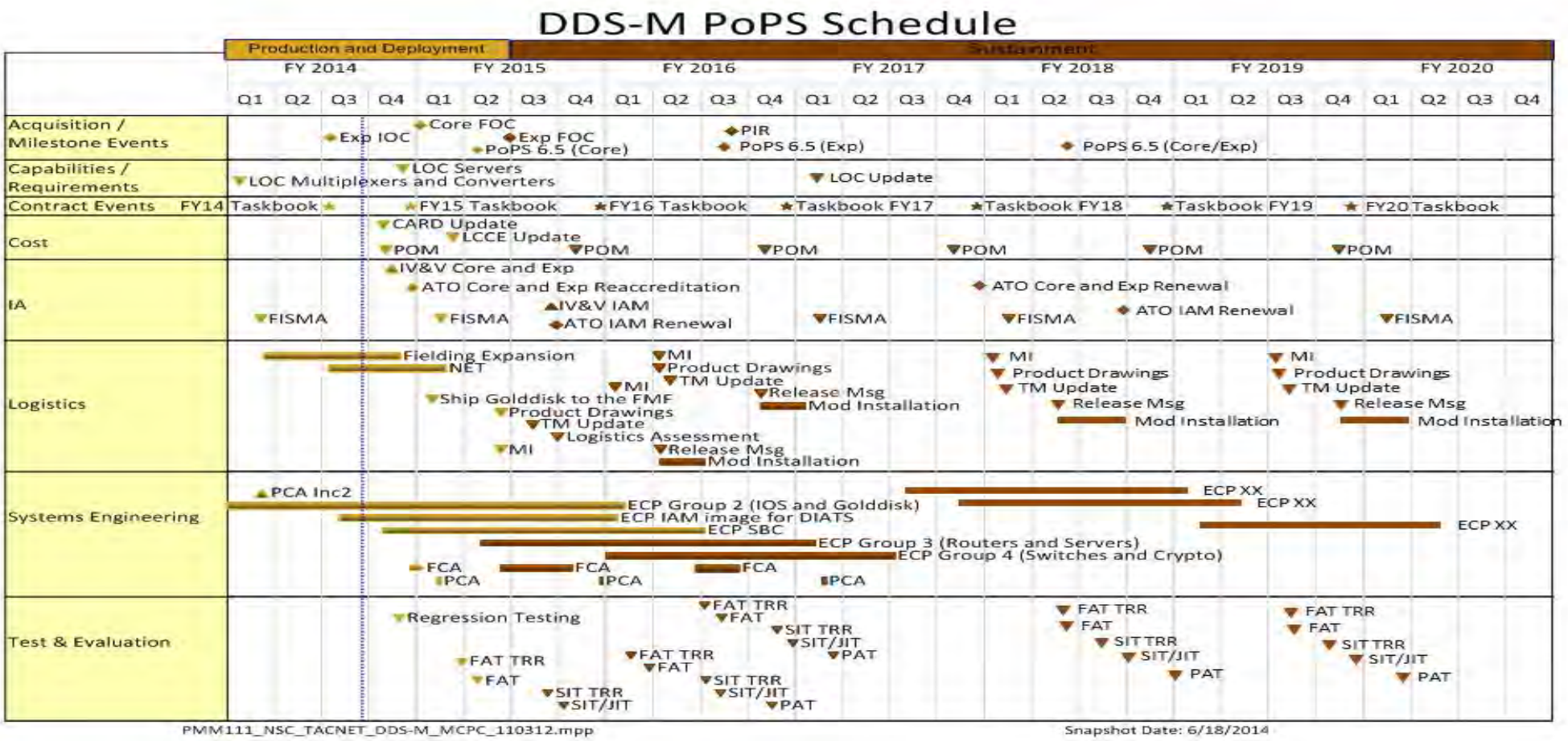

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2276 / *Comms Switching and Control Sys*

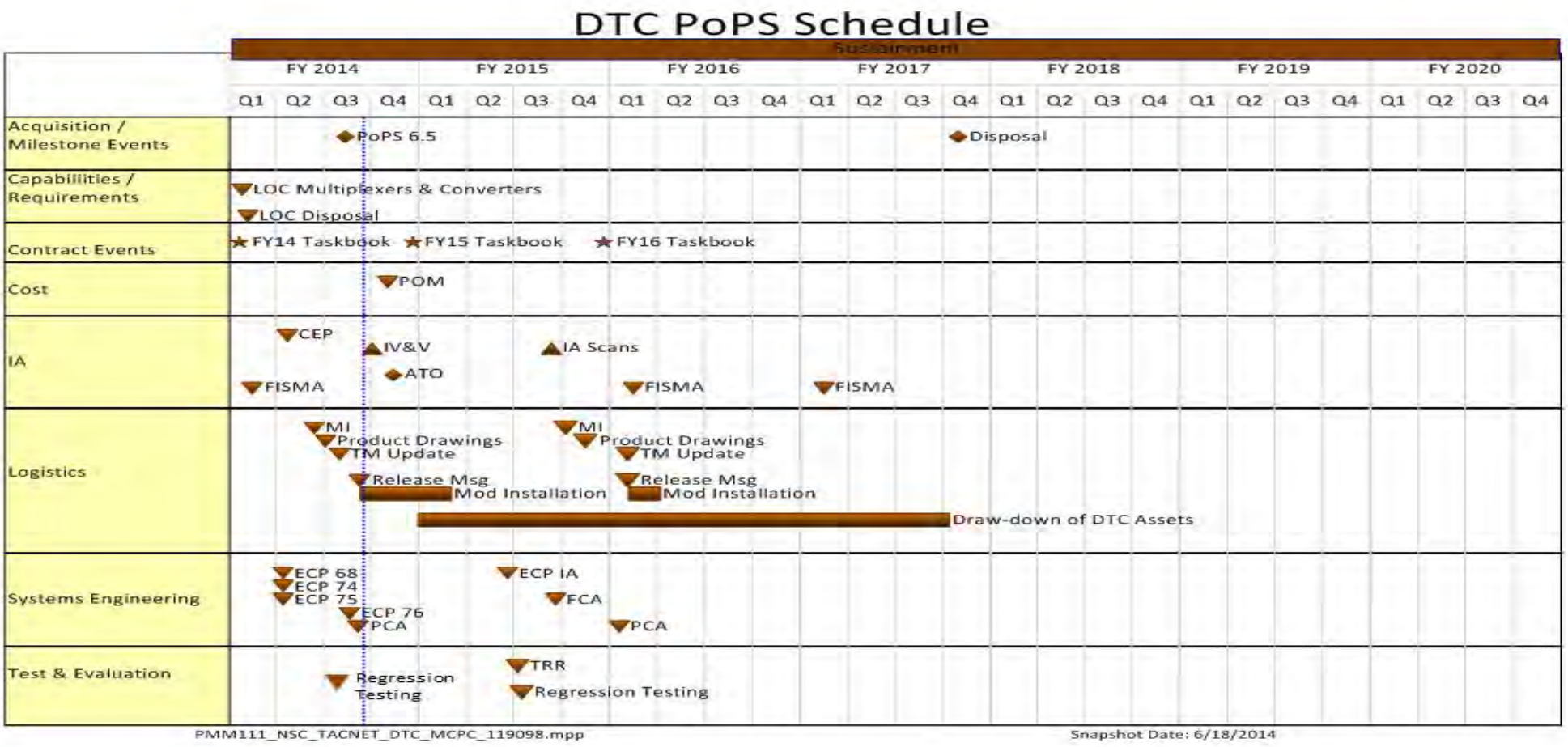

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2276 / *Comms Switching and Control Sys*

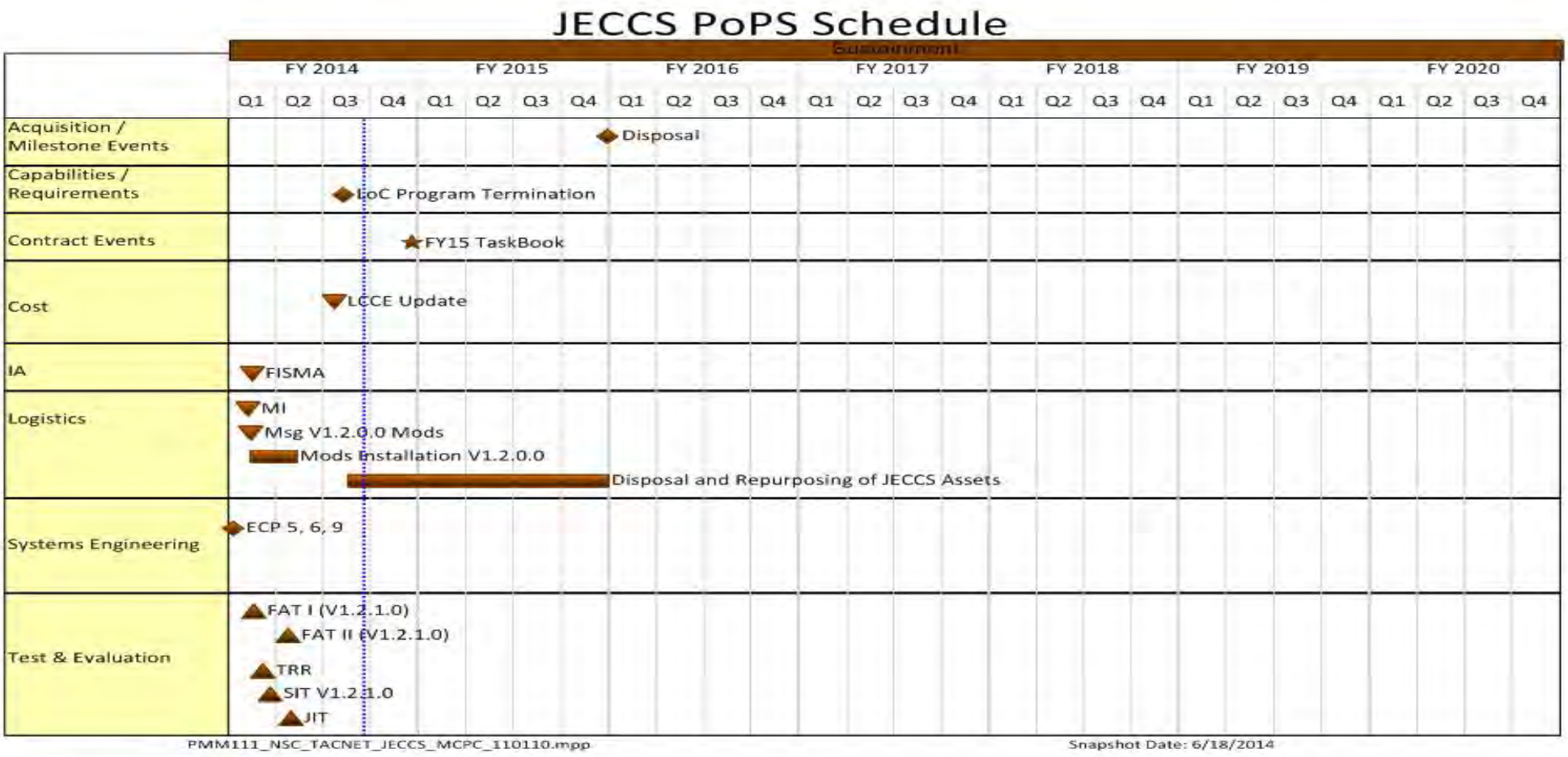

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2276 / *Comms Switching and Control Sys*

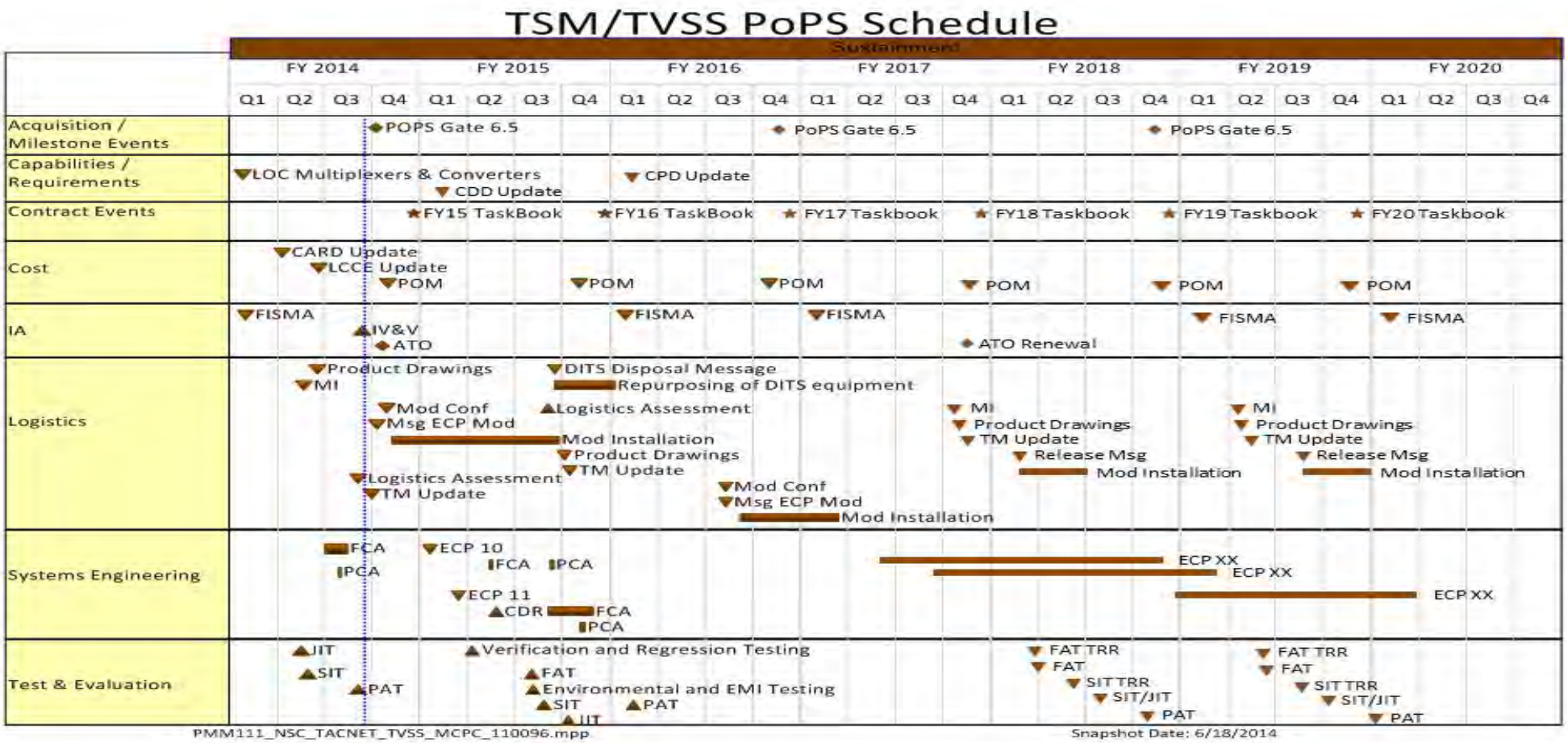

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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Program Schedule - NPM

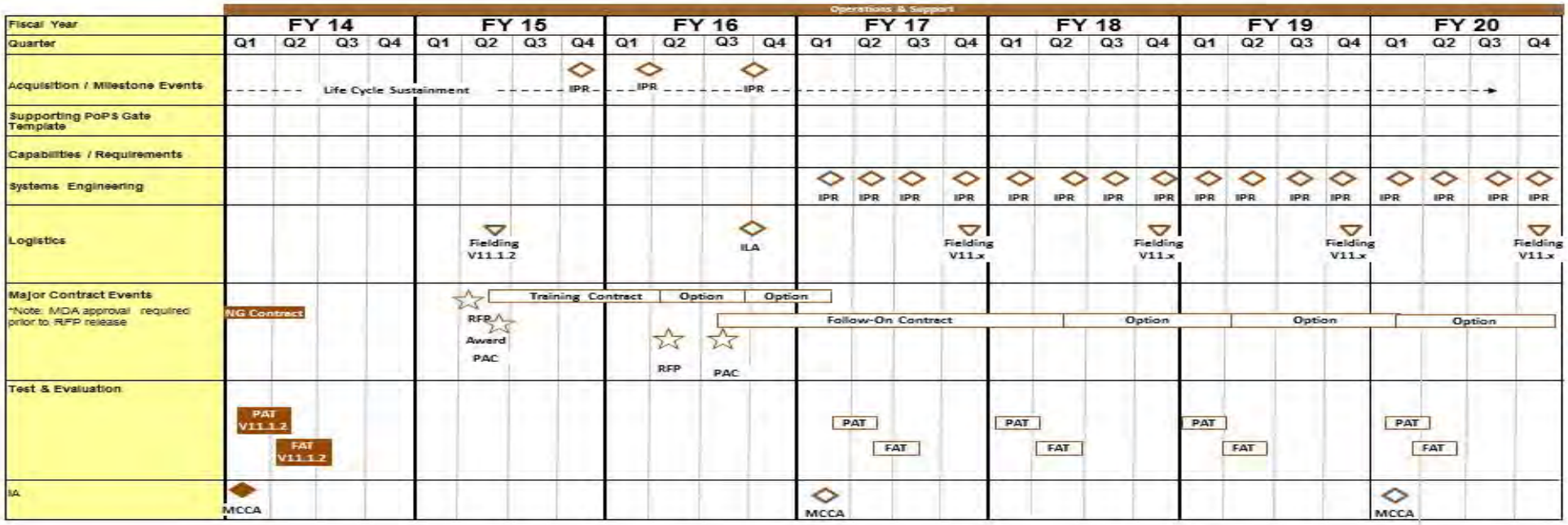

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2276				
DTC DRAW DOWN OF DTC ASSETS	1	2015	4	2017
DTC ECP IA	2	2015	2	2015
DTC Disposal	4	2017	4	2017
JECCS FAT I (V1.2, 1.0)	1	2014	1	2014
JECCS Mods Installation V1.2.0.0	1	2014	2	2014
JECCS FAT II (V1.2.1.00)	2	2014	2	2014
JECCS Disposal and Repurposing of JECCS Assets	3	2014	4	2015
DDS-M CORE FOC	1	2015	1	2015
DDS-M FAT TRR	1	2015	1	2015
DDS-M ECP GROUP 3	2	2015	1	2017
DDS-M EXP FOC	3	2015	3	2015
DDS-M SIT TRR	3	2015	3	2015
DDS-M ECP GROUP 4	1	2016	3	2017
DDS-M PIR	3	2016	3	2016
TVSS (TSM) MOD INSTALLATION	4	2014	3	2015
TVSS (TSM) ECP 10	1	2015	1	2015
TVSS (TSM) ECP 11	1	2015	1	2015
TVSS (TSM) FAT	3	2015	3	2015
TVSS (TSM) ENVIRONMENTAL AND EMI TESTING	3	2015	3	2015
NPM PAT	1	2017	2	2017
NPM FAT	2	2017	3	2017

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2277 / *System Engineering and Integration*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2277: *System Engineering and Integration*	27.412	12.101	5.117	5.161	-	5.161	4.921	4.921	4.922	5.322	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides funds for engineering, test, and evaluation activity, which ensures that the systems being developed within the Program Element (PE) employ consistent standards for interoperability and to the maximum extent feasible use of hardware and software which is uniform and standard across programs.

Expeditionary Energy Office (E2O): Energy is a top priority for the USMC and one of the six pillars of Modernization for the Corps identified by the Commandant. In 2009 the Commandant established the USMC Expeditionary Energy Office (E2O), with the mission to analyze, develop, and direct the Marine Corps' energy strategy in order to optimize expeditionary capabilities across all warfighting functions. E2O's role is to advise the Marine Requirements Oversight Council (MROC) on all energy and resource related requirements, acquisitions, and programmatic decisions. This office and funding directly support execution of the USMC Expeditionary Energy Strategy and Implementation Plan (Mar 2011), and priorities identified in the USMC Expeditionary Energy Water and Waste Initial Capabilities Document/Capabilities Based Assessment (Sept 2011), as well as Science and Technology Objectives identified in the 2012 USMC S&T Strategic Plan. The Marine Corps program aligns with the Commandant's Planning Guidance 2010, the National Defense Authorization Act 2009, DoD directives and SECNAV goals. This funding will support the achievement of the Strategy, and the activities of the USMC Experimental Forward Operating Base process, managed by the E2O.

Joint Interoperability of Tactical Command and Control Systems (JINTACCS) is a Joint Chiefs-of-Staff (JCS)/DoD-mandated program for joint development, implementation, and testing of tactical data links and US Message Text Format (MTF) under the direction of the Defense Information Systems Agency (DISA) and Office of the Secretary of Defense/Networks and Information Integration (OASD/NII) per the Commander Joint Chiefs of Staff (CJCSI) 6610.01C and CJCS16241.04 for US Military Tactical Forces (USMTF). This effort also covers interoperability and testing of tactical message standards such as MILSTD 6017 Variable Message Format used between the US Army and USMC; and Coalition message formats the Joint Command, Control, Consultation Information Exchange Data Model (JC3IEDM).

Marine Air-Ground Task Force Command, Control, Communications, Computers, and Intelligence Systems Engineering and Integration, and Coordination (MAGTF C4I SEI&C) provides for the centralized planning and execution of Marine Corps Enterprise Information Technology and National Security Systems. It develops, certifies, and manages the configurations of the Marine Corps Enterprise Systems and Technical Architecture products and uses these to support enterprise-level systems engineering. It supports unified technical representation to joint and coalition communities for Marine Corps Systems and provides top-tier system engineering support to address system of systems technical issues. It is used to conduct direct Marine Expeditionary Unit/Marine Expeditionary Force (MEU/MEF) support in system integration testing with USN. This is part of Deploying Group Systems Integration Testing (DGSIT) and workups supporting Marine Expeditionary Force (MEF) deployments. It is also used to support Marine Corps systems coordination and involvement in DoD initiatives to include ForceNet, Global Information Grid Enterprise Services (GIGES), and other Deployable Information Systems Architecture DISA/NETWARCOM efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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Marine Civil Information Management System (MARCIMS) is a system of systems comprised of people, process and technology that operates in the full Joint, Interagency, Intergovernmental, and Multinational (JIIM) environment. It is a force multiplier for the commander that allows him to leverage the process of Planning, Collection, Consolidation, Analysis, Production, and sharing of civil information in order to support the visualization and understanding of the civil environment to the military commander's decision making process. The increase of $.150M from FY15 to FY16 will support minor software patches.

Public Affairs System (PAS) provides the Marine Air Ground Task Force (MAGTF) and the broader Marine Corps the capability to research, understand and affect the information environment. PA Marines and Systems enable commanders at all levels and across the range of military operations to engage domestic and foreign publics whose trust, confidence, and understanding are mission critical. The Public Affairs Systems (PAS) AAP identifies and fields materiel solutions required to research and plan communication initiatives, acquire still and video visual information, produce and disseminate communication products, and assess the effects of communication initiatives within the information environment. The program maintains an evolutionary approach to acquisitions, and leverages commercial industry-standard non-developmental items to provide the best value to the Marine Corps, while keeping PA Marines appropriately equipped to understand and affect the information environment. This is a New Start for RDT&E in FY16 to research and evaluate solutions to modernize the Public Affairs Still Acquisition System into a single handheld device with the capability to acquire, edit and transmit still and video imagery and engage publics via traditional and social media.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Expeditionary Energy Office (E2O)	2.311	2.671	2.253	-	2.253
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued to support the USMC Expeditionary Energy Strategy and Implementation Plan, and priorities identified in the USMC Expeditionary Energy Water and Waste Initial Capabilities Document/Capabilities Based Assessment, as well as Science and Technology Objectives identified in the 2012 USMC S&T Strategic Plan. Using these priority roadmaps, E2O will invest in R&D programs to advance Strategy goals. Priority areas for investment include, but are not limited to: Energy harvesting; hybrid power; efficient heating and cooling of people, equipment and water; energy storage; energy efficient vehicles; energy metering and monitoring and decision tools; energy efficient shelters and sustainment.					
FY 2015 Plans: Continue to support the USMC Expeditionary Energy Strategy and Implementation Plan, and priorities identified in the USMC Expeditionary Energy Water and Waste Initial Capabilities Document/Capabilities Based Assessment, as well as Science and Technology Objectives identified in the 2012 USMC S&T Strategic Plan. Using these priority roadmaps, E2O will invest in R&D programs to advance Strategy goals. Priority areas for investment include, but are not limited to: Energy harvesting; hybrid power; efficient heating and cooling of					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
people, equipment and water; energy storage; energy efficient vehicles; energy metering and monitoring and decision tools; energy efficient shelters and sustainment. ***FY 2016 Base Plans:*** Funds will continue to support the USMC Expeditionary Energy Strategy and Implementation Plan, and priorities identified in the USMC Expeditionary Energy Water and Waste Initial Capabilities Document/Capabilities Based Assessment, as well as Science and Technology Objectives identified in the 2012 USMC S&T Strategic Plan. Using these priority roadmaps, E2O will invest in R&D programs to advance Strategy goals. Priority areas for investment include, but are not limited to: Energy harvesting; hybrid power; efficient heating and cooling of people, equipment and water; energy storage; energy efficient vehicles; energy metering and monitoring and decision tools; energy efficient shelters and sustainment. ***FY 2016 OCO Plans:*** N/A					
Title: JINTACCS: JCS and DoD CIO Data Links Testing	1.056	0.504	0.425	-	0.425
Articles:	-	-	-	-	-
Description: Joint Interoperability of Tactical Command and Control Systems or JINTACCS is a United States military program for the development and maintenance of tactical information exchange configuration items (CIs) and operational procedures. It was originated to ensure that the command and control (C2 and C3) and weapons systems of all US military services and NATO forces would be interoperable. Joint Interoperability of Tactical C2 Systems (JINTACCS) resides at MARCORSYSCOM under SIAT oversight but primarily executed by the Interoperability Branch at MCTSSA. Created as a non-acquisition R&D engineering program it provides for critical engineering services in several areas. JINTACCS is essential to USMC development and maintenance of tactical data exchange standards (Link 16, VMF, MTF, etc.), maintenance of C2 systems interoperability issues, development of Net Centric standards (UCore, C2 Core, XML, Web Services) to meet requirements of DoD/ USMC Net Centric Data Strategy, and participation in Marine Corps and Joint Interoperability Certification testing to DoD/JCS/USMC requirements. Requirements annotated in IT Budget Submit (NC-36). ***FY 2014 Accomplishments:*** Continued to perform the engineering and testing functions for tactical data exchanges (e.g. VMF-XML, NIEM MilOps, COIs XML) that are necessary to certify and field MAGTF C2 systems as interoperable with Joint & Coalition forces. Conducted interoperability testing at JUICE14 for NATO STANAG 4677. ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2277 / *System Engineering and Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue to review and update all IT Standards applicable to the USMC and maintain the architectural data environment to ensure all developed solution architectures are associated with the appropriate technical IT standards in their DoDAF Standards View. DC SIAT will continue to lead the Army - Marine Corps C2 interoperability Systems Engineering IPT to align the use of tactical messaging standards to create interoperability between the DoD ground force systems FBCB2/JTCW (VMF), GCCS (OTH Gold), TBMCS/ AFATDS (USMTF), and aviation tactical data links (Link 16/22). This effort will continue to support HQMC Director C4 in the development of implementation plans for the Marine Corps to meet its Service level requirements mandated by the DoD Net Centric Data Strategy and participate in the Joint development of XML data standards to enable tactical data exchanges in C2 systems. Additionally, this effort will expand to incorporate the ability to use Tactical Service Oriented approaches to mediate data across multiple environments/domains (Air/Mobile platform/Dismounted/Stationary command posts). DC SIAT will continue to lead the development of data model converter applications to create Standard Agreement 4677 on interoperability between the NATO JC3IEDM data model to the JTCW (VMF) system allowing coalition interoperability at the dismounted level. ***FY 2016 Base Plans:*** Continue to review and update all IT Standards applicable to the USMC and maintain the architectural data environment to ensure all developed solution architectures are associated with the appropriate technical IT standards in their DoDAF Standards View. DC SIAT will continue to lead the Army - Marine Corps C2 interoperability Systems Engineering IPT to align the use of tactical messaging standards to create interoperability between the DoD ground force systems FBCB2/JTCW (VMF), GCCS (OTH Gold), TBMCS/ AFATDS (USMTF), and aviation tactical data links (Link 16/22). ***FY 2016 OCO Plans:*** N/A					
Title: SEIC: Engineering and Technical Support	7.344	1.892	1.983	-	1.983
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued engineering and technical support for configuration management of MAGTF C4I systems. Reviewed and submitted multiple Integration Support Plans (ISPs) and Tactical ISPs (TISPs). Participated in ForceNet, NCES, GIGES, and other Joint DoD initiatives. New policy, handbooks and training were produced for Configuration Management, In-Service Engineering, Systems Engineering Technical Reviews, as well as an updated overarching Systems Engineering Guidebook. New processes for policy review and approval and					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2277 / *System Engineering and Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
management thereof were instituted. Plans are for continued activities to support the interoperability and jointness of the USMC Enterprise IT/NSS systems, and for the development of just-in-time training programs. -Executed DGSIT events ISO 11th, 22nd & 24th MEU deployments and 2D MEB (BOLD ALLIGATOR 14). -Contributed to the development of the 2014 Afloat MAGTF C4 Required Capabilities (AMC4RC Letter). -Contributed to the submission of Blue-In-Support-Of-Green (BISOG) issues to OPNAV N9 and N2/N6 for POM-16 and preparation for POM-17. -Provided technical support to CD&I, CDD, SID's Seabased C2 IPT. -Directly supported the development of USMC input to OUSD AT&L's Joint C2 Capability Area FY15 Sustainment & Modernization Plan and FY15 Plan Build Workshop. -Provided engineering support to capability document (JCIDs, SON, etc.) development and review in response to 60 MCATS. Provided engineering support to the execution and assessment of 4 AoAs (MEHPS, TWTS, LX(R), Able Archer). -Assisted in the development of CD&I's CPM Process and its alignment with MARCORSYSCOM's Requirements Transition Process. ***FY 2015 Plans:*** Continue to provide system engineering policy, process, systems analysis, SE resource management, requirements transition coordination, Systems of Systems Certification, transport engineering analysis, transportation certification and external (DoD, Joint Staff, ASN, Navy, Army et al.) coordination to ensure program success, system interoperability, and an integrated system of systems capabilities for the Marine Corps. ***FY 2016 Base Plans:*** -Provide DGSIT support to 11th, 22nd and 24th MEU deployments. -Contribute to the development of the 2016 Afloat MAGTF C4 Required Capabilities (AMC4RC) Letter. -Contribute to the OPNAV N9 & N2/N6 Blue-In-Support-Of-Green (BISOG) POM-18 submission and POM 19 development. -Provide engineering support to capabilities development, review and assessment as well as requirements transition. -Provide engineering support to the development of USMC input to OUSD AT&L's Joint C2 Capability Area FY17 Sustainment & Modernization Plan and Plan Build Workshop ***FY 2016 OCO Plans:*** N/A					
Title: MARCIMS: Marine Civil Information Management System	1.390	0.050	0.200	-	0.200

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2277 / *System Engineering and Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated software and technical data package development, testing, and engineering study and implementation on the AWS Cloud infrastructure. ***FY 2015 Plans:*** Continue software development to incorporate all remaining threshold requirements to get to Full Operational Capability (FOC). ***FY 2016 Base Plans:*** Continue development and implementation of minor software patches. ***FY 2016 OCO Plans:*** N/A					
Title: Public Affairs System (PAS): Product Development	-	-	0.300	-	0.300
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Initiate support to the research and evaluation of solutions to modernize the Public Affairs Still Acquisition System into a single handheld device with the capability to acquire, edit and transmit still and video imagery and engage publics via traditional and social media. These actions will include the evaluation of device solutions, development of specific software applications, and the attainment of required information assurance certifications and accreditations for a handheld Public Affairs System. This is a new start for RDT&E in FY16. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	12.101	5.117	5.161	-	5.161

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** *2277 / System Engineering and Integration*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/4620AA: *MARCIMS*	1.533	0.568	0.301	-	0.301	0.300	0.237	0.223	0.227	Continuing	Continuing
• PMC/4620BB: *Public Affairs Systems*	2.280	1.193	1.124	-	1.124	0.901	0.918	0.669	0.681	Continuing	Continuing

Remarks

D. Acquisition Strategy

Marine Civil Information Management System (MARCIMS) will employ an evolutionary acquisition strategy utilizing an incremental approach for development and fielding of the MARCIM. The Letter of Clarification (LOC) identifies two baselines to fullfill all Threshold requirements. The current acquisition strategy addresses both baseline builds to include the software development, training, fielding and sustainment of these builds. Build 1 will support an Initial Operational Capability (IOC) and Build 2 will support a Full Operational Capability (FOC).

Public Affairs System will employ an evolutionary acquisition strategy, maximizing the utilization of commercial-off-the-shelf devices and software to provide best overall performance solutions to the warfighter with minimal developmental cost and schedule investments.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** *2277 / System Engineering and Integration*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MARCIMS	C/FFP	AGC : Boston,MA	0.000	1.080	Aug 2014	-		0.174	Apr 2016	-		0.174	-	1.254	-
MARCIMS	MIPR	AGC : Boston, MA	0.000	0.086	May 2014	-		0.026	Feb 2016	-		0.026	-	0.112	-
MARCIMS Tech Doc	MIPR	AGC : Boston, MA	0.000	0.118	Feb 2014	-		-		-		-	-	0.118	-
Experimental Forward Operating Base	WR	NSWC : Various	4.234	1.082	Oct 2013	2.314	Nov 2014	-		-		-	Continuing	Continuing	Continuing
Experimental Forward Operating Base	WR	NRL : Wash, DC	0.781	0.224	Jan 2014	0.357	Jan 2015	-		-		-	Continuing	Continuing	Continuing
PAS	WR	TBD : TBD	0.000	-		-		0.300	Mar 2016	-		0.300	Continuing	Continuing	Continuing
		Subtotal	5.015	2.590		2.671		0.500		-		0.500	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MARCIMS	C/FFP	SPAWAR : Charleston,SC	0.000	0.025	Jun 2014	-		-		-		-	-	0.025	-
MARCIMS	C/FFP	SPAWAR : Charleston, SC	0.000	0.074	Feb 2014	-		-		-		-	-	0.074	-
MARCIMS	WR	SPAWAR : Charleston, SC	0.000	0.007	Feb 2014	0.050	Feb 2015	-		-		-	-	0.057	-
JINTACCS	C/FFP	NSWC : Dahlgren, VA	3.891	0.571	Apr 2014	0.041	Apr 2015	-		-		-	Continuing	Continuing	Continuing
Prior Years Cumulative	C/BA	CDSA : DAM Neck	0.441	-		-		-		-		-	-	0.441	-
MAGTF SEI&C	C/FP	SPAWAR : Charleston, SC	0.500	-		0.392	Apr 2015	0.500	Apr 2016	-		0.500	Continuing	Continuing	Continuing
MAGTF SEI&C	C/FP	LTC : Stafford, VA	4.462	4.111	Apr 2014	-		-		-		-	Continuing	Continuing	Continuing
MAGTF SEI&C	C/FP	MCSC : Quantico, VA	1.240	1.600	Apr 2014	-		-		-		-	Continuing	Continuing	Continuing
MAGTF SEI&C	WR	NSWC : Dahlgren, VA	2.290	1.633	Apr 2014	1.500	Apr 2015	1.483	Apr 2016	-		1.483	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** *2277 / System Engineering and Integration*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JINTACCS	C/FP	MCTSSA : Cmp Pendlton CA	1.672	0.485	Apr 2014	0.463	Apr 2015	0.425	Apr 2016	-		0.425	Continuing	Continuing	Continuing
		Subtotal	14.496	8.506		2.446		2.408		-		2.408	-	-	-

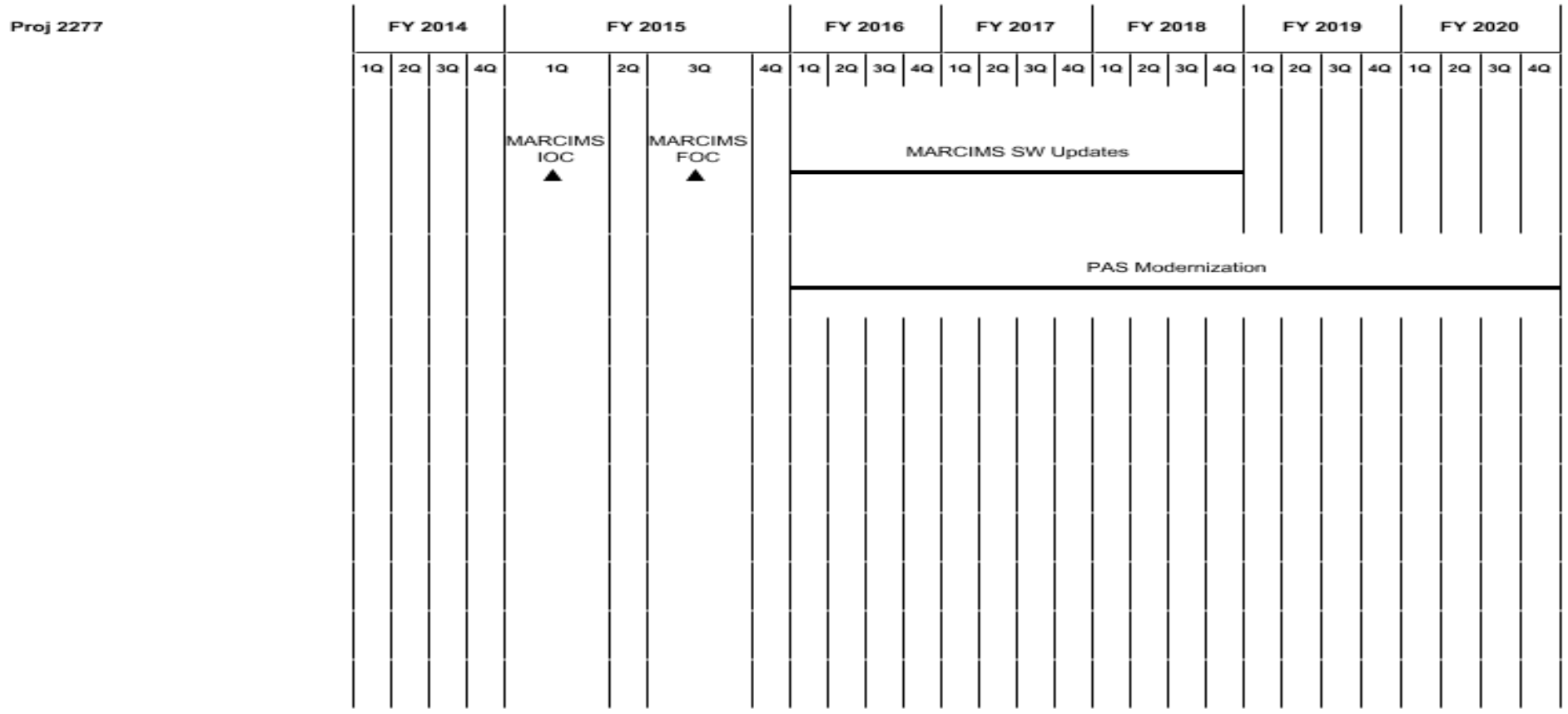
Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cummulative Funding	Various	various : various	5.622	-		-		-		-		-	-	5.622	-
Experimental Forward Operating Base	WR	MCWL : Quantico, VA	1.300	0.491	Oct 2013	-		0.125	Mar 2016	-		0.125	Continuing	Continuing	Continuing
Experimental Forward Operating Base	WR	ATC : Aberdeen, MD	0.979	0.231	Jan 2014	-		0.140	May 2016	-		0.140	Continuing	Continuing	Continuing
Experimental Forward Operating Base	WR	NSWC : Various	0.000	0.283	Nov 2013	-		1.888	Nov 2015	-		1.888	-	2.171	-
Experimental Forward Operating Base	WR	NAVFAC : Various	0.000	-		-		0.100	Mar 2016	-		0.100	-	0.100	-
		Subtotal	7.901	1.005		-		2.253		-		2.253	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	27.412	12.101		5.117		5.161		-		5.161	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2277 / *System Engineering and Integration*



2016OSD - 0206313M - 2277

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** *2277 / System Engineering and Integration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2277				
MARCIMS IOC	1	2015	1	2015
MARCIMS FOC	3	2015	3	2015
MARCIMS SW Updates	1	2016	4	2018
PAS Modernization	1	2016	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2278 / *Air Defense Weapons System*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2278: *Air Defense Weapons System*	37.701	3.580	3.453	1.721	-	1.721	1.821	1.826	2.919	2.967	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Ground Based Air Defense-Transformation (GBAD-T) - Based upon the deployment of the Low Altitude Air Defense (LAAD) Battalions and their employment of the Stinger Missile, GBAD-T transforms Air Defense equipment through technology insertion and equipment repackaging to address capability gaps as the result of equipment obsolescence and the emergent and evolving threats to the Marine Air Ground Task Force (MAGTF).

GBAD-T consists of three efforts: 1) systems engineering support of currently fielded LAAD equipment/assets to include the Stinger Mounted Optic and Mode 5/S Identification Friend or Foe (IFF); 2) redesign and integration of the Advanced Man-Portable Air Defense System (A-MANPADS) Increment 1 Fire Unit Vehicle (FUV) which consists of a M1114 (HMMWV), into an operationally capable vehicle configuration; 3) design, test, and integration of new systems for the Fire Unit Vehicle (FUV) to replace aging and failing technology. The replacement technology is required to retain interfaces with, and be capable of receiving, a Common Aviation Command and Control System (CAC2S) broadcasted link. It will also be capable of interfacing with legacy Marine Air Command and Control System (MACCS) equipment. The decrease ($1.732) from FY15 to FY16 reflects realignment of RDT&E funding to the correct appropriation to support Contractor Advisory and Assistance Services.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: GBAD TRANSFORMATION: Product Development	0.464	1.112	0.827	-	0.827
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated directed energy research of follow on weapon system.					
FY 2015 Plans: Initiate Stinger Missile Mounted Optic (AN/PAS-18) replacement development.					
FY 2016 Base Plans: Continue Stinger Missile Mounted Optic (AN/PAS-18) replacement development.					
FY 2016 OCO Plans: N/A					
Title: GBAD TRANSFORMATION: Support Costs	0.876	0.559	0.403	-	0.403
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2278 / *Air Defense Weapons System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: Continued GBAD-T assessments at the LAAD Battalions and the Stinger Missile School House, ensuring future readiness is maintained. ***FY 2015 Plans:*** Continue both Stinger Missile Mounted Optic (AN/PAS-18) replacement and M1114 (HMMWV)/FUV Replacement documentation. ***FY 2016 Base Plans:*** Continue development of both Stinger Missile Mounted Optic (AN/PAS-18) replacement and M1114 (HMMWV)/ FUV Replacement documentation, as well as, conduct an A-MANPADS Engineering Change Proposal (ECP) Readiness Analysis. ***FY 2016 OCO Plans:*** N/A					
Title: GBAD TRANSFORMATION: Test and Evaluation	0.812	0.940	0.250	-	0.250
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed M1114 and supported Warhead Proximitiy Fuse testing. ***FY 2015 Plans:*** Initiate Developmental Test/Operational Test (DT/OT) and Field User Evaluation (FUE) of Stinger Missile Mounted Optic (AN/PAS-18) replacement. ***FY 2016 Base Plans:*** Complete DT/OT and FUE of Stinger Missile Mounted Optic (AN/PAS-18) replacement. ***FY 2016 OCO Plans:*** N/A					
Title: GBAD TRANSFORMATION: Program Management Services	1.428	0.842	0.241	-	0.241
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Finalized development of acquisition planning documentation for GBAD portfolio of programs and projects.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2278 / *Air Defense Weapons System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Completed M1114 (HMMWV)/FUV modeling and design effort and conduct DT test events. ***FY 2015 Plans:*** Initiate development of GBAD Follow On Weapon System acquisition documentation in support of Stinger Night Replacement and R&D efforts to test and integrate a Fire Unit Laptop and Secure Tactical Wireless replacement system. ***FY 2016 Base Plans:*** -Finalize development of acquisition documentation in support of Stinger Night Replacement. -Initiate development of acquisition documentation in support of Stinger Identification Friend or Foe (IFF) replacement system. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.580	3.453	1.721	-	1.721

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/300600: *GBAD-T*	18.656	30.339	7.565	-	7.565	9.260	9.508	12.320	12.570	Continuing	Continuing

Remarks

D. Acquisition Strategy

GBAD-Transformation: A-MANPADS Increment I is an Abbreviated Acquisition Program (AAP), GBAD-T enables the rapid transition from the Avenger/MANPADS weapon system to the more mobile, flexible and maintainable Advanced MANPADS. The AAP is principally comprised of integrating Government Off The Shelf (GOTS) equipment and Non-Developmental Items (NDI).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2278 / *Air Defense Weapons System*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-T	WR	NSWC : Dahlgren, VA	0.000	0.247	Jan 2014	0.485	Oct 2014	0.230	Feb 2016	-		0.230	Continuing	Continuing	Continuing
GBAD-T	WR	NSWC : Crane.IN	3.703	0.217	Jan 2014	-		-		-		-	Continuing	Continuing	Continuing
GBAD-T	Various	VARIOUS : VARIOUS	5.548	-		0.627	Mar 2015	0.597	Jul 2016	-		0.597	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	N/A : N/A	15.932	-		-		-		-		-	-	15.932	-
		Subtotal	25.183	0.464		1.112		0.827		-		0.827	-	-	-

Remarks

* Base FY 2016 Award date for Various Activities reflect the actual obligation date for the last activity.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-T	MIPR	Army : AMRDEC	0.049	-		0.320	Mar 2015	-		-		-	Continuing	Continuing	Continuing
GBAD-T	WR	NSWC : Crane, IN	0.926	0.876	Dec 2013	0.239	Oct 2014	0.403	Nov 2015	-		0.403	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	N/A : N/A	4.279	-		-		-		-		-	-	4.279	-
		Subtotal	5.254	0.876		0.559		0.403		-		0.403	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-T	WR	NSWC INDIAN HEAD : Indian Head, MD	0.000	0.212	Dec 2013	-		-		-		-	Continuing	Continuing	Continuing
GBAD-T	MIPR	NSWC Crane : Crane, IN	0.000	-		0.940	Mar 2015	0.250	Jan 2016	-		0.250	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2278 / *Air Defense Weapons System*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-T	MIPR	CMDS : Redstone Arsenal,AL	0.000	0.600	Oct 2014	-		-		-		-	-	0.600	-
Prior Years Cumulative Funding	Various	N/A : N/A	4.057	-		-		-		-		-	-	4.057	-
		Subtotal	4.057	0.812		0.940		0.250		-		0.250	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GBAD-T	C/FP	MCSC : Quantico, VA	1.862	1.074	Jun 2014	0.527	Jun 2015	-		-		-	Continuing	Continuing	Continuing
GBAD-T	Various	MCSC Travel : Quantico, VA	0.027	0.040	Nov 2013	0.015	Dec 2014	0.076	Dec 2015	-		0.076	Continuing	Continuing	Continuing
GBAD-T	WR	NSWC : Dahlgren, VA	0.000	0.314	Jan 2014	0.300	Oct 2014	0.165	Oct 2015	-		0.165	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	N/A : N/A	1.318	-		-		-		-		-	-	1.318	-
		Subtotal	3.207	1.428		0.842		0.241		-		0.241	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.701	3.580		3.453		1.721		-		1.721	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2278 / *Air Defense Weapons System*

GBAD SCHEDULE

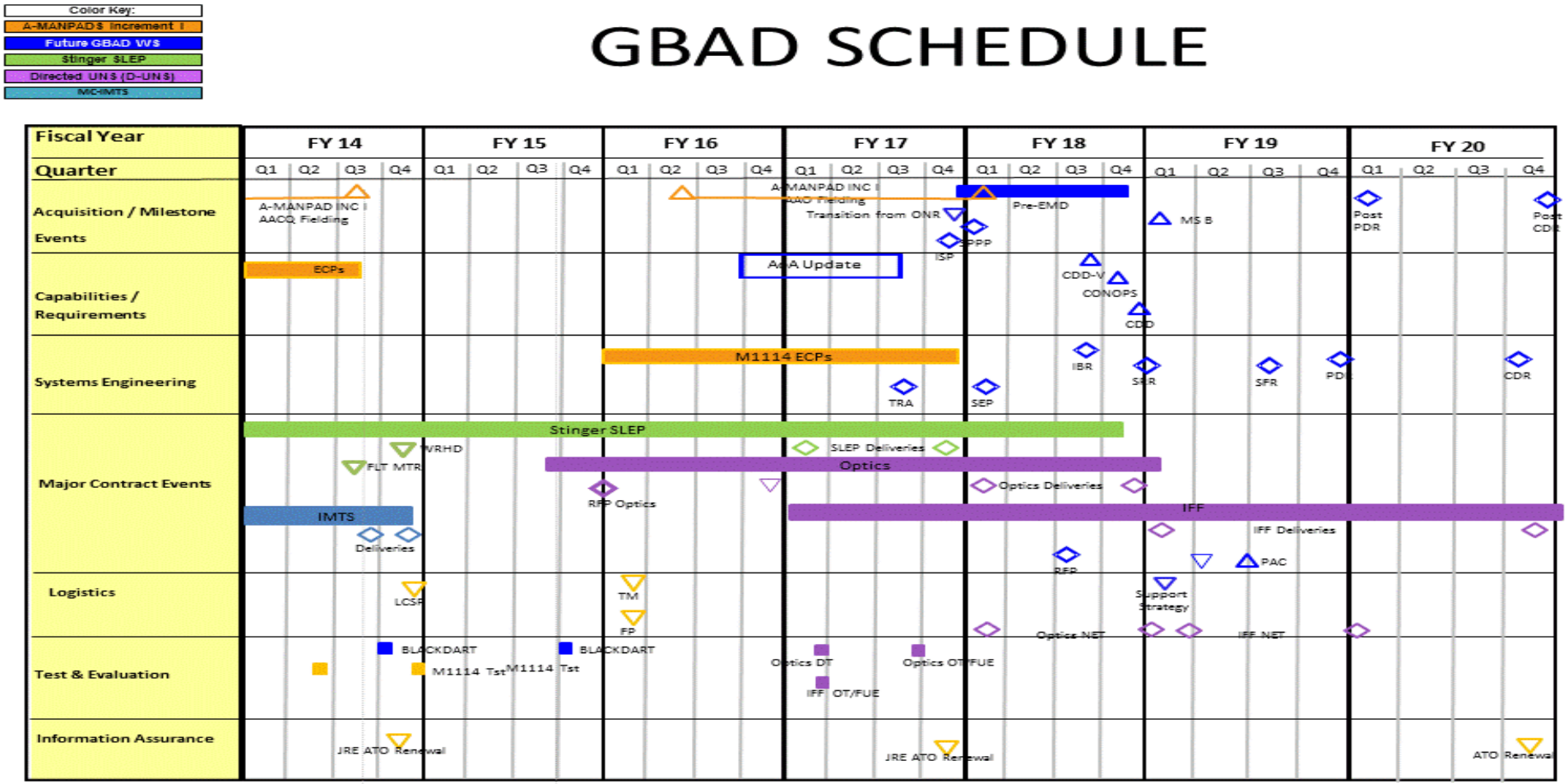


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2278 / *Air Defense Weapons System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2278				
MC--IMPROVED MOVING TARGET SIMULATOR DELIVERY	4	2014	4	2014
117G FIRMWARE (MULTI-BAND VOICE AND DATA RADIO)	1	2014	1	2014
BLACK DART COUNTER UNMANNED AERIAL SYSTEMS DEMO, JOINT TEST EVENT FY14	4	2014	4	2014
STINGER SLEP CONTRACT AWARD (Flight Motor)	3	2014	3	2014
STINGER SLEP CONTRACT AWARD (War Head)	4	2014	4	2014
STINGER SLEP	4	2014	4	2017
JRE (JOINT RANGE EXTENSION) FY14 AUTHORITY TO OPERATE RENEWAL	4	2014	4	2014
AMANDPADS INC 1 FIELDING	2	2016	1	2018
JRE FY17 AUTHORITY TO OPERATE RENEWAL	4	2017	4	2017
OPTICS DEVELOPMENTAL TEST	1	2017	1	2017
OPTICS OT/FUE (OPERATIONAL TEST/FIELD USER EVALUATION)	3	2017	4	2017
OPTICS DELIVERY	1	2018	4	2018
IFF OT/FUE	1	2017	1	2017
IFF DELIVERIES	1	2019	4	2019
M1114 (HMMWV)/FUV ECP (ENGINEERING CHANGE PROPOSAL)	1	2016	4	2017
M1114 (HMMWV)/FUV TEST	4	2014	1	2015
BLACK DART 1	3	2014	4	2014
BLACK DART 2	4	2015	4	2015

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2510 / *MAGTF CSSE & SE*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2510: *MAGTF CSSE & SE*	268.552	3.120	4.124	3.031	-	3.031	2.372	1.228	0.946	0.977	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

(U) The Marine Air Ground Task Force (MAGTF) Combat Service Support Element & Supporting Establishment (CSSE & SE) consists of mutually supporting Logistics Information Technology (IT) programs that support force deployment, planning, and execution; sustainment and distribution; and contributes to the Combatant Commander's Common Operating Picture to support rapid accurate decision making. The funding decrease from FY15 to FY16 in the Transportation Systems Portfolio is due to the completion of initial developmental efforts in accordance with program development schedule.

GLOBAL COMBAT SUPPORT SYSTEM-MARINE CORPS (GCSS-MC) is the physical implementation of the enterprise Information Technology (IT) architecture designed to support both improved and enhanced Marine Air Ground Task Force (MAGTF) Combat Support Services (CSS) functions and MAGTF Commander and Combatant Commanders/Joint Task Force (CC/JTF) combat support information requirements. Today the program includes all transactional CSS systems related to Supply Chain Management (SCM) and Enterprise Asset Management (EAM) functionality enabled with Service Management functions. When combined, these capabilities are referred to as Logistics Chain Management(LCM). The primary goal of GCSS-MC/LCM is to provide the capabilities specified in the Logistics Operational Architecture (Log OA). The result of enabling the Log OA is the retirement of legacy applications. The GCSS-MC/LCM exposes timely mission information to Marine Corps operational and CSS commanders, CC/JTF commanders and their staffs and other authorized users. It exposes information interoperability and common logistics information applications and services across functional areas. GCSS-MC/LCM allows operating forces commanders to base decisions on complete logistics information and make decisions in concert with specific operational tasks. Other follow-on capabilities can be invoked if affordable and when defined by the Business Case(s) as follow-on activities to the Business Capabilities Lifecycle documentation.

JOINT FORCE REQUIREMENTS GENERATOR II (JFRG II)) is an Automated Information System (AIS) that provides the Marine Corps' the capability to plan and execute strategic force movements in support of Joint contingency and crisis action operations and plans. It serves as the single link between Service operational force requirements and validated/sourced unit personnel and cargo data. JFRG II permits multi-level planning with entry of equipment and personnel data, transportation/ movement data, and the phasing of the total force throughout the entire movement timeline. JFRG II interfaces with the Joint Operation Planning and Execution System (JOPES) to register update and validate deployment information within the Department of Defense chain of command. Validated deployment information is then used by U.S. Transportation Command for the scheduling of strategic transportation assets. JFRG II interfaces with the MAGTF Deployment Support System II (MDSS II) for unit cargo information and the War Reserve System (WRS) in order to register sustainment requirements. JFRG II can generate standard, executive, and ad hoc reports and perform database queries to support information requirements. JFRG II operates and functions in a classified environment.

BASE TELECOMMUNICATIONS INFRASTRUCTURE (BTI) provides all Marine Corps installations with the base area network communications infrastructure that connects the end-user to the Defense Information Systems Agency (DISA) network. BTI sustains upgrades and enhances the telecommunications systems infrastructure for all Marine Corps Installations in order to meet the demands required to support the 5th Element of the Marine Air Ground Task Force (MAGTF). BTI is designed to maintain industry currency as it relates to technological capabilities for all voice, video and data transport services via each installation's infrastructure.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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These data services include support for but are not limited to: telephony (including voice over internet protocol), video-teleconferencing, integrated services digital network, Marine Corps enterprise network, energy monitoring control systems, intrusion detection systems, access control systems, fire alarm control networks and fleet training systems. This includes supporting systems such as optical networks, telecommunications management systems, primary power, voice mail, teleconferencing, and outside plant infrastructure.

ELECTRONIC MAINTENANCE SUPPORT SYSTEM (EMSS) is composed of several main components including Electronic Maintenance Devices (EMD), regional servers, deployment servers, charger racks, and ruggedized deployment cases. EMSS is a rugged organizational-level (O-level), light-weight, one-man portable maintenance device capable of supporting multiple platforms and systems across maintenance communities. EMSS provides a Commercial Off-The-Shelf (COTS) hardware device equipped with network interfaces, Built-In-Test/Built-In-Test Equipment (BIT/BITE) interfaces, and Software Defined Test Instrument (SDTI) General Purpose Electronic Test Equipment (GPETE) capabilities. These hardware capabilities will enable commercial or custom DoD and USMC software capabilities including Interactive Electronic Technical Manuals (IETMs), Computer Based Training (CBT), access to Subject Matter Experts (SMEs) over USMC networks, and other maintenance applications to be hosted on EMSS. With these capabilities, maintainers will make more informed decisions, thereby sustaining force readiness over time. Program renamed MAGTF Logistics Support System beginning in FY16.

TRANSPORTATION SYSTEMS PORTFOLIO (TSP): provides funding that supports the USMC Deployment and Execution Support Systems and the Distribution Management Support Systems, and fair share cost to the joint program management office systems. These systems and applications support the planning, deployment, distribution, sustainment and redeployment of supplies, equipment and personnel. The TSP portfolio applications utilize AIT read/write devices, active radio frequency identification (aRFID) tags and satellite tracking systems. TSP applications support In-Transit Visibility (ITV) and Total Asset Visibility (TAV) initiatives to provide commanders with timely and accurate near real-time data on the location and movement of personnel, equipment and supplies that are in-process, in-transit and in-theater. Portfolio renamed Enterprise Logistics Support Systems beginning in FY16.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: BASE TELECOM (BTI)	0.394	0.487	0.490	-	0.490
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Initiated participation in the Defense Information Systems Agency (DISA) Unified Capabilities (UC) (voice, video, collaboration, and data) pilot is critical to BTI modernization strategy. -Initiated testing efforts in support of the DISA UC Everything over Internet Protocol (EoIP) effort. After the testing is reviewed by the Joint Interoperability Test Command (JITC), successfully evaluated products will be placed on the DISA Approved Products List (APL).					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue test and evaluation (T&E) engineering support for Defense Information Systems Agency (DISA) Unified Capabilities (UC) (voice, video, collaboration, and data) implementation. ***FY 2016 Base Plans:*** Continue test and evaluation (T&E) engineering support for Defense Information Systems Agency (DISA) Unified Capabilities (UC) (voice, video, collaboration, and data) implementation. ***FY 2016 OCO Plans:*** N/A					
Title: GCSS-MC LOGISTICS CHAIN MANAGEMENT (GCSS-MC) ***Articles:*** ***FY 2014 Accomplishments:*** -Complete requirements for GCSS-MC/LCM Increment I for the R12 upgrade Tasks and Development and Operational Test (D&OT) events required to validate the Automated Task Organization and Data Synchronization functionalities of the deployed capability ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A	2.626 -	- -	- -	- -	- -
Title: JOINT FORCES REQUIREMENT GENERATION II (JFRG II) ***Articles:*** ***FY 2014 Accomplishments:*** - N/A ***FY 2015 Plans:*** Initiate development of modernized information system. ***FY 2016 Base Plans:*** Conduct Development, Government Acceptance, Information Security and Interoperability testing/certification	- -	0.203 -	0.204 -	- -	0.204 -

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Deploy Information System and transition to Post Deployment Software Support (PDSS) ***FY 2016 OCO Plans:*** N/A					
Title: TRANSPORTATION SYSTENS PORTFOLIO (TSP) / Enterprise Logistics Support Systems	-	2.780	1.686	-	1.686
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated requirements decomposition and design efforts to develop Sea Service Deployment Module (SSDM) within Integrated Computerized Deployment System (ICODES) Managed by Joint Program Management Office (JPMO). ***FY 2015 Plans:*** Develop ICODES SSDM with JPMO. Validate and verify program development and continue testing and validation of functional transition. ***FY 2016 Base Plans:*** Initiate subsequent increment of ICODES development as necessary and continue functional testing and validation. ***FY 2016 OCO Plans:*** N/A					
Title: ELECTRONIC MAINTENANCE SUPPORT SYSTEM (EMSS) / MAGTF Logistics Support System	0.100	0.654	0.651	-	0.651
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated investigation of NGEN computer and tablet connectivity on the Electronic Maintenance Support System (EMSS) Program ***FY 2015 Plans:*** -Initiate investigation of software defined test instruments (SDTI) and software applications. -Initiate investigation of advanced Interactive Electronic Technical Manual software to incorporate advanced diagnostics. -Initiate development of advanced software interfaces to integrate wireless capability into software defined test instruments (SDTI).					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiate development of software applications which support enhanced maintenance capabilities on existing weapon system platforms. ***FY 2016 Base Plans:*** -Continue to Investigate software defined test instruments (SDTI) and software applications. -Continue to investigate advanced Interactive Electronic Technical Manual software to incorporate advanced diagnostics. -Continue to develop advanced software interfaces to integrate wireless capability into software defined test instruments (SDTI). -Continue to develop software applications which support enhanced maintenance capabilities on existing weapon system platforms. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.120	4.124	3.031	-	3.031

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/BLI 461700 GCSS: *GCSS-MC*	0.536	-	-	-	-	-	-	-	-	Continuing	Continuing
• PMC/BLI 463500 BTI: *BTI*	14.447	21.867	54.476	-	54.476	84.457	75.759	172.795	53.089	Continuing	Continuing
• PMC/BLI 418100: *EMSS/ MAGTF Logistics Support Systems*	1.500	0.796	3.606	-	3.606	3.866	3.948	3.043	3.103	Continuing	Continuing
• PMC/BLI 461700: *TSP/Enterprise Logistics Support Systems*	-	0.498	0.396	-	0.396	0.595	-	-	-	Continuing	Continuing
• PE/BLI 4616: *GCSS-MC*	-	-	-	-	-	1.100	2.000	-	1.200	Continuing	Continuing
• RDTE/4041: *JFRG*	-	-	0.294	-	0.294	-	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

GLOBAL COMBAT SUPPORT SYSTEM-MARINE CORPS (GCSS-MC) The Acquisition Strategy for GCSS-MC/LCM Increment 1 and the Business Capabilities Lifecycle for the GCSS-MC/LCM Follow-on acquisition is building an acquisition approach in the portfolio of systems for Logistics Chain Management (LCM) that adds

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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to the baseline system developed in Increment 1. The goal is to field operationally suitable and supportable capabilities in the shortest time possible that meets the Logistics Advocate goals. The GCSS-MC Program Management Office acquisition approach will deliver capabilities in increments as defined in the DoDi 5000 Interim guidance, and updated as guidance is developed. Each increment capability will follow the established acquisition model for software intensive systems. Increments will include emergent user priorities, advanced technology improvements and expanded capabilities as prioritized and funded by the system advocates. Increment 1 is an operational Enterprise system (authorized for 36,000 users). The Mobile Field Service (MFS), Enterprise Automated Task Organization (EATO) and Riverbed Steelhead Appliance (RSA) (WAN optimization) will be provided as a deliverable in Increment 1 Release 1.1.1. This release provides limited detached capability (store and forward), automated task organizing, and optimizes WAN throughput. Other follow-on capabilities can be invoked if affordable and when defined by the Business Case(s) as follow-on activities to the Business Capabilities Lifecycle documentation.

JOINT FORCES REQUIREMENT GENERATOR II (JFRG II) II is required to modernize in order to implement Joint Requirements Oversight Counsel (JROC) mandates in support of Adaptive Planning and Execution (APEX) including the inclusion of Global Force Management - Data Initiative (GFM-DI) data elements and Joint Command and Control (JC2) Capabilities Development Document (CDD) requirements. The JFRG II legacy software application will remain supported until end of life (EOL) in 1st Qtr FY17 when it will be replaced by the modernized version. The planning phase (requirements analysis, market research and cost analysis, etc.) was completed during the 2d and 3d Qtr FY13. The design and prototype demonstration phase was conducted during FY14 and development of the approved design will take place during FY15. The modernized version of JFRG II will deploy during the 2d Qtr FY16 with a six month transition period ending 4th Qtr FY16.

BASE TELECOMMUNICATIONS INFRASTRUCTURE (BTI) provides all Marine Corps installations with the base area network communications infrastructure that connects the end-user to the DISA network. BTI sustains upgrades and enhances the telecommunications systems infrastructure for all Marine Corps Installations in order to meet the demands required to support the 5th Element of the Marine Air Ground Task Force (MAGTF). Participation in the DISA Unified Capabilities (voice, video, collaboration, and data) pilot is critical to BTI modernization strategy. The RDT&E funds will be utilized for analysis, research and evaluation of Unified Capabilities (UC) (voice, video, collaboration, and data) implementation efforts.

ELECTRONIC MAINTENANCE SUPPORT SYSTEM (EMSS)/MAGTF Logistics Support Systems is pursuing an evolutionary acquisition strategy in order to field operationally suitable and supportable capability across the Marine Corps as a maintenance aid. EMSS must evolve in concert with the supported platforms maintenance philosophy to provide extended functionality and access to network connectivity.

TRANSPORTATION SYSTEMS PORTFOLIO (TSP): The acquisition strategy is to develop the functional elements of the MAGTF Deployment Support System II (MDSS II) into a Sea Service Deployment Module (SSDM) of the Integrated Computerized Deployment System (ICODES). ICODES is a Joint Program currently managed by the Surface Deployment and Distribution Command (SDDC) of USTRANSCOM. The development of the SSDM will be instituted as a CLIN to the SDDC JPMO contract for ICODES expected to be awarded in January 2015. The development will follow an evolutionary acquisition approach that allows for continued development based on functional transition and changing user need requirements as well as information assurance requirements. The JPMO will determine the contracting strategy and this PMO will acknowledge and approve strategies prior to funding development.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2510 / *MAGTF CSSE & SE*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	261.019	-		-		-		-		-	Continuing	Continuing	Continuing
JFRG II	C/FFP	TBD : TBD	0.418	-		0.203	Sep 2015	0.204	Aug 2016	-		0.204	Continuing	Continuing	Continuing
TSP Enterprise SyS Modernization	TBD	USTRANSCOM JPMO : SCOTT AFB, IL	0.000	-		2.780	Feb 2015	1.686	Nov 2015	-		1.686	Continuing	Continuing	Continuing
GCSS-MC Deployable Capability/ Warehouse Mgmt	TBD	Various : SSC-LANT, SC	0.000	2.399	Jan 2015	-		-		-		-	-	2.399	-
		Subtotal	261.437	2.399		2.983		1.890		-		1.890	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMSS/MAGTF Logistics Support Systems Program SW Support	WR	NSWC, Crane : Crane, Indiana	0.563	-		0.654	Apr 2015	0.651	Mar 2016	-		0.651	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	Various : Various	3.177	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	3.740	-		0.654		0.651		-		0.651	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EMSS	WR	NSWC,Crane : Crane, Indiana	0.000	0.100	Dec 2014	-		-		-		-	-	0.100	-
BTI	MIPR	MITRE : Aberdeen Proving Ground, MD	0.000	0.394	Dec 2014	0.487	Jan 2015	0.490	Jan 2016	-		0.490	-	1.371	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 2510 / *MAGTF CSSE & SE*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GCSS-MC Deployed Capability/Warehouse Management	MIPR	JTIC : Indian Head, MD	0.000	0.227	Nov 2014	-		-		-		-	-	0.227	-
Prior Years Cumulative Funding	Various	Various : Various	3.375	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	3.375	0.721		0.487		0.490		-		0.490	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	268.552	3.120		4.124		3.031		-		3.031	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

JFRG II Program Schedule

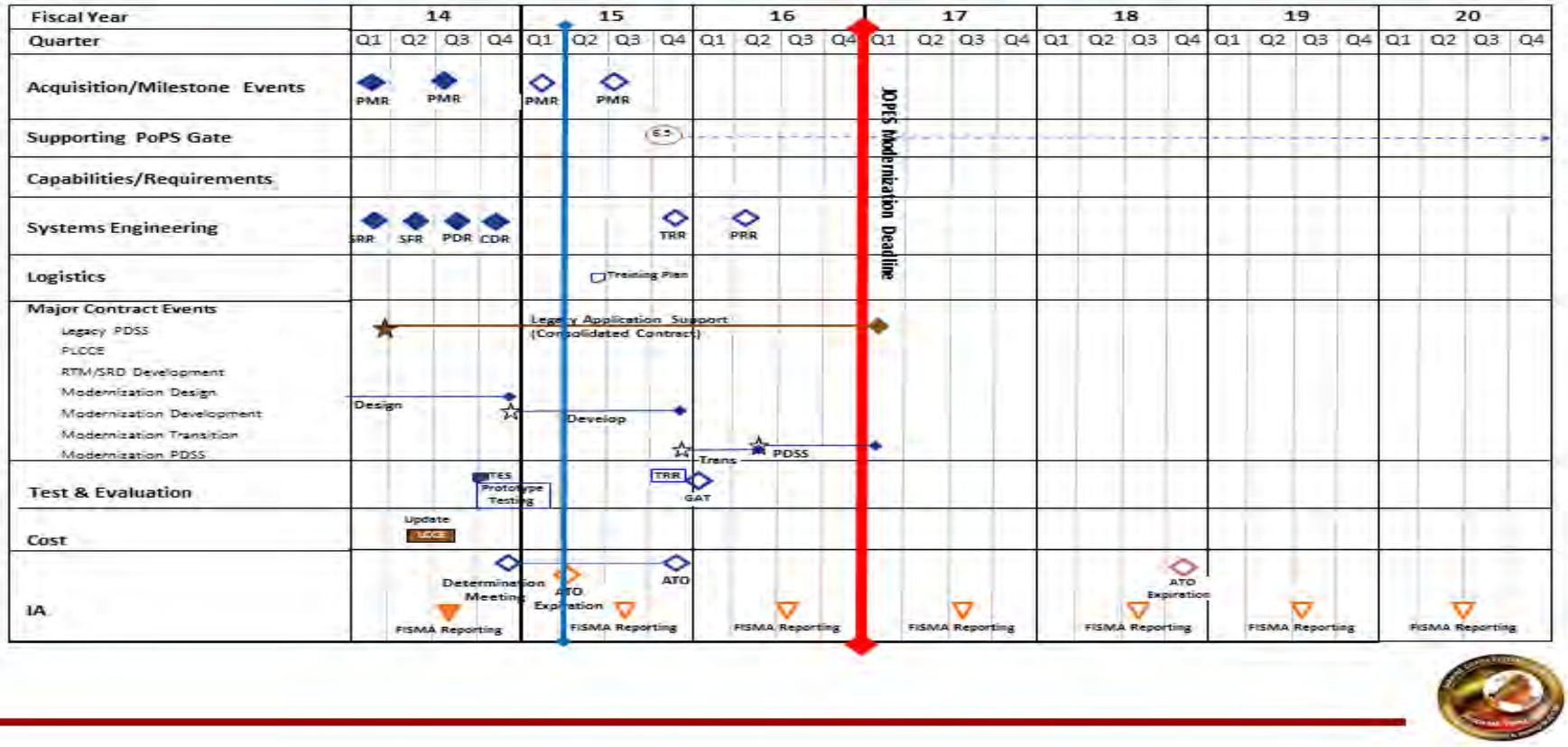

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

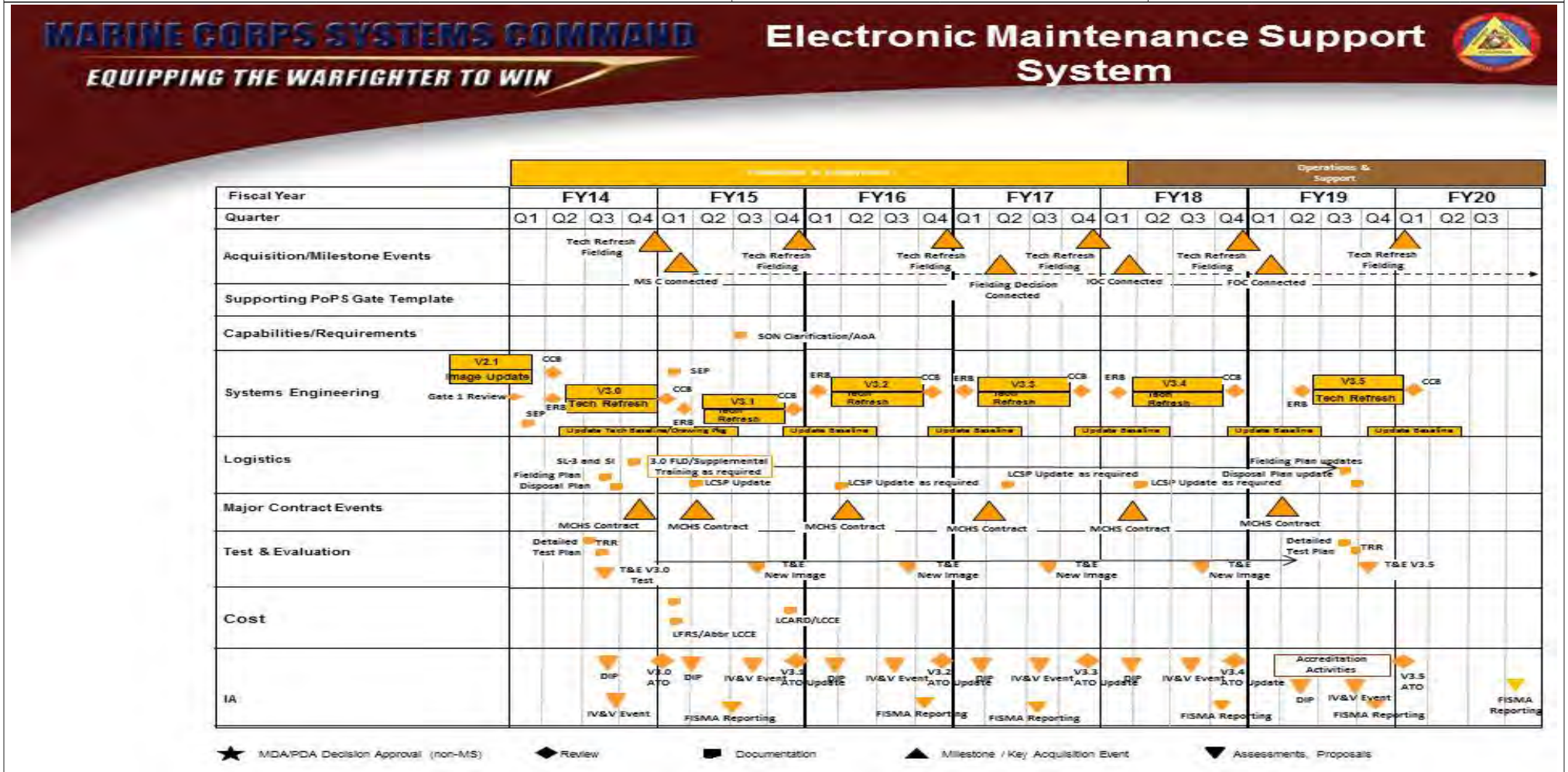

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

BTI Top-Level Program Schedule

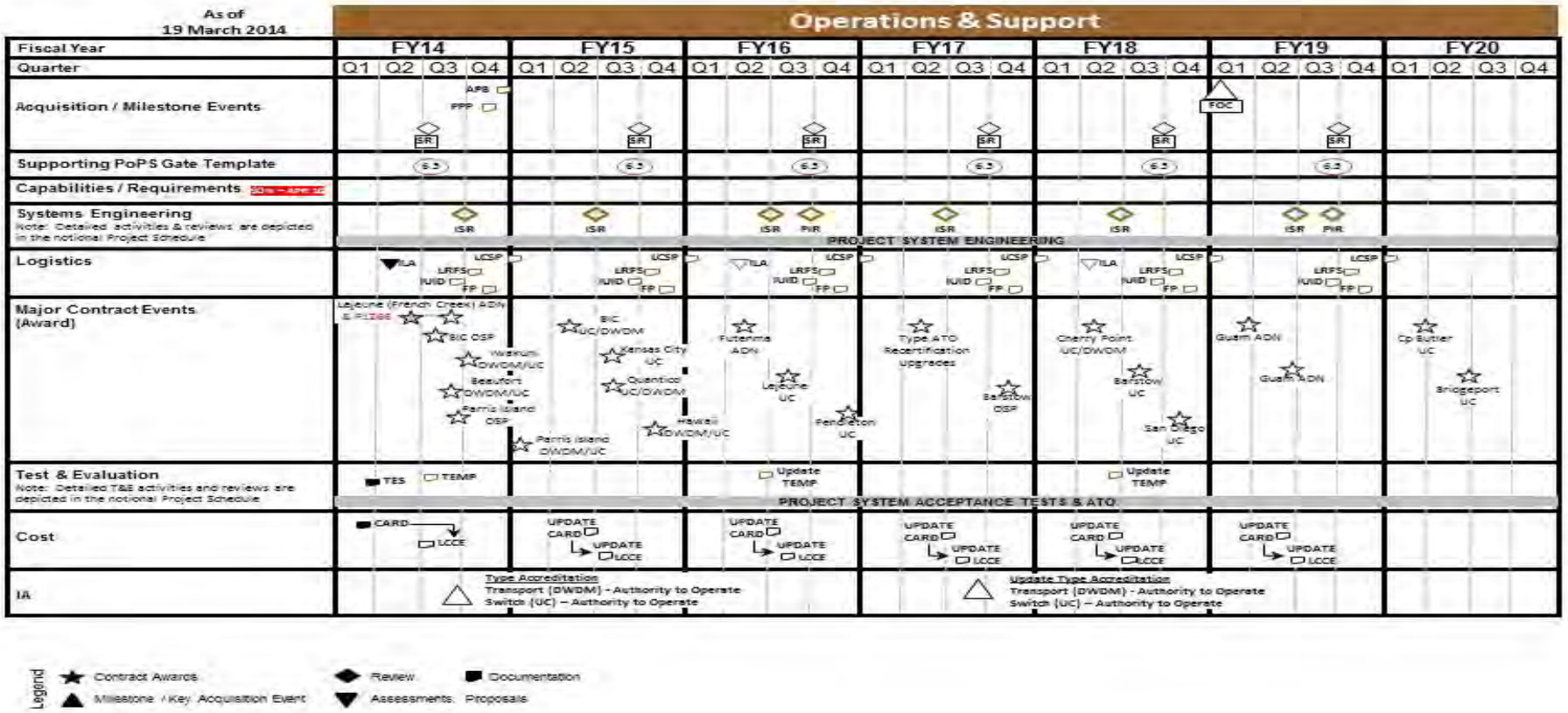

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

TSP

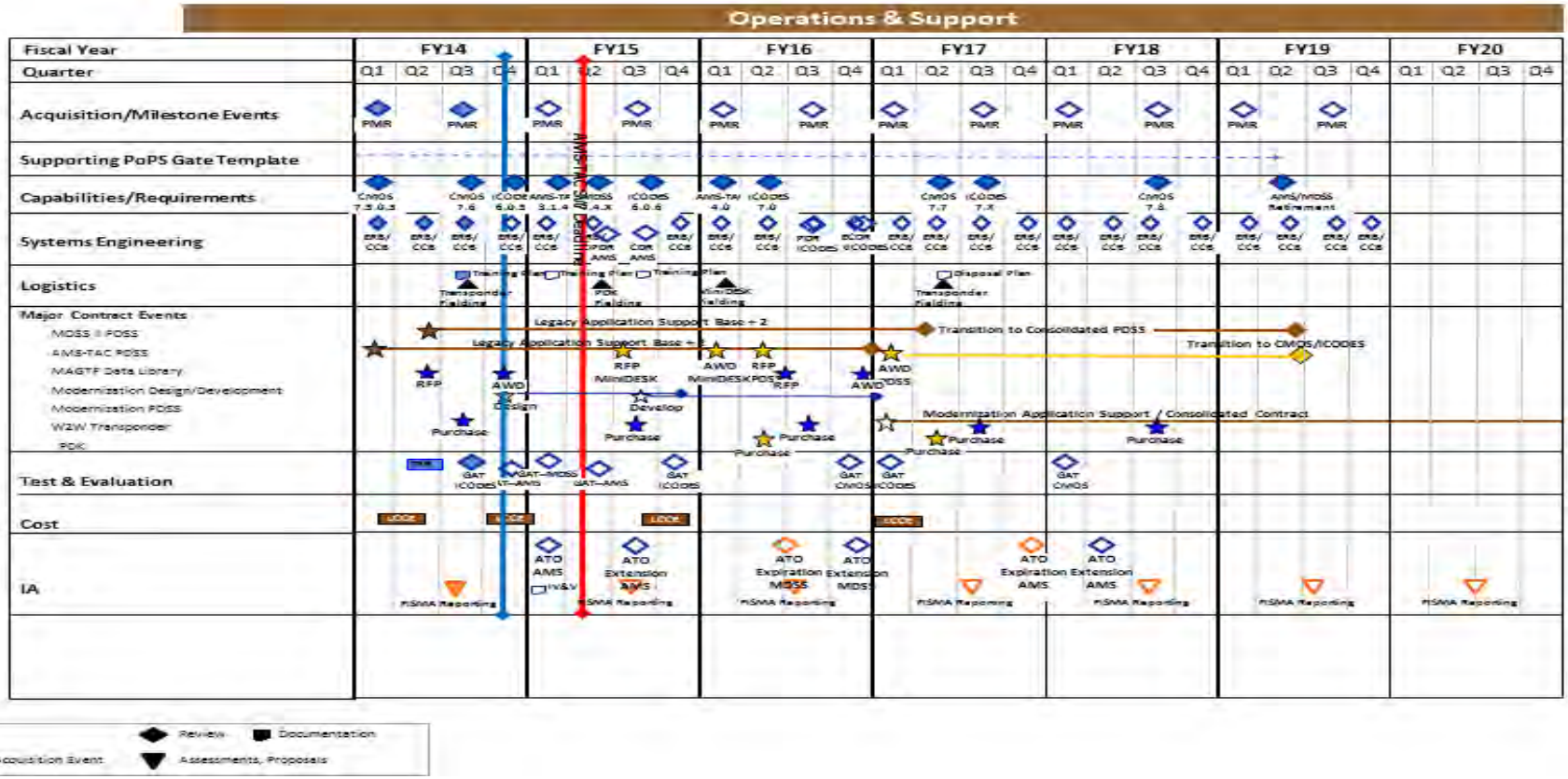

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

PEO EIS
ENTERPRISE INFORMATION SYSTEMS
DEPARTMENT OF THE NAVY

GCSS-MC/LCM
Increment 1 Schedule

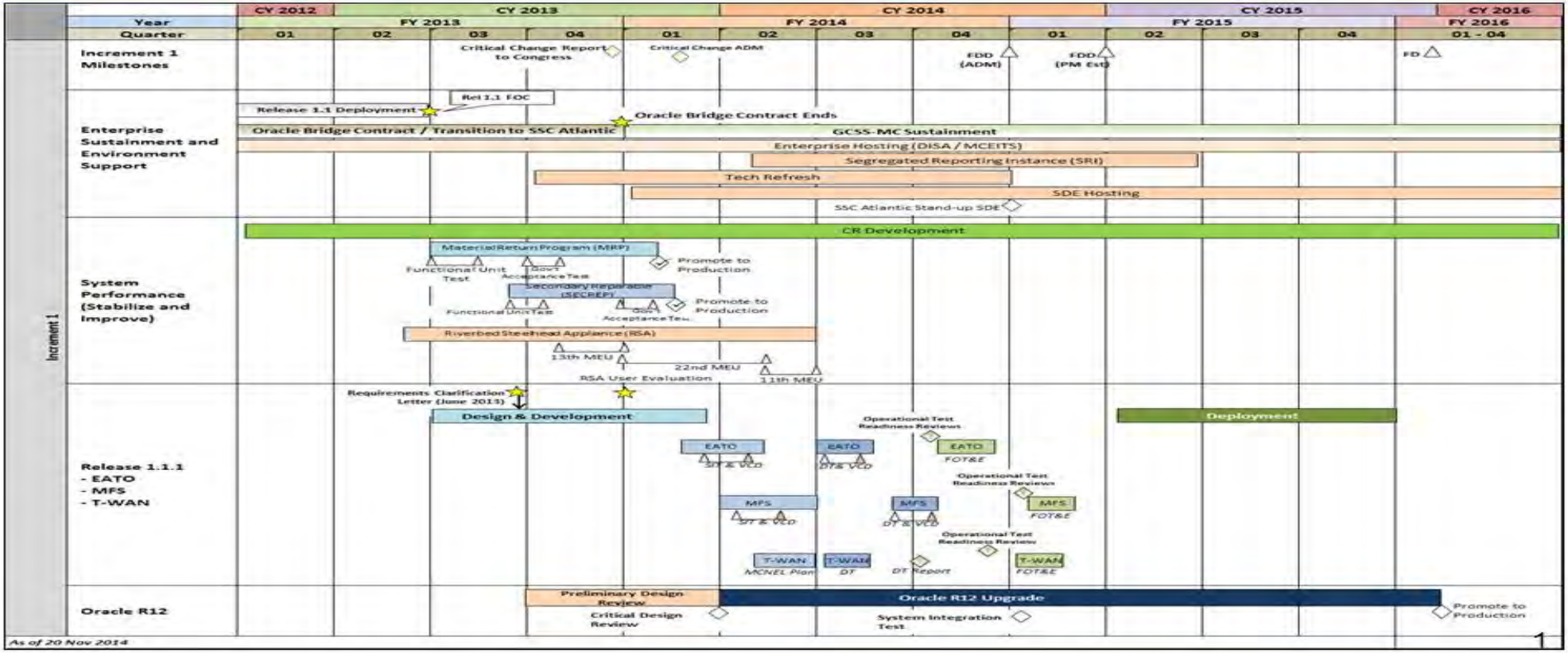

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2510				
Milestone C (Re-baseline Block I)	1	2015	1	2015
Tech Refresh V3.1 Fielding	4	2015	4	2015
Initial Operational Capability (IOC) Connected	1	2018	1	2018
Full Operational Capability (FOC) Conntected	1	2019	1	2019
GCSS-MC Increment 1 Full Deployment Decision (FDD)	1	2015	1	2015

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 3099 / *Radar System*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3099: *Radar System*	169.458	9.305	10.342	11.083	-	11.083	17.156	18.898	17.333	17.665	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Long Range Radar (AN/TPS-59) - The AN/TPS-59 is a three dimensional ground-based sensor that can detect and track long range Air Breathing Targets (ABT) at ranges of 300 nautical miles and Tactical Ballistic Missiles (TBM) at ranges of 400 nautical miles. The system is experiencing increasing Obsolescence and Diminishing Manufacturing Sources and Material Shortages (ODMSMS) issues. The program will use a Post Production Support (PPS) contract and Other Government Activities (OGAs) to develop engineering changes to resolve ODMSMS and incorporate Mode 5 Identification Friend or Foe (IFF) per DOD mandate.

Family of Target Acquisition Systems (FTAS) - The FTAS provides the MAGTF the capability to locate, identify, and attack enemy indirect fire weapons systems and observe and direct friendly artillery fire. The FTAS consists of the AN/TPQ-46 Firefinder Radar, the AN/TPQ-49 Lightweight Counter Mortar Radar, and the AN/TSQ-267 Target Processing Set. The FTAS is critical in the execution of counterfire and the integration of target acquisition information enabling attack by MAGTF assets. The FTAS also provides artillery firing units the ability to conduct artillery registration and other friendly fire missions. The FTAS encompasses the equipment required to support target acquisition within the target acquisition platoon and is resident in the headquarters battery of each artillery regiment. The program will continue to address engineering issues that arise due to ODMSMS items within the FTAS. Also, prior to FY15, the Marine Corps was able to leverage US Army efforts but as the US Army divests from the AN/TPQ-46 and AN/TPQ-49, the USMC will have to assume and fund the responsibilities of the primary inventory control activity (PICA).

Short/Medium Range Air Defense Radar (SHORAD or AN/TPS-63) - The AN/TPS-63 is a two-dimensional, medium-range, medium altitude, transportable radar system, which is doctrinally employed as a tactical gap-filler or as an early warning system for early deployment into the operational area. It has a 360-degree air surveillance capability at a range of 160 miles and complements the co-employed AN/TPS-59 three-dimensional, long-range, air surveillance radar system. The program will use OGAs to develop engineering change proposals related ODMSMS to improved system reliability with the specific purpose of meeting increased fleet operational requirements.

Virtual Warfare Center (VWC) Support - The project team conducts fully interactive simulated war games at the Virtual Warfare Center (VWC) in St. Louis, MO, in order to quantify family of systems performance and how it impacts effectiveness in the Integrated Air and Missile Defense (IAMD) mission area. The VWC provides a venue for the exploration of advanced engagement concepts focused on persistent forward naval engagements in support of the MAGTF and the development of associated Joint and Service specific tactics, techniques, and procedures (TTPs). VWC support encompasses a set of integrated fire control (IFC) activities that also includes concept/CONOPS development, family of systems architecture development, and systems engineering/integration efforts.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: AN/TPS-59 : Product Development	0.700	1.065	1.991	-	1.991
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: The program will address Diminishing Manufacturing Sources and Material Shortages (DMSMS) issues by continuing use of a Post Production Support (PPS) contract as well as use of Other Government Activities (OGAs). The AN/TPS-59 modification will address DMSMS and the DOD mandated Mode 5 Implementation for the AN/TPS-59 Radar System. ***FY 2014 Accomplishments:*** -Continued software integration and ECPs to address obsolescence and DMSMS issues. ***FY 2015 Plans:*** -Continue software integration and ECPs to address obsolescence and DMSMS issues. ***FY 2016 Base Plans:*** -Continue software integration and ECPs to address obsolescence and DMSMS issues. ***FY 2016 OCO Plans:*** N/A					
Title: AN/TPS-59: Test and Evaluation	0.700	1.600	1.000	-	1.000
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Completed Software Validation and Verification: Bold Quest Interface Testing and Black Dart Interface Testing ***FY 2015 Plans:*** -Initiate Field User Evaluation (FUE) for Identification Friend or Foe (IFF) -Initiate Limited User Evaluation of Transport Shelter Tech Refresh -Initiate FUE for Ops Consoles/Servers Tech Refresh ***FY 2016 Base Plans:*** -Initiate Joint Operational Test Approach (JOTA) for IFF -Continue Sustainment Activities Integration Testing ***FY 2016 OCO Plans:*** N/A					
Title: AN/TPS-59 : Support	1.416	3.506	4.873	-	4.873
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: -Continued MITRE/NSWC Dahlgren - Engineering Support -Continued MCSC - Engineering Support and Program Office Travel -Continued Post Production Services and Support ***FY 2015 Plans:*** -Continue MITRE/NSWC Dahlgren - Engineering Support -Continue MCSC - Engineering Support and Program Office Travel -Continue Post Production Services and Support ***FY 2016 Base Plans:*** -Continue MITRE/NSWC Dahlgren - Engineering Support -Continue MCSC - Engineering Support and Program Office Travel -Continue Post Production Services and Support ***FY 2016 OCO Plans:*** N/A					
Title: AN/TPS-59: Management Services	3.668	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued program management and technical support for Long Range Radar efforts. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: FTAS: Support	-	0.250	0.502	-	0.502
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2015 Plans:*** -Continue NSWC Dahlgren - Engineering Support for the Family of Target Acquisition systems -Continue MCSC Albany - Program Travel in support of Equipment and Logistics SME. ***FY 2016 Base Plans:*** -Continue Tobyhanna Army Depot (TYAD)- ECP development on the AN/TSQ-267 and ECP development on the AN/TPQ-49. -Continue MCSC Albany - Program Travel in support of Equipment and Logistics SME. -Initiate assuming responsibilities of the primary inventory control activity (PICA) as the US Army divests from the AN/TPQ-46 and AN/TPQ-49. ***FY 2016 OCO Plans:*** N/A					
Title: FTAS: Product Development	0.131	1.892	1.090	-	1.090
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued ECP development for the AN/TSQ-267 and AN/TPQ-49. ***FY 2015 Plans:*** -Initiate development and testing of an engineering change to capitalize on products and technologies initiated by the Navy future capability for correlation/fusion of radar data within the AN/TSQ-267. -Initiate FTAS Correlation and Fusion ECP for the AN/TSQ-267 pending product outcome of the Correlation and Fusion Naval Future Capability Study. ***FY 2016 Base Plans:*** -Continue development and testing of an engineering change to capitalize on products and technologies initiated by the Navy future capability for correlation/fusion of radar data within the AN/TSQ-267 which includes the Correlation and Fusion ECP for the AN/TSQ-267. -Initiate assuming the responsibilities of the primary inventory control activity (PICA) as the US Army divests from the AN/TPQ-46 and AN/TPQ-49. ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: SHORAD: Support	0.147	0.193	0.195	-	0.195
Articles:	-	-	-	-	-
Description: Continued development effort to resolve ongoing DMSMS and obsolescence issues. ***FY 2014 Accomplishments:*** -Completed AIMS Platform Certification ***FY 2015 Plans:*** -Continue Tobyhanna Army Depot (TYAD) - DMSMS ECP Efforts ***FY 2016 Base Plans:*** -Continue Tobyhanna Army Depot (TYAD) - DMSMS ECP Efforts ***FY 2016 OCO Plans:*** N/A					
Title: VWC: Support	2.543	1.836	1.432	-	1.432
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued simulated war games at the Virtual Warfare Center (VWC) in St. Louis, MO, in order to quantify family of systems performance and how it impacts effectiveness in the Integrated Air and Missile Defense (IAMD) mission area. ***FY 2015 Plans:*** -Continue simulated war games at the Virtual Warfare Center (VWC) in St. Louis, MO, in order to quantify family of systems performance and how it impacts effectiveness in the Integrated Air and Missile Defense (IAMD) mission area. ***FY 2016 Base Plans:*** -Continue to simulate war games at the Virtual Warfare Center (VWC) in St. Louis, MO, in order to quantify family of systems performance and how it impacts effectiveness in the Integrated Air and Missile Defense (IAMD) mission area. ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Accomplishments/Planned Programs Subtotals	9.305	10.342	11.083	-	11.083

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/465003: *AN/TPS-59*	12.066	9.699	29.309	-	29.309	21.395	16.095	20.636	21.062	Continuing	Continuing
• PMC/465005: *FTAS*	2.617	6.623	4.388	-	4.388	3.059	2.764	2.899	2.980	Continuing	Continuing
• PMC/465007: *SHORAD (AN/TPS-63)*	1.496	0.973	1.421	-	1.421	0.729	0.743	-	-	Continuing	Continuing
• PMC/463000: *AN/TPS-59 MCHS*	0.091	0.098	0.121	-	0.121	0.143	0.149	0.151	0.154	Continuing	Continuing

Remarks

D. Acquisition Strategy

Long Range Radar (AN/TPS-59) - The AN/TPS-59 is a three dimensional ground-based sensor that can detect and track long range Air Breathing Targets (ABT) at ranges of 300 nautical miles and Tactical Ballistic Missiles (TBM) at ranges of 400 nautical miles. The system is experiencing increasing Obsolescence and Diminishing Manufacturing Sources and Material Shortages (ODMSMS) issues. The program will use a Post Production Support (PPS) contract with the original equipment manufacturer (OEM) as well as Other Government Agencies (OGAs) to develop engineering changes to resolve DMSMS and incorporate Mode 5 Identification Friend or Foe (IFF) per DOD mandate.

Family of Target Acquisition Systems (FTAS) - The Family of Target Acquisition Systems consists of 3 major components: AN/TPQ-46, AN/TPQ-49 and the AN/TSQ-267. Of these 3 systems, the AN/TPQ-46 is due to be replaced by the Ground/Air TAsk Oriented Radar (G/ATOR) beginning in 2018. Sustainment activities during 2016 and beyond will be limited to maintain the authority to operate (ATO) creditation. Sustainment activities on the AN/TPQ-49 are escalating as the US Army divests from the AN/TPQ-46 and AN/TPQ-49, the USMC will have to assume the responsibilities of the primary inventory control activity (PICA). Additionally, the AN/TSQ-267 requires hardware updates in order to continue housing the refreshed AFTADS and C2PC platforms.

Short/Medium Range Air Defense Radar (SHORAD or AN/TPS-63) - The AN/TPS-63 is experiencing increasing Obsolescence and Diminishing Manufacturing Sources and Material Shortages (ODMSMS) issues. The program will use Other Government Agencies (OGAs) to develop engineering changes to resolve DMSMS issues.

Virtual Warfare Center (VWC) Support - The project team conducts fully interactive simulated war games at the Virtual Warfare Center (VWC) in St. Louis, MO, in order to quantify family of systems performance and how it impacts effectiveness in the Integrated Air and Missile Defense (IAMD) mission area. VWC support encompasses

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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a set of integrated fire control (IFC) activities that also includes concept/CONOPS development, family of systems architecture development, and systems engineering/ integration efforts. These efforts are led by ONR.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59	SS/FFP	LMC : SYRACUSE, NY	3.690	0.700	Jan 2015	-		-		-		-	-	4.390	-
AN/TPS-59	C/FFP	MARCORSYSCOM : QUANTICO, VA	0.000	-		1.065	Jul 2015	1.000	Jun 2016	-		1.000	-	2.065	-
AN/TPS-59	WR	NSWC : CRANE, IN	3.425	-		-		0.991	Feb 2016	-		0.991	Continuing	Continuing	Continuing
FTAS	C/IDIQ	SRC TEC : SYRACUSE, NY	0.000	0.131	Sep 2014	1.492	Mar 2015	-		-		-	-	1.623	-
FTAS	MIPR	TYAD : TOBYHANNA, PA	0.000	-		0.400	Mar 2015	1.090	Feb 2016	-		1.090	-	1.490	-
Prior Year Cumulative Funding	Various	VARIOUS : VARIOUS	74.879	-		-		-		-		-	-	74.879	-
		Subtotal	81.994	0.831		2.957		3.081		-		3.081	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59	WR	NSWC : DAHLGEN, VA	9.057	-		0.200	Nov 2014	0.753	Jan 2016	-		0.753	Continuing	Continuing	Continuing
AN/TPS-59	Various	SPAWAR : CHARLESTON, SC	4.397	-		0.500	Mar 2015	-		-		-	Continuing	Continuing	Continuing
AN/TPS-59	MIPR	MITRE : BEDFORD, MA	6.084	-		1.700	Mar 2015	1.300	Dec 2015	-		1.300	Continuing	Continuing	Continuing
AN/TPS-59	Various	MCSC : QUANTICO, VA	1.150	0.544	Aug 2014	0.300	Feb 2015	0.475	Oct 2015	-		0.475	Continuing	Continuing	Continuing
AN/TPS-59	C/CPFF	LOCKHEED MARTIN : SYRACUSE, NY	8.137	0.652	Jun 2014	0.500	Apr 2015	-		-		-	Continuing	Continuing	Continuing
AN/TPS-59	Various	MCSC COMP : QUANTICO, VA	5.871	-		0.306	Mar 2015	0.500	Jun 2016	-		0.500	Continuing	Continuing	Continuing
AN/TPS-59	WR	NSWC : CRANE, IN	2.232	0.220	May 2014	-		-		-		-	-	2.452	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 3099 / *Radar System*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59	MIPR	TYAD : TOBYHANNA, PA	0.000	-		-		1.845	Oct 2015	-		1.845	-	1.845	-
AN/TPS-63	MIPR	TYAD : TOBYHANNA, PA	0.249	-		0.153	Feb 2015	0.195	Feb 2016	-		0.195	Continuing	Continuing	Continuing
AN/TPS-63	WR	MCSC : QUANTICO, VA	0.084	-		0.040	Feb 2015	-		-		-	-	0.124	-
AN/TPS-63	MIPR	DTIC : FT BELVOIR, VA	0.000	0.147	Jul 2014	-		-		-		-	-	0.147	-
FTAS	WR	NSWC : DAHLGREN, VA	7.329	-		0.200	Mar 2015	-		-		-	Continuing	Continuing	Continuing
FTAS	MIPR	TYAD : TOBYHANNA, PA	0.693	-		-		0.452	Nov 2015	-		0.452	Continuing	Continuing	Continuing
FTAS	Various	MCSC : QUANTICO, VA	2.138	-		0.050	Feb 2015	0.050	Oct 2015	-		0.050	Continuing	Continuing	Continuing
VWC	C/CPFF	ONR : ST. LOUIS, MO	8.581	2.543	Jan 2014	1.836	Feb 2015	1.432	Dec 2015	-		1.432	Continuing	Continuing	Continuing
Prior Year Cumulative Funding	Various	VARIOUS : VARIOUS	7.954	-		-		-		-		-	-	7.954	-
		Subtotal	63.956	4.106		5.785		7.002		-		7.002	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59	WR	MCTSSA : CAMP PENDLETON, CA	0.000	-		1.600	Mar 2015	-		-		-	-	1.600	-
AN/TPS-59	SS/FFP	LMC : SYRACUSE, NY	0.000	0.700	Nov 2014	-		-		-		-	-	0.700	-
AN/TPS-59	WR	NSWC : CRANE, IN	0.000	-		-		1.000	Feb 2016	-		1.000	-	1.000	-
Prior Year Cumulative Funding	Various	VARIOUS : VARIOUS	1.195	-		-		-		-		-	-	1.195	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206313M / *Marine Corps Comms Systems*	Project (Number/Name) 3099 / *Radar System*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	1.195	0.700		1.600		1.000		-		1.000	-	4.495	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/TPS-59	C/CPFF	MCSC: GENERAL DYNAMICS : QUANTICO, VA	19.809	3.668	Apr 2014	-		-		-		-	-	23.477	-
Prior Year Cumulative Funding	C/CPFF	MCSC: GENERAL DYNAMICS : QUANTICO, VA	2.504	-		-		-		-		-	-	2.504	-
		Subtotal	22.313	3.668		-		-		-		-	-	25.981	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	169.458	9.305		10.342		11.083		-		11.083	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

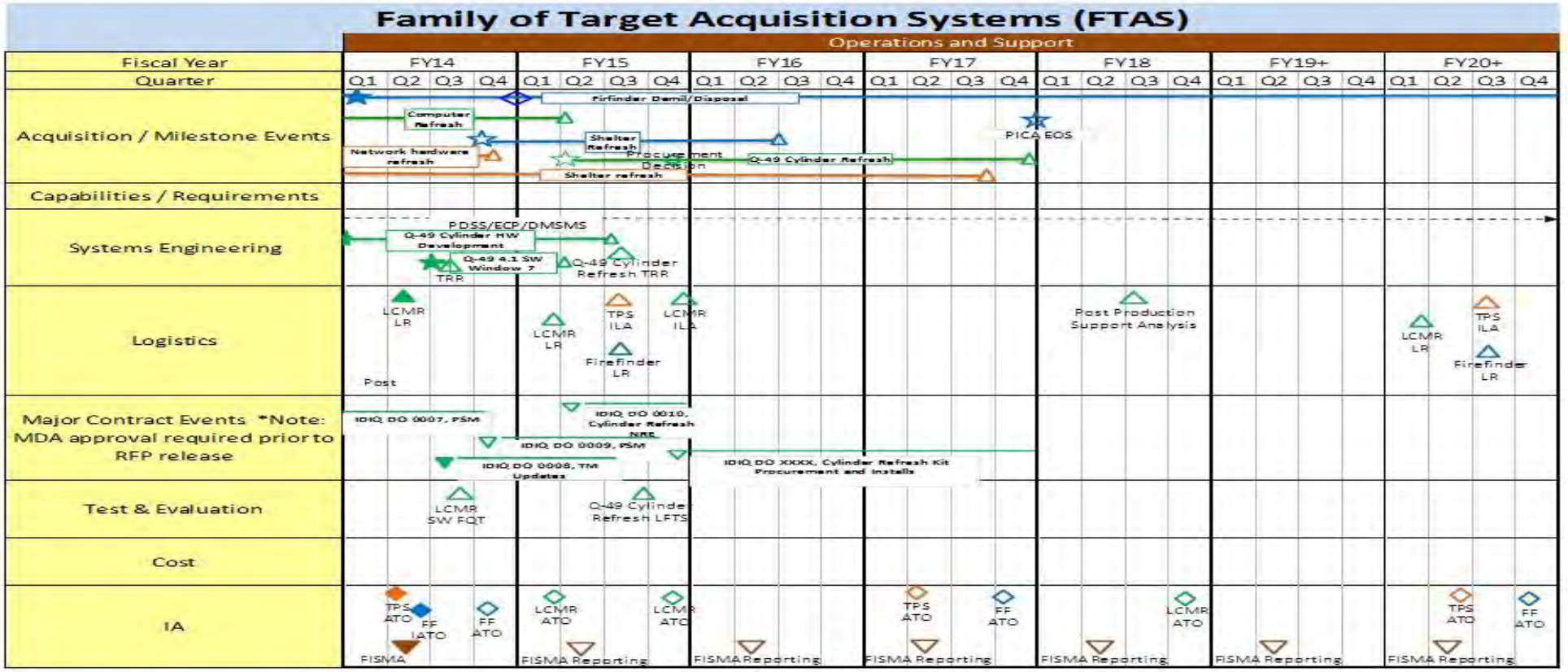

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

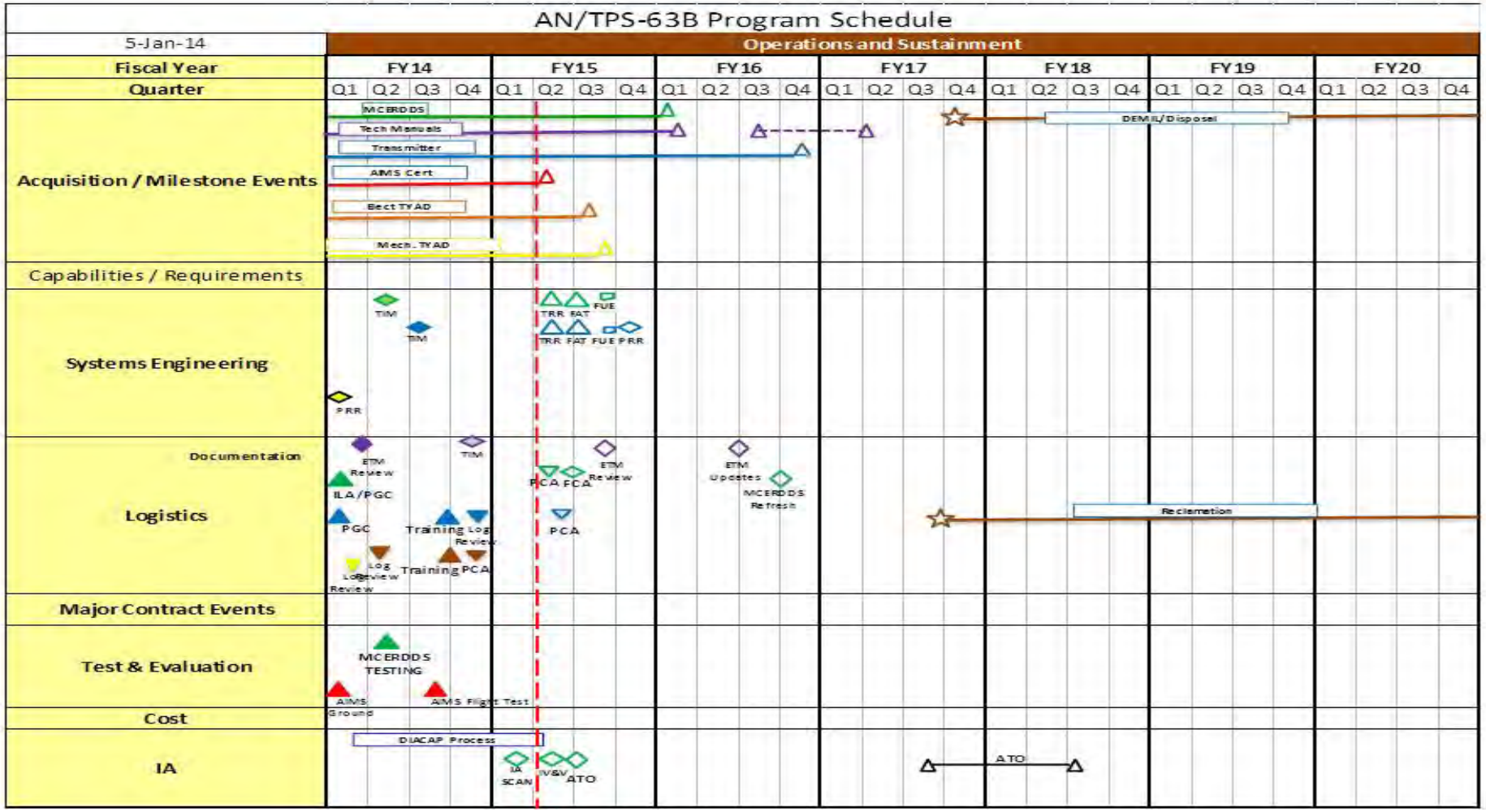

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

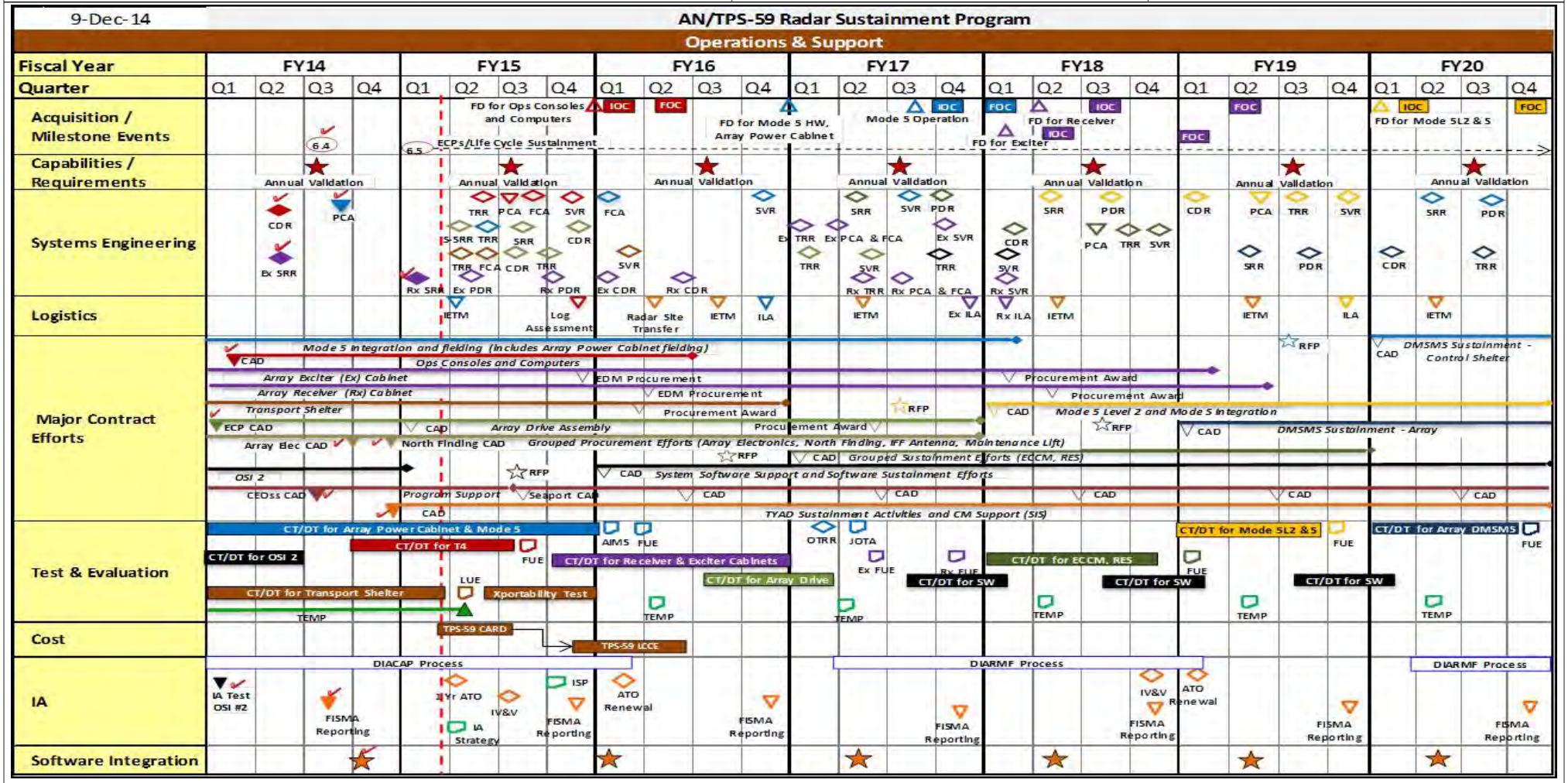

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206313M / *Marine Corps Comms Systems*	**Project (Number/Name)** 3099 / *Radar System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3099				
AN/TPS-59 - IFF Mode 5 Fielding Decision	1	2016	1	2016
AN/TPS-59 - IFF Mode 5 IOC	1	2017	1	2017
AN/TPS-59 - IFF Mode 5 FOC	2	2017	2	2017
AN/TPS-63 - Test Readiness Review (TRR) for Transmitter ECP	1	2015	1	2015
AN/TPS-63 - Technical Manual Delivery	3	2015	3	2015
FTAS AN/TPQ-49 - Cylinder Refresh Final Test Report Fielding Decision	3	2015	3	2015
FTAS - AN/TPQ-49 (LCMR) PICA Responsibility	4	2015	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0206335M *I Common Aviation Command and Control System (CAC2S)*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	-	32.495	13.431	-	13.431	10.629	3.323	3.403	3.483	Continuing	Continuing
3373: *Common Aviation Command and Control System (CAC2S)*	0.000	-	32.495	13.431	-	13.431	10.629	3.323	3.403	3.483	Continuing	Continuing
MDAP/MAIS Code: **Other MDAP/MAIS Code(s):** N36												

Note

Funding for FY2014 and prior is listed in PE 0206313M Marine Corps Comms Systems, Project 2273 Air Ops Cmd & Control (C2) Sys, Accomplishments/Planned Programs Common Aviation Command and Control Systems (CAC2S)

Funding for FY15 and beyond are listed in PE 0206335M Common Aviation Command and Control System (CAC2S), Project 3373 - Common Aviation Command and Control System (CAC2S)

A. Mission Description and Budget Item Justification

Common Aviation Command and Control System (CAC2S) - A coordinated modernization effort to replace the existing aviation command and control equipment of the Marine Air Command and Control System (MACCS) and to provide the Aviation Combat Element (ACE) with the necessary hardware, software, equipment, and facilities to effectively command, control, and coordinate aviation operations. The CAC2S system will accomplish the MACCS missions with a suite of operationally scalable modules to support the Marine Air Ground Task Force (MAGTF), Joint, and Coalition Forces. The CAC2S integrates the functions of aviation command and control into an interoperable system that will support the core competencies of all Marine Corps warfighting concepts. The CAC2S, in conjunction with MACCS organic sensors and weapons systems, supports the tenets of Expeditionary Maneuver Warfare and fosters joint interoperability. CAC2S Increment I will replace legacy aviation command and control systems in the following Marine aviation agencies: Direct Air Support Center (DASC), Tactical Air Command Center (TACC), and Tactical Air Operations Center (TAOC).

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0206335M *I Common Aviation Command and Control System (CAC2S)*

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	-	32.495	13.538	-	13.538
Current President's Budget	-	32.495	13.431	-	13.431
Total Adjustments	-	-	-0.107	-	-0.107
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	-0.107	-	-0.107

Change Summary Explanation

The decrease in funding from FY15 to FY16 is due to the ramp down of the Engineering, Manufacturing, and Design (EMD) Phase and transition to procurement after Milestone C in 2nd Qtr FY15.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206335M / *Common Aviation Command and Control System (CAC2S)*				Project (Number/Name) 3373 / *Common Aviation Command and Control System (CAC2S)*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
3373: *Common Aviation Command and Control System (CAC2S)*	-	-	32.495	13.431	-	13.431	10.629	3.323	3.403	3.483	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: N36

Note

Funding for FY2014 and prior is listed in PE 0206313M Marine Corps Comms Systems, Project 2273 Air Ops Cmd & Control (C2) Sys, Accomplishments/Planned Programs Common Aviation Command and Control Systems (CAC2S)

Funding for FY15 and beyond is listed in PE 0206335M Common Aviation Command and Control System (CAC2S), Project 3373 - Common Aviation Command and Control System (CAC2S)

A. Mission Description and Budget Item Justification

Common Aviation Command and Control System (CAC2S) - A coordinated modernization effort to replace the existing aviation command and control equipment of the Marine Air Command and Control System (MACCS) and to provide the Aviation Combat Element (ACE) with the necessary hardware, software, equipment, and facilities to effectively command, control, and coordinate aviation operations. The CAC2S system will accomplish the MACCS missions with a suite of operationally scalable modules to support the Marine Air Ground Task Force (MAGTF), Joint, and Coalition Forces. The CAC2S integrates the functions of aviation command and control into an interoperable system that will support the core competencies of all Marine Corps warfighting concepts. The CAC2S, in conjunction with MACCS organic sensors and weapons systems, supports the tenets of Expeditionary Maneuver Warfare and fosters joint interoperability. CAC2S Increment I will replace legacy aviation command and control systems in the following Marine aviation agencies: Direct Air Support Center (DASC), Tactical Air Command Center (TACC), and Tactical Air Operations Center (TAOC). Funding decreases ($19.064) from FY15 to FY16 due to the ramp down of the Engineering, Manufacturing, and Design (EMD) Phase and transition to procurement after Milestone C in 2nd Qtr FY15.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	-	6.743	1.175	-	1.175
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206335M / *Common Aviation Command and Control System (CAC2S)*	**Project (Number/Name)** 3373 / *Common Aviation Command and Control System (CAC2S)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Initiate validation and verification of the four (4) Engineering and Development Models (EDMs). ***FY 2016 Base Plans:*** -Complete validation and verification of the four (4) Engineering and Development Models (EDMs). -Initiate and complete validation and verification of the four (4) Limited Deployment Units (LDUs). ***FY 2016 OCO Plans:*** N/A					
Title: Support and Management Services	-	5.333	3.303	-	3.303
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** Continue program management, business, engineering, and logistical support. ***FY 2016 Base Plans:*** Continue program management, business, engineering, and logistical support but this support as program nears completion of EDM phase. ***FY 2016 OCO Plans:*** N/A					
Title: Test and Evaluation	-	20.419	8.953	-	8.953
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** -Continue support of phase 2 in Information Assurance certification test scans. -Complete developmental testing of the Engineering and Development Models (EDMs). -Initiate Initial Operational Test and Evaluation (IOT&E) preparations. ***FY 2016 Base Plans:*** -Continue support of phase 2 in Information Assurance certification test scans. -Complete Initial Operational Test and Evaluation (IOT&E) preparations.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206335M / *Common Aviation Command and Control System (CAC2S)*	**Project (Number/Name)** 3373 / *Common Aviation Command and Control System (CAC2S)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Intitate and complete IOT&E. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	-	32.495	13.431	-	13.431

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0206313M/2273: *Common Aviation Command And Control System (CAC2S)*	47.197	-	-	-	-	-	-	-	-	-	481.352
• PMC/4640: *Common Aviation Command And Control System (CAC2S)*	2.246	-	-	-	-	-	-	-	-	-	92.311
• PMC/4644: *Common Aviation Command And Control System (CAC2S)*	-	12.272	35.147	-	35.147	61.184	52.769	53.722	54.809	-	269.903
• PMC/7000: *Common Aviation Command And Control (Spares)*	-	1.698	-	-	-	-	-	-	-	-	1.698

Remarks

RDT&E funding for FY2014 and prior is listed in PE 0206313M Marine Corps Comms Systems, Project 2273 Air Ops Cmd & Control (C2) Sys, Accomplishments/ Planned Programs Common Aviation Command and Control Systems (CAC2S).

RDT&E funding for FY15 and beyond are listed in PE 0206335M Common Aviation Command and Control System (CAC2S), Project 3373 - Common Aviation Command and Control System (CAC2S).

PMC funding for FY2014 and prior is listed in BLI 4640 Air Operations C2 Systems, Common Aviation Command and Control Systems (CAC2S). This funding was primarily executed in support of CAC2S Phase One.

PMC funding for FY15 and beyond are listed in BLI 4644 Common Aviation Command and Control System (CAC2S).

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206335M / *Common Aviation Command and Control System (CAC2S)*	**Project (Number/Name)** 3373 / *Common Aviation Command and Control System (CAC2S)*

D. Acquisition Strategy

CAC2S will employ an evolutionary acquisition strategy utilizing an incremental and phased approach for development and fielding of the CAC2S. The Capability Production Document (CPD) identifies two increments to achieve the full requirements of CAC2S. The current acquisition strategy addresses Increment I of the CAC2S development process and focuses on the requirements that will modernize the assault and air support, air defense and control, and Aviation Combat Element (ACE) battle management capabilities of the Marine Air Command and Control System (MACCS). Increment I of the CAC2S will be accomplished through a two phased approach. Phase 1 will address the requirements to establish the baseline CAC2S capabilities for the MACCS and improve AC2 performance and effectiveness. Phase 2 will address the requirements for remaining ACE Battle Management Command & Control (BMC2) requirements.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206335M / *Common Aviation Command and Control System (CAC2S)*	Project (Number/Name) 3373 / *Common Aviation Command and Control System (CAC2S)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Phase 2 Product Development	WR	NSWC CD : Crane, In	0.000	-		1.031	Nov 2014	0.753	Nov 2015	-		0.753	0.896	2.680	-
Phase 2 Product Development	C/FPIF	General Dynamics : Pheonix, AZ	0.000	-		3.800	Nov 2014	-		-		-	16.544	20.344	59.922
Phase 2 Product Development	WR	NSWC DD : Dahlgren, VA	0.000	-		1.951	Nov 2014	0.422	Nov 2015	-		0.422	-	2.373	-
		Subtotal	0.000	-		6.782		1.175		-		1.175	17.440	25.397	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Phase 2 Support	MIPR	AMSSA : Aberdeen, MD	0.000	-		0.501	Nov 2014	0.300	Nov 2015	-		0.300	0.238	1.039	-
Phase 2 Support	WR	SpaWar : Charleston, SC	0.000	-		0.250	Nov 2014	0.200	Nov 2015	-		0.200	0.350	0.800	-
Phase 2 Support	MIPR	JITC : Fort Huachuca, AZ	0.000	-		0.500	Apr 2015	0.300	Nov 2015	-		0.300	0.265	1.065	-
Phase 2 Support	Sub Allot	MCTSSA : Camp Pendleton, CA	0.000	-		0.170	Nov 2014	-		-		-	-	0.170	-
Phase 2 Support	WR	NSWC Corona : Corona, CA	0.000	-		0.376	Nov 2014	-		-		-	-	0.376	-
Phase 2 Support	Sub Allot	LogCom : Albany, GA	0.000	-		0.502	Nov 2014	0.219	Nov 2015	-		0.219	0.302	1.023	-
Phase 2 Support	C/FP	MCSC Safety : TBD	0.000	-		0.250	Nov 2014	0.175	Nov 2015	-		0.175	0.095	0.520	-
Phase 2 Support	Various	Travel : TBD	0.000	-		-		0.143	Oct 2015	-		0.143	Continuing	Continuing	Continuing
		Subtotal	0.000	-		2.549		1.337		-		1.337	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206335M / *Common Aviation Command and Control System (CAC2S)*	Project (Number/Name) 3373 / *Common Aviation Command and Control System (CAC2S)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Phase 2 Testing and Evaluation	WR	NSWC - Port Huenueme : Port Huenueme, CA	0.000	-		1.001	Nov 2014	0.750	Nov 2015	-		0.750	0.955	2.706	-
Phase 2 Testing and Evaluation	Sub Allot	MCOTEA : Quantico, VA	0.000	-		2.253	Nov 2014	1.200	Jan 2016	-		1.200	3.465	6.918	-
Phase 2 Testing and Evaluation	WR	MACCS - 2 : Cherry Point, NC	0.000	-		0.500	Nov 2014	0.261	Jan 2016	-		0.261	0.125	0.886	-
Phase 2 Testing and Evaluation	Sub Allot	MCTSSA : Camp Pendleton, CA	0.000	-		6.200	Jan 2015	0.876	Nov 2015	-		0.876	0.952	8.028	-
Phase 2 Testing and Evaluation	MIPR	NAWC AB : Patuxent River, MD	0.000	-		6.000	Nov 2014	1.863	Jan 2016	-		1.863	1.258	9.121	-
Phase 2 Testing and Evaluation	WR	NSWC CD : Crane, IN	0.000	-		4.426	Jan 2015	2.652	Nov 2015	-		2.652	7.445	14.523	-
Phase 2 Testing and Evaluation	MIPR	NSWC DD : Dahlgren, VA	0.000	-		-		1.351	Nov 2015	-		1.351	-	1.351	-
		Subtotal	0.000	-		20.380		8.953		-		8.953	14.200	43.533	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Phase 2 Management Services	C/FFP	Get It Done (GID) Solutions LLC : Fredericksburg, VA	0.000	-		1.505	Apr 2015	0.980	Mar 2016	-		0.980	-	2.485	19,096.227
Phase 2 Management Services	C/FFP	MITRE : Bedford, MA	0.000	-		1.279	Oct 2014	0.986	Oct 2015	-		0.986	2.958	5.223	-
		Subtotal	0.000	-		2.784		1.966		-		1.966	2.958	7.708	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		32.495		13.431		-		13.431	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206335M / *Common Aviation Command and Control System (CAC2S)*	Project (Number/Name) 3373 / *Common Aviation Command and Control System (CAC2S)*	

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206335M / *Common Aviation Command and Control System (CAC2S)*	**Project (Number/Name)** 3373 / *Common Aviation Command and Control System (CAC2S)*

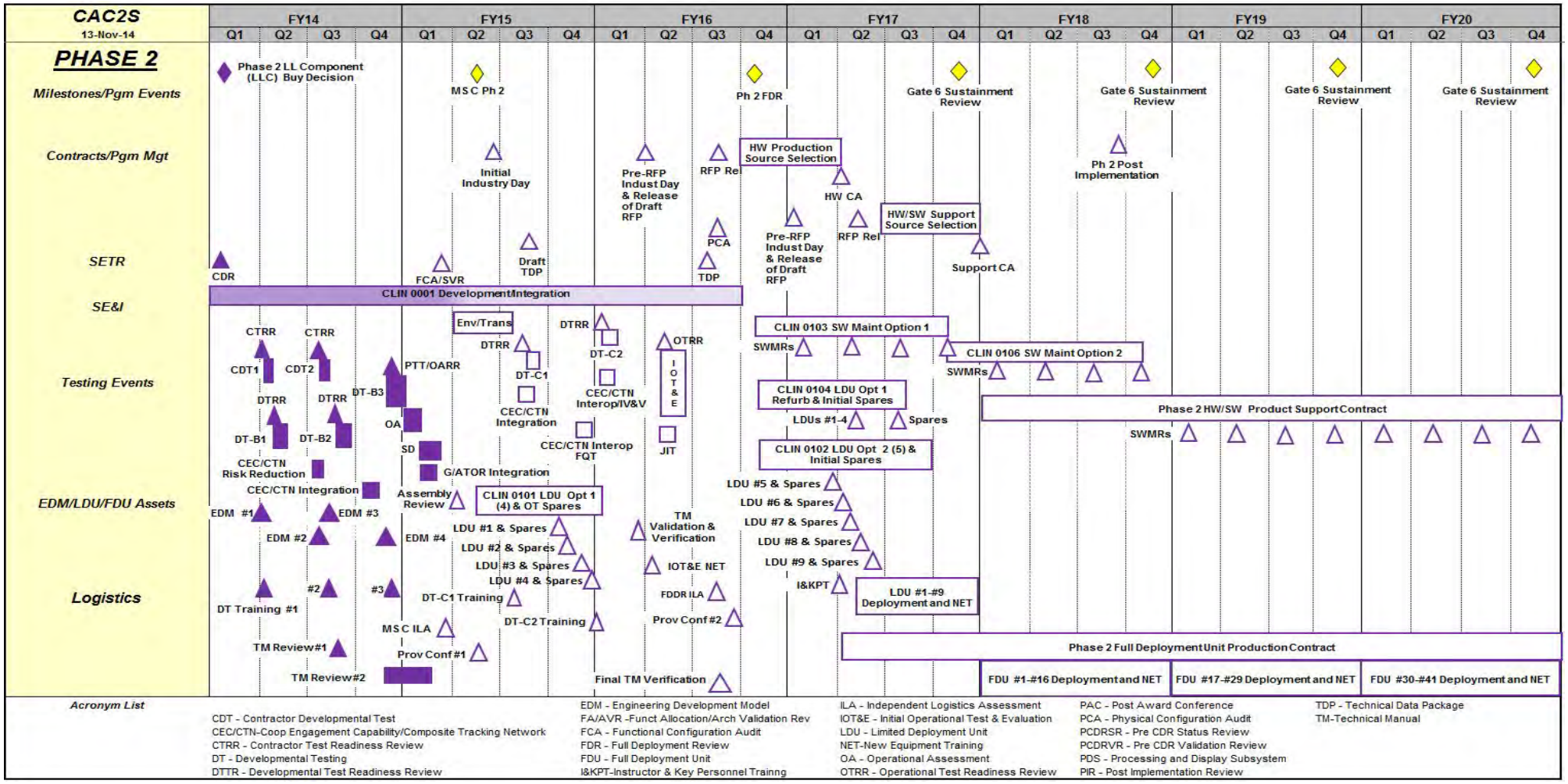

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206335M / *Common Aviation Command and Control System (CAC2S)*	**Project (Number/Name)** 3373 / *Common Aviation Command and Control System (CAC2S)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3373				
CAC2S Schedule: CLIN 0001 Development/Integration	1	2014	3	2016
CAC2S Schedule: Critical Design Review	1	2014	1	2014
CAC2S Schedule: Developmental Test - B1	2	2014	2	2014
CAC2S Schedule: Developmental Test - B2	3	2014	3	2014
CAC2S Schedule: Developmental Test - B3	4	2014	4	2014
CAC2S Schedule: Operational Assessment	1	2015	1	2015
CAC2S Schedule: Milestone C	2	2015	2	2015
CAC2S Schedule: Coop Engagement Capability/Composite Tracking Network Certification and Interopability Test	2	2015	2	2015
CAC2S Schedule: Limited Deployment Units (LDU) Build 1-4 (PMC BL 464400)	2	2015	1	2016
CAC2S Schedule: Developmental Test Readiness Review	3	2015	3	2015
CAC2S Schedule: Developmental Test - C1	3	2015	3	2015
CAC2S Schedule: Developmental Test - C2	1	2016	1	2016
CAC2S Schedule: Operational Test Readiness Review	2	2016	2	2016
CAC2S Schedule: Initial Operational Test and Evaluation	2	2016	2	2016
CAC2S Schedule: Full Deployment Review	4	2016	4	2016
CAC2S Schedule: Limited Deployment Units (LDU) Build 5-9 (PMC BL 464400)	4	2016	1	2017

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0206623M *I MC Ground Cmbt Spt Arms Sys*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	563.093	116.944	52.377	56.769	-	56.769	57.213	53.407	49.581	50.800	Continuing	Continuing
0021: *Assault Amphibious Vehicle 7A1*	137.062	31.543	-	-	-	-	-	-	-	-	-	168.605
1555: *Lt Armored Vehicle Prog*	79.232	21.568	5.156	11.297	-	11.297	14.541	14.653	9.327	9.526	Continuing	Continuing
1901: *MC Grnd Wpnry Prod Improvement*	25.812	12.743	5.537	3.719	-	3.719	4.357	3.413	4.719	4.805	Continuing	Continuing
2086: *Soldier/Marine Enhancement*	16.718	5.952	4.656	3.253	-	3.253	3.786	3.604	3.862	3.943	Continuing	Continuing
2112: *Lightweight 155mm Howitzer*	0.000	0.193	0.204	0.207	-	0.207	0.003	0.003	0.003	0.003	Continuing	Continuing
2237: *Amphibious Vehicle Test*	1.274	2.283	0.836	0.994	-	0.994	1.002	0.991	0.916	0.935	Continuing	Continuing
2315: *Training Devices/ Simulators*	99.516	12.854	10.210	14.882	-	14.882	16.467	13.315	13.114	14.051	Continuing	Continuing
2503: *Initial Issue*	37.833	8.227	5.498	4.050	-	4.050	4.482	4.018	4.554	4.423	Continuing	Continuing
2513: *Body Armor*	39.571	5.529	3.431	3.160	-	3.160	3.812	4.733	4.684	4.771	Continuing	Continuing
2928: *Exp Indirect Fire Gen Supt Wpn Sys*	9.656	0.001	1.953	2.763	-	2.763	1.986	2.575	2.361	2.172	Continuing	Continuing
3098: *Fire Support System*	113.476	15.709	14.400	11.940	-	11.940	6.274	5.580	5.508	5.628	Continuing	Continuing
4002: *Family of Raid Reconnaissance*	2.943	0.342	0.496	0.504	-	0.504	0.503	0.522	0.533	0.543	Continuing	Continuing

Note

NOTE: Funding for the Assault Amphibious Vehicle (AAV) program for FY 2015 and beyond was realigned to Program Element 0206629M Project 2938.

A. Mission Description and Budget Item Justification

This PE provides modification to Marine Corps Expeditionary Ground Force Weapon Systems to increase lethality, range, survivability and operational effectiveness. In addition, the PE provides for the development of AAV7A1 reliability, maintainability, operational and safety modifications, improvements in command and control, and product improvements to the family of LAVs. The AVTB provides facilities and personnel which perform a broad range of testing, repair and technical services to amphibious vehicles. This program is funded under Operational Systems Development Program Element (PE) because it encompasses engineering and manufacturing and manufacturing development for upgrades of existing systems.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0206623M *I MC Ground Cmbt Spt Arms Sys*

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	116.061	156.626	105.124	-	105.124
Current President's Budget	116.944	52.377	56.769	-	56.769
Total Adjustments	0.883	-104.249	-48.355	-	-48.355
• Congressional General Reductions	-	-0.042			
• Congressional Directed Reductions	-	-104.207			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	5.070	-			
• SBIR/STTR Transfer	-4.187	-			
• Program Adjustments	-	-	7.715	-	7.715
• Rate/Misc Adjustments	-	-	-56.070	-	-56.070

Change Summary Explanation

The FY 2016 funding request was reduced by $10.000M to account for the availability of prior year execution balances. The funding increase from FY15 to FY16 can be attributed to LAV modifications and development testing, as well as Deployable Virtual Training Environment and High Mobility Artillery Rocket Systems (HIMARS) development efforts.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 0021 / *Assault Amphibious Vehicle 7A1*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0021: *Assault Amphibious Vehicle 7A1*	137.062	31.543	-	-	-	-	-	-	-	-	-	168.605
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Assault Amphibious Vehicle (AAV) program provides life-cycle support and sustainment improvement initiatives to ensure cost-effective combat readiness for the AAV Family of Vehicles (FOV). This is accomplished through engineering changes resulting from continuous review of sub-systems to maintain system supportability, safety, reduce total ownership costs, improve fleet readiness, address obsolescence issues, and improve vehicle survivability and performance. The AAV program also includes a survivability upgrade which will increase AAVP7A1 survivability and force protection while maintaining the required land and water mobility performance. This upgrade is derived from the need for an operationally effective amphibious armored personnel carrier capability bridge until the future amphibious combat vehicle reaches full operational capability.

NOTE: AAV funding for FY15 and beyond was realigned to Program Element 0206629M Project 2938.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	22.502	-	-	-	-
Articles:	-	-	-	-	-
Description: AAV Survivability Upgrade will improve the legacy AAV Force Protection capability. Improvements include improved underbelly protection, integrated blast mitigating seats, integrated spall liners, protected fuel storage, sponson armor, and selected improvements to maintain required water and land mobility.					
FY 2014 Accomplishments: -Completed automotive hull and suspension analysis, RAM baseline testing, and AAV mobility technical demonstration testing. Received a successful Milestone B decision. -Awarded EMD design and development contract. -Conducted preliminary design reviews for survivability upgrade.					
FY 2015 Plans: Funding moved to PE 0206629M Project 2938.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 0021 / *Assault Amphibious Vehicle 7A1*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Funding moved to PE 0206629M Project 2938. ***FY 2016 OCO Plans:*** N/A					
Title: Support	1.798	-	-	-	-
Articles:	-	-	-	-	-
Description: Provide engineering and technical support for AAV sustainment modifications, and Survivability Upgrade efforts. ***FY 2014 Accomplishments:*** -Continued engineering and technical support for human systems integration, other nonrecurring engineering services in support of AAV obsolescence and performance modifications and travel associated with these efforts. -Provided technical and engineering support for electrical modernization and 3D modeling for the P7 variant. ***FY 2015 Plans:*** Funding moved to PE 0206629M Project 2938. ***FY 2016 Base Plans:*** Funding moved to PE 0206629M Project 2938. ***FY 2016 OCO Plans:*** N/A					
Title: Test and Evaluation	2.912	-	-	-	-
Articles:	-	-	-	-	-
Description: AAV operations Support: Evaluation and testing of safety improvements and fact-of-life changes to maintain the AAV Family of Vehicles. ***FY 2014 Accomplishments:*** -Completed AAV performance baseline and water testing, soft soil testing, and aluminum alloy evaluation. -Continued evaluation and testing of safety improvements and fact-of-life changes to maintain the AAV Family of Vehicles.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 0021 / *Assault Amphibious Vehicle 7A1*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Completed modeling and simulation and testing of vehicles launching from naval ships. ***FY 2015 Plans:*** Funding moved to PE 0206629M Project 2938. ***FY 2016 Base Plans:*** Funding moved to PE 0206629M Project 2938. ***FY 2016 OCO Plans:*** N/A					
Title: Management Services	4.331	-	-	-	-
Articles:	-	-	-	-	-
Description: Management support services technical support for program office and field activities. ***FY 2014 Accomplishments:*** -Provided program management services in support of ECP development, trade studies and analysis, supply chain and government property management in support of AAV sustainment and modification efforts. -Provided program support for acquisition documentation development in support of AAV Survivability Upgrade Milestone B. ***FY 2015 Plans:*** Funding moved to PE 0206629M Project 2938. ***FY 2016 Base Plans:*** Funding moved to PE 0206629M Project 2938. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	31.543	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/2021: *AAV Product Improvement Program*	32.036	15.356	26.744	-	26.744	114.291	115.154	153.174	137.520	1,289.892	2,812.185

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 0021 / *Assault Amphibious Vehicle 7A1*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTEN/0206629M: *Amphibious Assault Vehicle*	-	96.207	48.535	-	48.535	49.414	65.038	14.631	12.280	Continuing	Continuing

Remarks

D. Acquisition Strategy

The USMC competitively awarded two contracts for development efforts in support of upgrading 392 Assault Amphibious Vehicles in FY14. Down select to one contractor for manufacture of prototype vehicles occurs in FY15. The program's main focus is on improving Marine force protection capabilities. To support the required capabilities, the Survivability Upgrade program will seek to incorporate Non-Developmental Item (NDI) and/or Commercial off the Shelf (COTS) solutions into the existing AAVP7A1 Reliability, Availability, Maintainability/Rebuild to Standard (RAM/RS). The acquisition strategy seeks to minimize cost and schedule, and maximize value, technology readiness, and commonality, while ensuring the selected manufacturer meets selected capability attributes established for the AAVP7A1 RAM/RS. R&D funds competitive designs followed by contract options for EMD and production.

E. Performance Metrics

Milestone Reviews:
Milestone B: 3rd quarter of FY14

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 0021 / *Assault Amphibious Vehicle 7A1*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Syst Design & Dev / EMD	C/FFP	MCSC : Quantico, VA	72.108	22.502	May 2014	-		-		-		-	-	94.610	-
Prior Years Cumulative Funding	Various	Various : Various	5.868	-		-		-		-		-	-	5.868	-
		Subtotal	77.976	22.502		-		-		-		-	-	100.478	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	MCSC : Quantico, VA	2.172	0.115	Oct 2013	-		-		-		-	-	2.287	-
Prior Years Cumulative Funding	Various	Various : Various	0.265	-		-		-		-		-	-	0.265	-
In-House Technical Support	Various	Various : Various	2.349	0.280	Feb 2014	-		-		-		-	-	2.629	-
Engineering and Technical Services	Various	Various : Various	35.681	1.403	Mar 2014	-		-		-		-	-	37.084	-
		Subtotal	40.467	1.798		-		-		-		-	-	42.265	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	ATC/AVTB : APG, MD; Camp Pendleton, CA	3.531	2.912	Mar 2014	-		-		-		-	-	6.443	-
		Subtotal	3.531	2.912		-		-		-		-	-	6.443	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 0021 / *Assault Amphibious Vehicle 7A1*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support Svcs	C/FFP	MCSC : Quantico, VA	15.088	4.331	Apr 2014	-		-		-		-	-	19.419	-
		Subtotal	15.088	4.331		-		-		-		-	-	19.419	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	137.062	31.543		-		-		-		-	-	168.605	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 0021 / *Assault Amphibious Vehicle 7A1*

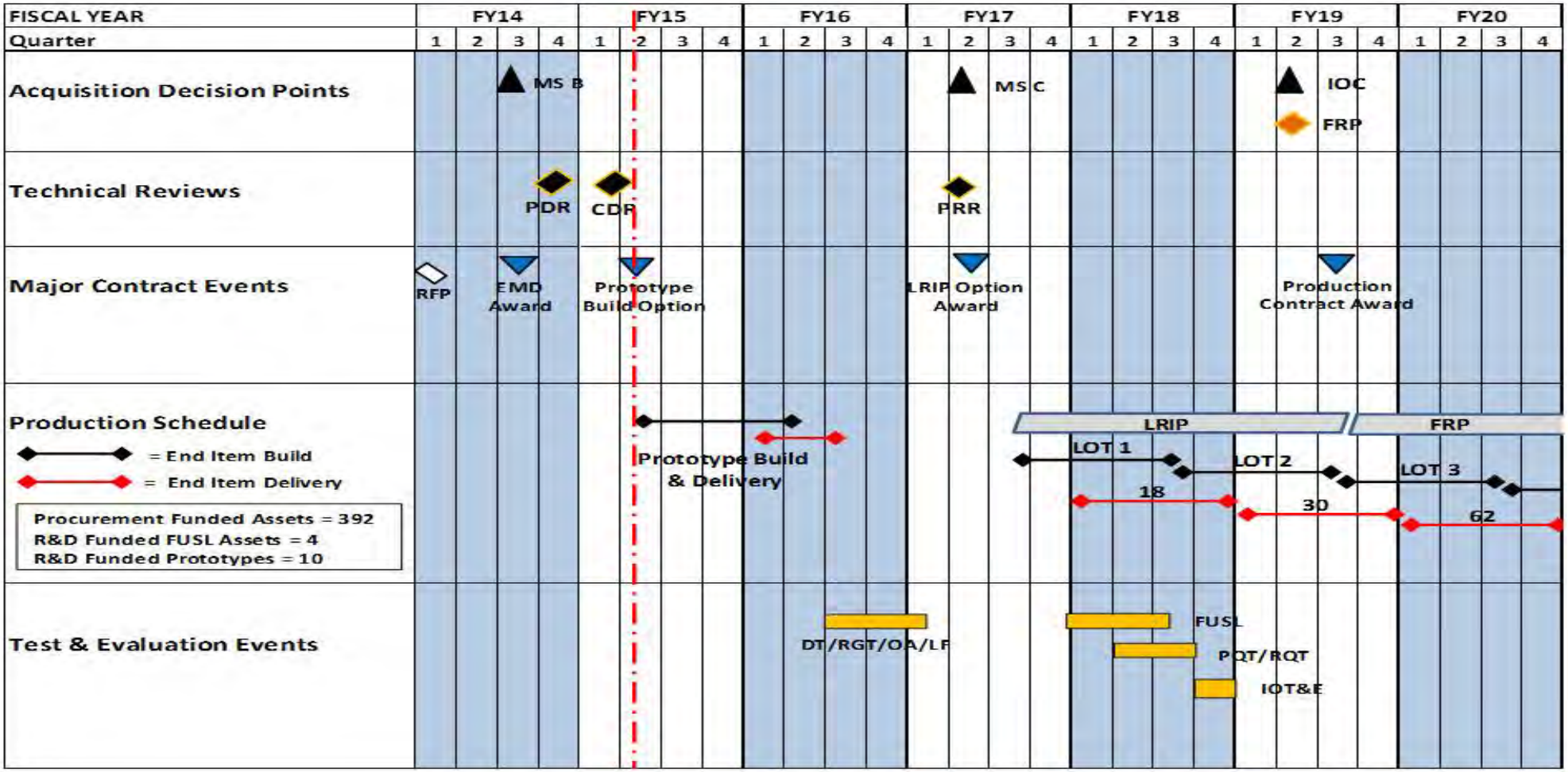

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 0021 / *Assault Amphibious Vehicle 7A1*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0021				
MS B	3	2014	3	2014
EMD CONTRACT AWARD	3	2014	3	2014

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 1555 / *Lt Armored Vehicle Prog*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1555: *Lt Armored Vehicle Prog*	79.232	21.568	5.156	11.297	-	11.297	14.541	14.653	9.327	9.526	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Light Armored Vehicle Family of Vehicles (LAV FOV) consists of six fielded LAV configurations and one communications/intelligence-configured asset on a LAV chassis. The LAV FOV provides a logistically self-contained, highly mobile, and lethal combined arms combat system to the Marine Air Ground Task Force (MAGTF). The LAV Product Improvement Program funds modification and sustainment activities and the development and testing of modifications of three programs; the LAV Modification Program, the LAV Anti-Tank Modernization (ATM) Program, and the LAV Survivability Upgrades Program. These programs will ensure that the LAV FOV will be capable of conducting its assigned missions by enhancing lethality and survivability; reliability, availability, maintainability and durability; as well as reducing operations and support costs.

The funding increase from FY15 to FY16 reflects the cost estimate and options for the Mobility & Obsolescence contract and initiation of developmental testing.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: LAV MODIFICATIONS	14.063	5.156	11.297	-	11.297
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued development of the Mobility and Obsolescence Kits consisting of Powerpack, Driveline, Steering, Electrical Upgrade, Suspension, Hull Modifications and Ballistic Protection Upgrade Package (BPUP) Kits. MS B approval, RFP Release, Research & Development (R&D) Contract award, Power Pack, Driveline, Steering, Suspension, Hull Modifications and Electrical Upgrade, Developmental Test and Operational Assessment Planning, Preliminary Design Review (PDR), supportability analysis, provisioning and PM support.					
FY 2015 Plans: -Continue Engineering Change Proposal (ECP), Integrated Logistic Support (ILS) data development, Technical Publications Development, Integrated Baseline Review (IBR), PDR#2 and Critical Design Review for the Mobility and Obsolescence Kits consisting of Powerpack, Driveline, Steering, Electrical Upgrade, Suspension, Hull Modifications, BPUP Kits and PM support.					
FY 2016 Base Plans: -Initiate support of Developmental Testing					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1555 / *Lt Armored Vehicle Prog*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue Engineering Change Proposal (ECP), Integrated Logistic Support (ILS) data development, Technical Publications Development, Critical Design Review #2, PDR #3 and LRIP Material Approval for the Mobility and Obsolescence Kits consisting of Powerpack, Driveline, Steering, Electrical Upgrade, Suspension, Hull Modifications, BPUP Kits and PM support. ***FY 2016 OCO Plans:*** N/A					
Title: LAV ANTI-TANK SYSTEM	4.753	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Completed Technical Manual Updates and Developmental Testing. -Initiated and prepared Independent Logistics Assessment (ILA) pre-brief and ILA Certification, began Operational Assessment Testing, Milestone C (MS C) Preparation, PM support and the following Technical Reviews: Functional Configuration Audit, System Verification Review, Operational Test Readiness Review & Operational Test Readiness Review Board. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: LAV SURVIVABILITY UPGRADES	2.752	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Completed modeling and simulation testing for ballistic seats, ballistic seats initial capabilities document P-spec completion, LAV-25 fuel cell space claim analysis, drivers seat lift safety improvement, ballistic floor protection design, turret fence design and PM Support. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1555 / *Lt Armored Vehicle Prog*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	21.568	5.156	11.297	-	11.297

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/2038: *LAV PIP*	5.981	72.736	54.879	-	54.879	96.776	122.094	112.870	111.628	Continuing	Continuing
• PMC/7000: *LAV Spares*	-	4.767	1.288	-	1.288	1.529	3.335	4.145	5.973	Continuing	Continuing

Remarks

D. Acquisition Strategy

The LAV Modification & Sustainment program funds numerous low-dollar, yet extremely important minor modifications, support equipment and tools and other projects that increase LAV reliability and readiness while simultaneously reducing operations and support costs. The Marine Corps PM-LAV Modification Team uses multi-disciplined integrated project teams consisting of engineering, logistical, contracting and financial personnel to manage Modification projects. The majority of contracts issued under the Modification line are subject to the competitive acquisition process. Currently the LAV Modification and Sustainment program will capture the Mobility and Obsolescence kits consisting of Power Pack, Driveline, Steering, Electrical Upgrade, Suspension, Hull Modifications and Ballistic Protection Upgrade Package (BPUP) Kits. The Mobility and Obsolescence program will address the Family of Light Armored Vehicles (FOLAV) automotive system obsolescence and reduced performance due to increased Gross Vehicle Weight (GVW). This will be achieved through acquisition and the integration of replacement Powerpack, Driveline, Steering, Electrical Upgrade, Suspension, Hull Modifications and Ballistic Protection Upgrade Package (BPUP) Kits. This effort will require deliverable kits during the Engineering & Manufacturing Development (EMD) phase, such as Engineering Change Proposals (ECPs) and Modification Instructions (MI) for each of the 7 LAV variants and all Integrated Logistics Support (ILS) products (training, technical publications, tools, test equipment, provisioning, etc.) to support Developmental Testing, Operational Assessment, Initial Operational Test and Evaluation and fielding.

The LAV Anti-Tank Modernization (ATM) program will focus on integrating a new turret into the LAV-AT variant with options for production. The LAV-ATM is a replacement for the obsolete M901A1 turret to correct operational and readiness deficiencies. It will be capable of firing the current family of Tube-launched, Optically tracked, Wire-guided (TOW) missiles and be forward compatible with the next generation of heavy anti-armor missiles. The program was approved in December of 2009 as part of the Material Development Decision to enter at Milestone B (MS B) based on the technical maturity of the capabilities required, schedule, and budget. Milestone B approval was achieved in Mar 2011 and the EMD contract was awarded in Apr 2012. Once the EMD phase is complete, a combined MS C and Full Rate Production Review (FRPR) are planned to be followed by a Production and Deployment Phase and Operations and Support Phase.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1555 / *Lt Armored Vehicle Prog*

The Survivability Upgrades program will include replacing and relocating the legacy LAV-25 fuel cells (currently located under the scout seats in the LAV-25) with self sealing fuel cells and adding blast attenuating seats for all 7 LAV variants. These projects are being executed as ECPs.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 1555 / *Lt Armored Vehicle Prog*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SYS DEV/INTEGRATION (Surv Upgrades)	MIPR	TARDEC : Warren, MI	8.922	2.133	Nov 2013	-		-		-		-	-	11.055	-
Proj 1555: Prior Years Cumulative Funding	Various	N/A : N/A	24.125	-		-		-		-		-	-	24.125	-
ILS DATA DEV (MOD)	C/CPFF	GDLS : London Ontario, Canada	4.071	6.642	May 2014	2.109	May 2015	3.610	Nov 2015	-		3.610	Continuing	Continuing	Continuing
PRODUCT DEV/ PROTOTYPES (MOD)	C/CPFF	GDLS : London Ontario, Canada	22.597	5.325	May 2014	0.731	May 2015	3.596	Nov 2015	-		3.596	Continuing	Continuing	Continuing
ILS DATA DEVELOPMENT (Anti-Tank)	C/CPFF	Raytheon : McKinney, TX	1.385	0.832	Apr 2014	-		-		-		-	-	2.217	-
		Subtotal	61.100	14.932		2.840		7.206		-		7.206	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mgmt (Surv Upgrades)	MIPR	TACOM : Warren, MI	1.130	0.619	Dec 2013	-		-		-		-	-	1.749	-
Program Mgmt (MOD)	MIPR	TACOM : Warren, MI	3.588	2.096	Dec 2013	2.316	Dec 2014	1.652	Dec 2015	-		1.652	Continuing	Continuing	Continuing
Program Mgmt (Anti-Tank)	MIPR	TACOM : Warren, MI	6.727	2.029	Dec 2013	-		-		-		-	-	8.756	-
		Subtotal	11.445	4.744		2.316		1.652		-		1.652	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operation Assessment (Anti-Tank)	MIPR	MCOTEA : Quantico, VA	4.643	1.462	Aug 2014	-		-		-		-	-	6.105	-
Devl/Oper T&E (MOD)	MIPR	RTC : AL	1.394	-		-		2.439	Oct 2015	-		2.439	Continuing	Continuing	Continuing
		Subtotal	6.037	1.462		-		2.439		-		2.439	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 1555 / *Lt Armored Vehicle Prog*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Tech Eng Services (Anti-Tank)	C/FP	Camber Corp. : Huntsville, AL	0.650	0.430	Jan 2015	-		-		-		-	-	1.080	-
		Subtotal	0.650	0.430		-		-		-		-	-	1.080	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	79.232	21.568		5.156		11.297		-		11.297	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1555 / *Lt Armored Vehicle Prog*

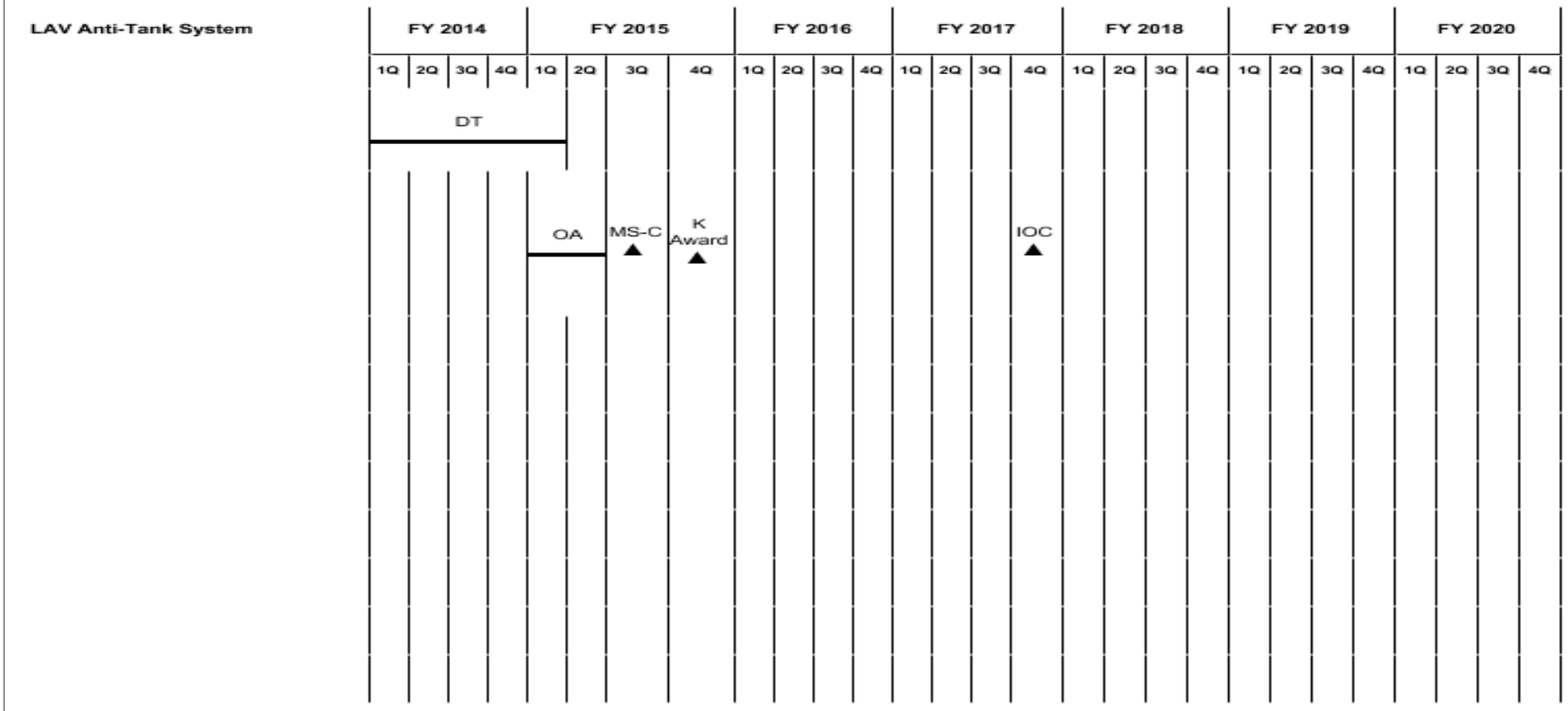

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1555 / *Lt Armored Vehicle Prog*

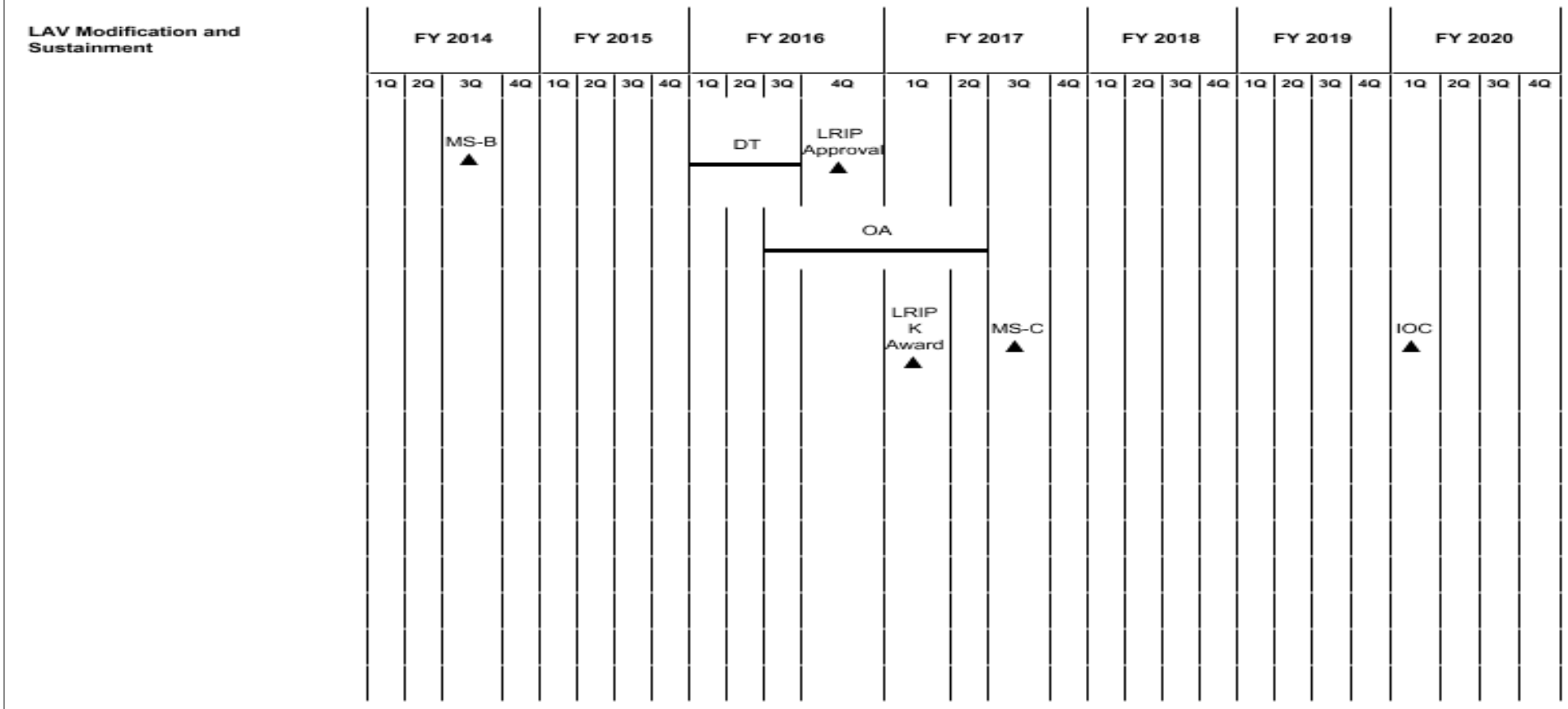

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1555 / *Lt Armored Vehicle Prog*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
LAV Anti-Tank System				
Developmental Testing	1	2014	1	2015
Operational Assessment	1	2015	2	2015
MS-C	3	2015	3	2015
Production Contract Award	4	2015	4	2015
IOC	4	2017	4	2017
LAV Modification and Sustainment				
MS-B	3	2014	3	2014
Developmental Testing	1	2016	3	2016
Pre-LRIP Approval	4	2016	4	2016
Operational Assessment	3	2016	2	2017
LRIP Contract Award/IDIQ Contract	1	2017	1	2017
MS-C	3	2017	3	2017
IOC	1	2020	1	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 1901 / *MC Grnd Wpnry Prod Improvement*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1901: *MC Grnd Wpnry Prod Improvement*	25.812	12.743	5.537	3.719	-	3.719	4.357	3.413	4.719	4.805	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops joint and Marine Corps unique improvements to infantry weapons technology, non-lethal systems technology, improvements for Night Vision Equipment, Rifle Combat Optics, Family of Individual Optics, and monitors national and international weapons developments.
The decrease in funding from FY15 to FY16 supports the revised acquisition strategy to develop a dual channel short-wave infrared and long wave infrared weapons mounted optic within Combat Optics.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Mission Payload Module (MPM)	6.775	-	-	-	-
Articles:	-	-	-	-	-
Description: The Mission Payload Module (MPM) launches non-lethal payloads to greater ranges with broader area coverage, greater duration of effects, and volume of fire. This will be initially deployed from the Marine Corps Transparent Armored Gun Shield (MCTAGS). MPM will deliver counter-personnel, non-lethal effects applicable to controlling crowds, denying/defending areas, controlling access, and engaging threats. This program will be supported by the Joint Non Lethal Directorate beginning in FY15. ***FY 2014 Accomplishments:*** -Initiated system design, functional review and Joint Service Fuse and Initiator System Safety Activity (JS-FISSA) Board. System design will be further developed through the Preliminary Design Review and post-PDR assessment. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Escalation of Force-Equipment (EoF-E)	-	0.066	0.089	-	0.089

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1901 / *MC Grnd Wpnry Prod Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
Description: Escalation of Force Equipment (EoF-E) is a mod funding line to support/sustain all fielded Escalation of Force (EoF) equipment and capabilities. Additionally, EoF-E supports type-classification, testing and procurement of new advancements and technologies to provide an increased capability over existing or obsolescent equipment currently in or associated with the Escalation of Force Mission Modules (EoF-MMs). ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** -Initiate evaluation and upgrade of the Translation capability within the Escalation of Force - Mission Module. -Initiate evaluation and upgrade of the Halogen Lighting in legacy systems to the new Light Emitting Diode Lighting System. -Initiate assessment of upgrades to the EoF-MM, Non-Lethal/Tube launched Munition System (NL/TLMS), and LA-9/P Lasers to sustain/support equipment and capabilities. ***FY 2016 Base Plans:*** -Continue assessment of upgrades and replacements to the EoF-MM, Non-Lethal/Tube launched Munition System (NL/TLMS), and LA-9/P Lasers to sustain/support equipment and capabilities. ***FY 2016 OCO Plans:*** N/A					
Title: Ocular Interruption (OI)	0.988	-	-	-	-
Articles:	-	-	-	-	-
Description: Ocular Interruption (OI) is the replacement of the 'Dazzling Laser' program for the LA-9/P and the Glare Mount 532P-M (Mini Green) laser. OI is a 'non-damaging' dazzling system that will be used in Escalation of Force Missions. This emerging technology will be supported by the Joint Non Lethal Directorate beginning in FY15. ***FY 2014 Accomplishments:*** -Completed system verification testing. ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1901 / *MC Grnd Wpnry Prod Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Sniper System Capability Set (SSCS)	0.399	-	-	-	-
Articles:	-	-	-	-	-
Description: The intent of the Scout Sniper Capability Set (SSCS) program is to establish a consolidated kit that includes common items that are needed by sniper elements throughout the Marine Corps. The SSCS program is composed of a suite of items designed to support scout sniper employment. It includes precision rifles as well as ancillary equipment such as the Scout Sniper Ballistic Computer (SSBC) and Sniper Tripod. The SSCS is employed by sniper teams throughout the Marine Corps within infantry battalions, reconnaissance elements, and the Marine Corps Special Operations Command. ***FY 2014 Accomplishments:*** -Completed testing and evaluation of modifications to the M40 Series Sniper Rifle. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Disable Point Target (DPT)	0.022	-	-	-	-
Articles:	-	-	-	-	-
Description: The Disable Point Target (DPT) is a Non-Lethal System(s) that will accurately engage/incapacitate a single individual or multiple engagements from 10-50 meters Threshold(T); 2-100 meters Objective(O) for a duration of 30 seconds(T) and 60 seconds(O). Capability provides the Marine with an increased standoff distance during crowd control/human shield situations while simultaneously keeping Marines beyond the reach of a hostile threat. This program is leveraging Joint Non Lethal Weapons (JNLW) Science & Technology funding					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1901 / *MC Grnd Wpnry Prod Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
for FY15-FY17 and will resume Technology Maturation and Risk Reduction (TMRR) efforts with JNLW funding in FY18. ***FY 2014 Accomplishments:*** -Completed Milestone A Technology Development (TD) Phase Decision. -Completed the RFP, the Human Effects Evaluation plan, and the development of a draft Test Operations procedure. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Combat Optics	3.577	3.198	1.751	-	1.751
Articles:	-	-	-	-	-
Description: Program title changed from Family of Optical Systems and Modifications (FOSAM) to Combat Optics. Combat Optics is a program that provides for research and development, procurement, and assessment of optical systems and implementation of modifications for these systems as well as life-cycle management efforts. The research and development of future capabilities include, but are not limited to, fused/multi-spectral (e.g., combined image intensifier and thermal imaging) optical and laser systems. Additionally, this line supports the procurement of over 600,000 magnified day optics, thermal imagers, image intensifier, lasers, and illuminators principle end items (PEI) due to combat losses, wash-outs, and increases in Approved Acquisition Objectives. Sustainment efforts include sustainment of optics capabilities and/or improvements to the performance, maintainability, supportability, service life, ergonomics, and safety enhancements. ***FY 2014 Accomplishments:*** -Completed Human Systems Integration of Display Presentation (HSIDP) Study -Completed activities to support evaluation of ONR Integrated Day-Night Sight Technology (IDNST) prototypes -Completed evaluation of Multi-Color Infrared Imaging (MCIRI). ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1901 / *MC Grnd Wpnry Prod Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Complete design of a Dual-Channel Heavy Sight (DCHS) prototype to inform the development of a joint capability document for future production. -Initiate technology development and evaluation to support life cycle extension and improvement of current optics and inform future optics requirements generation to address capability gaps. ***FY 2016 Base Plans:*** -Initiate fabrication and testing of DCHS prototypes. -Continue technology development and evaluation to support life cycle extension and improvement of current optics and inform future optics requirements generation to address capability gaps. ***FY 2016 OCO Plans:*** N/A					
Title: Company and Battalion Mortars	-	1.195	0.986	-	0.986
Articles:	-	-	-	-	-
Description: This funding is used to provide system development and demonstration efforts and pre-Milestone C activities, for the Next Generation of Lightweight Handheld Mortar Ballistic Computer software and hardware. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** -Initiate system development and demonstration efforts. -Initiate pre-Milestone C activities. -Initiate purchase of Non-developmental Items (NDI) for testing and evaluation of candidate systems and modifications for Company and Battalion Mortars, and for the development of software for Lightweight Handheld Mortar Ballistic Computer. ***FY 2016 Base Plans:*** -Continue system development and demonstration efforts. -Complete pre-Milestone C activities. -Complete purchase of Non-developmental Items (NDI) for testing and evaluation of candidate systems and modifications for Company and Battalion Mortars, and for the development of software for Lightweight Handheld Mortar Ballistic Computer. ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: Family of Infantry Weapons Systems (FIWS)	0.982	1.078	0.893	-	0.893
Articles:	-	-	-	-	-
Description: Family of Infantry Weapons Systems (FIWS) is a program that provides for continuous monitoring, research and development, assessment of and implementation of Joint Service and USMC unique system modifications. Efforts such as: sustain weapon capability and/or improve the performance, maintainability, supportability, service life, ergonomics, and safety enhancements. ***FY 2014 Accomplishments:*** -Continued Product Improvement Program testing for various Machine Gun Mounts, to evaluate performance of various types of ammunition currently under development. -Continued efforts to analyze, design, develop, and field modifications. ***FY 2015 Plans:*** -Continue Product Improvement Program testing for various Machine Gun Mounts. -Continue efforts to analyze, design, develop, and field modifications for Infantry Weapons, such as Rifle Barrel Modifications, Rifle Barrel Twist study, and M27 Infantry Automatic Rifle ammo compatibility study. -Initiate performance evaluation of various types of ammunition currently under development. ***FY 2016 Base Plans:*** -Continue to conduct Product Improvement Program testing for various emergent requirements. -Continue to evaluate performance of various types of ammunition currently under development. -Continue efforts to analyze, design, develop, and field modifications. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	12.743	5.537	3.719	-	3.719

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTEN/2319 - MPM: *Mission Payload Module-Joint Non-Lethal Weapons Directorate*	3.683	4.236	6.826	-	6.826	7.273	-	-	-	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1901 / *MC Grnd Wpnry Prod Improvement*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/2208-01: *Escalation of Force - Equip (EoF-E)*	1.108	0.289	0.488	-	0.488	1.917	1.761	1.407	1.435	Continuing	Continuing
• PMC/4930: *Night Vision Equipment (NVE)*	6.100	7.472	2.018	-	2.018	3.303	6.593	9.394	9.564	Continuing	Continuing
• PMC/2220-02: *Family of Infantry Weapons Systems*	3.529	1.840	7.102	-	7.102	5.341	5.019	5.105	5.199	Continuing	Continuing
• PMC/2220-03: *Company and Battalion Mortars*	0.838	0.890	1.122	-	1.122	-	0.816	3.362	3.429	Continuing	Continuing
• RDTEN/2319 - OI: *Ocular Interruption-Joint Non-Lethal Weapons Directorate*	-	2.376	1.608	-	1.608	-	-	-	-	-	3.984

Remarks

D. Acquisition Strategy

These programs range from off-the-shelf modifications to developmental items for safety, reliability, and technology upgrades to meet Marine Corps requirements.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1901 / *MC Grnd Wpnry Prod Improvement*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Payload Module	C/CPFF	GDIT : Orlando, FL	3.229	4.550	Nov 2014	-		-		-		-	Continuing	Continuing	Continuing
Mission Payload Module	Various	AFRL : San Antonio,TX	1.446	0.643	Feb 2014	-		-		-		-	Continuing	Continuing	Continuing
Company and Battalion Mortars	MIPR	Picatinny Arsenal : Picatinny, NJ	0.882	-		0.800	May 2015	0.866	May 2016	-		0.866	Continuing	Continuing	Continuing
Esacalation of Force Equipment	Various	MCSC : QUANTICO, VA	0.394	-		0.066	May 2015	0.089	May 2016	-		0.089	-	0.549	-
Family of Infantry Weapons Systems	WR	NSWC : Dahlgren, VA	0.000	0.272	Dec 2014	0.442	Mar 2015	-		-		-	Continuing	Continuing	Continuing
Combat Optics	Various	MCSC : Quantico, VA	0.000	1.853	Nov 2013	1.212	Nov 2014	1.361	Mar 2016	-		1.361	Continuing	Continuing	Continuing
Combat Optics	Various	Night Vision Lab : Ft. Belvoir, VA	1.283	0.573	Nov 2013	1.257	Nov 2014	-		-		-	Continuing	Continuing	Continuing
Combat Optics	Various	MCSC : Travel	0.008	-		-		0.050	Jan 2016	-		0.050	-	0.058	-
Proj 1901: Prior Years Cum Funding (Product Dev)	Various	Not Specified : Not Specified	0.954	-		-		-		-		-	-	0.954	-
		Subtotal	8.196	7.891		3.777		2.366		-		2.366	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Payload Module	Various	MCSC : Travel	0.026	0.026	Aug 2014	-		-		-		-	-	0.052	-
Family of Infantry Weapons Systems	Various	Travel/IMPAC : Quantico, VA	0.000	0.077	Sep 2014	0.066	Sep 2015	0.072	Sep 2016	-		0.072	Continuing	Continuing	Continuing
Ocular Interruption	Various	Travel : Quantico, VA	0.078	0.082	Aug 2014	-		-		-		-	Continuing	Continuing	Continuing
Ocular Interruption	C/FFP	CD&I : Quantico, VA	0.000	0.055	Apr 2014	-		-		-		-	Continuing	Continuing	Continuing
Combat Optics	C/FFP	MCSC : Quantico, VA	0.939	0.287	Nov 2013	0.729	Nov 2014	-		-		-	Continuing	Continuing	Continuing
Disable Point Target	Various	MCSC : TRAVEL	0.096	0.007	Aug 2014	-		-		-		-	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 1901 / *MC Grnd Wpnry Prod Improvement*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Disable Point Target	C/FFP	MCSC : Quatico, VA	0.175	0.015	May 2014	-		-		-		-	Continuing	Continuing	Continuing
Company and Battalion Mortars	WR	NSWC : Various Navy Labs	0.000	-		0.275	May 2015	-		-		-	Continuing	Continuing	Continuing
Combat Optics	C/FFP	NSCW : Crane, IN	0.000	-		-		0.340	Dec 2015	-		0.340	-	0.340	-
Proj 1901: Prior Years Cum Funding (Support)	Various	Not Specified : Not Specified	9.210	-		-		-		-		-	-	9.210	-
		Subtotal	10.524	0.549		1.070		0.412		-		0.412	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Combat Optics	Various	NSWC Dahlgren : Dahlgren, VA	0.556	0.400	Nov 2013	-		-		-		-	Continuing	Continuing	Continuing
Combat Optics	WR	NSWC : Crane, IN	0.023	-		-		-		-		-	Continuing	Continuing	Continuing
Combat Optics	Various	MCSC : Quantico, VA	0.000	0.464	Nov 2014	-		-		-		-	Continuing	Continuing	Continuing
Family of Infantry Weapons Systems	WR	NSWC : Crane, IN	0.000	0.205	Jan 2014	0.220	Dec 2014	0.242	Dec 2015	-		0.242	Continuing	Continuing	Continuing
Family of Infantry Weapons Systems	WR	NSWC : Various Navy Labs	0.000	-		0.108	Aug 2015	0.329	Aug 2016	-		0.329	Continuing	Continuing	Continuing
Mission Payload Module	C/FFP	MCOTEA : Quantico, VA	0.163	0.228	Dec 2013	-		-		-		-	-	0.391	-
Mission Payload Module	WR	NSWC : Crane, IN	0.252	0.176	Nov 2013	-		-		-		-	-	0.428	-
Mission Payload Module	WR	NSWC : Dalhgren, VA	0.442	1.152	Nov 2013	-		-		-		-	-	1.594	-
Ocular Interruption	WR	NSWC : Crane, IN	0.075	0.122	Jun 2014	-		-		-		-	-	0.197	-
Ocular Interruption	WR	NSWC : Dalhgren, V A	0.984	0.138	Jun 2014	-		-		-		-	-	1.122	-
Family of Infantry Weapons Systems	WR	PM Ammo : Quantico, VA	0.000	0.190	Sep 2014	-		-		-		-	-	0.190	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Company and Battalion Mortars	WR	NSWC : Various Navy Labs	0.000	-		0.120	Aug 2015	0.120	Aug 2016	-		0.120	Continuing	Continuing	Continuing
Scout Sniper Cap Set	Various	MCSC : Quantico, VA	0.006	0.399	Aug 2014	-		-		-		-	-	0.405	-
Proj 1901: Prior Years Cum Funding (T&E Eval)	Various	Not Specified : Not Specified	4.155	-		-		-		-		-	-	4.155	-
		Subtotal	6.656	3.474		0.448		0.691		-		0.691	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Ocular Interruption	C/FFP	MCSC : Quantico, VA	0.000	0.591	May 2014	-		-		-		-	-	0.591	-
Family of Infantry Weapons Systems	C/FFP	MCSC : Quantico, VA	0.000	0.238	Mar 2014	0.242	Mar 2015	0.250	Mar 2016	-		0.250	-	0.730	-
Proj 1901: Prior Years Cum Funding (Mgmt Services)	Various	Not Specified : Not Specified	0.436	-		-		-		-		-	-	0.436	-
		Subtotal	0.436	0.829		0.242		0.250		-		0.250	-	1.757	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.812	12.743		5.537		3.719		-		3.719	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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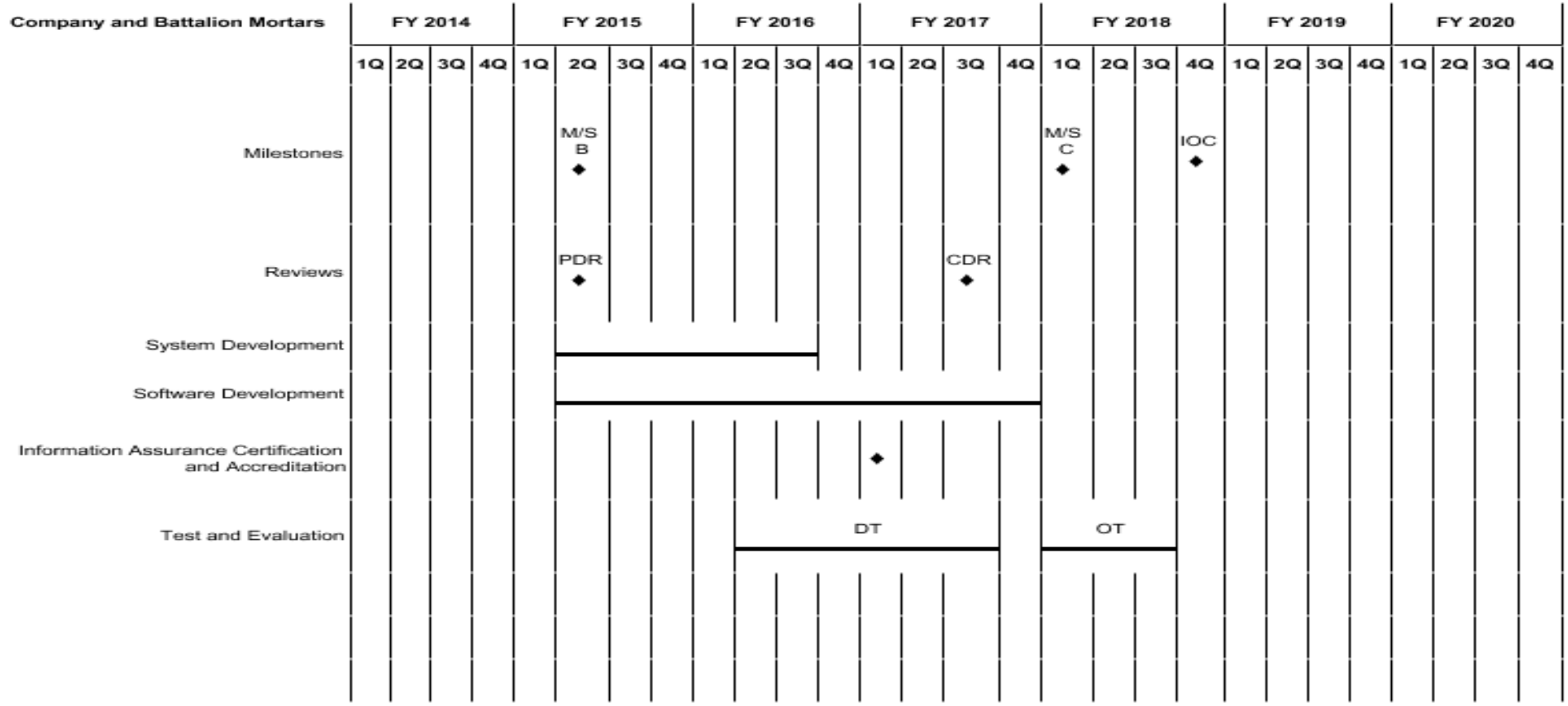

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1901 / *MC Grnd Wpnry Prod Improvement*

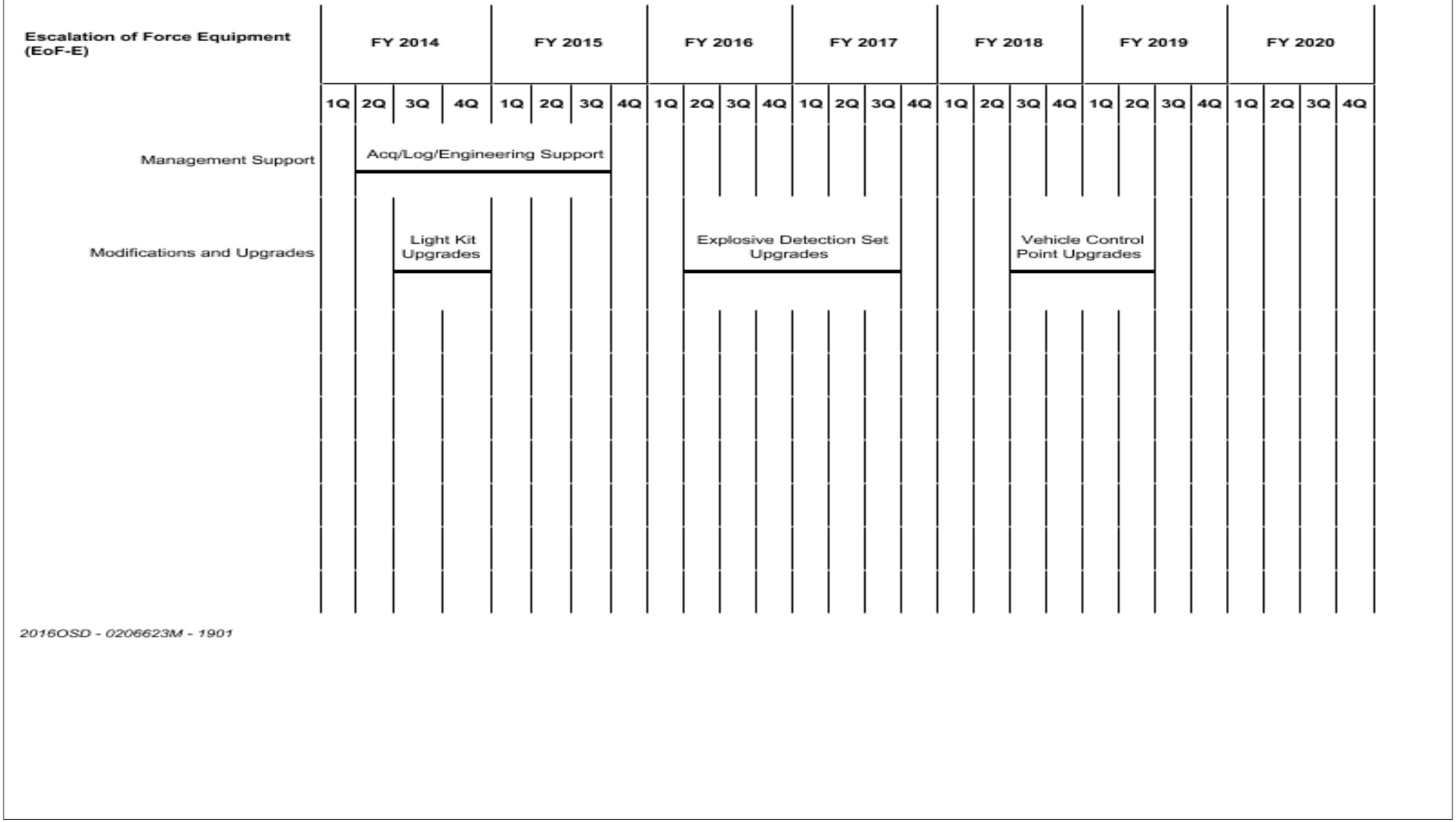

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 1901 / *MC Grnd Wpnry Prod Improvement*

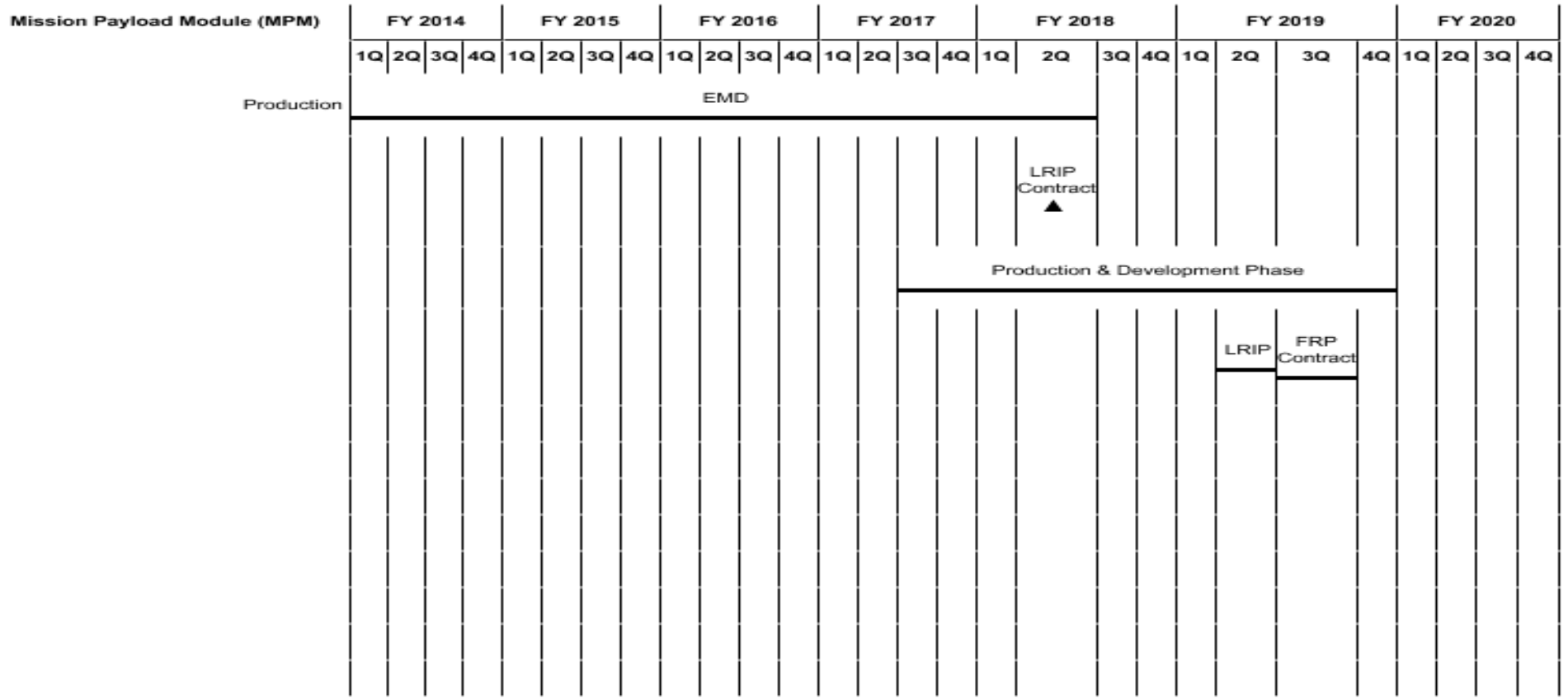

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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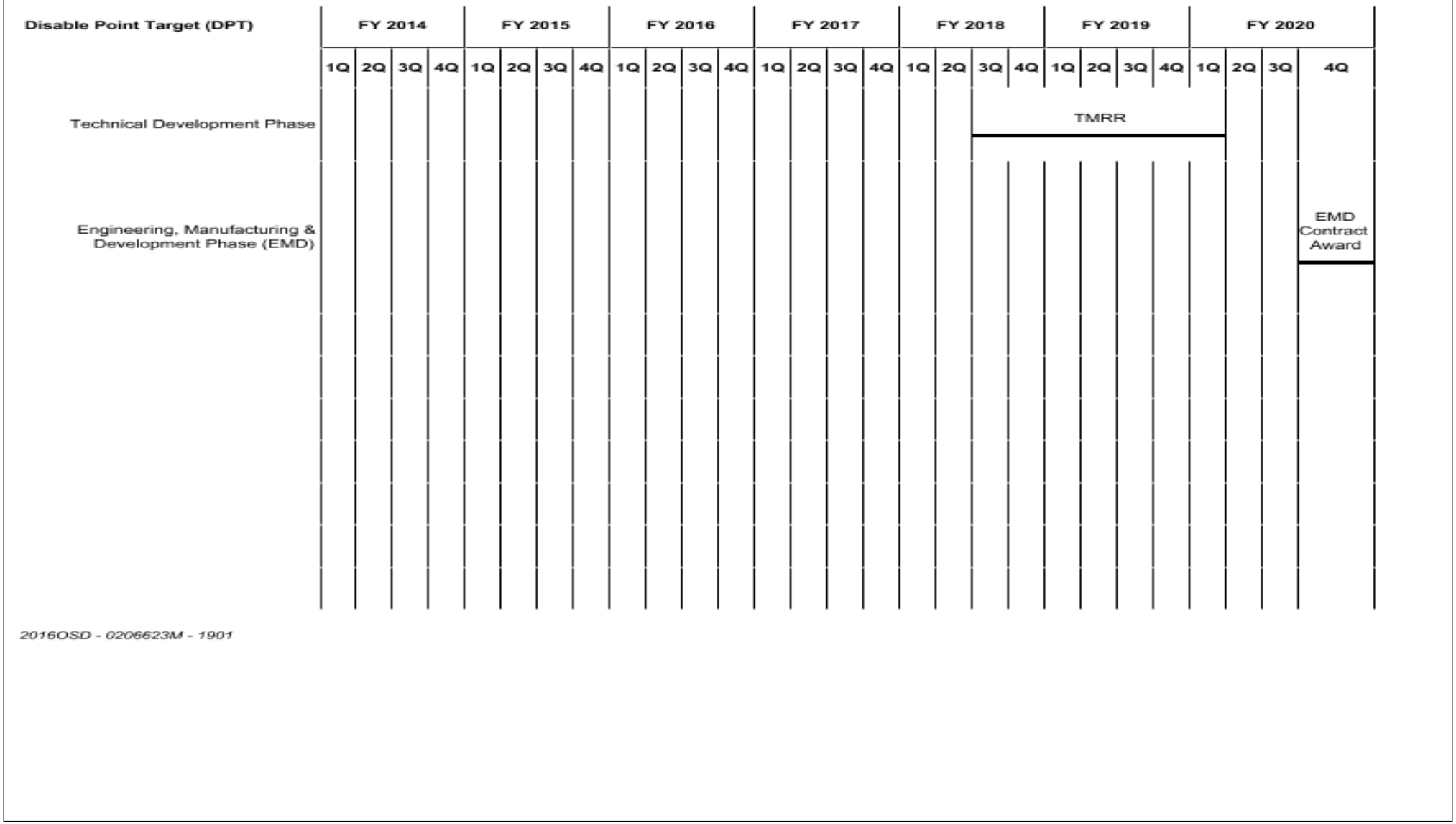

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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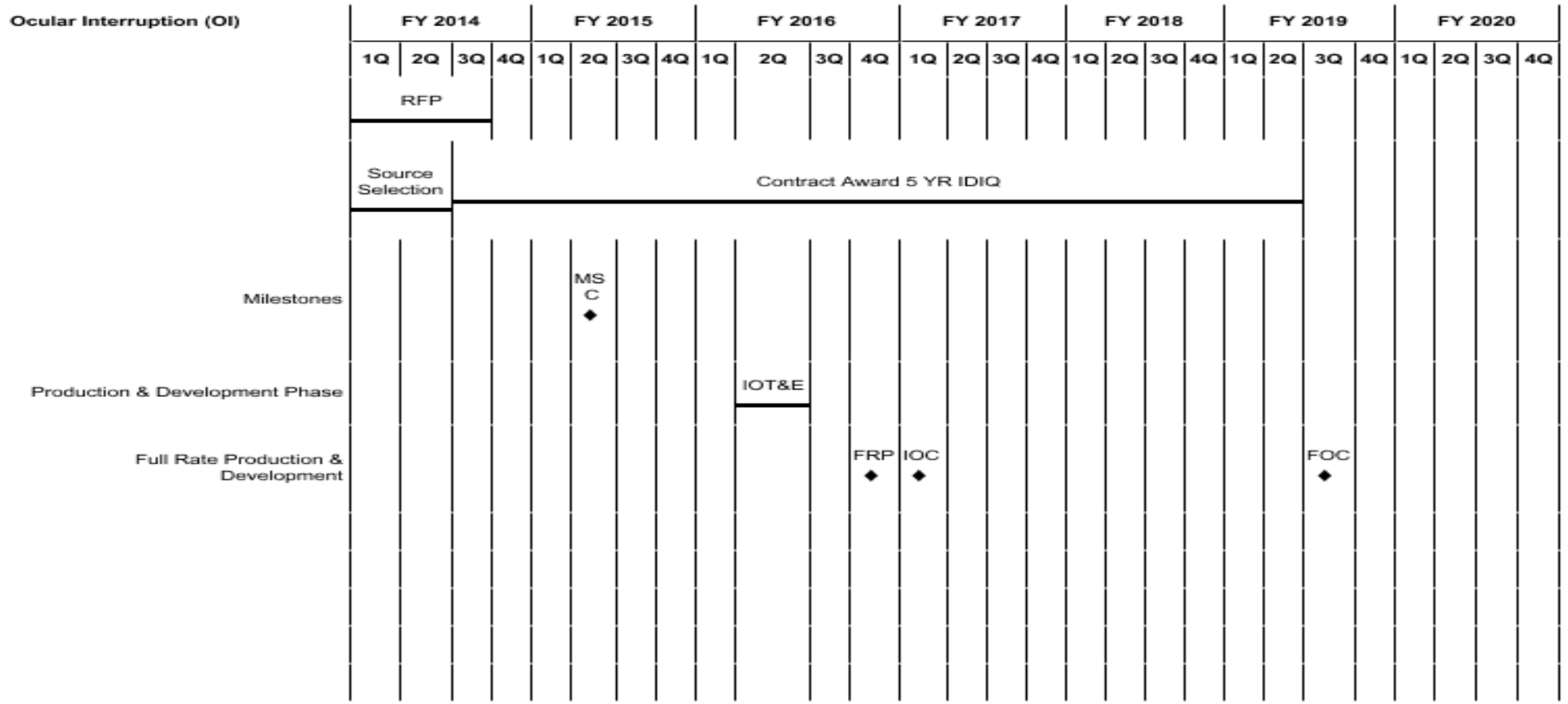

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Company and Battalion Mortars				
Milestones: Milestone B	2	2015	2	2015
Milestones: Milestone C	1	2018	1	2018
Milestones: IOC	4	2018	4	2018
Reviews: PDR	2	2015	2	2015
Reviews: CDR	3	2017	3	2017
System Development: System Development	2	2015	3	2016
Software Development: Software Development	2	2015	4	2017
Information Assurance Certification and Accreditation: Information Assurance Certification and Accreditation	1	2017	1	2017
Test and Evaluation: Developmental Test	2	2016	3	2017
Test and Evaluation: Operational Test	1	2018	3	2018
Escalation of Force Equipment (EoF-E)				
Management Support: Acq/Log/Engineering Support	2	2014	3	2015
Modifications and Upgrades: Light Kit Upgrades	3	2014	4	2014
Modifications and Upgrades: Explosive Detection Set Upgrades	2	2016	3	2017
Modifications and Upgrades: Vehicle Control Point Upgrades	3	2018	2	2019
Mission Payload Module (MPM)				
Production: Engineering, Manufacturing & Development	1	2014	2	2018
Production: Low Rate Initial Contract Award	2	2018	2	2018
Production: Production & Development Phase	3	2017	4	2019
Production: Low Rate Initial Production (LRIP)	2	2019	2	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production: Full Rate Production Contract Award	3	2019	3	2019
Disable Point Target (DPT)				
Technical Development Phase: Technical Maturation Readiness Review (TMRR)	3	2018	1	2020
Engineering, Manufacturing & Development Phase (EMD): EMD Contract Award	4	2020	4	2020
Ocular Interruption (OI)				
Request for Proposal (RFP)	1	2014	3	2014
Source Selection	1	2014	2	2014
Contract Award 5 Yr IDIQ	3	2014	2	2019
Milestones: Milestone C Decision	2	2015	2	2015
Production & Development Phase: Initial Operational Test & Evaluation (IOT&E)	2	2016	2	2016
Full Rate Production & Development: Full Rate Production Design	4	2016	4	2016
Full Rate Production & Development: Initial Operational Capability (IOC)	1	2017	1	2017
Full Rate Production & Development: Full Operational Capability (FOC)	3	2019	3	2019

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 2086 / *Soldier/Marine Enhancement*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2086: *Soldier/Marine Enhancement*	16.718	5.952	4.656	3.253	-	3.253	3.786	3.604	3.862	3.943	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Marine Expeditionary Rifle Squad (MERS) mission is to manage the infantry squad "squad as a system" by conducting integration, systems engineering, human factors, and modernization efforts across all the products that are worn, carried, and consumed by the rifle squad. Physical integration, capability analysis, modeling and simulation, ergonomics, and usability assessments are facilitated by this program in working with the various program managers and project officers in the development of their unique items that contribute to the squads overall capabilities. Weight and volume management are fundamental considerations in the insertion or modernization of any squad equipment. MERS works with Joint and NATO soldier modernization programs to harvest new technologies to increase the capability of the rifle squad. The program also ensures the integration of the rifle squad into the various mobility platforms currently in service and being developed to ensure a Marine and his equipment can operate effectively. This program is essential to ensure the combined synergistic equipment effects enhance the war-fighting functions of the Marine rifle squad towards the strategic Marine Corps warfighting vision for the future.

Marine Enhancement Program (MEP) provides Research, Development, Test and Evaluation funding for low visibility, low cost items. It focuses on items of equipment which will benefit the individual Marine by reducing the load, increasing survivability, enhancing safety, and improving combat effectiveness. The emphasis of the program is on non-developmental item/commercial off the shelf (NDI/COTS) available items which can be quickly evaluated and fielded. This program is coordinated with the Army's Soldier Enhancement Program (SEP).

Ammunition Life Cycle Management Program responsibility for Total Life Cycle Management for ground conventional munitions. Accordingly, PM Ammo is a member of the joint services Ammunition Logistics Research and Development IPT (ALR&D IPT). Each year the IPT solicits R&D projects from all of the services. The IPT looks for innovative ideas to enhance logistical support for munitions. Approximately 20 Ammo Logistics R&D projects are voted on each year by the IPT. They are prioritized by voting actions of the Senior Review Board and funding sources are identified. Since the funding for ammunition will likely decrease as the Marine Corps draws down and we end our participation in OEF, ammunition logistics R&D projects designed to extend the shelf life of our current inventory, provide enhanced packaging to protect our munitions, and other such projects will go a long way to ensure the Marine Corps can maintain a reliable conventional ammunition inventory into the future.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Marine Enhancement Program (MEP)	2.976	1.750	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2086 / *Soldier/Marine Enhancement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Initiated the new Modular/Scalable Vest, Hearing Protection, Boot Dry System and the Patrol Planning Tool. ***FY 2015 Plans:*** Continue to use funds based on the mission and the nature of the MEP as an accelerated acquisition process. The future MEP candidate submissions/selections will determine the projects that will be funded. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Marine Expeditionary Rifle Squad (MERS)	2.976	2.406	2.753	-	2.753
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued to support all the Marine Corps Systems Command program offices that provide equipment to the Marine rifle squad or provide mobility platforms that support the squad. -Continued to provide the Gruntworks Squad Integration Facility as an asset to execute integration projects and usability trials. -Completed human performance trials utilizing Marine Corps Load Effects Assessment Program (MC-LEAP) and other data collection methodologies. -Continued usability trials and limited user evaluations for Joint Battle Command Platform at the infantry platoon and squad level. -Completed Modular Scalable Protection System and Tropical Uniform projects with human factors expertise. -Completed experiments using the Marine Corps Load Effects Assessment Program. -Continued integrated seating solutions for combat equipped Marines for Amphibious Combat Vehicle (ACV), Marine Personnel Carrier (MPC), Joint Light Tactical Vehicle (JLTV) and other mobility programs and synchronized seat belt and retention systems among the platforms. -Continued R&D on squad systems in conjunction with Army squad system projects. -Completed surveys with post deploying infantry battalions on usability and integration of equipment utilized during deployment. -Completed human performance testing of Marines utilizing current and prototype configurations of infantry rifle squad equipment. -Completed and transitioned technologies from ONR and other S&T activities that enhance capabilities of the squad or provide a desired capability.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2086 / *Soldier/Marine Enhancement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continued weight and volume reduction replacements for current infantry equipment that support integration of components. -Completed MERS Initial Capabilities Document (ICD) that will be finalized in FY14.					
FY 2015 Plans: -Continue to support all the Marine Corps Systems Command program offices that provide equipment to the Marine rifle squad or provide mobility platforms that support the squad. -Continue to resource and utilize the Gruntworks Squad Integration Facility as an asset to execute integration projects and usability trials. -Continue to conduct human performance trials utilizing MC-LEAP and other data collection methodologies. -Continue to conduct usability trials and limited user evaluations for Joint Battle Command Platform at the infantry platoon and squad level. -Continue to support Modular Scalable Protection System and Tropical Uniform projects with human factors expertise. -Continue to conduct experiments using the Marine Corps Load Effects Assessment Program. -Continue to develop integrated seating solutions for combat equipped Marines for ACV, MPC, JLTV and other mobility programs and synchronize seat belt and retention systems among the platforms. -Continue to conduct R&D on squad systems in conjunction with Army squad system projects. -Continue to conduct surveys with post deploying infantry battalions on usability and integration of equipment utilized during deployment. -Continue to conduct human performance testing of Marines utilizing current and prototype configurations of infantry rifle squad equipment. -Continue to evaluate and transition technologies from ONR and other S&T activities that enhance capabilities of the squad or provide a desired capability. -Continue to seek weight and volume reduction replacements for current infantry equipment that support integration of components. -Continue to implement requirements from MERS Initial Capabilities Document (ICD).					
FY 2016 Base Plans: -Continue to support all the Marine Corps Systems Command program offices that provide equipment to the Marine rifle squad or provide mobility platforms that support the squad. -Continue to resource and utilize the Gruntworks Squad Integration Facility as an asset to execute integration projects and usability trials.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2086 / *Soldier/Marine Enhancement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Improve and invest in the R&D capabilities within the Gruntworks Squad Integration Facility by adding test equipment and hardware to conduct research and testing. -Continue to conduct human performance trials utilizing MC-LEAP and other data collection methodologies. -Continue to conduct usability trials and limited user evaluations for Joint Battle Command Platform at the infantry platoon and squad level. -Continue to support Modular Scalable Protection System and Tropical Uniform projects with human factors expertise. -Continue to conduct experiments using the Marine Corps Load Effects Assessment Program. -Continue to develop integrated seating solutions for combat equipped Marines for ACV, MPC, JLTV and other mobility programs and synchronize seat belt and retention systems among the platforms. -Continue to conduct R&D on squad systems in conjunction with Army squad system projects. -Continue to conduct surveys with post deploying infantry battalions on usability and integration of equipment utilized during deployment. -Continue to conduct human performance testing of Marines utilizing current and prototype configurations of infantry rifle squad equipment. -Continue to evaluate and transition technologies from ONR and other S&T activities that enhance capabilities of the squad or provide a desired capability. -Continue to seek weight and volume reduction replacements for current infantry equipment that support integration of components. -Continue to implement requirements from MERS Initial Capabilities Document (ICD). ***FY 2016 OCO Plans:*** N/A					
Title: Ammunition Life Cycle Management	-	0.500	0.500	-	0.500
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: -Initiate support for the Ammunition Logistics R&D IPT by funding two of the fifteen projects that have the most logistical impact to the Marine Corps.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2086 / *Soldier/Marine Enhancement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue to support the Ammunition Logistics R&D IPT by funding the projects (TBD) that have the most logistical impact to the Marine Corps. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	5.952	4.656	3.253	-	3.253

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC BLI 2208: *Marine Enhancement Program*	1.300	1.319	-	-	-	-	-	-	-	-	22.158

Remarks

D. Acquisition Strategy

Non Developmental Item/Commercial off the Shelf (NDI/COTS).

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2086 / *Soldier/Marine Enhancement*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MERS Product Development	C/FFP	Various : Various	0.000	0.700	Jul 2014	0.821	Mar 2015	1.100	Jan 2016	-		1.100	-	2.621	-
MEP Product Development	C/FFP	Marine Corps : Quantico, VA	3.528	1.926	Apr 2014	1.520	Mar 2015	-		-		-	-	6.974	-
Prior Years Cumulative Funding	Various	Marine Corps Systems Command : Quantico, VA	4.429	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	7.957	2.626		2.341		1.100		-		1.100	-	-	-

Remarks

Various contracts, MIPRS, Work Requests and Supply Requisitions are awarded through the year for the various initiatives in the MEP and MERS programs. Contract Method reflects where the majority of the funding is allocated. Contract award date reflects the first of multiple awards.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MERS Prior Year Cumulative Funding	Various	Marine Corps Systems Command : Quanico, VA	0.600	-		-		-		-		-	-	0.600	-
MEP Operational Technical Support	WR	Various : Various	0.000	0.700	Apr 2014	-		-		-		-	-	0.700	-
Ammunition Life Cycle Management	MIPR	Defense Ammo Ctr : McAlester, OK	0.000	-		0.247	Jan 2015	0.263	Jan 2016	-		0.263	-	0.510	-
Ammunition Life Cycle Management	WR	NSWC : Indian Head, MD	0.000	-		0.253	Jan 2015	0.237	Jan 2016	-		0.237	-	0.490	-
MERS Technical Support	WR	Various : Various	0.000	1.303	Jun 2014	0.934	Jan 2015	1.400	Mar 2016	-		1.400	-	3.637	-
		Subtotal	0.600	2.003		1.434		1.900		-		1.900	-	5.937	-

Remarks

Various contracts, MIPRS, Work Requests and Supply Requisitions are awarded through the year for the various initiatives in the MERS programs. Contract method reflects where the majority of the funding is allocated. Contract award date reflects the first of multiple awards.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 2086 / *Soldier/Marine Enhancement*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MERS Developmental Test & Eval	C/FFP	Marine Corps Systems Command : Quantico, VA	3.795	0.973	May 2014	0.651	Mar 2015	0.253	Mar 2016	-		0.253	Continuing	Continuing	Continuing
MEP Developmental Test & Eval	C/FFP	Marine Corps Systems Command : Quantico, VA	4.366	0.350	Apr 2014	0.230	Mar 2015	-		-		-	Continuing	Continuing	Continuing
		Subtotal	8.161	1.323		0.881		0.253		-		0.253	-	-	-

Remarks

Various contracts, MIPRS, Work Requests and Supply Requisitions are awarded through the year for the various initiatives in the MEP and MERS programs, therefore a specific contract award date cannot be identified. Contract award date reflects the first of multiple awards.

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.718	5.952		4.656		3.253		-		3.253	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2086 / *Soldier/Marine Enhancement*

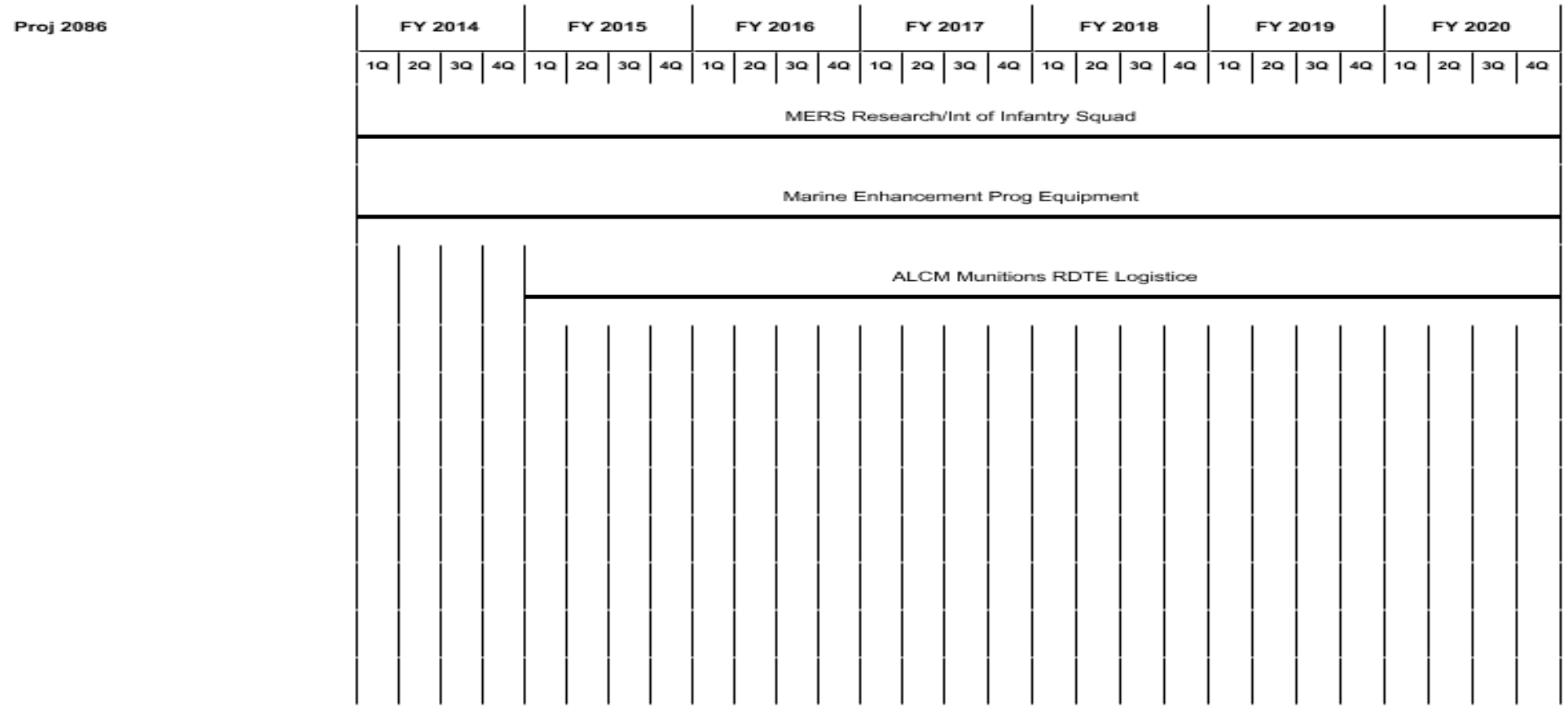

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2086 / *Soldier/Marine Enhancement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2086				
MERS research/integration of Infantry Squad - No major milestones	1	2014	4	2020
Marine Enhancement Program Equipment - No major milestones	1	2014	4	2020
ALCM - Munitions RDTE Logistics - No major milestones	1	2015	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 2112 / *Lightweight 155mm Howitzer*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2112: *Lightweight 155mm Howitzer*	-	0.193	0.204	0.207	-	0.207	0.003	0.003	0.003	0.003	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Lightweight 155mm Howitzer (LW155), also known as the M777A2, provides direct, reinforcing, and general support fires to maneuver forces. It replaces all howitzers in all missions in the USMC and replaces the M198 howitzer as the general support artillery for light forces in the Army. The LW155 fires unassisted projectiles to a range of 15 miles and assisted projectiles to 19 miles. The addition of the digital fire control system enables the weapon to program and fire the improved Excalibur precision-guided munition to ranges in excess of 25 miles with better than 10-meter Circular Error Probable (CEP) accuracy. The LW155 is the first ground combat system whose major structures are made of high strength titanium alloy and the system makes extensive use of hydraulics to operate the breech, load tray, recoil and wheel arms. The combination of titanium structures and the use of hydraulic systems resulted in a significant weight savings over the M198 system (7000 lbs.). Compared to the M198, the LW155 emplaces three-times faster and displaces four-times faster. It traverses 32 percent more terrain worldwide and is 70 percent more survivable than the M198. The LW155 was first introduced into the Marine Corps in April 2005 and since then 10th, 11th, 12th and 14th Marines and the schoolhouses have been fielded. The Army has fielded the system to its Stryker Brigades and Fires Brigades and is currently fielding to its Infantry Brigades. The LW155 is currently in OEF with both Services.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: ECP Material Solutions	0.193	0.204	0.207	-	0.207
Articles:	-	-	-	-	-

FY 2014 Accomplishments:
Awarded contract to the Defense Ordinance Technology Consortium for industry studies on technology related to the Hydrostrut re-design for the howitzer.

FY 2015 Plans:
Continue to support engineering analysis such as Digital Fire Control System component upgrades as well as concepts to increase M777A2 range and future power technology solutions.

FY 2016 Base Plans:
Continue to support assessment of concepts such as increasing LW155 range. In addition, funds will assess alternative power solutions such as improvements to the Digital Fire Control System (DFCS) operation with respect to run time, cold weather adaption and the reduction of external power source reliance.

FY 2016 OCO Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2112 / *Lightweight 155mm Howitzer*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
n/a					
Accomplishments/Planned Programs Subtotals	0.193	0.204	0.207	-	0.207

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 218500: *PMC - LW155*	4.226	4.532	7.482	-	7.482	2.581	0.262	0.065	0.068	-	1,332.659

Remarks

D. Acquisition Strategy

Production and fielding of the LW155 has concluded and has now entered into the Sustainment Life Cycle Phase. The program will continue to perform research and development to remedy obsolescence issues, diminishing manufacturing sources, technical issues and emergent threats.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2112 / *Lightweight 155mm Howitzer*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Weapons Eng	C/T&M	Defense Ordinance Technology Consortium (DOTC) : Picatinny Arsenal, NJ	0.000	0.193	May 2014	-		-		-		-	-	0.193	-
System Engineering	C/T&M	Defense Ordinance Technology Consortium (DOTC) : Picatinny Arsenal, NJ	0.000	-		-		0.207	Mar 2016	-		0.207	-	0.207	-
		Subtotal	0.000	0.193		-		0.207		-		0.207	-	0.400	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Weapons Engineering	C/T&M	Defense Ordinance Technology Consortium (DOTC) : Picatinny Arsenal, NJ	0.000	-		0.204	Mar 2015	-		-		-	Continuing	Continuing	Continuing
		Subtotal	0.000	-		0.204		-		-		-	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.193		0.204		0.207		-		0.207	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2112 / *Lightweight 155mm Howitzer*

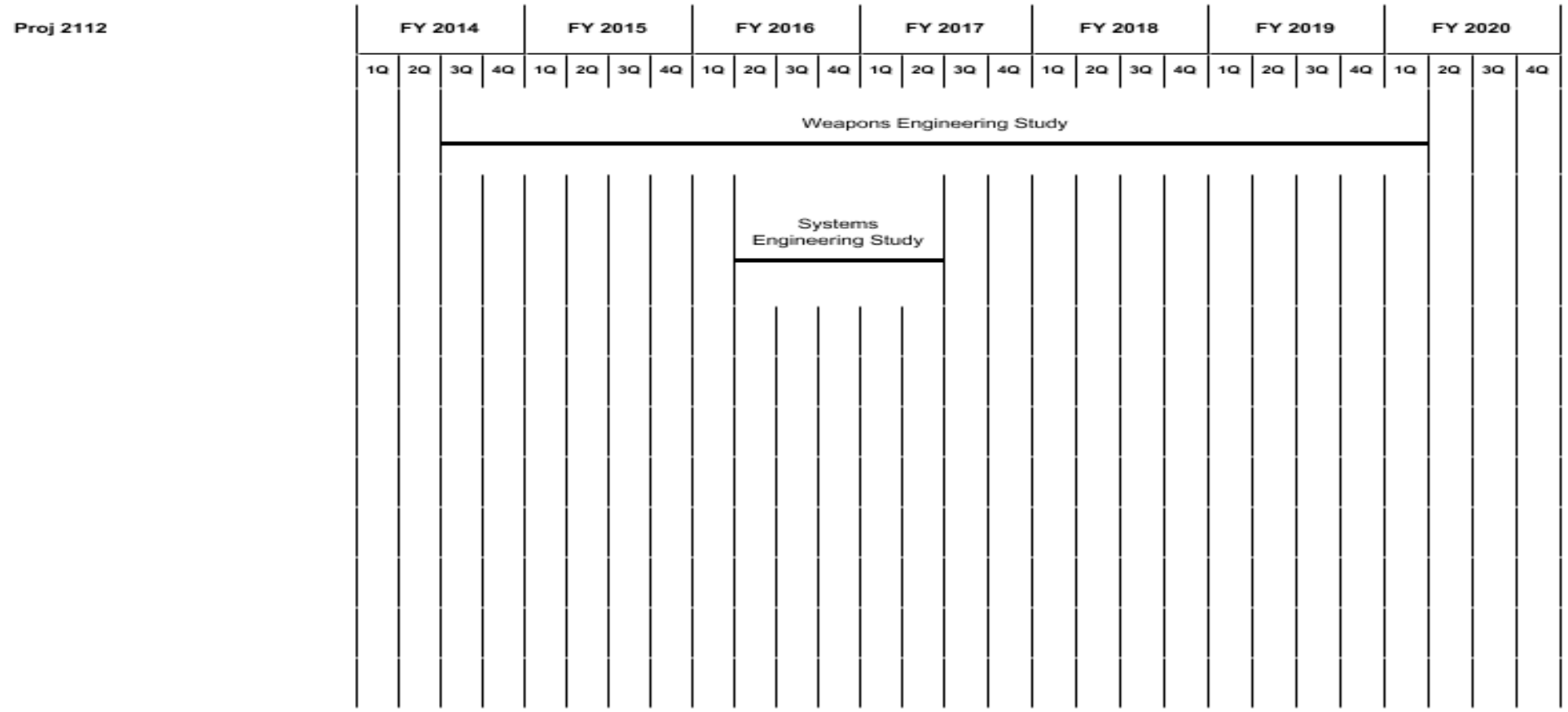


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2112 / *Lightweight 155mm Howitzer*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2112				
Weapons Engineering Study	3	2014	1	2020
Systems Engineering Study	2	2016	2	2017

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 2237 / *Amphibious Vehicle Test*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2237: *Amphibious Vehicle Test*	1.274	2.283	0.836	0.994	-	0.994	1.002	0.991	0.916	0.935	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Amphibious Vehicle Test Branch (AVTB) is a component of Marine Corps Systems Command (MCSC) and is the Department of Defense's only certified amphibious vehicle test capability. The AVTB plans, executes, analyzes and reports results of developmental and integrated test and evaluation events, predominately supporting the development and performance validation of amphibious and ground combat vehicle system capabilities. The AVTB conducts or supports testing for the MCSC; Navy PEOs and Program Management Offices; the Office of Naval Research; and HQMC PP&O and CD&I, as directed. The AVTB mission is to plan, execute, analyze and report developmental and integrated test and evaluation of USMC and Joint Service tracked, wheeled and ground combat vehicles and other demonstration events in order to characterize the performance of amphibious and ground combat vehicle systems and enable informed acquisition decisions.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Contracts and Test and Evaluation Support Assets	2.283	0.836	0.994	-	0.994
Articles:	-	-	-	-	-

FY 2014 Accomplishments:

-Continued to provide the necessary support resources to safely and effectively conduct simultaneous developmental testing and feasibility assessments on amphibious vehicles and other prototype systems.

-Continued support for Hydrodynamic Test Rig (HTR) focused technology demonstrations in support of the Amphibious Combat Vehicle (ACV) 2.0 program effort.

-Completed Light Armored Vehicle (LAV) variant water testing.

-Completed testing Networking on the Move (NOTM) integrated with the Amphibious Assault Vehicle (AAV).

-Completed conducting AAV baseline in support of PEO LS / PM AAA and, specifically, the AAV survivability upgrade testing the Topographic Production Capability (TPC) system to validate MilStd 810 compliance.

-Completed planning, witness and evaluation of the Ground Based Air Defense A/MANPADS system integrated on a new HMMWV variant.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2237 / *Amphibious Vehicle Test*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continued to improve and expand on existing personnel and facility capabilities in preparation for the ACV Inc 1.1 and upgraded AAV system testing beginning during FY16. ***FY 2015 Plans:*** -Continue high water speed testing of the HTR to support the ACV design development and technology risk reduction efforts. -Continue LAV variant water testing; AAV baseline and track with focused testing to inform the upgrade acquisition and contracting process for survivability upgrade. -Continue to provide resources and technical expertise to ONR's Exercise Trident Warrior. -Continue test support to other MCSC, Navy PEO and PM requirements such as PM GBAD and PM MC3. -Initiate Joint Service acquisitions support, such as the United States Special Operations Command, including multiple ground mobility systems, maritime systems and target engagement systems. ***FY 2016 Base Plans:*** -Continue testing of the HTR. -Continue ACV inc 1.1 Reliability Growth Testing (RGT), Survivability, Human Factors, C2, Water mode Operational Assessments, and support the ACV design development and technology risk reduction efforts. -Continue LAV variant water testing. -Continue AAV baseline and survivability upgrade DT&E RGT with increased focused testing to inform the upgrade acquisition and contracting process for survivability upgrade. -Continue to provide resources and technical expertise to ONR's Exercise Trident Warrior; and provide test support to other MCSC, Navy PEOs, and Joint Service acquisitions. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	2.283	0.836	0.994	-	0.994

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2237 / *Amphibious Vehicle Test*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Work will be led in-house by the Amphibious Vehicle Test Branch (AVTB). As DoD's only certified amphibious test and evaluation capability, AVTB will provide technical and user information regarding the performance of amphibious and ground combat vehicles during developmental testing, capabilities demonstrations and assessments, integrated and follow-on test evaluations events for Marine Corps and Joint Service Program Managers. Required DT&E test assets will be resourced organically with military and civilian personnel, and as required contracted by the MCSC, such as boat operations and maintenance, professional data collection and reduction, test instrumentation and test-peculiar programming and technical writing.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 2237 / *Amphibious Vehicle Test*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Facility/Test Infrastucture	C/FFP	NAVFAC, SW : Camp Pendleton, CA	0.298	0.106	Sep 2014	0.061	Apr 2015	0.045	May 2016	-		0.045	Continuing	Continuing	Continuing
Test Support Assets	C/FFP	MCTSSA : Camp Pendleton	0.087	1.194	Aug 2014	0.036	Aug 2015	-		-		-	-	1.317	-
Prior Years Cumulative Funding	C/FFP	MCTSSA : Camp Pendleton Ca	0.010	-		-		-		-		-	-	0.010	-
Data Collections	WR	ATC : Camp Pendleton, CA	0.216	0.040	Jun 2014	-		-		-		-	Continuing	Continuing	Continuing
Hazmat POL PPE	Various	Camp Pendleton : Camp Pendleton CA	0.000	0.060	Jul 2014	0.050	Jul 2015	0.040	Jul 2016	-		0.040	-	0.150	-
Test/Equipment/NMCI Support	Various	Camp Pendleton : Camp Pendleton CA	0.039	0.020	Apr 2014	0.020	Dec 2014	0.020	Dec 2015	-		0.020	Continuing	Continuing	Continuing
		Subtotal	0.650	1.420		0.167		0.105		-		0.105	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Article Ops& Maint/ Fuel Consumables and Materials	Various	AVTB : Camp Pendelton, CA	0.466	0.477	Aug 2014	0.148	Apr 2015	0.460	Jun 2016	-		0.460	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	WR	AVTB : Camp Pendleton	0.020	-		-		-		-		-	-	0.020	-
		Subtotal	0.486	0.477		0.148		0.460		-		0.460	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Data Management	C/FFP	MCSC : Quantico, VA	0.138	0.386	Jun 2014	0.521	Jun 2015	0.429	Jun 2016	-		0.429	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2237 / *Amphibious Vehicle Test*

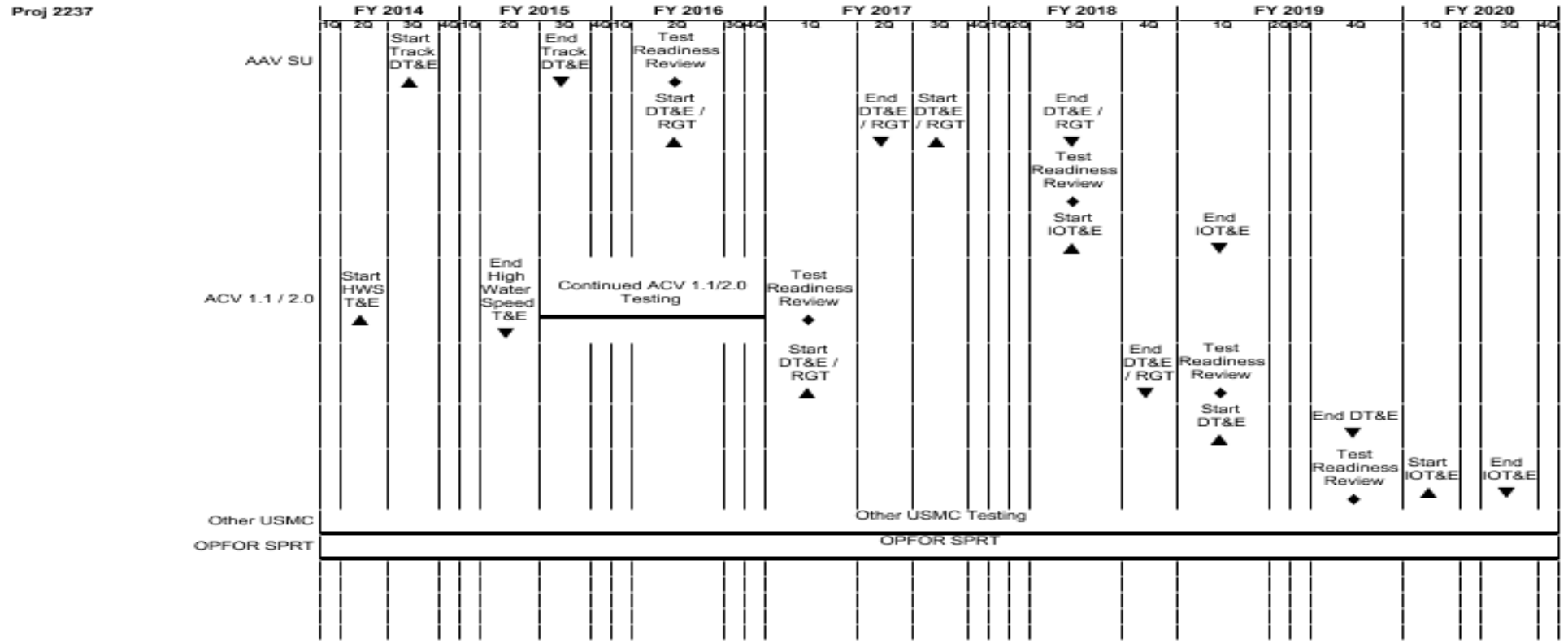
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.138	0.386		0.521		0.429		-		0.429	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.274	2.283		0.836		0.994		-		0.994	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2237 / *Amphibious Vehicle Test*



2016OSD - 0206623M - 2237

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2237 / *Amphibious Vehicle Test*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2237				
AAV SU: FY14 Start Track DT&E	3	2014	3	2014
AAV SU: FY15 End Track DT&E	3	2015	3	2015
AAV SU: FY16 Test Readiness Review	2	2016	2	2016
AAV SU: FY16 Start DT&E / RGT	2	2016	2	2016
AAV SU: FY17 End DT&E / RGT	2	2017	2	2017
AAV SU: FY17 Start DT&E / RGT	3	2017	3	2017
AAV SU: FY18 End DT&E / RGT	3	2018	3	2018
AAV SU: FY18 Test Readiness Review	3	2018	3	2018
AAV SU: FY18 Start IOT&E	3	2018	3	2018
AAV SU: FY19 End IOT&E	1	2019	1	2019
ACV 1.1 / 2.0: FY14 Start High Water Speed T&E	2	2014	2	2014
ACV 1.1 / 2.0: FY15 End High Water Speed T&E	2	2015	2	2015
ACV 1.1 / 2.0: Continued ACV Testing	3	2015	4	2016
ACV 1.1 / 2.0: FY17 Test Readiness Review	1	2017	1	2017
ACV 1.1 / 2.0: FY17 Start DT&E / RGT	1	2017	1	2017
ACV 1.1 / 2.0: FY18 End DT&E / RGT	4	2018	4	2018
ACV 1.1 / 2.0: FY19 (1) Test Readiness Review	1	2019	1	2019
ACV 1.1 / 2.0: FY19 Start DT&E	1	2019	1	2019
ACV 1.1 / 2.0: FY20 End DT&E	4	2019	4	2019
ACV 1.1 / 2.0: FY19 (2) Test Readiness Review	4	2019	4	2019
ACV 1.1 / 2.0: FY20 Start IOT&E	1	2020	1	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ACV 1.1 / 2.0: FY20 End IOT&E	3	2020	3	2020
Other USMC: Other USMC Testing	1	2014	4	2020
OPFOR SPRT: OPFOR SPRT	1	2014	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 2315 / *Training Devices/Simulators*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2315: *Training Devices/ Simulators*	99.516	12.854	10.210	14.882	-	14.882	16.467	13.315	13.114	14.051	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

(U) Training simulators supported by this program element include Combined Arms Command & Control Training Upgrade System (CACCTUS), Deployable Virtual Training Environment (DVTE), Marine Air/Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) Enhancements, Range Modernization/Transformation (RM/T), Supporting Arms Virtual Trainer (SAVT), Squad Immersive Training Environment (SITE) and Training Support. These training systems provide tactical weapons and decision-making skill training from entry level through (MAGTF) staff level. Systems will be interoperable and will allow for mission planning, mission rehearsal and concept evaluation in a valid synthetic environment with objective and timely feedback. Through live, virtual and constructive simulation, the Marine Corps will have the means to train jointly, educate, develop doctrine and tactics, formulate and assess operational plans, assess warfighting situations, and define operational requirements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Combined Arms Command and Control Trainer Upgrade System (CACCTUS)	3.625	6.088	7.023	-	7.023
Articles:	-	-	-	-	-
Description: CACCTUS is a combined arms staff training system that when fully fielded will enable comprehensive Marine Corps staff, unit, and team training both at home station Combined Arms Staff Training (CAST) facilities and through distributed training involving CAST facilities across the Marine Corps. CACCTUS is an upgrade to the USMC's CAST that provides fire support training for the Marine Air Ground Task Force (MAGTF) elements up to and including Marine Expeditionary Brigade (MEB) level. Using the system components and simulation capabilities, two dimensional (2D) and three dimensional (3D) visuals, interfaced Command, Control, Communications, Computers and Intelligence (C4I), synthetic terrain, and an After Action Review (AAR), the concept of operations for the CACCTUS system is to immerse the trainees in a realistic, scenario-driven environment to enable commands and their battle staffs to train or rehearse combined arms tactics, techniques and procedures for decision-making processes. The increase in funding from FY15 to FY16 enables additional Software Development. ***FY 2014 Accomplishments:*** - Continued development of Distributed Ops and Virtualization. - Continued development of Live, Virtual and Constructive (LVC) training capabilities.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Continued development of warfare specific software applications in support of Battalion Regimental staffs to Marine Expeditionary Brigade (MEB) training requirements. - Continued development of After Action Review (AAR) functionality. - Initiated and completed development of Backward Compatibility for scenario development. ***FY 2015 Plans:*** - Continue development of Distributed Ops and Virtualization. - Continue development of Live, Virtual and Constructive (LVC) training capabilities. - Continue development of warfare specific software applications in support of Battalion Regimental staffs to Marine Expeditionary Brigade (MEB) training requirements. - Continue development of After Action Review (AAR) functionality. - Initiate development of new architecture to support maturing hardware platforms ***FY 2016 Base Plans:*** - Continue development of Distributed Ops and Virtualization. - Continue development of Live, Virtual and Constructive (LVC) training capabilities. - Continue development of warfare specific software applications in support of Battalion Regimental staffs to Marine Expeditionary Brigade (MEB) training requirements. - Continue development of After Action Review (AAR) functionality. - Continue development of new architecture to support maturing hardware platforms. - Initiate additional training system interoperability to include aviation. - Initiate prototype development for shipboard training. ***FY 2016 OCO Plans:*** N/A					
Title: Deployable Virtual Training Environment (DVTE)	0.261	0.587	3.305	-	3.305
Articles:	-	-	-	-	-
Description: DVTE is a laptop Personal Computer (PC) based simulation system capable of emulating organic and supporting Infantry Battalion weapons systems and training scenarios to facilitate training and readiness based training. Its portable configuration allows Marines to train in areas where there are few options for training in garrison, aboard ship, at remote reserve locations, and deployed. DVTE training includes language and culture training, platoon and squad level tactics, employment of supporting arms, and various Recognition of Combatants (ROC) packages. DVTE is part of a Commander's "training toolkit" contributing to the building block approach to standards based training focusing on achieving an improved level of combat readiness.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
In late FY15, DVTE becomes MAGTF Integration Plan compliant. As a result, the funding increase from FY15 to FY16 is to develop Command and Control (C2) systems (Tactical Air Control Party Green Gear modeling and Digital Fire Control System (DFCS) modeling). In addition, enhance and integrate Next generation Warfare - Intelligent Training (NEW-IT), Entities and Weapons, Comm Gear and After Action Review (AAR). ***FY 2014 Accomplishments:*** - Continued incremental DVTE network infrastructure development by focusing on capabilities identified as DVTE application enhancements in the development plan. - Continued the additional efforts specified under the DVTE Software Capability Development Document (CDD) Increment II that includes improved Call For Fire (CFF) and Close Air Support (CAS) capability to replace/ decrease actual live training events. ***FY 2015 Plans:*** - Continue incremental DVTE network infrastructure development by focusing on capabilities identified as DVTE application enhancements in the development plan. - Continue the additional efforts specified under the DVTE Software Capability Development Document (CDD) Increment II that includes improved Call For Fire (CFF) and Close Air Support (CAS) capability to replace/ decrease actual live training events. ***FY 2016 Base Plans:*** - Continue incremental DVTE network infrastructure development by focusing on capabilities identified as DVTE application enhancements in the development plan. - Continue the additional efforts specified under the DVTE Software Capability Development Document (CDD) Increment II that includes improved Call For Fire (CFF) and Close Air Support (CAS) capability to replace/ decrease actual live training events. - Initiate development of Tactical Air Control Party Green Gear modeling and Digital Fire Control System (DFCS) modeling. - Initiate action to improve Flight Dynamics of Close Air Support (CAS) weapon platforms to more accurately represent live Joint Terminal Attack Controller (JTAC) training. - Initiate enhancement and integration of Next generation Expeditionary Warfare - Intelligent Training (NEW-IT) and Entities and Weapons.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Initiate enhancement and integration of Comm Gear and After Action Review (AAR).					
FY 2016 OCO Plans: N/A					
Title: Marine Air/Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS) Enhancements	2.564	1.962	2.095	-	2.095
Articles:	-	-	-	-	-
Description: MTWS is the only Marine Corps aggregate-level constructive simulation system designed to support the training of Senior Commanders and their staffs in command and control processes and procedures. The system provides interactive, multi-sided, force-on-force, real-time modeling and simulation with stand-alone tactical combat scenarios for air ground, surface, and amphibious operations that interfaces to fielded Marine Corps Command, Control, Communications Computers and Intelligence (C4I) systems such as Command and Control Personal Computer (C2PC) and Intelligence Operations Server (IOS). MTWS provides the battle staff the ability to seamlessly train with and use other C4I systems during the execution on an MTWS supported training event. Through the implementation of a High Level Architecture (HLA) interface between MTWS and the entity-level Joint Conflict and Tactical Simulation (JCATS) system, high resolution tactical objectives can be simulated in JCATS and reflected within the context of a larger operation scenario conducted in MTWS.					
FY 2014 Accomplishments: - Completed interoperability development of the MTWS High Level Architecture (HLA) bridge. - Continued interoperability development of MTWS integration into Joint Live, Virtual and Constructive (JLVC) Federation, with primary focus on amphibious landings. - Continued development to increase levels of software capability to meet the changing operational environment that Marines fight in daily. - Initiated design/development and test of a detailed unified architecture in support U.S. Korea Command (KORCOM) interoperability. - Initiated server virtualization testing.					
FY 2015 Plans: - Continue interoperability development of MTWS integration into Joint Live Virtual and Constructive (JLVC) Federation, with primary focus on amphibious landings. - Continue development to increase levels of software capability to meet the changing operational environment that Marines fight in daily.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Complete design/development and test of a detailed unified architecture in support U.S. Korea Command (KORCOM) interoperability. - Continue server virtualization testing. ***FY 2016 Base Plans:*** - Continue interoperability development of MTWS integration into Joint Live Virtual and Constructive (JLVC) Federation, with primary focus on amphibious landings. - Continue development to increase levels of software capability to meet the changing operational environment that Marines fight in daily. - Complete server virtualization testing. - Initiate Live, Virtual and Constructive (LVC) simulation integration. ***FY 2016 OCO Plans:*** N/A					
Title: Range Modernization/Transformation (RM/T)	0.974	-	0.992	-	0.992
Articles:	-	-	-	-	-
Description: RM/T developments are associated with modernizing live training ranges at major USMC bases and stations. This development effort enhances After Action Review (AAR) with ground truth feedback, realistic representation of Opposing Forces (OPFOR), and will upgrade the range and exercise control capabilities. RM/T integrates Live, Virtual, and Constructive training technologies, thereby, enhancing fielded live-fire, force-on-target, and force-on-force training capabilities. The increase from FY15 to FY16 result of buyback initiative which enables continued investment in range modernization and transformation efforts. ***FY 2014 Accomplishments:*** - Continued to perform minimum software upgrades to the Range Instrumentation Systems Exercise Controller (RISCon) and ensured integration of numerous target systems. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Continue to perform minimum software upgrades to add capability to the Range Instrumentation Systems Exercise Controller (RISCon) through the integration of numerous live/target systems. ***FY 2016 OCO Plans:*** N/A					
Title: Supporting Arms Virtual Trainer (SAVT)	3.585	-	-	-	-
Articles:	-	-	-	-	-
Description: The SAVT will advance the training capability, operational readiness, and tactical proficiency of USMC Joint Terminal Attack Controllers (JTACS), Forward Observers (FOs), and Forward Air Controllers (FACs). The personnel will use training scenarios that require the placement of tactical ordnance on selected targets using Joint Close Air Support (JCAS) procedures and observed fire procedures for Naval Surface Fire Support (NSFS), artillery and mortar fire to perform destruction, neutralization, suppression, illumination/ coordinated illumination, interdiction and harassment fire missions. ***FY 2014 Accomplishments:*** - Completed Government Engineering Labor support for modeling and simulation for aircraft enhancements to SAVT. - Completed Government Engineering Labor support for enhancements of Digital Channel Associated Signalling (CAS) to integrate Marine organic equipment and Digital CAS providing interoperability amongst virtual training systems. - Completed SW development and upgrade to Windows 7 OS and Voice Recognition package. - Completed SAVT interoperability for the Large Scale Exercise (LSE-14) trainer proof of concept. - Completed analysis of limited technical refresh of key component replacements. - Initiated and completed contract action for SW development for new visual attributes and necessary interoperability. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: Squad Immersive Training Environment (SITE)	1.787	1.518	1.426	-	1.426
Articles:	-	-	-	-	-

Description: SITE is an integrating construct or "toolkit" of Live, Virtual and Constructive (LVC) training capabilities used to significantly improve infantry squad operational readiness and squad leader tactical decision-making skills. The collection of LVC training capabilities within SITE will enhance opportunities for squad collective training to increase tactical proficiency, confidence, and readiness for real world operations. SITE will enhance skill transfer and assessment by enabling squads to finish, test, and remediate training in preparation for a capstone exercise such as pre-deployment training.

FY 2014 Accomplishments:
- Continued to produce additional documentation associated with product development to include (1) Systems Design Specification; (2) Interface Design Document; and (3) an overarching System Engineering Master Plan (SEMP) crossing current training systems to steer development of standards and a roadmap for system capability upgrades and sustained interoperability.
- Continued Live Core System Instrumented-Tactical Engagement Simulation System II (I-TESS II) upgrades to include One Tactical Engagement Simulation System (OneTESS) integration.
- Completed capability upgrades to the Virtual Battle Space 2 (VBS2) environment for realistic After Action Review and Operations.
- Initiated and completed transition of Office of Naval Research Technology Insertion Program for Savings (TIPS) project Squad Leader Decision Trainer, cost analysis activities for transition of Perceptual Training System & Tools (PercepTs), and Augmented Immersive Team Training (AITT) transition deliverables to provide immersive training capabilities with existing programs of record.

FY 2015 Plans:
- Continue to produce additional documentation associated with product development to include (1) Systems Design Specification; (2) Interface Design Document; and (3) an overarching System Engineering Master Plan (SEMP) crossing current training systems to steer development of standards and a roadmap for system capability upgrades and sustained interoperability.
- Continue to provide immersive training capabilities with existing programs of record systems and develop capability upgrades to include integration of Instrumented-Tactical Engagement Simulation System II (I-TESS II) enhancements with Range Instrumentation Systems Exercise Controller (RISCon).

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Initiate Training Effectiveness Evaluation events for system enhancements for I-TESS II Shoulder-Launched Multipurpose Assault Weapon (SMAW) and Javelin weapons, and One Tactical Engagement Simulation System (OneTESS). - Initiate transition of Office of Naval Research project Perceptual Training System & Tools (PercepTs) and complete Augmented Immersive Team Training (AITT) products and deliverables. ***FY 2016 Base Plans:*** - Continue to produce additional documentation associated with product development to include (1) Systems Design Specification; (2) Interface Design Document; and (3) an overarching System Engineering Master Plan (SEMP) crossing current training systems to steer development of standards and a roadmap for system capability upgrades and sustained interoperability. - Continue Training Effectiveness Evaluation events for system enhancements for Instrumented-Tactical Engagement Simulation System II (I-TESS II) Shoulder-Launched Multipurpose Assault Weapon (SMAW) and Javelin weapons, and One Tactical Engagement Simulation System (OneTESS) with Range Instrumentation Systems Exercise Controller (RISCon). - Complete transition of Office of Naval Research (ONR) project Perceptual Training System & Tools (PercepTs) product and deliverable to PM TRASYS. - Initiate integration of Augmented Immersive Team Training (AITT) system upon completion of transition from ONR into existing programs of record. - Initiate System Training Effectiveness Evaluation Event. Decrease from FY15 to FY16 due to under execution mark per RMD700A2 INV001. ***FY 2016 OCO Plans:*** N/A					
Title: Training Support	0.058	0.055	0.041	-	0.041
Articles:	-	-	-	-	-
Description: Provide training solution development efforts for the modernization of training systems by providing high fidelity, immersive simulations and capabilities. Integrates existing live, virtual, and constructive training capabilities to provide fully coordinated Marine Air Ground Training Force (MAGTF) training exercises that realistically simulate the operating environment.					
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Completed the development of tools that will provide Return on Investment (ROI) capability for training events. - Continued interoperability development of MAGTF Tactical Warfare Simulation (MTWS) integration to Joint Live, Virtual and Constructive (JLVC) Federation, with primary focus on amphibious landings. - Initiated server virtualization testing. ***FY 2015 Plans:*** - Continue interoperability development of MAGTF Tactical Warfare Simulation (MTWS) integration to Joint Live, Virtual and Constructive (JLVC) Federation, with primary focus on amphibious landings. - Continue server virtualization testing. - Initiate and complete design/development and test of a detailed unified architecture in support U.S. Korea Command (KORCOM) interoperability and amphibious landings for MTWS. ***FY 2016 Base Plans:*** - Continue interoperability development of MAGTF Tactical Warfare Simulation (MTWS) integration to Joint Live, Virtual and Constructive (JLVC) Federation, with primary focus on amphibious landings. - Complete server virtualization testing. - Initiate Live, Virtual and Constructive (LVC) simulation integration. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	12.854	10.210	14.882	-	14.882

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/6532-01: *Training Devices, CACCTUS*	3.236	2.520	2.601	-	2.601	3.604	4.322	3.936	4.015	Continuing	Continuing
• PMC/6532-02: *Training Devices, RM/T*	2.497	2.000	12.391	-	12.391	14.930	13.284	23.189	13.009	Continuing	Continuing
• PMC/6532-03: *Training Devices, DVTE*	1.270	-	-	-	-	2.250	2.288	1.457	1.486	Continuing	Continuing
• PMC/4630: *Common Computer Resources, MTWS*	0.578	0.546	0.718	-	0.718	0.731	0.744	0.757	0.770	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

(U) CACCTUS - Exercised option on existing contract (T&M); Work Request to Navy-NAWCTSD; and exercise task orders on new Competitive contract (C/CPFF) planned for 2nd quarter FY15.
(U) DVTE - Exercised final option in FY14 for developmental hardware and exercise task orders off of new sole source FFP for Virtual Battleship Space (VBS) SW Dev to award in FY15.
(U) MTWS - Exercise Option 2 on a existing Sole Source Firm Fix Price (SS/FFP). A new Competitive contract (C/CPFF) planned for 3rd quarter award in FY15.
(U) RM/T - MIPR to the Army-PEO STRI planned for award on existing Consolidated Product-line Management Contract, Work Request to Navy-NAWCTSD, and new Army Competitive Firm Fixed Price (C/FFP) for software development.
(U) SAVT - Work Request to Navy-NAWCTSD and leverage off of an existing Seaport-E contract.
(U) SITE - MIPR to the Army-PEO STRI planned for award on existing Consolidated Product-line Management Contract and exercise option on existing contract (C/FFP).
(U) Training Support - Exercise Option 2 on a existing Sole Source Firm Fix Price (SS/FFP). A new Competitive contract (C/CPFF) planned for 3rd quarter award in FY15.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CACCTUS - SW Dev - Option 2	C/T&M	Riptide : Oviedo, FL	0.274	2.663	Dec 2013	-		-		-		-	-	2.937	-
CACCTUS - SW Dev Task 1	C/CPFF	TBD : TBD	0.000	0.363	Mar 2015	4.366	Mar 2015	3.119	Oct 2015	-		3.119	Continuing	Continuing	Continuing
CACCTUS - SW Dev Task 2	C/CPFF	TBD : TBD	0.000	-		1.522	Jun 2015	1.000	Feb 2016	-		1.000	Continuing	Continuing	Continuing
CACCTUS - SW Dev Task 3	C/CPFF	TBD : TBD	0.000	-		-		1.143	Jun 2016	-		1.143	Continuing	Continuing	Continuing
DVTE - SW Dev - VBS	SS/FFP	Bohemia Interactive : Orlando, FL	12.450	0.261	Feb 2014	0.587	Jul 2015	3.305	Jul 2016	-		3.305	Continuing	Continuing	Continuing
MTWS - SW Dev Option 2	SS/FFP	Cole Engineering Services Inc : Orlando, FL	0.214	2.149	Mar 2014	-		-		-		-	-	2.363	-
MTWS - SW Dev	C/FFP	TBD : TBD	0.000	0.415	May 2015	1.962	May 2015	2.095	May 2016	-		2.095	Continuing	Continuing	Continuing
Training Support - MTWS SW Dev	SS/FFP	Cole Engineering Services Inc : Orlando, FL	0.058	0.056	Mar 2014	-		-		-		-	-	0.114	-
Training Support - MTWS SW Dev	C/FFP	TBD : TBD	0.000	0.002	May 2015	0.055	May 2015	0.041	May 2016	-		0.041	Continuing	Continuing	Continuing
RM/T RISCon Development	MIPR	PEOSTRI/TRADE : Orlando, FL	6.264	0.764	Feb 2014	-		0.835	Jul 2016	-		0.835	Continuing	Continuing	Continuing
RM/T - ITESS II Lab Assets	C/IDIQ	Cubic Defense : San Diego, CA	0.000	0.049	Jun 2014	-		-		-		-	-	0.049	-
SAVT - HW Upgrade Test Berth	C/FFP	T.J. Inc. : Christmas, FL	0.000	3.015	Aug 2014	-		-		-		-	-	3.015	-
SAVT - SW Dev	WR	NAWC-AD : Orlando, FL	1.007	0.005	Dec 2013	-		-		-		-	-	1.012	-
SAVT - SW Dev - Task 1	WR	NAWC-TSD : Orlando, FL	0.000	0.093	Oct 2013	-		-		-		-	-	0.093	-
SAVT - SW Dev - Task 2	WR	NAWC-TSD : Orlando, FL	0.000	0.200	Oct 2014	-		-		-		-	-	0.200	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SAVT - SW Dev - Task 3	WR	NAWC-TSD : Orlando, FL	0.000	0.264	Feb 2015	-		-		-		-	-	0.264	-
SAVT - SW Dev	C/FFP	MCSELMS : Quantico, VA	0.000	0.008	Apr 2015	-		-		-		-	-	0.008	-
SITE - Material Solution Anlaysis	C/CPFF	Bohemia : Orlando, FL	1.331	0.415	Nov 2013	-		-		-		-	-	1.746	-
SITE - Live Core System Upgrades	C/FFP	Cubic Defense : San Diego, CA	1.237	0.146	Jan 2015	0.634	Jan 2015	0.832	Jan 2016	-		0.832	Continuing	Continuing	Continuing
SITE - Consolidated Product Line Dev	MIPR	PEOSTRI/TRADE : Orlando, FL	0.000	0.864	Feb 2014	0.191	Jul 2015	0.500	Jul 2016	-		0.500	Continuing	Continuing	Continuing
Prior Year Cumulative Funding	Various	Not Specified : Not Specified	59.673	-		-		-		-		-	-	59.673	-
		Subtotal	82.508	11.732		9.317		12.870		-		12.870	-	-	-

Remarks

- CACCTUS - SW Dev - The New Competitive contract to award 2nd quarter FY15.
- MTWS - SW Dev - New Competitive contract projected to award in 3rd quarter FY15.
- Training Support - MTWS SW Dev - New Competitive contract projected to award in 3rd quarter FY15.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CACCTUS - Joint Simulation Bus (JBUS)	MIPR	Defense Technical Information Center : Ft Belvoir, VA	0.000	0.032	May 2014	-		-		-		-	-	0.032	-
CACCTUS - SW Dev Support	WR	NAWCTSD : Orlando, FL	1.940	0.528	Oct 2013	0.200	Oct 2014	1.761	Oct 2015	-		1.761	Continuing	Continuing	Continuing
CACCTUS - CEOSS Support	C/FFP	URS : Germantown, MD	0.585	0.039	Jun 2014	-		-		-		-	-	0.624	-
RM/T - SW Dev Support	WR	NAWCTSD : Orlando, FL	0.641	0.161	Feb 2014	-		0.157	Oct 2015	-		0.157	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 2315 / *Training Devices/Simulators*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SITE - SW Dev Support	WR	NAWCTSD : Orlando, FL	0.000	0.129	Feb 2014	0.521	Jan 2015	0.094	Oct 2015	-		0.094	Continuing	Continuing	Continuing
SITE - CEOSS Support	C/FFP	URS : Germantown, MD	1.113	0.210	Jun 2014	-		-		-		-	-	1.323	-
SITE - Navy Support	WR	NSWC Corona : Corona, CA	0.000	-		0.172	Jan 2015	-		-		-	-	0.172	-
SITE - Travel	Various	DTS : Various	0.000	0.023	Sep 2015	-		-		-		-	-	0.023	-
Prior Year Cumulative Funding	Various	Not Specified : Not Specified	12.727	-		-		-		-		-	-	12.727	-
		Subtotal	17.006	1.122		0.893		2.012		-		2.012	-	-	-

Remarks

- MTWS MIPR to CECOM is no longer required in FY 15. High Level Architecture (HLA) software development (SW Dev) was previously supported by CECOM on their MITRE contract. This effort has transitioned into Post Deployment Software Support (PDSS) which will go on the new MTWS competitive contract under the Product Development category.

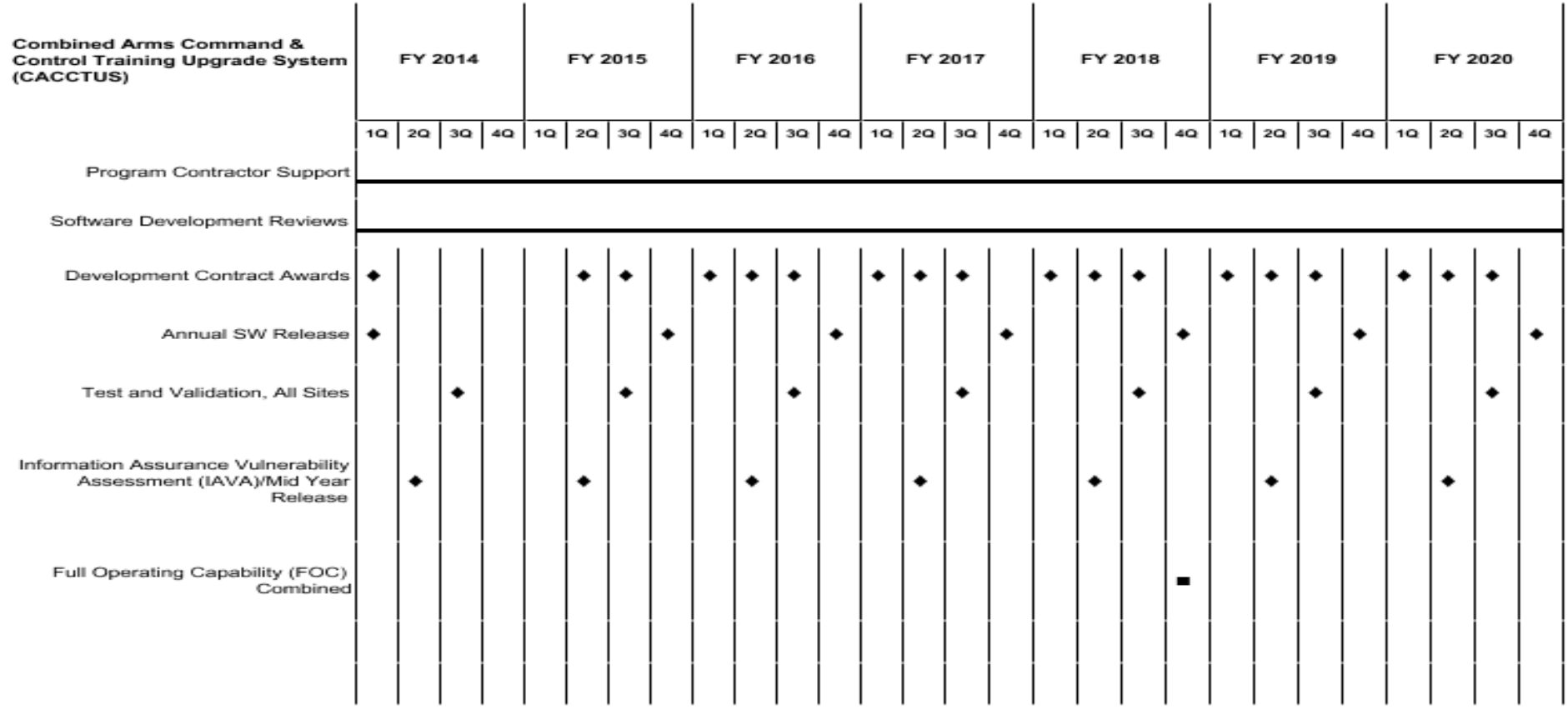
Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Not Specified : Not Specified	0.002	-		-		-		-		-	-	0.002	-
		Subtotal	0.002	-		-		-		-		-	-	0.002	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	99.516	12.854		10.210		14.882		-		14.882	-	-	-

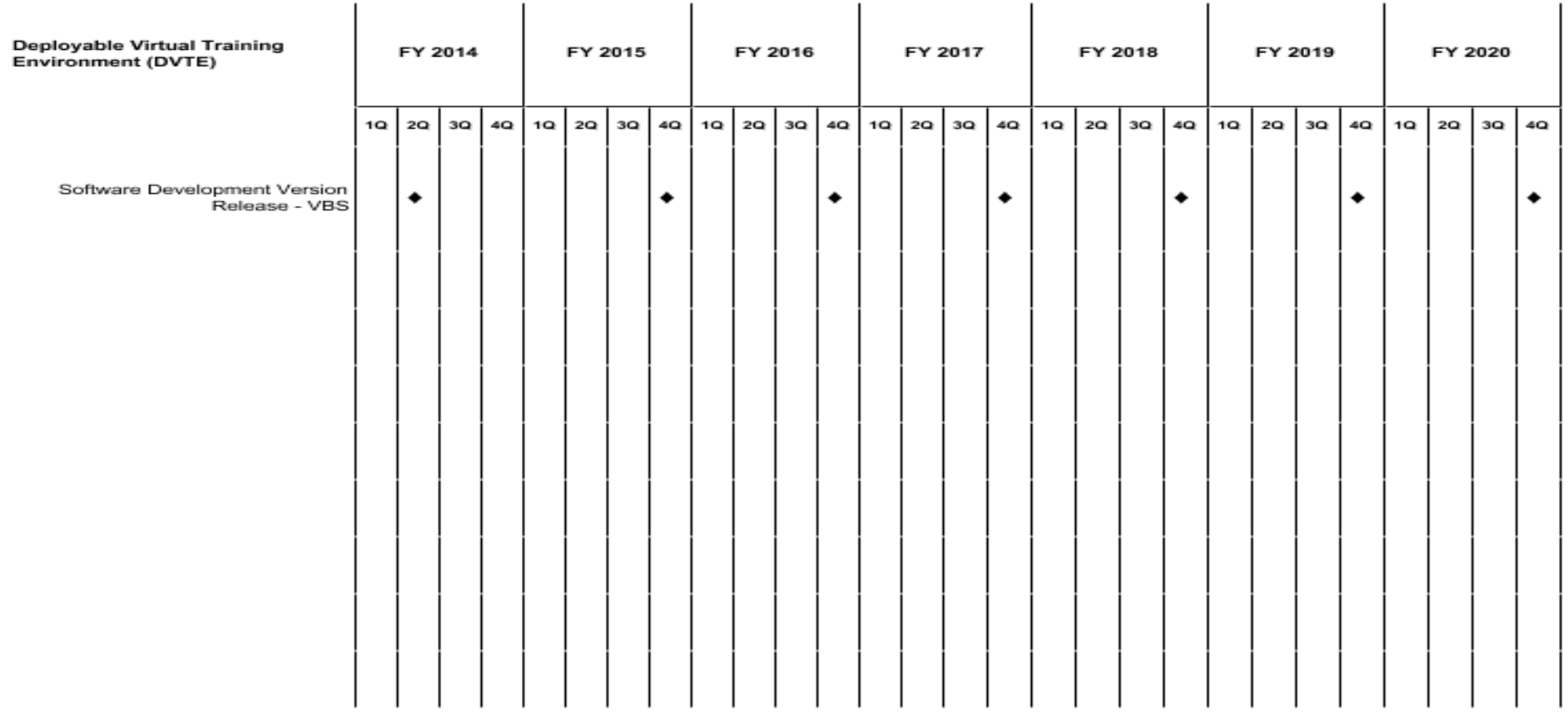
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*



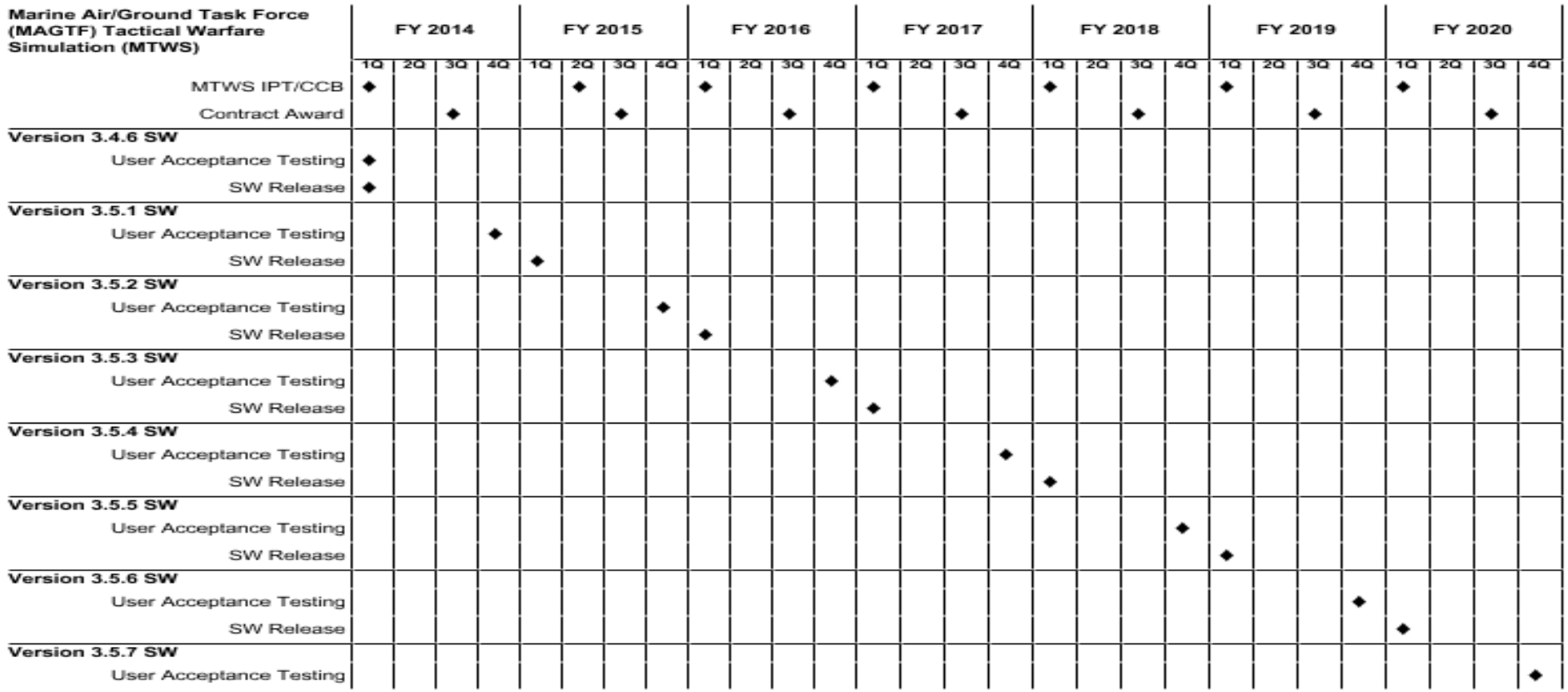
2016PB - 0206623M - 2315

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*



2016PB - 0206623M - 2315

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*



2016PB - 0206623M - 2315

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

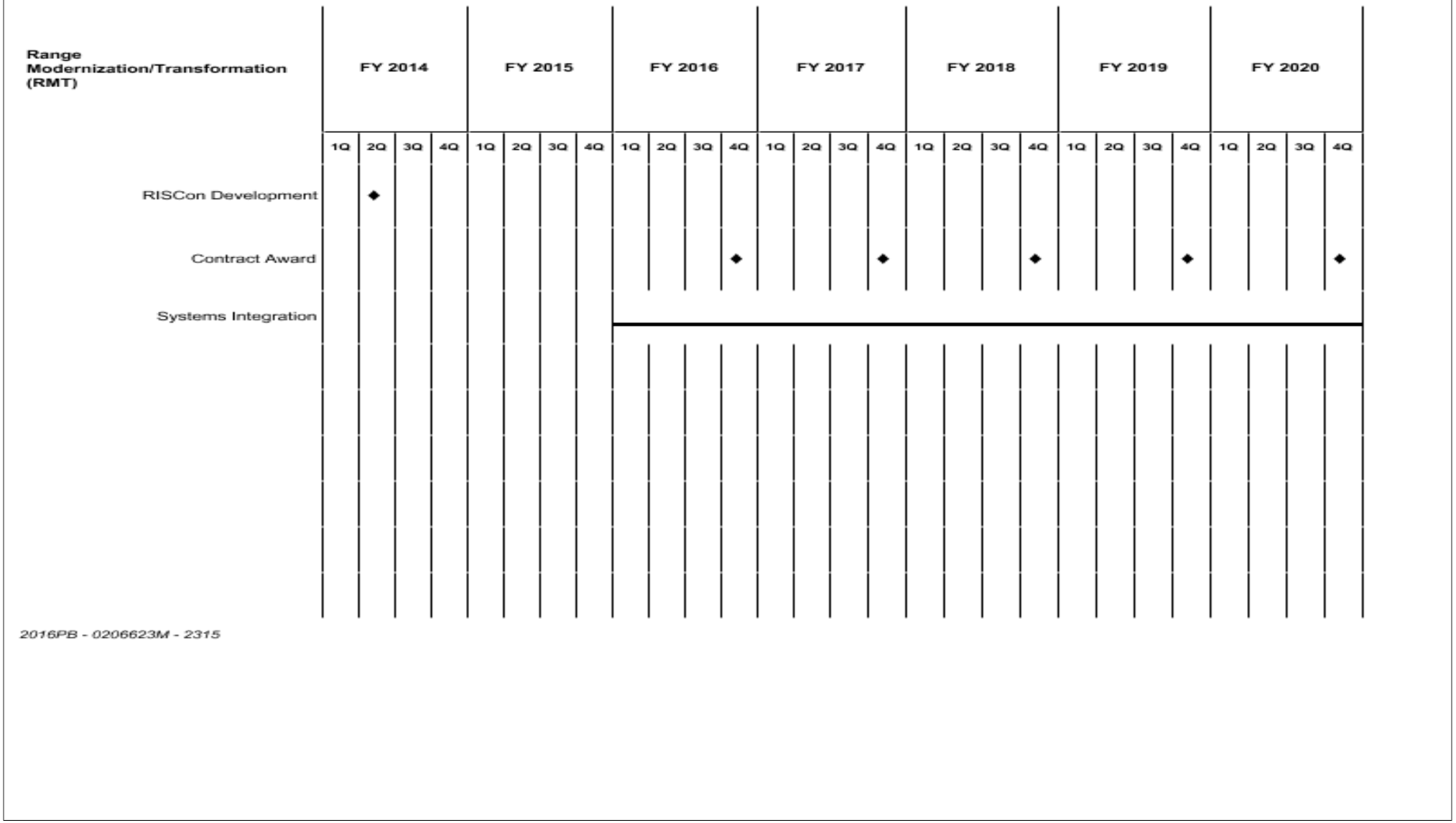
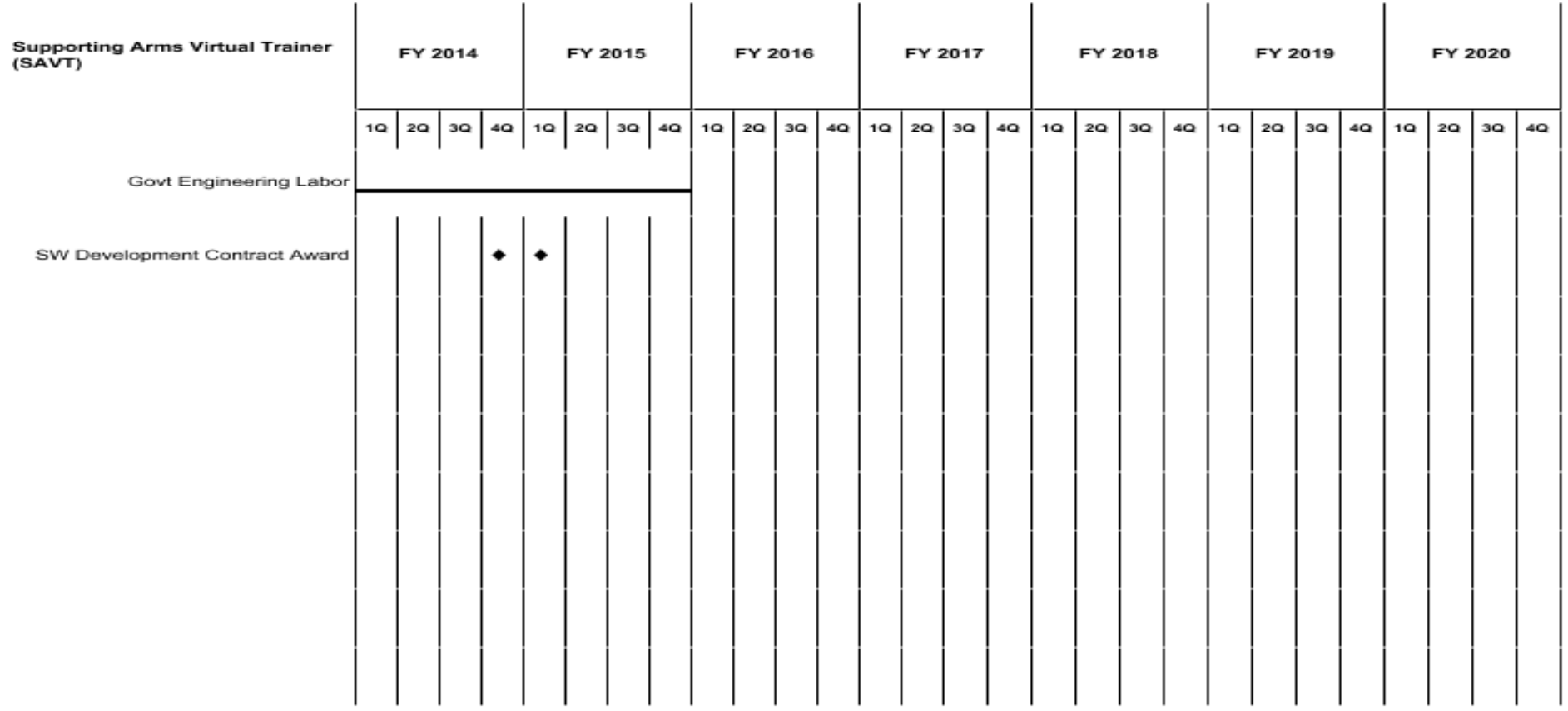
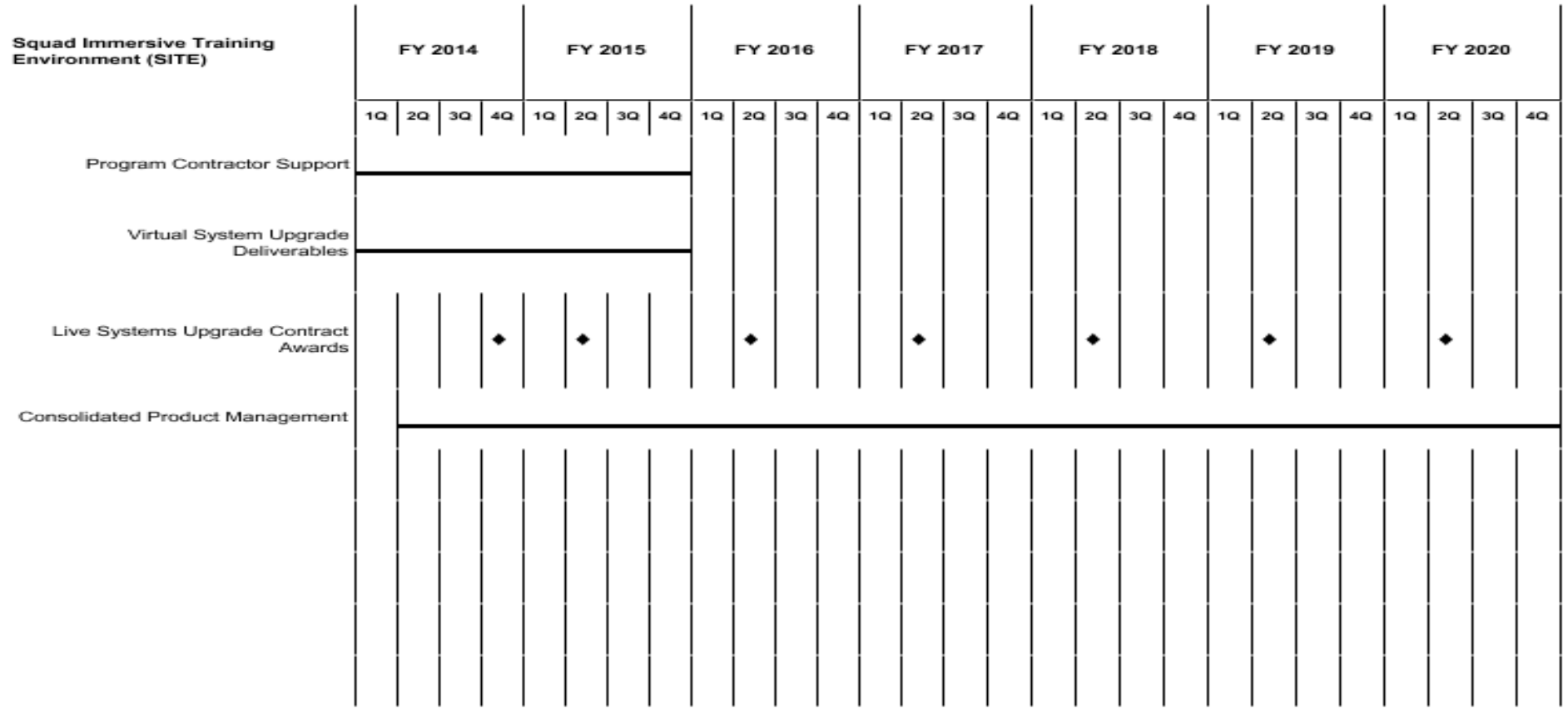


Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*



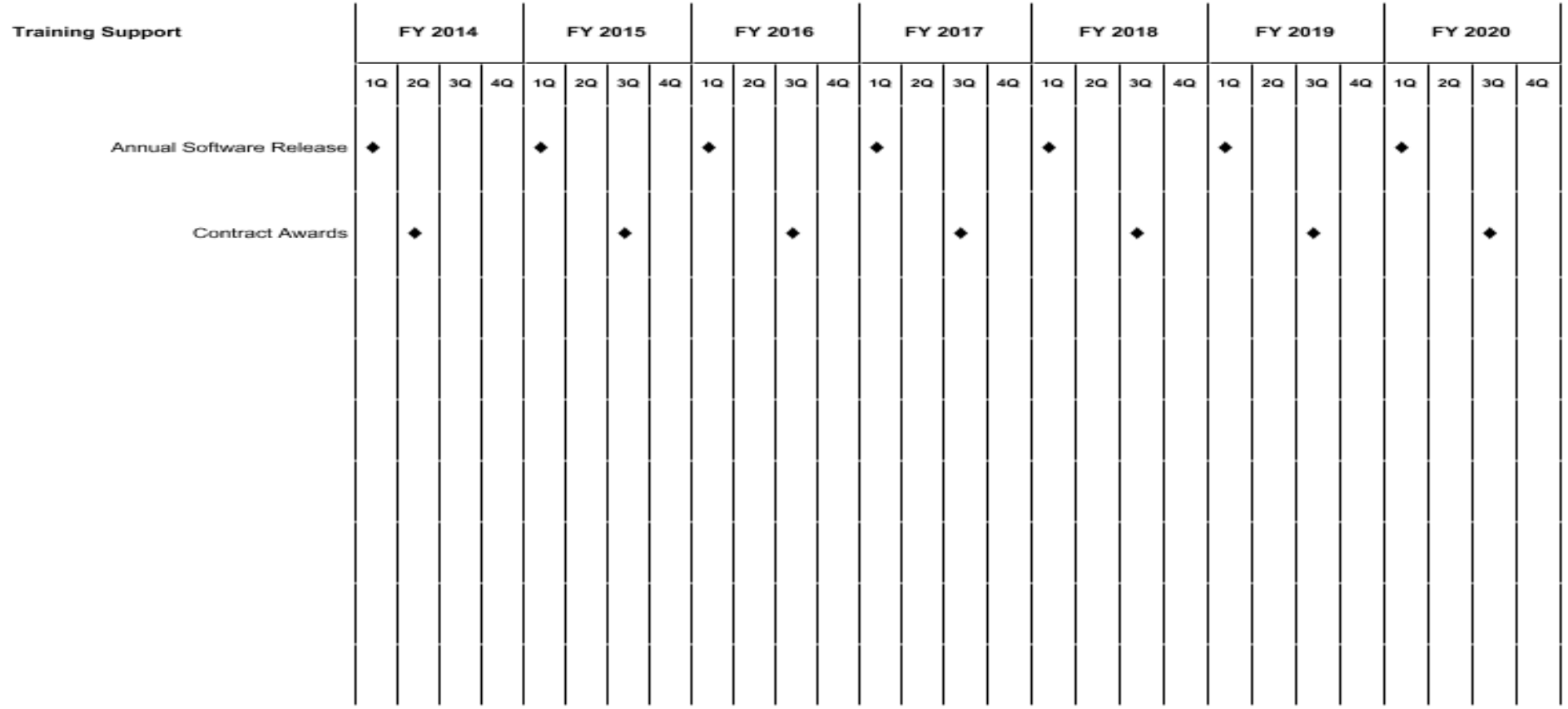
2016PB - 0206623M - 2315

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*



2016PB - 0206623M - 2315

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*



2016PB - 0206623M - 2315

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Combined Arms Command & Control Training Upgrade System (CACCTUS)				
Program Contractor Support: Program Contractor Support	1	2014	4	2020
Software Development Reviews: Software Development Reviews	1	2014	4	2020
Development Contract Awards: FY14 Award	1	2014	1	2014
Development Contract Awards: FY15 Award 1	2	2015	2	2015
Development Contract Awards: FY15 Award 2	3	2015	3	2015
Development Contract Awards: FY16 Award 1	1	2016	1	2016
Development Contract Awards: FY16 Award 2	2	2016	2	2016
Development Contract Awards: FY16 Award 3	3	2016	3	2016
Development Contract Awards: FY17 Award 1	1	2017	1	2017
Development Contract Awards: FY17 Award 2	2	2017	2	2017
Development Contract Awards: FY17 Award 3	3	2017	3	2017
Development Contract Awards: FY18 Award 1	1	2018	1	2018
Development Contract Awards: FY18 Award 2	2	2018	2	2018
Development Contract Awards: FY18 Award 3	3	2018	3	2018
Development Contract Awards: FY19 Award 1	1	2019	1	2019
Development Contract Awards: FY19 Award 2	2	2019	2	2019
Development Contract Awards: FY19 Award 3	3	2019	3	2019
Development Contract Awards: FY20 Award 1	1	2020	1	2020
Development Contract Awards: FY20 Award 2	2	2020	2	2020
Development Contract Awards: FY20 Award 3	3	2020	3	2020
Annual SW Release: Annual SW Release 2014	1	2014	1	2014

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Annual SW Release: Annual SW Release 2015	4	2015	4	2015
Annual SW Release: Annual SW Release 2016	4	2016	4	2016
Annual SW Release: Annual SW Release 2017	4	2017	4	2017
Annual SW Release: Annual SW Release 2018	4	2018	4	2018
Annual SW Release: Annual SW Release 2019	4	2019	4	2019
Annual SW Release: Annual SW Release 2020	4	2020	4	2020
Test and Validation, All Sites: Test and Validation, All Sites 2014	3	2014	3	2014
Test and Validation, All Sites: Test and Validation, All Sites 2015	3	2015	3	2015
Test and Validation, All Sites: Test and Validation, All Sites 2016	3	2016	3	2016
Test and Validation, All Sites: Test and Validation, All Sites 2017	3	2017	3	2017
Test and Validation, All Sites: Test and Validation, All Sites 2018	3	2018	3	2018
Test and Validation, All Sites: Test and Validation, All Sites 2019	3	2019	3	2019
Test and Validation, All Sites: Test and Validation, All Sites 2020	3	2020	3	2020
Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release: Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release 2014	2	2014	2	2014
Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release: Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release 2015	2	2015	2	2015
Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release: Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release 2016	2	2016	2	2016
Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release: Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release 2017	2	2017	2	2017
Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release: Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release 2018	2	2018	2	2018
Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release: Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release 2019	2	2019	2	2019
Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release: Information Assurance Vulnerability Assessment (IAVA)/Mid Year Release 2020	2	2020	2	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Full Operating Capability (FOC) Combined: Full Operating Capability (FOC) Combined	4	2018	4	2018
Deployable Virtual Training Environment (DVTE)				
Software Development Version Release - VBS: Software Development Version Release - VBS (2014)	2	2014	2	2014
Software Development Version Release - VBS: Software Development Version Release - VBS (2015)	4	2015	4	2015
Software Development Version Release - VBS: Software Development Version Release - VBS (2016)	4	2016	4	2016
Software Development Version Release - VBS: Software Development Version Release - VBS (2017)	4	2017	4	2017
Software Development Version Release - VBS: Software Development Version Release - VBS (2018)	4	2018	4	2018
Software Development Version Release - VBS: Software Development Version Release - VBS (2019)	4	2019	4	2019
Software Development Version Release - VBS: Software Development Version Release - VBS (2020)	4	2020	4	2020
Marine Air/Ground Task Force (MAGTF) Tactical Warfare Simulation (MTWS)				
MTWS IPT/CCB: MTWS IPT/CCB	1	2014	1	2014
MTWS IPT/CCB: MTWS IPT/CCB 2015	2	2015	2	2015
MTWS IPT/CCB: MTWS IPT/CCB 2016	1	2016	1	2016
MTWS IPT/CCB: MTWS IPT/CCB 2017	1	2017	1	2017
MTWS IPT/CCB: MTWS IPT/CCB 2018	1	2018	1	2018
MTWS IPT/CCB: MTWS IPT/CCB 2019	1	2019	1	2019
MTWS IPT/CCB: MTWS IPT/CCB 2020	1	2020	1	2020
Contract Award: Contract Award 2014	3	2014	3	2014
Contract Award: Contract Award 2015	3	2015	3	2015
Contract Award: Contract Award 2016	3	2016	3	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Contract Award: Contract Award 2017	3	2017	3	2017
Contract Award: Contract Award 2018	3	2018	3	2018
Contract Award: Contract Award 2019	3	2019	3	2019
Contract Award: Contract Award 2020	3	2020	3	2020
Version 3.4.6 SW: User Acceptance Testing: User Acceptance Testing	1	2014	1	2014
Version 3.4.6 SW: SW Release: SW Release	1	2014	1	2014
Version 3.5.1 SW: User Acceptance Testing: User Acceptance Testing	4	2014	4	2014
Version 3.5.1 SW: SW Release: SW Release	1	2015	1	2015
Version 3.5.2 SW: User Acceptance Testing: User Acceptance Testing	4	2015	4	2015
Version 3.5.2 SW: SW Release: SW Release	1	2016	1	2016
Version 3.5.3 SW: User Acceptance Testing: User Acceptance Testing	4	2016	4	2016
Version 3.5.3 SW: SW Release: SW Release	1	2017	1	2017
Version 3.5.4 SW: User Acceptance Testing: User Acceptance Testing	4	2017	4	2017
Version 3.5.4 SW: SW Release: SW Release	1	2018	1	2018
Version 3.5.5 SW: User Acceptance Testing: User Acceptance Testing	4	2018	4	2018
Version 3.5.5 SW: SW Release: SW Release	1	2019	1	2019
Version 3.5.6 SW: User Acceptance Testing: User Acceptance Testing	4	2019	4	2019
Version 3.5.6 SW: SW Release: SW Release	1	2020	1	2020
Version 3.5.7 SW: User Acceptance Testing: User Acceptance Testing	4	2020	4	2020
Range Modernization/Transformation (RMT)				
RISCon Development: RISCon Development	2	2014	2	2014
Contract Award: Contract Award (2016)	4	2016	4	2016
Contract Award: Contract Award (2017)	4	2017	4	2017
Contract Award: Contract Award (2018)	4	2018	4	2018
Contract Award: Contract Award (2019)	4	2019	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Contract Award: Contract Award (2020)	4	2020	4	2020
Systems Integration: Systems Integration	1	2016	4	2020
Supporting Arms Virtual Trainer (SAVT)				
Govt Engineering Labor: Govt Engineering Labor	1	2014	4	2015
SW Development Contract Award: Upgrade Test Berth & First Article	4	2014	4	2014
SW Development Contract Award: SW Development	1	2015	1	2015
Squad Immersive Training Environment (SITE)				
Program Contractor Support: Program Contractor Support	1	2014	4	2015
Virtual System Upgrade Deliverables: Virtual System Upgrade Deliverables	1	2014	4	2015
Live Systems Upgrade Contract Awards: Live Systems Upgrade Contract Awards (2014)	4	2014	4	2014
Live Systems Upgrade Contract Awards: Live Systems Upgrade Contract Awards (2015)	2	2015	2	2015
Live Systems Upgrade Contract Awards: Live Systems Upgrade Contract Awards (2016)	2	2016	2	2016
Live Systems Upgrade Contract Awards: Live Systems Upgrade Contract Awards (2017)	2	2017	2	2017
Live Systems Upgrade Contract Awards: Live Systems Upgrade Contract Awards (2018)	2	2018	2	2018
Live Systems Upgrade Contract Awards: Live Systems Upgrade Contract Awards (2019)	2	2019	2	2019
Live Systems Upgrade Contract Awards: Live Systems Upgrade Contract Awards (2020)	2	2020	2	2020
Consolidated Product Management: Consolidated Product Management	2	2014	4	2020
Training Support				
Annual Software Release: Version 3.4.6	1	2014	1	2014
Annual Software Release: Version 3.5.1	1	2015	1	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2315 / *Training Devices/Simulators*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Annual Software Release: Version 3.5.2	1	2016	1	2016
Annual Software Release: Version 3.5.3	1	2017	1	2017
Annual Software Release: Version 3.5.4	1	2018	1	2018
Annual Software Release: Version 3.5.5	1	2019	1	2019
Annual Software Release: Version 3.5.6	1	2020	1	2020
Contract Awards: FY14 Award	2	2014	2	2014
Contract Awards: FY15 Award	3	2015	3	2015
Contract Awards: FY16 Award	3	2016	3	2016
Contract Awards: FY17 Award	3	2017	3	2017
Contract Awards: FY18 Award	3	2018	3	2018
Contract Awards: FY19 Award	3	2019	3	2019
Contract Awards: FY20 Award	3	2020	3	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 2503 / *Initial Issue*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2503: *Initial Issue*	37.833	8.227	5.498	4.050	-	4.050	4.482	4.018	4.554	4.423	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Family of Combat Equipment Support and Services provides research, development, test and evaluation on low cost items with an emphasis on non-developmental/ commercially available items. Much of the RDT&E is conducted in coordination/concert with other services and joint organizations, and in consideration of RDT&E efforts being pursued by the other Services. Items approved for procurement will transition into Procurement Marine Corps and the Operation and Maintenance Marine Corps accounts for Individual Combat Equipment, Medical Equipment, Shelters and Combat Field Feeding Systems. The focus is to provide state of the art combat equipment (e.g. lightweight helmet, sleeping bags, load bearing systems, etc.), medical equipment (e.g. Authorized Medical Allowance (AMAL)/Authorized Dental Allowance (ADAL), Enroute Care, Mobile Medical Monitors, etc.), Family of shelters (soft wall, different frames and fabrics, etc.), and Family of Combat Field Feeding Systems (technology insertion for the Expeditionary Field Kitchen (EFK), Modernized Tray Ration Heating System. etc.). The benefits will be reduced logistics, less weight, improved combat effectiveness, better echelon I and II care for Marines, improved individual and unit protection, expeditionary feeding platforms, tactical mobility, etc. The employment of state of the art equipment will ensure Marines are equipped and supported with the best items that technology can offer.

The decrease in funding from FY15 to FY16 reflects rephasing of development funds to better align with the program development schedule.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: *Clothing and Flame Resistant Organizational Gear (CFROG)	0.836	0.664	0.670	-	0.670
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued to test and evaluate emerging Marine Corps Uniform Board (MCUB) and CMC uniform initiatives. -Continued fabric improvement efforts leveraging advanced technologies in uniform durability, design, and test footwear. -Initiated Flame and Footwear research, development and testing for the tropical boot and Male Dress Cap.					
FY 2015 Plans: -Continue to test and evaluate emerging Marine Corps Uniform Board (MCUB) and CMC uniform initiatives. -Continue fabric improvement efforts leveraging advanced technologies in uniform durability, design, and test footwear. -Continue Flame and Footwear research, development and testing for the tropical boot and Male Dress Cap.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2503 / *Initial Issue*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue to test and evaluate emerging Marine Corps Uniform Board (MCUB) and CMC uniform initiatives. -Continue fabric improvement efforts leveraging advanced technologies in uniform durability, design, and test footwear. -Continue Flame and Footwear research, development and testing for the tropical boot and Male Dress Cap. ***FY 2016 OCO Plans:*** N/A					
Title: *Family of Mountain Cold Weather Clothing & Equipment (FMCWCE)	1.187	0.930	0.092	-	0.092
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued research and development of the current industry technology to further increase existing equipment effectiveness while lightening the load of the individual Marine in both weight and volume. -Continued to further research, develop, and evaluate reduced load while increasing insulation values of Desert and Woodland Fleece, Cold Weather Gloves, and Extreme Cold Weather Boots. -Initiated the development of the Marine Corps Cold Weather Infantry Kit and over the snow mobility in both snowshoes, skis, and sleds and Three Season Sleep System.					
FY 2015 Plans: -Continue the research and development of industry technology to further increase existing equipment effectiveness while lightening the load of the individual Marine in both weight and volume. -Continue to further research, develop, and evaluate reduced load while increasing insulation values of Desert and Woodland Fleece, Extreme Cold Weather Parkas, and Extreme Cold Weather Boots. -Continue research in equipment technology advances which drive the development of the Marine Assault Climbers Kit (MACK) to effectively and safely negotiate horizontal and vertical obstacles. -Continue the development of the Marine Corps Cold Weather Infantry Kit (MCCWIK) and over the snow mobility in both skis and sleds.					
FY 2016 Base Plans: -Continue equipment technology advances which will drive the development of the Marine Assault Climbers Kit (MACK) to effectively and safely negotiate horizontal and vertical obstacles. -Continue the development of the Marine Corps Cold Weather Infantry Kit (MCCWIK) and over the snow mobility in both skis and sleds.					
FY 2016 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2503 / *Initial Issue*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: *Family of Improved Load Bearing Equipment	0.035	0.308	0.298	-	0.298
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued product improvements and advanced technology for the Family of Improved Load Bearing Systems. -Continued research, development and evaluation for Block II Individual Water Purification System (IWPS).					
FY 2015 Plans: -Continue to explore product improvements and advanced technology for the Family of Improved Load Bearing Systems. -Continue research, development and evaluation of Individual Water Purification System (IWPS) de-salinization effort.					
FY 2016 Base Plans: -Continue to explore product improvements and advanced technology for the Family of Improved Load Bearing Systems. -Continue research, development and evaluation of Individual Water Purification System (IWPS) de-salinization effort.					
FY 2016 OCO Plans: N/A					
Title: *Family of Individual Warfighter Equipment (formerly Combat Support Equipment)	0.029	0.105	0.001	-	0.001
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued to explore the industry's development of technological advances in Mechanical Breachers Kit and Waterproof Bags for USMC Pack. -Continued to test and evaluate to ensure operational effectiveness of the IWE components. -Continued the modernization of existing programs through Minor Modification, leveraging the technological advances of industry.					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue to explore industry's development of technological advances in Mechanical Breachers Kit and Waterproof Bags for USMC Pack. Continue to test and evaluate to ensure operational effectiveness of the IWE components. -Continue the modernization of existing programs through Minor Modification, leveraging the technological advances of industry. ***FY 2016 Base Plans:*** - Continue to test and evaluate to ensure operational effectiveness of the IWE components. ***FY 2016 OCO Plans:*** N/A					
Title: *Family of Field Medical Equipment	2.901	2.467	2.437	-	2.437
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued to test Commercial-Off-The-Shelf/Non-developmental (COTS/NOI) medical equipment items for the Enroute Care System, Forward Resuscitative Surgical System to determine future viability in an operational environment. -Continued testing of medical equipment items to evaluate their functionality and ability to improve the quality of healthcare provided to the warfighter and reduce the logistics footprint of USMC medical equipment. -Continued testing for possible application technology for insertion. -Completed Research and Development Studies on the application of Freeze Dried Pooled Plasma within the USMC Health Service Support organization. -Continued collaborative testing with Army for patient movement research. -Continued development of Plasma Sterilizer with Naval Medical Research Unit San Antonio (NAMRUSA). ***FY 2015 Plans:*** -Continue to test Commercial-Off-The-Shelf/Non-developmental (COTS/NOI) medical equipment items for the Enroute Care System, Forward Resuscitative Surgical System, and X-ray equipment to determine future viability in an operational environment. -Continue testing of medical equipment items to evaluate their functionality and ability to improve the quality of healthcare provided to the warfighter and reduce the logistics footprint of USMC medical equipment. -Continue testing for possible application technology for insertion.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiate collaborative development efforts with other services on the Autonomous Critical Care System. ***FY 2016 Base Plans:*** -Continue to test Commercial-Off-The-Shelf/Non-developmental (COTS/NOI) medical equipment items for the Enroute Care System and Forward Resuscitative Surgical System to determine future viability in an operational environment. -Continue testing of medical equipment items to evaluate their functionality and ability to improve the quality of healthcare provided to the warfighter and reduce the logistics footprint of USMC medical equipment. -Continue testing for possible application technology for insertion. -Continue collaborative development efforts with other services on the Autonomous Critical Care System. -Continue collaborative testing with Army for patient movement research. -Continue development of Plasma Sterilizer with NAMRUSA. ***FY 2016 OCO Plans:*** N/A					
Title: *Family of Shelters and Shelter Equipment (FSSE)	2.413	0.560	0.180	-	0.180
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Completed testing of energy efficient LED lighting technologies for shelters and shelters equipment. - Initiated contract award for testing of energy efficient technologies for new composite materials for rigid wall shelters and energy efficient field heating systems. - Initiated contract award to develop and test next generation heating system for soft walled shelters. ***FY 2015 Plans:*** - Complete testing of energy efficient technologies for new composite materials for rigid wall shelters and energy efficient field heating systems. - Complete testing of next generation heaters for the Arctic Shelter and compatibility with soft wall shelters in inventory. - Continue enhancing energy efficient technologies for shelters, lighting and shelter equipment; develop energy efficient Engineering Change Proposals (ECP) for FSSE. The current inventory of general purpose medium tents is adequate to meet mission requirements. ***FY 2016 Base Plans:*** - Complete design of next generation heating system for soft walled shelters.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Initiate development of energy efficient ECP's for FSSE. ***FY 2016 OCO Plans:*** N/A					
Title: *Family of Combat Field Feeding	0.826	0.464	0.372	-	0.372
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Initiated testing of alternative rechargeable/regenerative energy sources for field feeding systems in preparation for replacement of Tray Ration Heating System (TRHS) rendered obsolete by the up -armoring of tactical vehicles. Tested thermoelectric generator energy capture systems in Tray Ration Heating Systems. - Initiated testing of alternative burners for use in combat field feeding solutions with the goal of reduced life cycle cost and mitigation of sole source burner provider. - Completed testing of Riello burners in field feeding systems. - Initiated design of sanitation capability for the Enhanced Tray Ration Heating System (E-TRHS). ***FY 2015 Plans:*** - Continue testing options to reduce the footprint size of the current Tray Ration Heater System. - Continue testing of alternative energy sources (burners) for use in future systems negating the requirement for vehicle power to heat rations on the-move. - Continue testing of technological improvements for use in the family of combat field feeding systems. - Complete design activities for the E-TRHSS sanitation capability. ***FY 2016 Base Plans:*** - Complete testing of alternative energy sources and initiate design of Modernized Tray Ration Heating System (M-TRHS) to replace current TRHS rendered obsolete by up-armoring of tactical vehicles. This enhanced capability will allow Commanders to continue to provide hot meals to warfighters throughout tactical operations. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	8.227	5.498	4.050	-	4.050

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/6522-01: *Field Medical Equipment*	25.796	-	-	-	-	-	-	-	-	-	112.405
• PMC/6613: *Combat Field Feeding System*	1.652	-	-	-	-	-	-	-	-	-	45.563
• PMC/6522-02: *Family of Shelters & Shelter Equipment*	1.586	-	-	-	-	-	-	-	-	-	42.262

Remarks

D. Acquisition Strategy

Family of Mountain Cold Weather Clothing and Equipment, Family of Improved Load Bearing Equipment, Family of Individual Warfighter Equipment, Clothing and Flame Resistant Organizational Gear, items utilize various acquisition strategies. These programs leverage heavily on current developments and technology in commercial industry. As a result, the government's R&D phase is relatively short. Contracting is performed by either Marine Corps Systems Command Contracting Directorate, the Naval Research Laboratory or the U.S. Army Natick Soldier Research, Development and Engineering Center via Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts. ID/IQ contracts are used to decrease the government risk, allow maximum contract flexibility and capitalize on the savings realized by utilizing Economic Order Quantities.

Shelters: The Shelter acquisition strategy is to modify Non-Developmental Items (NDI) to further meet the requirements of the Marine Corps, to support development of multi-service items through inter-service agreements and to adopt Commercial-Off-the-Shelf (COTS) items.

Family of Field Medical Equipment: These programs leverage heavily on current development and technology in the commercial medical industry. The field medical acquisition strategy is to modify Non-Developmental Items (NDI) and adopt Commercial-Off-the-Shelf (COTS) items.

Combat Field Feeding Systems: This program utilized various acquisition strategies and leverages heavily on current developments and technology in commercial industry and other Service field feeding systems. As a result, the government's RDTE phase is relatively short. Contracting is performed by either Marine Corps Systems Command Contracting Directorate or the U.S. Army Natick Soldier Research, Development and Engineering Center (DoD Executive Agent for Field Feeding) via Indefinite Delivery/Indefinite Quantity (ID/IQ) contracts. ID/IQ contracts are used to decrease the government risk, allow maximum contract flexibility and capitalize on the savings realized by utilizing Economic Order Quantities.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Combat Field Feeding Systems	WR	NSWC PCD : Panama City, FL	0.000	0.547	Aug 2014	-		-		-		-	-	0.547	-
Family of Shelters and Shelter Equipment	MIPR	USA NSRDEC : Natick, MA	0.000	0.500	May 2014	-		-		-		-	-	0.500	-
Prior Year Cumulative Funding	Various	Various : Various	8.006	-		-		-		-		-	-	8.006	-
Family of Shelters and Shelters Equipment	WR	NSWC PCD : Panama City, FL	0.000	1.457	May 2014	-		-		-		-	-	1.457	-
Family of Field Medical	WR	NAMRUSA : San Antonia, TX	0.000	0.500	Sep 2014	-		0.509	Jan 2016	-		0.509	-	1.009	-
Family of Field Medical	MIPR	USAARL : Ft Rucker, AL	0.000	-		-		0.700	Mar 2016	-		0.700	-	0.700	-
Improved Load Bearing Equipment	MIPR	USA NSRDEC : Natick, MA	3.333	0.035	Dec 2014	0.308	Jan 2015	0.298	Jan 2016	-		0.298	Continuing	Continuing	Continuing
Family of Mountain Cold Weather	MIPR	USA NSRDEC : Natick, MA	4.535	0.192	Jan 2014	-		-		-		-	Continuing	Continuing	Continuing
Family of Combat Field Feeding Systems	MIPR	USA NSRDEC : Natick, MA	2.207	-		0.214	Feb 2015	0.070	Jan 2016	-		0.070	Continuing	Continuing	Continuing
Family Individual Warfighter Equipment	MIPR	USA NSRDEC : Natick, MA	0.323	0.029	Sep 2014	-		-		-		-	Continuing	Continuing	Continuing
Clothing & FR Organizational Gear	MIPR	USA NSRDEC : Natick, MA	3.714	0.412	Sep 2014	0.477	Feb 2015	0.481	Jun 2016	-		0.481	Continuing	Continuing	Continuing
Family of Field Medical	MIPR	AFMESA : Ft. Detrick, MD	0.000	-		-		0.030	Jan 2016	-		0.030	-	0.030	-
		Subtotal	22.118	3.672		0.999		2.088		-		2.088	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : Various	1.096	-		-		-		-		-	-	1.096	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	1.096	-		-		-		-		-	-	1.096	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Individual Warfighter Equipment	C/FP	MCSC : Quantico, VA	0.013	-		-		-		-		-	-	0.013	-
Family of Combat Field Feeding	MIPR	USA NSRDEC : Natick, MA	0.296	0.279	Mar 2014	0.250	Jan 2015	0.302	Mar 2016	-		0.302	-	1.127	-
Clothing & FR Organizational Gear	MIPR	USA NSRDEC : Natick, MA	0.000	0.301	Sep 2014	0.187	Feb 2015	0.189	Jun 2016	-		0.189	-	0.677	-
Family of Shelter and Shelter Equipment	TBD	TBD : TBD	0.000	-		0.100	Mar 2015	-		-		-	-	0.100	-
Prior Year Cumulative Funding	Various	Various : Various	7.565	-		-		-		-		-	-	7.565	-
Family of Field Medical	WR	NMRC : Silver Spring, MD	0.000	0.093	Jul 2014	-		-		-		-	-	0.093	-
Family of Field Medical	MIPR	USAARL : Ft. Rucker, AL	0.000	0.574	Feb 2014	0.454	Dec 2014	0.250	Jun 2016	-		0.250	-	1.278	-
Family of Field Medical	MIPR	USA NSRDEC : Natick, MA	0.000	1.383	Sep 2014	-		-		-		-	-	1.383	-
Family of Shelters & Shelter Equipment	MIPR	USA NSRDEC : Natick, MA	0.000	0.456	Sep 2014	0.460	Dec 2014	0.180	Mar 2016	-		0.180	-	1.096	-
Family of Mountain Cold Weather	MIPR	USA NSRDEC : Natick, MA	0.000	0.555	Sep 2014	0.930	Jan 2015	0.092	Mar 2016	-		0.092	Continuing	Continuing	Continuing
Family of Mountain Cold Weather	MIPR	AFRL/MILTECH : Wright Patterson, OH	0.000	0.125	Jan 2014	-		-		-		-	Continuing	Continuing	Continuing
Family of Field Medical	WR	NAMRUSA : San Antonio, TX	0.000	0.351	Jan 2014	-		0.748	Feb 2016	-		0.748	-	1.099	-
Family of Field Medical	WR	NHRC : San Diego, CA	0.000	-		1.500	Feb 2015	-		-		-	-	1.500	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Field Medical	MIPR	AFMESA : Ft. Detrick, MD	0.000	-		-		0.200	Jan 2016	-		0.200	-	0.200	-
		Subtotal	7.874	4.117		3.881		1.961		-		1.961	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : Various	1.850	-		-		-		-		-	-	1.850	-
Family of Field Medical	MIPR	USAARL : Ft. Rucker, AL	0.000	-		0.513	Feb 2015	-		-		-	-	0.513	-
Family of Mountain Cold Weather	MIPR	USA NSRDEC : Natick, MA	2.906	0.315	Sep 2014	-		-		-		-	Continuing	Continuing	Continuing
Family of Individual Warfighter Equpment	C/FP	MCSC : Quantico, VA	0.373	-		0.105	Jul 2015	0.001	Jul 2016	-		0.001	-	0.479	-
Clothing & FR Organizational Gear	MIPR	USA NSRDEC : Natick, MA	1.616	0.123	Sep 2014	-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	6.745	0.438		0.618		0.001		-		0.001	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.833	8.227		5.498		4.050		-		4.050	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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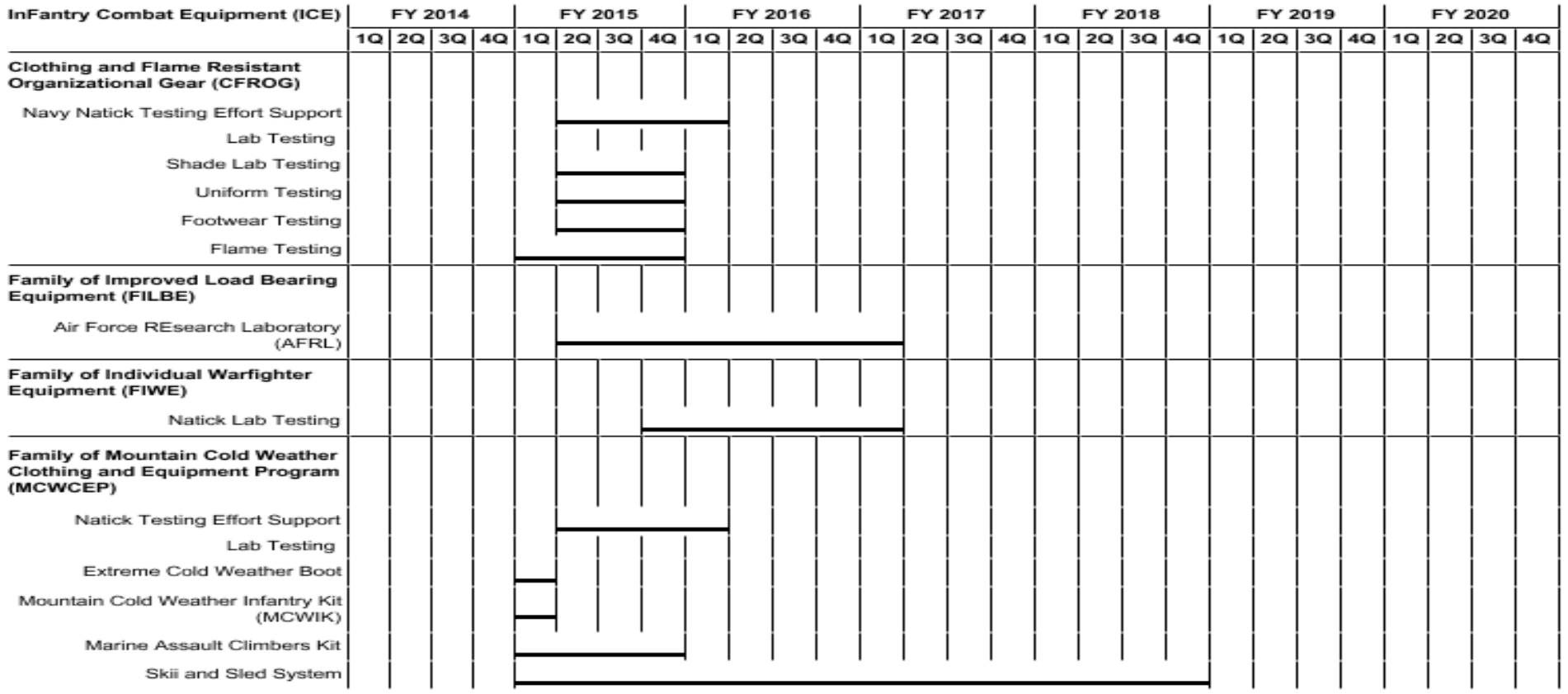

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
InFantry Combat Equipment (ICE)				
Clothing and Flame Resistant Organizational Gear (CFROG): Navy Natick Testing Effort Support: Navy Natick Testing Effort Support	2	2015	1	2016
Clothing and Flame Resistant Organizational Gear (CFROG): Shade Lab Testing:	2	2015	4	2015
Clothing and Flame Resistant Organizational Gear (CFROG): Uniform Testing:	2	2015	4	2015
Clothing and Flame Resistant Organizational Gear (CFROG): Footwear Testing:	2	2015	4	2015
Clothing and Flame Resistant Organizational Gear (CFROG): Flame Testing:	1	2015	4	2015
Family of Improved Load Bearing Equipment (FILBE): Air Force Research Laboratory (AFRL):	2	2015	1	2017
Family of Individual Warfighter Equipment (FIWE): Natick Lab Testing:	4	2015	1	2017
Family of Mountain Cold Weather Clothing and Equipment Program (MCWCEP): Natick Testing Effort Support: Lab Testing	2	2015	1	2016
Family of Mountain Cold Weather Clothing and Equipment Program (MCWCEP): Extreme Cold Weather Boot:	1	2015	1	2015
Family of Mountain Cold Weather Clothing and Equipment Program (MCWCEP): Mountain Cold Weather Infantry Kit (MCWIK):	1	2015	1	2015
Family of Mountain Cold Weather Clothing and Equipment Program (MCWCEP): Marine Assault Climbers Kit:	1	2015	4	2015
Family of Mountain Cold Weather Clothing and Equipment Program (MCWCEP): Ski and Sled System:	1	2015	4	2018

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
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COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2513: *Body Armor*	39.571	5.529	3.431	3.160	-	3.160	3.812	4.733	4.684	4.771	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

This program was previously justified in PE 0206623M Project 2503 Initial Issue under Family of Ballistic Protection.

A. Mission Description and Budget Item Justification

Body Armor Development (BAD) provides the most technologically advanced ballistics protection at the lightest weight in the world today. With current combat operations, these items have generated considerable Congressional and public interest because the items are considered life-saving equipment. When evaluated in total, BAD programs provide the critical systems that save lives, reduce the severity of combat injuries, and increase combat effectiveness by keeping more Marines in the fight. The major focus of all of the BAD programs is to address emergent threats on the battlefield; BAD equipment must constantly adapt to combat these new threats. BAD programs are truly a force multiplier on the battlefield of today and tomorrow. It includes Modular Scalable Vest (MSV), Enhanced Small Arms Protective Inserts (ESAPI), Helmet, and Eye Protection.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Body Armor Development	5.529	3.431	3.160	-	3.160
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued to develop the Headborne and Modular Scalable Vest (MSV) systems to increase the survivability, lethality and mobility of the individual Marine. -Continued to research active and passive hearing protection products that provide a sense of presence and protection against transient impact noise and blocks and/or reflects harmful blast shock wave in the ear canal. -Completed hard armor development for the Enhanced Capability Helmet.					
FY 2015 Plans: -Continue to develop the Headborne and Modular Scalable Vest (MSV) systems to increase the survivability, lethality and mobility of the individual Marine. -Continue to research active and passive hearing protection products that provide a sense of presence and protection against transient impact noise and blocks and/or reflects harmful blast shock wave in the ear canal.					
FY 2016 Base Plans: -Continue to develop the Headborne, Modular Scalable Vest (MSV) systems and Hard Armor Systems to increase the survivability, lethality and mobility of the individual Marine.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue to research active and passive hearing protection products that provide a sense of presence and protection against transient impact noise and blocks and/or reflects harmful blast shock wave in the ear canal. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	5.529	3.431	3.160	-	3.160

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OMMC/ 1A1A: *Operational Forces*	24.637	17.957	-	-	-	-	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

Marine Corps Body Armor Research, Development, Testing & Evaluation activities include seeking new developments in ballistic technology that feature reductions in weight, improvements in ballistic performance, enhanced operational effectiveness through improved product designs and the application of new material technologies to reduce total ownership costs by improving the expected service life of fielded systems. In order to accomplish these goals, PdM-Infantry Combat Equipment (ICE) uses a broad array of government and contractor performers to achieve the desired end state. This includes partnerships with government performers and research and development contracts and partnership intermediaries where applicable. The Marine Corps also leverages advancements in industry capabilities to rapidly field non-developmental and commercially available off the shelf armor solutions. Performance is confirmed by characterizing ballistic performance and data collected during user evaluations.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Ballistic Protection	MIPR	USA NSRDEC : Natick, MA	8.168	0.532	Jul 2014	-		0.240	Apr 2016	-		0.240	Continuing	Continuing	Continuing
Family of Ballistic Protection	C/FFP	NRL : Washington DC	16.138	-		0.498	Mar 2015	0.297	Sep 2016	-		0.297	-	16.933	-
Family of Ballistic Protection	MIPR	NCTRF : Natick MA	0.856	0.172	Apr 2014	-		-		-		-	Continuing	Continuing	Continuing
Family of Ballistic Protection	C/FFP	CERADYNE : Costa Mesa, CA	0.445	1.548	Oct 2014	-		1.000	Aug 2016	-		1.000	-	2.993	-
Family of Ballistic Protection	MIPR	AFRL/MILTECH : Wright Patterson,OH	1.822	1.470	Aug 2014	0.980	Mar 2015	1.000	Aug 2016	-		1.000	-	5.272	-
Prior Year Cumulative Funding	Various	Various : Various	0.370	-		-		-		-		-	-	0.370	-
Family of Ballistic Protection	WR	USN NCTRF : Natick, MA	0.000	0.172	Jun 2014	0.126	Jan 2015	0.130	Jun 2016	-		0.130	-	0.428	-
		Subtotal	27.799	3.894		1.604		2.667		-		2.667	-	-	-

Remarks

Revised FY14 Product Development to reflect actual Product Development efforts.
Refined FY15 Product Development to accurately reflect Future year tasks.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Ballistic Protection	MIPR	USA NSRDEC : Natick, MA	7.262	0.118	Feb 2015	0.387	Feb 2015	-		-		-	-	7.767	-
Prior Year Cumulative Funding	Various	Various : Various	3.296	-		-		-		-		-	-	3.296	-
Family of Ballistic Protection	MIPR	USA ATC : Aberdeen Prv Grnd, MD	0.378	0.080	Sep 2014	-		-		-		-	-	0.458	-
Family of Ballistic Protection	MIPR	AFRL : Wright Patterson, OH	0.340	-		-		0.293	Aug 2016	-		0.293	-	0.633	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 2513 / *Body Armor*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Ballistic Protection	WR	NRL : Washington, DC	0.431	1.140	Sep 2014	1.440	Feb 2015	0.200	Sep 2016	-		0.200	-	3.211	-
Family of Ballistic Protection	WR	NSWC : Dahlgren, VA	0.065	0.297	Jul 2014	-		-		-		-	-	0.362	-
		Subtotal	11.772	1.635		1.827		0.493		-		0.493	-	15.727	-

Remarks

Revised FY14 Test and Evaluation to reflect actual Test and Evaluation efforts.
Refined FY15 Test and Evaluation to accurately reflect Future year tasks.

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	39.571	5.529		3.431		3.160		-		3.160	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2513 / *Body Armor*

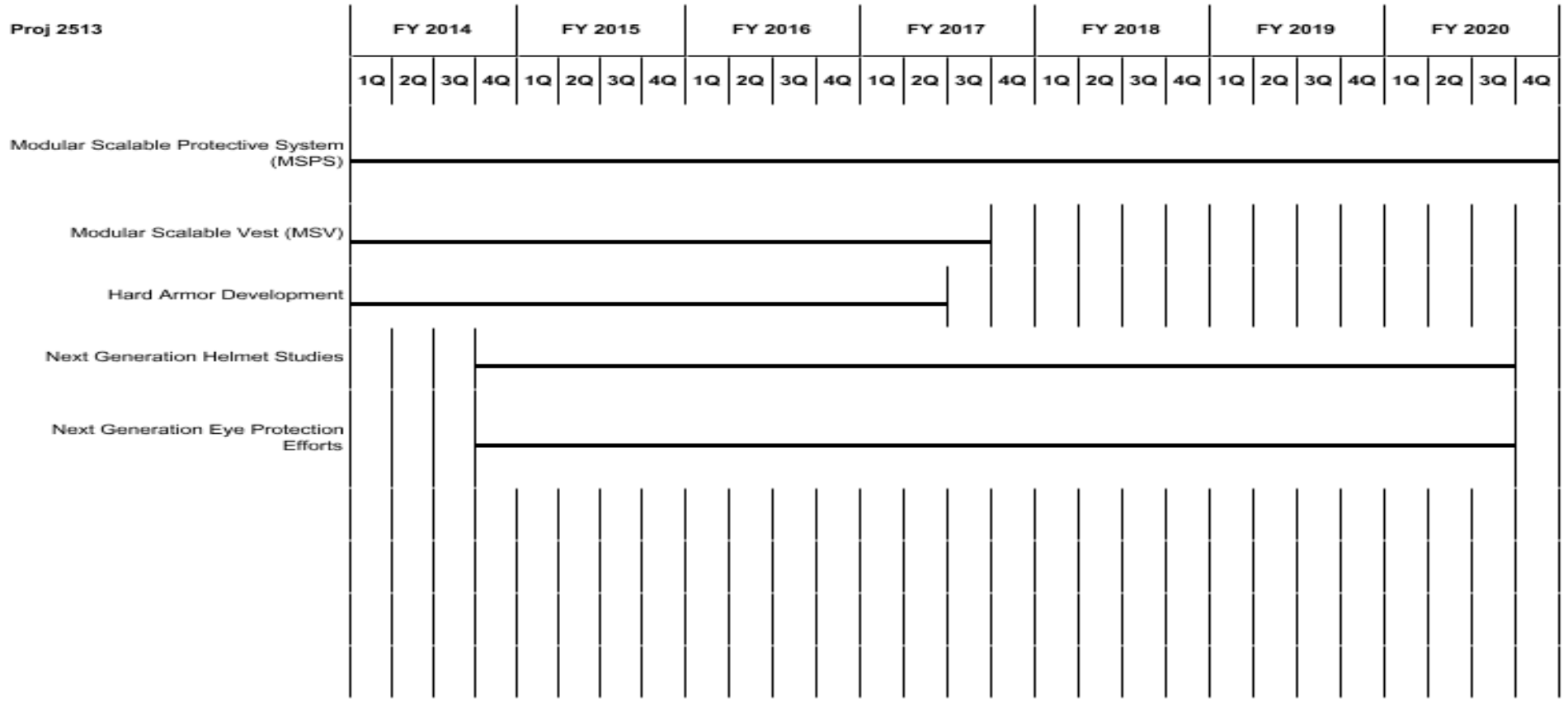

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2513 / *Body Armor*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2513				
Modular Scalable Protective System (MSPS): MSPS Development Schedule Detail	1	2014	4	2020
Modular Scalable Vest (MSV): MSV Efforts Schedule Detail	1	2014	3	2017
Hard Armor Development: Hard Armor Development Schedule Detail	1	2014	2	2017
Next Generation Helmet Studies: Next Generation Helmet Studies Schedule Detail	4	2014	3	2020
Next Generation Eye Protection Efforts: Next Generation Eye Protection Efforts Schedule Detail	4	2014	3	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
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COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2928: *Exp Indirect Fire Gen Supt Wpn Sys*	9.656	0.001	1.953	2.763	-	2.763	1.986	2.575	2.361	2.172	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

High Mobility Artillery Rocket Systems (HIMARS) is a C-130 transportable, wheeled, indirect fire, rocket/missile system capable of firing all rockets and missiles in the current and future Multiple Launch Rocket System (MLRS) Family of Munitions (MFOM). The system includes one launcher, two Re-Supply Systems, and the MFOM. HIMARS will provide the Fleet Marine Force with 24 hour ground-based, responsive General Support/General Support Reinforcing (GS/GSR) indirect fires which accurately engage targets at long range (60+km), with high volumes of lethal fire under all weather conditions throughout all phases of combat operations ashore, to include irregular warfare and distributed operations. HIMARS is a significant improvement over previously fielded ground fire support systems. During a 24 hour period, the system is expected to conduct multiple moves and multiple fire missions. Guided Multiple Launch Rocket System (GMLRS) is the primary munition for units fielded with the HIMARS and MLRS rocket and missile platforms. GMLRS provides close, medium, and long range precision and area fires to destroy, suppress, and shape threat forces and protect friendly forces against cannon, mortar, rocket and missile artillery, light material and armor, personnel, command and control, and air defense surface targets. GMLRS integrates guided and control packages and an improved rocket motor achieving greater range and precision accuracy, requiring fewer rockets to defeat targets, thereby reducing the logistics burden.

The two fielded variants are GMLRS with Dual Purpose Improved Conventional Munitions (DPICM/Increment 1) and GMLRS Unitary (U/Increment 2), a 200 pound class high explosive warhead. The GMLRS U integrates a multi-mode fuse and high explosive warhead making it an all weather, low collateral damage, precision strike rocket. GMLRS U expands the MLRS target set into urban and complex environments by adding point, proximity, and delay fusing modes. GMLRS U was fired in support of Overseas Contingency Operations (OCO), and has demonstrated high effectiveness and low collateral damage while supporting Marines in combat. A third variant of GMLRS, the alternative warhead (AW/Increment 3) is being developed to replace DPICM and meet the requirements outlined in a 25 June 2008 cluster munitions policy, which requires all cluster munitions by 2019 to produce less than 1% Unexploded Ordinance (UXO) on the battlefield. GMLRS/AWP begins production in FY15. HIMARS satisfies the Marine Corps requirement for an indirect fire system that is responsive, maneuverable, and is capable of engaging targets at long range. The Reduced Range Practice Rocket (RRPR) includes training devices for tactical training, classroom training and handling exercises.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: HIMARS Testing	-	0.500	-	-	-
Articles:	-	-	-	-	-
Description: Executed in conjunction with the U.S. Army, the Support Test and Evaluation Program for Marine Corps Principle End Items. The U.S. Army Program Office continues to provide improvements to these end					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2928 / *Exp Indirect Fire Gen Supt Wpn Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
items (e.g. alternate warheads). This funding will be used to provide adequate support and oversight to ensure testing supports Marine Corps requirements ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** Initiate Guided Multiple Launch Rocket System (GMLRS) follow on testing consisting of any testing required due to deficiencies discovered during U.S. Army E3 testing at Redstone Test Center (RTC) or during Shipboard Shock & Vibration testing at NSWCDD and as required by the Marine Corps Systems Command and NSWCDD. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: HIMARS Fire Control Obsolesence	-	1.453	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** Continue evaluation efforts that focus on improving HIMARS readiness, reliability and maintainability by eliminating obsolete parts and reducing the number of Line Replaceable Units (LRUs) by consolidating Fire Control System functions. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: HIMARS Program Support	0.001	-	-	-	-
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: HIMARS is a joint program run from the Army Program Office in Huntsville, AL. Funding supports Program Management at Quantico, Marine Corps Liaison Officer at Army Program Office (Huntsville) and contractor support. Marine Corps onsite liaison officer resides at Huntsville to support joint acquisition and program planning. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: HIMARS Expeditionary & Naval Integration Capabilities	-	-	2.763	-	2.763
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** -Continue the Marine Corps study of the capability to employ HIMARS from distributed locations and naval platforms, or surface connectors to support distributed maneuvers. -Continue development of long range precision fires capabilities for HIMARS from austere and expeditionary bases. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.001	1.953	2.763	-	2.763

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/BLI 221200: *High Mobility Artillery Rocket System (HIMARS)*	5.799	19.474	17.181	-	17.181	34.056	40.824	36.595	35.682	Continuing	Continuing

Remarks

D. Acquisition Strategy

USMC HIMARS is procuring the Army rocket launcher, the current/future Multiple Launch Rocket System Family of Munitions (MFOM) and a Medium Tactical Vehicle Replacement (MTVR) based Resupply System (truck(s) with associated trailer(s)). The Marine Corps launcher and ammo requirements closely match U.S. Army requirements. The U.S. Army HIMARS program received increased funding and is now an Acquisition Category (ACAT) IC level program. Marine Corps Resupply System requirements are unique. Accordingly, the Marine Corps is an integrator and must ensure the required warfighting capability is fielded to the Marine Corps operating forces. The USMC has aligned funds to reflect an emphasis on not only hardware development, but also the integration of these principle end items while providing associated evaluation and oversight, and the development of associated rocket munitions in conjunction with the Army. Additionally, the Marine Corps program is establishing the training and support methodologies that will result in associated skill sets required within the Marine Corps. The Marine Corps strategy is incorporating acquisition and capability upgrades to both the systems and rocket munitions. These improvements parallel the U.S. Army's acquisition strategy.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Expeditionary capabilities	WR	NSWC DD : Dahlgren, VA	0.000	-		-		0.600	Feb 2016	-		0.600	-	0.600	-
Expeditionary capabilities	MIPR	RDEC : Redstone Arsenal, AL	0.000	-		-		2.163	Feb 2016	-		2.163	-	2.163	-
		Subtotal	0.000	-		-		2.763		-		2.763	-	2.763	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
GMLRS follow on testing	MIPR	Redstone Test Ctr : Redstone, AL	0.000	-		0.500	Feb 2015	-		-		-	-	0.500	-
Fire Control Obsolesence	MIPR	Redstone Test Ctr : Redstone, AL	0.000	-		1.453	Feb 2015	-		-		-	-	1.453	-
Prior year cumulative funding	Various	various : various	4.013	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	4.013	-		1.953		-		-		-	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Managment	Various	Various : Various	0.000	0.001	Sep 2014	-		-		-		-	-	0.001	-
Prior year cumulative funding	Various	Various : Various	5.643	-		-		-		-		-	Continuing	Continuing	Continuing
		Subtotal	5.643	0.001		-		-		-		-	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.656	0.001		1.953		2.763		-		2.763	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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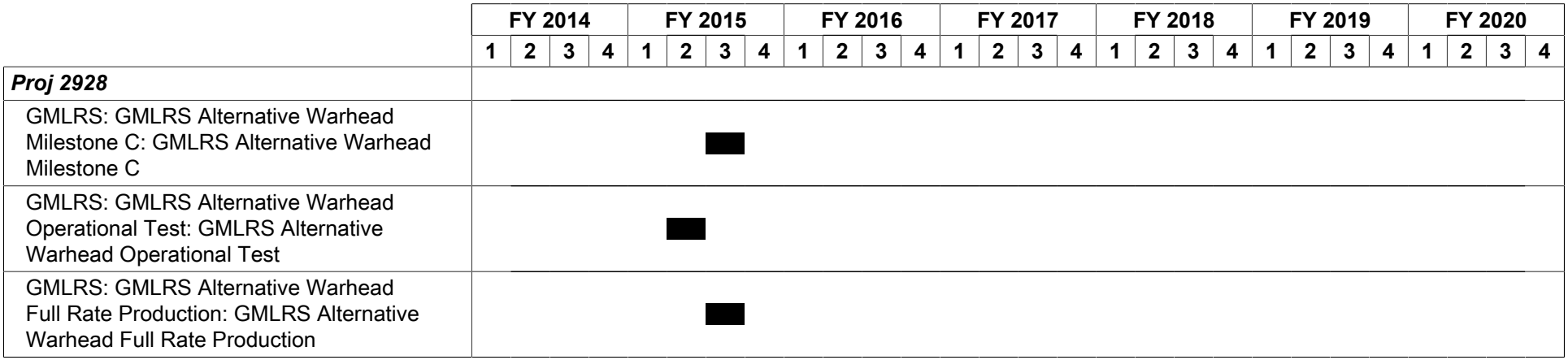

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 2928 / *Exp Indirect Fire Gen Supt Wpn Sys*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2928				
GMLRS: GMLRS Alternative Warhead Milestone C: GMLRS Alternative Warhead Milestone C	3	2015	3	2015
GMLRS: GMLRS Alternative Warhead Operational Test: GMLRS Alternative Warhead Operational Test	2	2015	2	2015
GMLRS: GMLRS Alternative Warhead Full Rate Production: GMLRS Alternative Warhead Full Rate Production	3	2015	3	2015

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*				Project (Number/Name) 3098 / *Fire Support System*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
3098: *Fire Support System*	113.476	15.709	14.400	11.940	-	11.940	6.274	5.580	5.508	5.628	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops Joint and Marine Corps unique improvements to artillery fire support technology that supports the artillery triad of fires and fire support equipment. These initiatives include but are not limited to the following: the Expeditionary Fire Support System (EFSS), munitions development & testing (to include rocket munitions), as well as testing and development of the Family of Artillery Munitions (FAM), Common Laser Ranger Finder (CLRF) integrated capability, and the Modeled Meteorological Information Manager (MMIM).

EFSS is an all-weather, ground based indirect fire system designed to support the vertical assault element of the Ship-To-Objective Maneuver (STOM) force. The EFSS is defined as a Launcher, Mobility Platform (prime mover), Ammunition, Ammunition Supply Vehicle, and Technical Fire Direction and Control equipment necessary for orienting weapons to an azimuth of fire. EFSS supports irregular warfare and distributed operations. The decrease of $2.889M from FY15 to FY16 is due to the Precision Extended Range Munition (PERM) round which is currently in the final stages of development and the funds required for development are beginning to ramp down.

FAM is used to develop and mature artillery munitions for the Marine Corps triad of fire.

The CLRF is a lightweight, eye-safe target laser rangefinder capable of being carried and employed by a single Marine. CLRF Integrated Capability (CLRF IC) is a replacement to the existing CLRF Suite of Equipment. CLRF IC provides the observer the ability to perform target detection, recognition, identification, and location determination in a suite of systems.

The Modeled Meteorological Information Manager (MMIM) is the primary artillery meteorological capability at the artillery battalion and regiment providing the ability to create, receive, manage, and transmit near real time gridded meteorological information supporting artillery and target acquisition systems significantly enhancing the accuracy of meteorological information.

The Fire Support Mod Line is a set of Marine Corps efforts to address critical operational and logistics deficiencies in existing, fielded fire support/weapons systems and equipment. The line provides technical refresh and development of target acquisition, artillery survey, meteorological systems, weapon systems, and fire direction control. Funding is used to ensure Clinger Cohen Act (CCA) and Information Assurance (IA) requirements are met, execution of product improvements/modifications, and upgrades to system hardware and software for the Ground Counter Fire Sensor (GCFS), Marine Artillery Survey Set (MASS), Meteorological Station Group (MSG), Global Positioning System Survey (GPS-S) and the Improved Position Azimuth Determining System (IPADS), Lightweight Target Designator (LTD), the Joint Terminal Attack Controller-Laser Target Designator (JTAC-LTD), and the CLRF as well as for upgrades, engineering change proposals, and modifications for guided munitions and fire control systems. Funding is also used for upgrades, engineering change proposals (ECPs) and modifications for guided munitions and fire control systems which falls within Fire Support Systems for the Marine Corps.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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Family of Internally Transportable Vehicles (FITV):
The Family of Internally Transportable Vehicles (FITV) consists of two variants of tactical ground vehicles for use by the Ground Combat Element (GCE) of a Marine Air Ground Task Force (MAGTF). The ITV Light Strike Variant (LSV) is outfitted primarily with a heavy machine gun or grenade launcher and transports four Marines plus 2000 lbs of cargo. The ITV Prime Mover (PM) is used to support the Expeditionary Fire Support System (EFSS), towing the 120MM Mortar and Ammo Trailer, while transporting two Marines. Both the LSV and PM are internally transportable inside the MV-22 and CH-53 aircraft.

Conventional Ground Ammunition:
The project identifies and develops Insensitive Munitions (IM) Technologies to address IM shortfalls in new Marine Corps development or improvements to legacy Conventional Ground Ammunition to meet OSD mandated IM compliance requirements. These IM Technology investments directly support the development of the bi-annual Marine Corps Insensitive Munitions Strategic Plan (IMSP) to address the identified IM technology needs of the Marine Corps.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Common Laser Range Finder (CLRF)	0.387	-	-	-	-
Articles:	-	-	-	-	-
Description: The Common Laser Range Finder (CLRF) is a lightweight, eye-safe target laser rangefinder capable of being carried and employed by a single Marine. CLRF Integrated Capability (CLRF IC) is a replacement to the existing CLRF Suite of Equipment. CLRF IC provides the observer the ability to perform target detection, recognition, identification, and location determination in a suite of systems. ***FY 2014 Accomplishments:*** -Completed the Engineering and Manufacturing Development Phase for CLRF IC with technical engineering services provided by NSWCDD. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Modeled Meteorological Information Manager (MMIM)	0.241	0.228	0.261	-	0.261
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: The Modeled Meteorological Information Manager (MMIM) is the primary artillery meteorological capability at the artillery battalion and regiment providing the ability to create, receive, manage, and transmit near real time gridded meteorological information supporting artillery and target acquisition systems significantly enhancing the accuracy of meteorological information. MMIM is saving over $1.3 million in annual operations, maintenance, and fuel costs by eliminating the requirement for 42 M1152 High Mobility Multi-purpose Wheeled Vehicles, 21 M101A3 Trailers and 21 OV-103 Generator Groups associated with the current legacy capability. ***FY 2014 Accomplishments:*** -Completed Test & Evaluation of enhanced resolution model for the MMIM. ***FY 2015 Plans:*** -Continue testing and integration of the MMIM to support software development and information assurance activities. ***FY 2016 Base Plans:*** -Initate research and technical support efforts to enhance communication of meteorological data that will support the production of computer meteorological messages for use with AFATDS to support battalion artillery operations. ***FY 2016 OCO Plans:*** N/A					
Title: Expeditionary Fire Support Systems (EFSS)	11.512	11.618	8.729	-	8.729
Articles:	-	-	-	-	-
Description: EFSS is an all-weather, ground based indirect fire system designed to support the vertical assault element of the Ship-To-Objective Maneuver (STOM) force. EFSS is defined as a Launcher, Mobility Platform (prime mover), Ammunition, Ammunition Supply Vehicle, and Technical Fire Direction and control equipment necessary for orienting weapons to an azimuth of fire. EFSS supports irregular warfare and distributed operations. ***FY 2014 Accomplishments:*** -Continued development of the Precision Extended Range Munition (PERM). ***FY 2015 Plans:*** -Complete PERM demonstration testing.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 3098 / *Fire Support System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiate engineering and safety analysis of the demonstration test results. ***FY 2016 Base Plans:*** -Initiate the development of Low Rate Initial Production (LRIP) test assets that will be destroyed during test. -Initiate the development of Tabular Firing Tables, Centaur and Advanced Field Artillery Tactical Data System (AFATDS) updates and final Gunner Display Unit - Marine (GDU-M) software development, all for use in support of PERM Type Qualification Testing (TQT) and LRIP testing. The decrease of $2.889M from FY15 to FY16 is due to the Precision Extended Range Munition (PERM) round which is currently in the final stages of development and the funds required for development are beginning to ramp down. ***FY 2016 OCO Plans:*** N/A					
Title: Fire Support Mods (FSM)	1.917	1.747	1.790	-	1.790
Articles:	-	-	-	-	-
Description: Funding is used for upgrades, engineering change proposals (ECP), and modifications to system hardware and software for the Ground Counter Fire Sensor (GCFS), Marine Artillery Survey Set (MASS), Meteorological Station Group (MSG), Global Positioning System Survey (GPS-S), the Improved Position Azimuth Determining System (IPADS), and the Joint Terminal Attack Controller-Laser Target Designator (JTAC-LTD) as well as technical refresh for target acquisition, and artillery survey and meteorological systems. Funding is also used for upgrades, engineering change proposals (ECPs) and modifications for guided munitions and fire control systems which falls within Fire Support Systems for the Marine Corps. ***FY 2014 Accomplishments:*** -Continued Software Integration Support - development of software to integrate digital message formats from the IPADS, GCFS & MMIM to meet required standards associated with new digital transmission kernels. Requirements to transmit information digitally to support current artillery and target acquisition systems dictates that survey, meteorological, and targeting information conform to current and anticipated established variable message formatting to ensure continued compatibility with communication and fire support systems. -Completed FSS IA activities. Met Clinger-Cohen requirements for FSS systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Completed the Acoustics analysis of the GCFS capability to determine sustainment, enhancement, suitability and affordability opportunities associated with continued development of a system that meets the CPD & MROC validated capability. ***FY 2015 Plans:*** -Initate research and analysis efforts to determine acoustic requirements to support the development of future acoustic sensor capabilities. -Initate the development of an ECP to transition the Azimuth and Inertial MEMS Future Naval Capability (AIM/FNC) into fielded targeting systems. ***FY 2016 Base Plans:*** -Initiate efforts to demonstate GCFS digital communications capability in a breadboard configuration. -Complete integration of AIM/FNC into fire support systems which will provide near 100% 2 mil azimuth availability to support targeting. The AIM/FNC program goal is to demonstrate a handheld, lightweight, affordable inertial navigation system (INS) capable of accurate azimuth determination in all environments, which will significantly improve the capabilities of ground-based, small unit fires. -Initiate engineering and research efforts to determine future IPADS capability requirements to support future artillery survey. ***FY 2016 OCO Plans:*** N/A					
Title: Family of Artillery Munitions (FAM)	0.323	0.307	0.310	-	0.310
Articles:	-	-	-	-	-
Description: FAM - Efforts include acquisition planning for future munitions, replacement of existing stockpiles, and providing technologically enhanced artillery munitions in order to mitigate/fill capability gaps in range, accuracy, and lethality and reduce undue logistical burden. Additionally, the program office addresses Weapon System Explosives Safety Review Board (WSESRB) requirements for naval transportation issues for all artillery projectiles, propellants, and fuzes. ***FY 2014 Accomplishments:*** -Completed WSESRB actions for Excalibur 1A. Received all Class B shipboard shock transportation approval for Excalibur. ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 3098 / *Fire Support System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiate efforts to monitor and support U.S. Army artillery ammunition programs in order to leverage and influence Army developmental efforts. Resolve outstanding PGK WSESRB actions. ***FY 2016 Base Plans:*** -Continue to monitor and support joint development with U.S. Army artillery ammunition programs in order to leverage and influence Army developmental efforts. Provide USMC specific safety analysis for M1123 (IR) and M1124 (VL). ***FY 2016 OCO Plans:*** N/A					
Title: Family of Internally Transportable Vehicle (FITV) ***Articles:*** ***Description:*** Internally Transportable Vehicle (ITV) program fields expeditionary vehicles to ground units to support various operations. Provides the Marine Air-Ground Task Force (MAGTF) ground combat units with a vehicle transportable in the MV-22 and CV-22 tilt-rotor aircraft as well as the CH53. The ITV is an integral part of the Expeditionary Fire Support System (EFSS). ***FY 2014 Accomplishments:*** -Completed the review of Test Incident Reports (TIRs) and incorporated recommendations in the performance work statement for the safety and reliability enhancement effort in support of ITV. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** - Continue engineering efforts to improve the system readiness of the FITV. FY15 to FY16 increase will be used to conduct comparative analysis and modeling to support proposed modification recommendations required to increase the FITV system readiness, safety and reliability. ***FY 2016 OCO Plans:*** N/A	0.207 -	- -	0.350 -	- -	0.350 -
Title: Conventional Ground Ammunition ***Articles:*** ***Description:*** All DoD services are required to field munitions that are insensitive munitions (IM) compliant. IM	1.122 -	0.500 -	0.500 -	- -	0.500 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
compliancy is measured by the performance of munitions to six tests; Fast Cook-Off, Slow Cook-Off, Bullet Impact, Fragment Impact, Sympathetic Detonation, and Shape Charge Jet. Services are required to submit IM Strategic Plans annually delineating how they intend on executing their Service IM effort to maximize IM improvements to both new development and legacy conventional ground ammunition. These IM Strategic Plans, Supporting Plan of Actions, and Milestones, with funding trial, are submitted to the JROC, demonstrating each Service's commitment to the continuing effort to improve IM characteristics of Conventional Ground Ammunition, for approval. In order to achieve the system's IM performance, the Conventional Ground Ammunition developer/ owner must have new technology identified and available to address IM shortfalls at the onset of the ammunition development or available for insertion during improvement opportunities for legacy ammunition. Under this program, the USMC invests in IM technology which will improve its existing munitions IM reactions or ability to reliably initiate IM technologies and complies with the OSD mandate for maximum feasible IM compliance. ***FY 2014 Accomplishments:*** Continued - (1) Fire-From-Enclosure Rocket IM Propulsion (472K @ U.S. Army Armament Research Development and Engineering Center, Picatinny, NJ) - Final propellant iteration development (Test Material) - Propellant Sensitivity Testing - Engineering IM Tests - Full Scale IM Testing - Ballistic Testing (2) Multi Point Initiation System (100K @ Naval Surface Warfare Center Indian Head, Indian Head, MD) - Additional multi point array design and reliability testing - Go/No-Go Billet Testing - Advanced Characterization - MPI/Meduim Caliber incorporation guidelines development (3) Micro Electro Mechanical System Fuzing (200K @ Naval Surface Warfare Center Indian Head, Indian Head, MD) - Laboratory/Field survivability testing of all up configuration - All-Up Round Fabrication (Design improvements based on initial testing) - Live Fire Demonstration (Functionality & Survivability)					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
(4) IM Compliant 120mm Tail Charge (350K @ U.S. Army Armament Research Development and Engineering Center, Picatinny, NJ) - CHEETAH Modeling of propellant - Fiber Reinforced Plastic Fin Boom development					
FY 2015 Plans: Continue - (1) Fire-From-Enclosure Rocket IM Propulsion (U.S. Army Armament Research Development and Engineering Center, Picatinny, NJ) - Venting design development - Eutectic material proof of concept - Slow Cook-Off testing (design verification/improvement) - Final vent design verification (2) IM Compliant 120mm Tail Charge (U.S. Army Armament Research Development and Engineering Center, Picatinny, NJ) - Continue Propellant Characterization assessments/tests - Continue Fiber Reinforced Plastic Fin Boom development & testing - Slow Cook-Off Testing to determine auto-ignition temperature of components - Propellant Characterization Tests (Closed Bomb, Mechanical Properties, Heat Flow Calorimetry) (3) Multi Point Initiation System (Naval Surface Warfare Center Indian Head Explosive Ordnance Disposal Technology Division, Indian Head, MD) - Test new array designs against NTO/HMX explosive fills - Characterize output of array					
FY 2016 Base Plans: Continue - (1) Fire-From-Enclosure Rocket IM Propulsion (U.S. Army Armament Research Development and Engineering Center, Picatinny, NJ) (2) IM Compliant 120mm Tail Charge (U.S. Army Armament Research Development and Engineering Center, Picatinny, NJ) -Initiate Full scale IM testing.					
FY 2016 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Accomplishments/Planned Programs Subtotals	15.709	14.400	11.940	-	11.940

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/206400: *Expeditionary Fire Support Systems*	0.583	0.642	2.652	-	2.652	6.435	0.629	0.064	0.066	-	100.035
• PMC/473300: *Common Laser Range Finder (CLRF)*	0.001	8.178	5.154	-	5.154	9.448	10.679	9.670	9.866	-	56.273
• PMC/473301: *Modeled Meterological Information Manager (MMIM)*	0.511	0.250	0.450	-	0.450	0.500	0.509	0.466	0.476	-	8.998
• PMC/473302: *Fire Support Mods*	2.813	3.432	3.532	-	3.532	3.642	3.703	3.776	3.852	-	76.828
• PMC/523000: *Items less Than $5 Million*	2.856	2.964	1.108	-	1.108	4.344	4.023	3.325	3.392	Continuing	Continuing
• PMC/654500: *Family of ITV*	-	-	7.533	-	7.533	2.206	-	-	-	-	9.739

Remarks

D. Acquisition Strategy

These programs range from off-the-shelf modifications to developmental items. Development will typically be conducted at government labs.

Expeditionary Fire Support System (EFSS) and the Precision Extended Range Munition (PERM):
The acquisition approach for PERM is being conducted in two phases; In Step 1, two CPFF contracts were awarded to two vendors for the development and delivery of production representative rounds. Step 1 allows the development of existing technology, the management of technology risks, and demonstration of PERM designs prior to Milestone C (MS C). In Step 2 one FFP contract will be awarded for the production and delivery of the Total Munitions Requirement (TMR) and a priced option for the procurement of the vendor's Technical Data Package (TDP) for the approved material solution. PERM will supplement the capability of EFSS by increasing the effective range from 8km to up to 20 km.

Family of Artillery Munitions (FAM):
Program includes four (4) artillery munitions which are being developed by the Army. The Army is the lead service for these programs but continues to interact with the FAM IPT to ensure USMC requirements and capability needs are met. This allows the USMC to become users of the munition and certify the round for naval

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transportation. The munitions include but are not limited to; XM1156 Precision Guidance Kit (PGK), Excalibur, and M1123 Infrared (IR) and M1124 Visual Light (VL) 155mm RAP Round. Each munitions' status is tracked to ensure Marine Corps requirements are satisfied throughout the systems lifecycle.

CLRF IC: Having completed the Engineering and Manufacturing Development phase, CLRF-IC will be procured using a firm fixed price contract in the second quarter of FY15.

MMIM: The Marine Corps is an active participant in the Army-led program and continues to support development of enhancements designed to increase availability of meteorological capability.

Fire Support Mods:
Acoustic sensors: Maintain current acoustic capability while developing an integrated platform capable of transmitting digitial information to AFATDS in support of artillery operations.
Complete development of AIM/FNC to support a production contract.
IPADS: Conduct engineering analysis of requirements to identify new technologies for future procurement.

Family of Internally Transportable Vehicles (FITV):
The FITV program strategy is to develop solutions under the ongoing Nevada Automotive Test Center effort to address eighteen identified reliability and safety design issues through government off-the-shelf (GOTS), commercial off-the-shelf (COTS) or modified off-the-shelf (MOTS) components. The government will select from two potential component upgrade solutions for each of the eighteen deficiencies and conduct competition to procure and integrate modification kits, develop logistics products and conduct training.

Conventional Ground Ammunition:
The Conventional Ground Ammunition strategy is to invest in Insensitive Munitions (IM) technologies to address IM shortfalls of priority programs identified in the bi-annual Marine Corps Insensitive Munitions Strategic Plan (IMSP). Once the IM technologies have been successfully demonstrated and matured, the intent is to insert the new technologies into new conventional ground ammunition development as well as provide opportunities to improve legacy munitions IM characteristics. The IM R&D effort directly addresses the mandated OSD requirement to obtain incremental IM improvement in pursuit of becoming fully IM compliant to the maximum extent practicable.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : Various	81.913	-		-		-		-		-	-	81.913	-
FITV Rollover Protection Mod	C/FFP	NATC : Carson City, NV	0.000	0.147	Dec 2014	-		-		-		-	-	0.147	-
Fire Support Mod	WR	NAVSEA : Washington, DC	0.000	-		1.307	Jan 2015	-		-		-	-	1.307	-
FAM Capability Enhancement	WR	NSWC Safety : Dahlgren, VA	0.000	-		0.154	Jan 2015	-		-		-	-	0.154	-
Fire Support Mods	MIPR	PM MATIC : Aberdeen, MD	0.000	0.679	Nov 2013	-		-		-		-	-	0.679	-
Fire Support Mods	WR	NAVSEA : Washington, DC	0.000	-		0.440	May 2015	-		-		-	-	0.440	-
Conventional Ground Ammunition	MIPR	ARDEC : Picatanny, NJ	0.000	0.822	Jan 2014	0.200	Jan 2015	0.250	Jan 2016	-		0.250	-	1.272	-
EFSS (PERM)	C/CPFF	Various : Contractors	6.741	11.512	May 2014	1.186	Dec 2014	-		-		-	-	19.439	-
Conventional Ground Ammunition	MIPR	U.S. Army Armament : Picatanny, NJ	0.000	-		0.300	Jan 2015	0.250	Jan 2016	-		0.250	-	0.550	-
Fire Support Mods	MIPR	ARDEC : Picatinny, NJ	0.000	-		-		0.500	Jan 2016	-		0.500	-	0.500	-
Conventional Ground Ammunition	C/FFP	NSWC : Indian Head, MD	0.000	0.300	Jan 2014	-		-		-		-	-	0.300	-
Fire Support Mods	WR	NSWC : Dahlgren, VA	0.000	-		-		0.400	Jan 2016	-		0.400	-	0.400	-
EFSS (PERM LRIP)	C/FFP	TBD : TBD	0.000	-		7.937	Feb 2016	7.557	Feb 2016	-		7.557	-	15.494	-
Fire Support Mods	MIPR	Army Research Lab : Adelphi, MD	10.688	0.321	Nov 2013	-		-		-		-	-	11.009	-
MMIM	MIPR	Army Research Lab : Adelphi, MD	0.186	-		0.228	Dec 2014	-		-		-	-	0.414	-
		Subtotal	99.528	13.781		11.752		8.957		-		8.957	-	134.018	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EFSS & PERM Safety Support	WR	NSWC : Dahlgren, Va	0.000	-		0.100	Nov 2014	0.175	Dec 2015	-		0.175	-	0.275	-
EFSS, PERM Engineeging Support	WR	NSWC : Dahlgren, Va	0.000	-		0.394	Nov 2014	0.788	Dec 2015	-		0.788	-	1.182	-
EFSS & PERM FSS Support	SS/CPFF	TBD : TBD	0.000	-		0.243	Apr 2015	-		-		-	-	0.243	-
Fire Support Mods	WR	SPAWAR : Charleston, SC	0.000	0.175	Nov 2013	-		-		-		-	-	0.175	-
CLRF	WR	NSWC : Dahlgren	0.000	0.387	Nov 2013	-		-		-		-	-	0.387	-
MMIM	WR	ARDEC : Picatinny	0.000	-		-		0.261	Jan 2016	-		0.261	-	0.261	-
Fire Support Mods	MIPR	ARDEC : Picatinny, NJ	0.000	-		-		0.275	Jan 2016	-		0.275	-	0.275	-
Fire Support Mods	WR	NSWC DD : Dahlgren, VA	0.000	-		-		0.215	Nov 2015	-		0.215	-	0.215	-
FAM Engineering Support	WR	NSWC : Dahlgren, Va	2.009	-		0.153	Apr 2015	0.310	Mar 2016	-		0.310	-	2.472	-
		Subtotal	2.009	0.562		0.890		2.024		-		2.024	-	5.485	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FAM	MIPR	Aberdeen : Aberdeen, MD	0.308	0.323	Jan 2014	-		-		-		-	-	0.631	-
Fire Support Mods	MIPR	Army Research Lab : Adelphi, MD	0.000	0.425	May 2014	-		-		-		-	-	0.425	-
MMIM	MIPR	Army Research Lab : Adelphi, MD	0.238	0.241	Dec 2013	-		-		-		-	-	0.479	-
Prior Year Cumulative Funding: Fire Support Mods	Various	Various : Various	7.014	-		-		-		-		-	-	7.014	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
EFSS (PERM)	WR	NSWCDD : Dahlgren, VA	4.379	-		1.661	Nov 2014	-		-		-	-	6.040	-
		Subtotal	11.939	0.989		1.661		-		-		-	-	14.589	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FITV Engineering Programmatic Support	MIPR	SURVICE : Dumfries, VA	0.000	0.060	Aug 2014	-		0.350	Nov 2015	-		0.350	Continuing	Continuing	Continuing
EFSS (PERM)	C/FFP	SEAPORT : Quantico, VA	0.000	-		0.097	Apr 2015	0.209	Apr 2016	-		0.209	-	0.306	-
Fire Support Mods	C/FFP	SEAPORT : Quantico, VA	0.000	0.317	Apr 2014	-		0.400	Mar 2016	-		0.400	-	0.717	-
		Subtotal	0.000	0.377		0.097		0.959		-		0.959	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	113.476	15.709		14.400		11.940		-		11.940	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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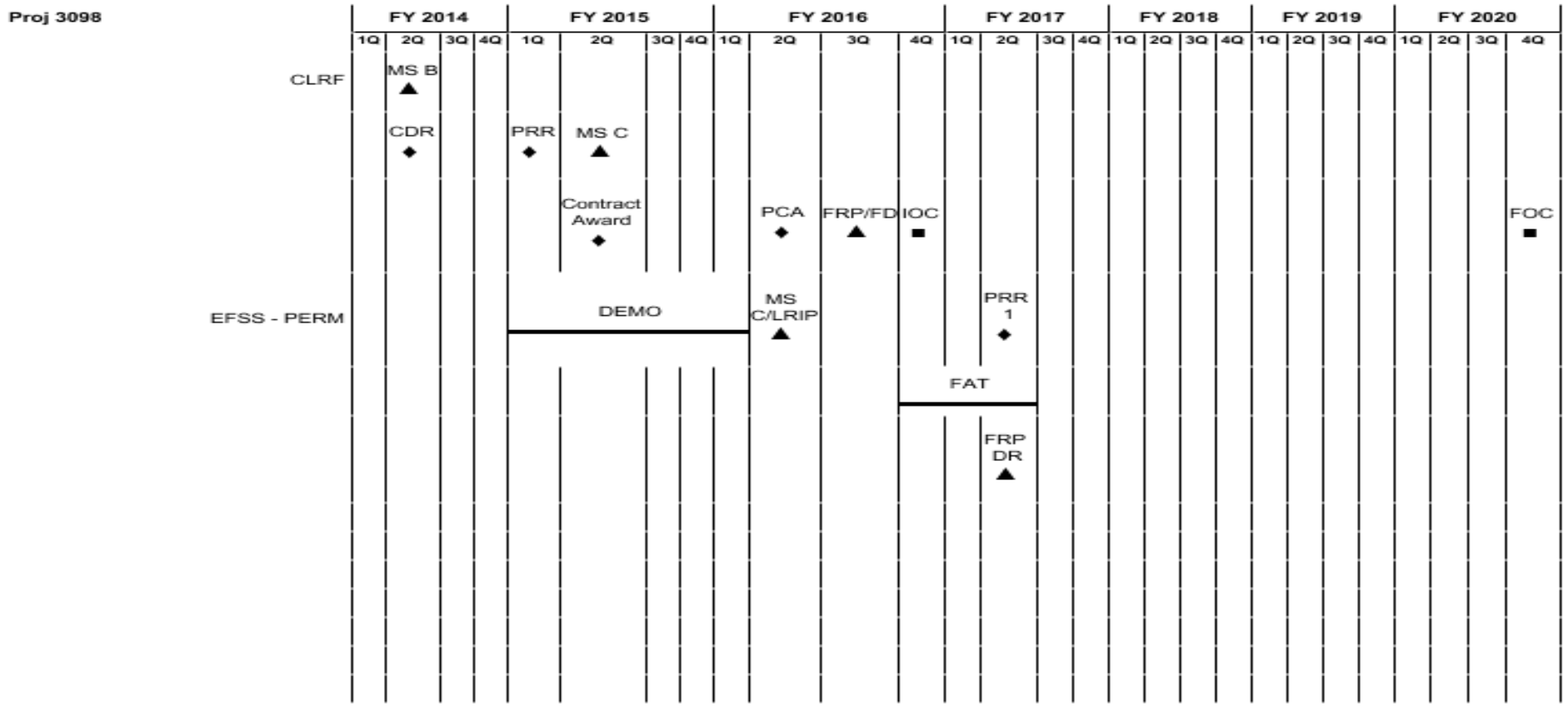

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3098				
CLRF: MS B	2	2014	2	2014
CLRF: CDR	2	2014	2	2014
CLRF: PRR	1	2015	1	2015
CLRF: MS C	2	2015	2	2015
CLRF: Production Contract Award	2	2015	2	2015
CLRF: PCA	2	2016	2	2016
CLRF: FRP/FIELDING DECISION	3	2016	3	2016
CLRF: IOC	4	2016	4	2016
CLRF: FOC	4	2020	4	2020
EFSS - PERM: DEMO	1	2015	1	2016
EFSS - PERM: MS C/LRIP	2	2016	2	2016
EFSS - PERM: PRR 1	2	2017	2	2017
EFSS - PERM: FAT/TYPE QUAL/USER TEST	4	2016	2	2017
EFSS - PERM: FRP DR	2	2017	2	2017

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 4002 / *Family of Raid Reconnaissance*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
4002: *Family of Raid Reconnaissance*	2.943	0.342	0.496	0.504	-	0.504	0.503	0.522	0.533	0.543	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project supports multiple airborne/parachuting and specialized reconnaissance related programs focusing on immediate capability enhancements to numerous insertion and personnel equipment shortfalls currently existing in reconnaissance units throughout the operating forces; such as improving airborne capability equipment and items for direct action missions that use specialized raid equipment.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Family of Raid/Reconnaissance Equipment (FRRE)	0.342	0.390	0.395	-	0.395
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Continued technology upgrades and evaluation of emerging reliability challenges presented by fielded systems, such as Automatic Activation Device.					
FY 2015 Plans: - Continue technology upgrades and evaluation of emerging reliability challenges presented by fielded systems, such as Automatic Activation Device.					
FY 2016 Base Plans: - Initiate Research and Development on personnel parachute and aerial delivery fielded programs, such as parachute performance testing.					
FY 2016 OCO Plans: N/A					
Title: Underwater Reconnaissance Capability (URC)	-	0.106	0.109	-	0.109
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Initiate test and evaluation of new Combatant Rubber Raiding Craft (CRRC) technology. ***FY 2016 Base Plans:*** - Initiate research and development efforts on improved amphibious support equipment to fulfill the Underwater Reconnaissance Capability (URC). ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.342	0.496	0.504	-	0.504

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/6518: *AMPHIB SPT EQUIP*	4.779	4.418	3.235	-	3.235	7.477	5.959	4.843	4.940	-	65.913

Remarks

D. Acquisition Strategy

(U) Family of Raid and Reconnaissance Equipment (FRRE) acquisition strategy is to fund engineering changes and product upgrade testing and development for various Reconnaissance Special Purpose Equipment for aerial delivery, parachuting, and close quarter combat, such as the Parachutist's High Altitude Oxygen System (PHAOS); Automatic Activation Device (AAD); Tandem Offset Resupply Delivery System (TORDS)/Military Tandem Tethered Bundle (MTTB) System; and the Marine Individual Assault Kit (MIAK).

(U) Underwater Reconnaissance Capability (URC) acquisition strategy for the Diver Reconnaissance Vehicle (DRV) program consists of a single step to full capability approach. Using a tradeoff source selection process a full and open competition will be executed for a commercial material solution. A single Firm Fixed Price (FFP) IDIQ contract will be awarded for the acquisition of the DRV systems, associated training, and Initial Issue Provisioning (IIP) Package.

E. Performance Metrics

Milestone reviews.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Family of Raid/Recon Equip	MIPR	US Army RDECOM : Natick, MA	0.035	0.342	Aug 2014	0.390	Jan 2015	-		-		-	-	0.767	-
Prior year cumulative funding	Various	Various : Various	1.680	-		-		-		-		-	-	1.680	-
Underwater Recon Capability	MIPR	NSWC : Carderock, MD	0.000	-		0.106	Jul 2015	-		-		-	Continuing	Continuing	Continuing
Family of Raid/Recon Equip	TBD	TBD : TBD	0.000	-		-		0.216	Jul 2016	-		0.216	-	0.216	-
Family of Raid/Recon Equip	MIPR	Yuma Test Center : Yuma, AZ	0.000	-		-		0.179	Jun 2016	-		0.179	-	0.179	-
Underwater Recon Capability	TBD	TBD : TBD	0.000	-		-		0.109	Jun 2016	-		0.109	-	0.109	-
		Subtotal	1.715	0.342		0.496		0.504		-		0.504	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year cumulative fudning	Various	various : various	1.146	-		-		-		-		-	-	1.146	-
		Subtotal	1.146	-		-		-		-		-	-	1.146	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year cumulative funding	Various	various : various	0.082	-		-		-		-		-	-	0.082	-
		Subtotal	0.082	-		-		-		-		-	-	0.082	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	Project (Number/Name) 4002 / *Family of Raid Reconnaissance*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.943	0.342		0.496		0.504		-		0.504	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 4002 / *Family of Raid Reconnaissance*

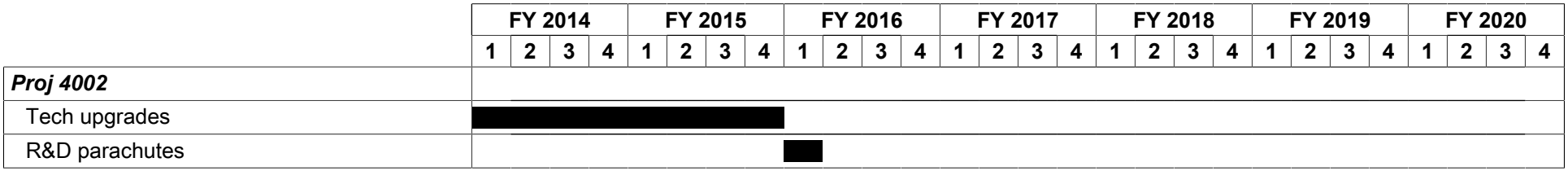

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206623M / *MC Ground Cmbt Spt Arms Sys*	**Project (Number/Name)** 4002 / *Family of Raid Reconnaissance*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4002				
Tech upgrades	1	2014	4	2015
R&D parachutes	1	2016	1	2016

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0206624M *I Marine Corps Cmbt Services Supt*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	188.098	23.883	20.999	20.729	-	20.729	17.373	14.085	15.052	13.861	Continuing	Continuing
0201: *Logistical Veh Sys Replacement (LVSR)*	36.046	2.212	0.385	0.261	-	0.261	0.267	0.237	0.211	0.215	Continuing	Continuing
2316: *Combat Service Support Eng Equip*	55.355	10.217	7.271	4.655	-	4.655	6.431	8.118	7.416	7.563	Continuing	Continuing
2509: *Motor Transport Mod*	37.066	2.776	6.978	2.064	-	2.064	1.595	1.208	1.224	1.249	Continuing	Continuing
2510: *MAGTF CSSE & SE*	12.648	4.179	4.930	9.167	-	9.167	7.285	3.167	4.461	4.053	Continuing	Continuing
2929: *Testing Measuring Diag Equip & SE*	6.120	1.897	0.248	0.516	-	0.516	0.544	0.580	0.622	0.636	Continuing	Continuing
9C90: *MTVR Mod*	40.863	2.602	1.187	4.066	-	4.066	1.251	0.775	1.118	0.145	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element (PE) provides funding for Marine Air-Ground Task Force requirements for Combat Service Support equipment improvement. It will enhance combat breaching capabilities of the ground combat elements, logistics, maintenance and transportation. The PE also provides improvements in all areas of Combat Service Support Equipment Vehicles by determining the replacement for the light fleet of vehicles. This includes projects such as: Alternative Power Sources for Communications Equipment (APSCE) which is a suite of devices that provide the commander with the capability to use existing power to operate his communication equipment, computers and peripheral equipment instead of using batteries or fossil fuel generators; the Marine Corps Family of Automatic Test Systems (ATS), formerly TETS, which provides automatic testing capability for use by technicians both in garrison and forward edge of the battlefield; improvements in all areas of the M1A1 main battle tank, LVSR & MTVR; the High Performance Capabilities for Military Vehicles Project which is dedicated to applying the best practices of the motor sports industry to military vehicles including engineering expertise, equipment and technology.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*			R-1 Program Element (Number/Name) PE 0206624M *I Marine Corps Cmbt Services Supt*		
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	35.647	20.999	23.666	-	23.666
Current President's Budget	23.883	20.999	20.729	-	20.729
Total Adjustments	-11.764	-	-2.937	-	-2.937
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.084	-			
• SBIR/STTR Transfer	-4.080	-			
• Program Adjustments	-	-	-7.193	-	-7.193
• Rate/Misc Adjustments	-	-	4.256	-	4.256
• Congressional Rescission Adjustments	-6.600	-	-	-	-

Change Summary Explanation

The $6.600M reduction in FY14 is due to a Congressional rescission. The $2.937M reduction in FY16 is due to the rephasing of funding to align with the revised program schedules.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / *Marine Corps Cmbt Services Supt*	Project (Number/Name) 0201 / *Logistical Veh Sys Replacement (LVSR)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0201: *Logistical Veh Sys Replacement (LVSR)*	36.046	2.212	0.385	0.261	-	0.261	0.267	0.237	0.211	0.215	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Logistics Vehicle System Replacement (LVSR) is the USMC Marine Air-Ground Task Force (MAGTF) Heavy Lift Capability system. The Medium/Heavy Modification line funds numerous modifications and initiatives that are required to address operational priorities, engineering change proposals, safety concerns, support equipment inefficiencies, tool malfunctions, product quality deficiencies, and other issues that effect vehicle reliability, availability, maintainability and readiness. A proactive and focused approach ensures proper vehicle sustainment and life cycle management and it allows the flexibility to develop and implement improvements as needed to respond to the evolving needs of the Marine Corps.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	1.962	-	0.131	-	0.131
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed safety & ECP modification development required to meet the diverse environments of current and future operations of Marine Air Ground Task Force Expeditionary Maneuver Warfare. Specifically, funding supported the development of the Wrecker Underbody Improvement Kits (UIK) and Automatic Fire Extinguishing System (AFES) for the unarmored vehicles. Also developed Emergency Egress Windows for the LVSR Wrecker variant and 360 Degree Lighting for all variants (cargo, tractor, and wrecker). ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Continue to support safety & ECP development required to meet the diverse environments of current and future operations of Marine Air Ground Task Force Expeditionary Maneuver Warfare as continual changes in threat environment requires an on-going and proactive approach. ***FY 2016 OCO Plans:*** N/A					
Title: Support	0.051	-	0.130	-	0.130
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 0201 / *Logistical Veh Sys Replacement (LVSR)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: -Completed safety support required to meet the diverse environments of current and future operations of Marine Air Ground Task Force Expeditionary Maneuver Warfare. Specifically, funding supported the Wrecker Underbody Improvement Kits (UIK) effort. -Completed Modeling & Simulation support for the LVSR. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Initiate ECP support safety required to meet the diverse environments of current and future operations of MAGTF Expeditionary Maneuver Warfare. Incorporating new safety upgrades that will protect the warfighter and LVSR vehicle from possible catastrophic events as warranted by continual changes in threat environment. ***FY 2016 OCO Plans:*** N/A					
Title: Test and Evaluation	0.199	0.385	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed testing events to support safety & ECP development required to meet the diverse environments of current and future operations of Marine Air Ground Task Force Expeditionary Maneuver Warfare. Specifically, funding supported the Wrecker 360 lighting & Emergency Egress Window follow-on testing efforts ***FY 2015 Plans:*** Continue testing events to support safety & ECP development required to meet the diverse environments of current and future operations of Marine Air Ground Task Force Expeditionary Maneuver Warfare. Specifically, funding will support the Stability Control testing. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	2.212	0.385	0.261	-	0.261

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 0201 / *Logistical Veh Sys Replacement (LVSR)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 505000: *Motor Transport Modifications*	1.579	0.469	2.310	-	2.310	1.785	1.357	1.976	2.024	Continuing	Continuing

Remarks

D. Acquisition Strategy

The LVSR program uses a two-phase, single-step acquisition approach rather than an evolutionary acquisition approach. Phase I developed the Cargo variant and Phase II developed the Tractor and Wrecker variants. The program is currently in sustainment utilizing RDT&E funding to address required ECPs to maintain relevancy on the battlefield and implement system requirements.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / *Marine Corps Cmbt Services Supt*	Project (Number/Name) 0201 / *Logistical Veh Sys Replacement (LVSR)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR Safety Mod Development	SS/FFP	Oshkosh Corp : Oshkosh, WI	0.884	0.912	Jun 2014	-		0.066	Apr 2016	-		0.066	Continuing	Continuing	Continuing
LVSR ECP Development	SS/FFP	Oshkosh Corp : Oshkosh, WI	0.000	1.050	May 2015	-		0.065	Apr 2016	-		0.065	-	1.115	-
Prior Years Cumulative Funding	C/FFP	Various : Various	17.398	-		-		-		-		-	-	17.398	-
		Subtotal	18.282	1.962		-		0.131		-		0.131	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR Engineer Change Support	SS/FFP	Oshkosh Corp : Oshkosh, WI	0.743	-	Jun 2014	-		0.065	May 2016	-		0.065	Continuing	Continuing	Continuing
Modeling & Simulation	Reqn	NSWC : Indian Head, MD	0.000	0.024	Jun 2014	-		-		-		-	-	0.024	-
LVSR Safety Support	WR	ARL : Aberdeen, MD	0.000	0.027	Jul 2014	-		0.065	Jun 2016	-		0.065	-	0.092	-
Prior Years Cumulative Funding	Various	Various : Various	1.648	-		-		-		-		-	-	1.648	-
		Subtotal	2.391	0.051		-		0.130		-		0.130	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LVSR ECP Testing	SS/FFP	Oshkosh Corp : Oshkosh, WI	1.422	0.066	Jun 2014	-		-		-		-	-	1.488	-
LVSR Safety Testing	SS/FFP	Oshkosh Corp : Oshkosh, WI	0.000	0.133	Aug 2014	-		-		-		-	-	0.133	-
LVSR ECP Testing	MIPR	ATC : Aberdeen, MD	0.000	-		0.385	Oct 2015	-		-		-	-	0.385	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / *Marine Corps Cmbt Services Supt*	Project (Number/Name) 0201 / *Logistical Veh Sys Replacement (LVSR)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	11.004	-		-		-		-		-	-	11.004	-
		Subtotal	12.426	0.199		0.385		-		-		-	-	13.010	-

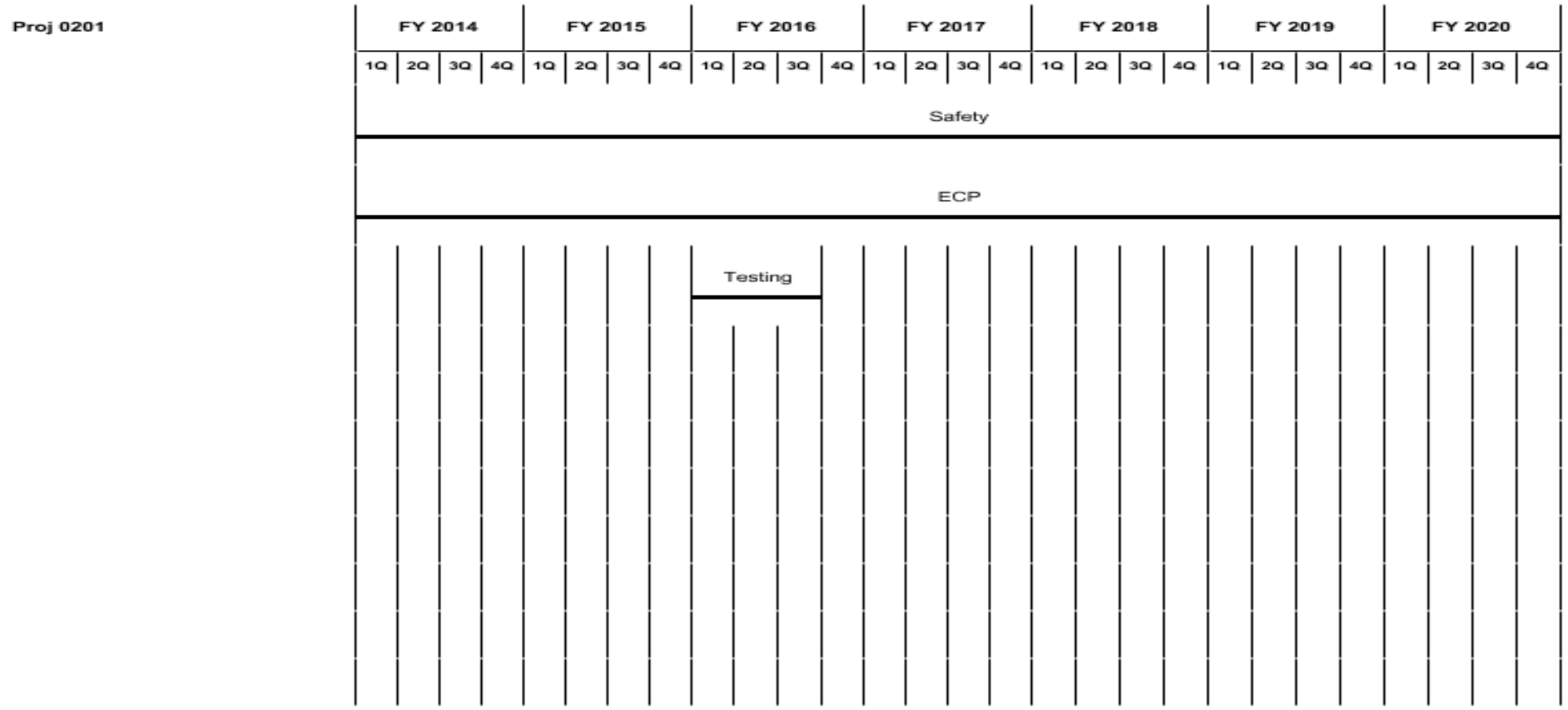
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cumulative Funding	Various	Various : Various	2.947	-		-		-		-		-	-	2.947	-
		Subtotal	2.947	-		-		-		-		-	-	2.947	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	36.046	2.212		0.385		0.261		-		0.261	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 0201 / *Logistical Veh Sys Replacement (LVSR)*



2016PB - 0206624M - 0201

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 0201 / *Logistical Veh Sys Replacement (LVSR)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0201				
Safety Mod Development	1	2014	4	2020
ECP Development	1	2014	4	2020
Stability Testing	1	2016	3	2016

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / *Marine Corps Cmbt Services Supt*	Project (Number/Name) 2316 / *Combat Service Support Eng Equip*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2316: *Combat Service Support Eng Equip*	55.355	10.217	7.271	4.655	-	4.655	6.431	8.118	7.416	7.563	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The M1A1 Mod Kit effort includes improvements in all areas of the M1A1 main battle tank and the Armored Vehicle Launched Bridge (AVLB). The M1A1 tank provides armor protected firepower to the USMC ground combat element. Efforts under the mod line pertaining to the M1A1 include improvements such as lethality systems to increase armament accuracy, increase the crew's situational awareness through sensor enhancements and intra-vehicular data sharing, providing for off-board targeting improvement, and environmental testing of components. The AVLB provides the Marine Corps only armor-protected assault gap crossing capability. Continued funding is required to address obsolescence and address operational deficiencies to adapt the tank and AVLB to a changing operational environment and support user-defined product improvements. These improvements directly address Marine Corps Lessons Learned, after action reports, and will ensure maximum survivability, sustainability, and readiness. Funds decreased from FY15 to FY16 to support the original acquisition strategy to defer all new modernization and obsolescence mitigation efforts until after completion of current development projects.

Route Reconnaissance and Clearance (R2C) is an incremental development project to enhance the capabilities of the R2C systems, a family of systems fielded in support of Operation Iraqi Freedom (OIF) via the Urgent Needs Statement (UNS) process. This research and development effort will integrate future vehicles, robots, and associated equipment to provide standoff detection, marking, and neutralization of Explosive Hazards such as mines and Improvised Explosive Devices (IEDs). Enhancements for R2C will provide capabilities not found in the current inventory to defeat explosive hazards and will protect Marines and equipment while conducting route and area clearance operations. The integration of the next generation of armored security and support vehicles, Vehicle Mounted Mine Detectors (VMMDs), specialized robots, and a new suite of detection, marking, and neutralization systems will enable maneuver commanders to make timely and informed decisions in avoiding or neutralizing explosive hazards that impede their missions. Multiple detection and marking capabilities will detect a broader spectrum of explosive hazards and achieve higher overall effectiveness rates, while standoff and remote-controlled detection, marking, and neutralization capabilities will enhance force protection and system survivability. Operational speeds and rates will increase, which will better support the maneuver force operational tempo. This program does not have funding beyond FY2014.

The Engineer Mods and Tool Kits line funds modifications and initiatives which are required to address operational priorities, engineering change proposals, safety concerns, support equipment inefficiencies, product quality deficiencies and other issues that affect vehicle reliability, availability and readiness. This approach ensures proper vehicle sustainment and life cycle management in response to evolving needs of the Marine Corps fleet. Operational needs to provide personnel survivability on engineer equipment is essential to current and future operations. Research and development funding develops and integrates new lighter, compact armor technology and supports ballistic testing for applications to existing and future acquisitions.

Corrosion Prevention and Control (CPAC): The useful life of Marine Corps assets will be extended through a comprehensive CPAC RDT&E program aimed at identifying and certifying new corrosion control products, materials, processes and procedures for legacy and new acquisition. The CPAC RDT&E Program works to standardize

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2316 / *Combat Service Support Eng Equip*

and substantially improve strategies, objectives and processes to prevent, detect, and treat corrosion and its effects on Marine Corps ground vehicles and weapons systems. This mission responds to the Congressional directives and DoD and SECNAV instruction to reduce the negative operational effects and associated total ownership cost of Marine Corps ground vehicles and weapons systems.

The Mine Resistant Ambush Protected (MRAP) Family of Vehicles (FoV) provides tactical mobility for Warfighters with multi-mission vehicles designed to support urgent operational needs and protect personnel from the effects of improvised explosive devices (IEDs), underbody mines, and small arms fire threats. Five vehicle categories (CATs) have been tested, procured, fielded and sustained: Category I - Urban combat operations, ambulance. Category II - Multi-mission ops-convoy lead, troop transport, ambulance, utility vehicle. Category III - Mine/IED clearance ops, explosive ordnance disposal. MRAP All Terrain Vehicle (M-ATV) - Combat operations (ops) in rural, mountainous, urban terrain. Other Protected Vehicles- Specialty mission or unique configuration. Provides the same threshold ballistic, mine and IED protection as other MRAP vehicles. Includes the MRAP Recovery Vehicle (MRV) variant. Operational needs to provide personnel survivability is essential to current and future operations. Research and development funding develops and integrates new armor technology and supports ballistic testing. Decrease in funding from FY14 to FY15 reflects the adjustment of priorities for research and development to integrate and test new armor technology.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Engineer Mods and Tool Kits	0.344	0.254	0.634	-	0.634
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued Ballistic and Add-on-Armor applications for Extended Boom Forklift in support of the Engineer Family of Systems. ***FY 2015 Plans:*** Initiate support work for Matting applications in support of the Engineer Family of Systems. ***FY 2016 Base Plans:*** Continue support work for Matting applications in support of the Engineer Family of Systems ***FY 2016 OCO Plans:*** N/A					
Title: M1A1 Modifications	3.166	3.911	1.084	-	1.084
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued to identify and develop upgrades to the M1A1 turret to include obsolescence mitigation, lethality, and survivability enhancement and evaluate broader platform modernization needs. Specifically, the preliminary research and development for the Abrams Integrated Target and Display System (AIDATS) upgrade commenced. This upgrade allows the tank commander to accurately identify and engage targets under all					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2316 / *Combat Service Support Eng Equip*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
visibility conditions at ranges approaching the full capability of the tank commander's weapon system; thereby, reducing the risk of fratricide and collateral damage. Additionally, the Slew-to-Cue upgrade that will allow the tank commander to automatically traverse the main gun to the same azimuth and elevation as the Stabilized Comander's Weapons Station (SCWS) sight with a single push of a button was continued and the Forward Observer/Forward Air Controller Modificaiton for satellite communication on the move began. ***FY 2015 Plans:*** Continue to identify and develop upgrades to the M1A1 turret to include obsolescence mitigation, lethality, and survivability enhancement and evaluate broader platform modernization needs. ***FY 2016 Base Plans:*** Complete the research and development effort for AIDATS and begin other development efforts such as the Radio Communication Integration upgrade. ***FY 2016 OCO Plans:*** N/A					
Title: Route Reconnaissance and Clearance (R2C): ***Articles:*** ***FY 2014 Accomplishments:*** Completed development and testing of the Unmanned Launch Vehicle (ULV) and Electronically Triggered Explosive Obstacle Neutralization (ETEON) integrations. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A	2.544 -	- -	- -	- -	- -
Title: Mine Resistant Ambush Protected Family of Vehicles ***Articles:*** ***FY 2014 Accomplishments:*** -Initiated ballistic testing and engineering support efforts on Cougar Egress and Seat Solution upgrades in support of Urgent Universal Needs Statement/Joint Urgent Operational Needs Statement (UUNS/JUONS).	2.200 -	- -	0.126 -	- -	0.126 -

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2316 / *Combat Service Support Eng Equip*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiated other research and development efforts associated with Engineering Change Proposals (ECP) such as survivability and mobility upgrades. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Continue research and development efforts associated with Engineering Change Proposals (ECP) such as survivability and mobility upgrades. ***FY 2016 OCO Plans:*** N/A					
Title: Corrosion Prevention and Control (CPAC)	1.963	3.106	2.811	-	2.811
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued to identify new corrosion control products, materials, processes and procedures and continued to impact Marine Corps corrosion control processes through Science and Technology initiatives in some of the following areas: Thermally Sprayed Metal Coatings (TSMC) for Corrosion Protection of Areas Subject to Wear, Compatibility of Chemical Agent Resistant Coating (CARC) Systems During Re-Paint, Chip Resistant, Flexible Nonslip Coatings and Corrosion Resistant Insulating Foams. Along with stewardship of the Corrosion Products, Processes and Materials project for vendor submissions to the Marine Corps and product qualification for chip and abrasion resistant coatings. ***FY 2015 Plans:*** Continue and increase the identification of new corrosion control products, materials, processes and procedures and continues to impact Marine Corps corrosion control processes through Science and Technology initiatives in some of the following areas: Thermally Sprayed Metal Coatings (TSMC) for Corrosion Protection of Areas Subject to Wear, Compatibility of Chemical Agent Resistant Coating (CARC) Systems During Re-Paint, Chip Resistant, Flexible Nonslip Coatings and Corrosion Resistant Insulating Foams. Along with stewardship of the Corrosion Products, Processes and Materials project for vendor submissions to the Marine Corps and product qualification for chip and abrasion resistant coatings. ***FY 2016 Base Plans:*** Continue and increase the identification of new corrosion control products, materials, processes and procedures that impact Marine Corps corrosion control processes through Science and Technology initiatives in some of the					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2316 / *Combat Service Support Eng Equip*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
following areas: Thermally Sprayed Metal Coatings (TSMC) for Corrosion Protection of Areas Subject to Wear, Compatibility of Chemical Agent Resistant Coating (CARC) Systems During Re-Paint, Chip Resistant, Flexible Nonslip Coatings and Corrosion Resistant Insulating Foams. Along with stewardship of the Corrosion Products, Processes and Materials project for vendor submissions to the Marine Corps and product qualification for chip and abrasion resistant coatings and other Corrosion Prevention Compounds that retard/arrest corrosion. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	10.217	7.271	4.655	-	4.655

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/6520-01: *EOD Systems - Route Reconnaissance & Clearance (R2C)*	44.121	-	-	-	-	-	-	-	-	-	288.678
• PMC/6670: *Items Less than $5M - CPAC & Eng Mods & Tool Kits*	6.509	4.272	4.322	-	4.322	4.386	4.440	4.675	4.770	Continuing	Continuing
• PMC/2061: *M1A1 Modification Kit*	32.121	18.406	11.827	-	11.827	12.700	14.949	15.267	15.365	Continuing	Continuing
• PMC/6520-02: *EOD Systems - MRAP*	-	0.245	0.047	-	0.047	0.349	1.157	1.219	1.243	Continuing	Continuing
• PMC/7000: *M1A1 Modification Kit*	-	-	2.090	-	2.090	2.514	0.364	-	-	-	4.968

Remarks

D. Acquisition Strategy

(U) The M1A1 modification kits program will leverage Army initiatives to the maximum extent and incorporate modifications to adapt Army solutions to the USMC environment. The USMC will research, develop, and evaluate programs to improve the survivability and lethality of the USMC tank. These efforts include the Abrams integrated Display and Targeting System, threat detection and warning, situational awareness, survivability, and ownership cost reduction work. M1A1 Mods will exercise options on existing contracts of varying types to conduct research and analysis associated with the development of modifications and corrosion prevention to the M1A1 Tank and supporting platforms.

(U) Route Reconnaissance and Clearance (R2C): Starting in FY10, the Marine Corps began to procure a fleet of standardized Route Reconnaissance and Clearance systems based upon the successful route clearance teams operating in Iraq using Capabilities Production Documents for current systems and leveraging contracts

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already in place. Concurrently, supports a research and development effort to integrate future vehicles with enhanced mobility and survivability, a suite of improved detection and marking capabilities, and robots with greater detection, marking, and neutralization capabilities. As a result of adjustments to Marine Corps fiscal priorities the R2C program has been terminated. This program does not have funding beyond FY14.

(U) Engineer Mods and Tool Kits: This is a roll-up line of various engineering efforts, modifications and other related items less than $5 Million each. This program provides for significant improvements to various pieces of engineering equipment by enhancing their capabilities and improving readiness.

(U) Corrosion Prevention and Control (CPAC) Program: The Program will execute the RDT&E Program through direct allocation of funding to the Naval Surface Warfare Center - Carderock Division Corrosion Research and Engineering Branch for a comprehensive program aimed at identifying and certifying new corrosion control products, materials, processes and procedures for legacy and new acquisition.

(U) Mine Resistant Ambush Protected (MRAP): The Program will execute RDT&E funds in support of research and development efforts associated with Engineering Change Proposals (ECP) for survivability and mobility upgrades such as the Cougar Egress and Seat Survivability testing.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
M1A1 Modifications	C/FFP	MCSC : Quantico, VA	0.000	-		2.980	Jan 2015	-		-		-	-	2.980	-
MRAP Engineering	WR	NSWC : Panama City, FL	0.898	1.314	Oct 2014	-		0.126	Dec 2015	-		0.126	Continuing	Continuing	Continuing
R2C-Increment II	WR	SPAWAR : Charleston, SC	12.297	2.544	Feb 2015	-		-		-		-	-	14.841	-
M1A1 Modifications	WR	SPAWAR : Charleston, SC	0.000	0.337	Jan 2014	-		0.213	Dec 2015	-		0.213	-	0.550	-
M1A1 Modifications	MIPR	FORT BELVOIR : Ft Belvoir, VA	0.559	2.295	Jan 2014	-		-		-		-	-	2.854	-
M1A1 Modifications	MIPR	TACOM : Warren, MI	3.091	0.086	Nov 2014	0.450	Mar 2015	-		-		-	-	3.627	-
M1A1 Modifications	MIPR	ABERDEEN PROVING GROUND : Aberdeen, MD	2.610	0.378	Dec 2013	-		0.250	Dec 2015	-		0.250	-	3.238	-
M1A1 Modifications	MIPR	BENET LABS : Watervliet, NY	0.847	0.070	Nov 2013	-		-		-		-	-	0.917	-
M1A1 Modifications	MIPR	Picatinny Arsenal : Picatinny, NJ	1.174	-		-		0.383	Dec 2015	-		0.383	-	1.557	-
Prior Year Cumulative. Funding	Various	VARIOUS : VARIOUS	22.418	-		-		-		-		-	-	22.418	-
M1A1 Modifications	MIPR	NVL : Fort Belvoir, VA	0.000	-		0.481	Jan 2015	0.238	Jan 2016	-		0.238	-	0.719	-
		Subtotal	43.894	7.024		3.911		1.210		-		1.210	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Cumulative Funding	Various	Various : various	0.300	-		-		-		-		-	-	0.300	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CPAC	C/FFP	NSWC : Bethseda, MD	0.000	-		1.303	Dec 2014	1.155	Dec 2015	-		1.155	-	2.458	-
		Subtotal	0.300	-		1.303		1.155		-		1.155	-	2.758	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MRAP FoV Ballistic Evaluations	MIPR	ATC : Aberdeen, MD	1.600	0.886	Jun 2014	-		-		-		-	-	2.486	-
Prior Year Cumulative Funding	Various	Various : Various	1.500	-		-		-		-		-	-	1.500	-
Engineer Modification Kits	MIPR	Aberdeen Proving Grounds : Aberdeen MD	1.085	0.344	Dec 2013	0.254	Dec 2014	0.634	Dec 2015	-		0.634	Continuing	Continuing	Continuing
CPAC	WR	NSWC : Bethseda, MD	6.589	1.963	Dec 2013	1.303	Nov 2014	1.156	Dec 2015	-		1.156	-	11.011	-
CPAC	WR	NRL : Arlington, VA	0.387	-		0.500	Dec 2014	0.500	Dec 2015	-		0.500	-	1.387	-
		Subtotal	11.161	3.193		2.057		2.290		-		2.290	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	55.355	10.217		7.271		4.655		-		4.655	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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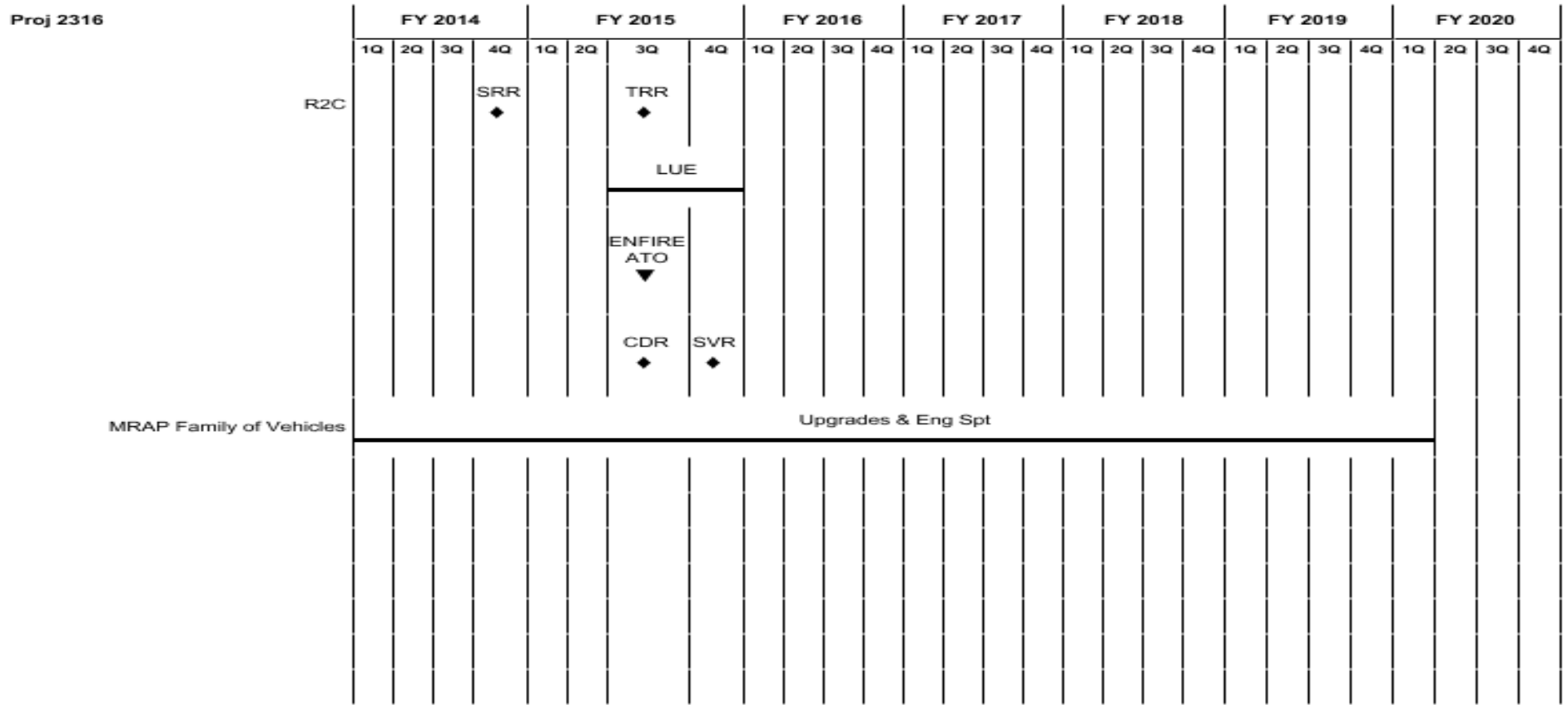

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2316				
R2C: System Readiness Review	4	2014	4	2014
R2C: Technical Readiness Review	3	2015	3	2015
R2C: Limited User Evaluation	3	2015	4	2015
R2C: ENFIRE Authority to Operate	3	2015	3	2015
R2C: Critical Design Review	3	2015	3	2015
R2C: System Verification Review	4	2015	4	2015
MRAP Family of Vehicles: Survivability and Mobility Upgrade Ballistic and Engineering Support	1	2014	1	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
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COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2509: *Motor Transport Mod*	37.066	2.776	6.978	2.064	-	2.064	1.595	1.208	1.224	1.249	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Marine Corps Tactical Motor Transport Modification project manages procurement and life cycle sustainment for more than 40,000 principle end items divided among four fleets: Light Fleet, Medium Fleet, Heavy Fleet, and Special Fleet. A sustained effort is maintained in the Marine Corps for development and testing in support of fleet Service Life Extension Program (SLEP) initiatives, vehicle quality deficiency resolutions, safety initiatives, environmental/state transportation mandated vehicle changes, and system component refresh modifications efforts. Since transportation asset operational availability declines at a steady rate over time, SLEP, fleet overhauls, and enhanced depot level modifications are essential in maintaining a viable transportation capability in the Marine Corps Operating Forces.

The Improved Recovery Vehicle (IRV) project includes improvements in all areas of the M88A2 Improved Recovery Vehicle. Continued funding is required to address obsolescence and support pre-planned product improvements. In addition, lessons learned will be implemented and used to develop safety related Engineering Change Proposals (ECPs) to correct hazards noted during the standard day to day operation of the M88A2 Improved Recovery Vehicle.

The HMMWV Sustainment Modification Initiative (SMI) program was cancelled effective FY 2016. FY 2015 funding will support engineering studies and analysis to evaluate the vehicle performance, safety and reliability. This program does not have funding beyond FY15. Future Legacy HMMWV improvements and sustainment efforts will be funded in the Motor Transport Modification project.

The Material Handling Equipment (MHE) line is a roll-up line that provides for the replacement and Service Life Extension Program (SLEP) of Marine Corps MHE including forklifts, cranes, and container handlers. Funds will be used to explore techniques and technology to help survivability of the various platforms while also working to help sustain reliability and performance of the equipment.

The Family of Construction Equipment (FCE) line is a roll-up line that provides for the replacement and Service Life Extension Program (SLEP) of Marine Corps construction equipment. Funds will be used for Ballistic and Add on Armor (AoA) application tests and integration into the Engineer Family of Systems construction equipment. This program does not have funding beyond FY15.

P-19 Replacement (P-19R) will replace the aging A/S32P-19A Crash Fire Rescue fleet in support of expeditionary airfield operations and the supporting establishment. The vehicle will be outfitted with advanced fire suppression equipment and provide rescue and aircraft fire fighting capabilities to permanent and expeditionary airfields throughout the Marine Corps. The P-19 Replacement may also be employed to fight structure fires in support of base camps and as firefighting support to other elements of the Marine Air Ground Task Force, such as ammunition supply points, Petroleum, Oil, and Lubricant (POL) distribution points, or hazardous material storage facilities. The decrease in funding from FY15 to FY16 is due to program entering production phase.

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The Medium Tactical Vehicle Replacement (MTVR) Trailer program explored options for "lightening the Marine Air Ground Task Force (MAGTF)" weight and cube attributes of the medium trailer fleet and sought technologies and other current and emerging options to be employed to achieve optimum lift capability while constrained to the desired weight and cube. Transportation and expeditionary goals were considered in the research and development phase for the trailer fleet. The MTVR Trailer program is a USMC initiative to replace the current M105/MK149/M353 Trailers with a trailer capable of augmenting the MTVR's increased mobility without degrading its operational capabilities. This program will develop and field a trailer which will have greater mobility characteristics while increasing the payload up to 11,500 lbs. MTVR Trailer funding ended in FY14 and will transition to the Family of Tactical Trailers program in FY16.

The Family of Tactical Trailers program will explore options for "lightening the Marine Air Ground Task Force (MAGTF)" weight and cube attributes of the light and medium/heavy trailer fleet. Seeking technologies and other current and emerging options that can be employed to achieve optimum lift capability while constrained to the desired weight and cube. Transportation and expeditionary goals will be considered in the research and development phase for the trailer fleet. Develop long-term modernization plans for the medium and heavy trailers within the Marine Corps to address operating safety enhancements, maintainability enhancements, and crew ergonomic improvements. The FY15 to FY16 increase is due to the inclusion of the MTVR Trailer to address safety and performance needs once fielded.

Family of Material Handling Equipment is exploring ways to armor or design survivability for various pieces of equipment in the Material Handling Family. This program does not have funding beyond FY14.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Improved Recovery Vehicle (IRV)	0.259	0.208	0.305	-	0.305
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued to develop long-term modernization plans for the M88A2 within the Marine Corps to address safety, obsolescence mitigation and mobility improvement; to include Situational Awareness, exhaust system redesign, Improved Track and Electronic Fuel Injection.					
FY 2015 Plans: Continue to develop long-term modernization plans for the M88A2 within the Marine Corps to address operating safety enhancements, maintainability enhancements, and crew ergonomic improvements.					
FY 2016 Base Plans: Initiate the development of modifications for the M88A2 and supporting equipment to increase Reliability, Availability, and Maintainability (RAM), decrease operating costs, and address obsolescence, crew ergonomics, Command and Control improvements, increase towing capacity to address supported platform weight growth.					
FY 2016 OCO Plans:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: High Mobility Multipurpose Wheeled Vehicle ECV (HMMWV-ECV)	0.503	5.355	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed the analysis and review of the final Concept test reports from NATC. ***FY 2015 Plans:*** Continue engineering studies and analysis to evaluate the vehicle performance, safety and reliability. Efforts will be focused on developing improvements to vehicle performance, safety and reliability. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: P-19 Replacement	1.007	1.008	0.172	-	0.172
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed Milestone B and awarded prime contract. Funded prototype development, performance & reliability testing, developed engineering data packages, and program management activities in support of the P-19R award. P-19R provides rescue and firefighting capabilities to permanent and expeditionary airfields throughout the Marine Corps and allows the MAGTF the capability to defend itself against aircraft fires caused by crashes or other causes. ***FY 2015 Plans:*** Continue testing of the P-19R in support of LRIP and Full Rate Production (FRP). ***FY 2016 Base Plans:*** Continue testing of the P-19R in support of Full Rate Production (FRP). ***FY 2016 OCO Plans:*** N/A					
Title: Motor Transport Modification (MTM)	0.597	0.108	0.854	-	0.854
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: -Completed evaluation, testing, and integration of system modifications identified for application on Motor Transportation light, medium, and heavy tactical assets as well as enhancements to improve vehicle performance including testing in support of the Internally Transportable Vehicle (ITV). -Completed development and procurement of the MK1077 Flatrack and integrated the PLS-T for use with the Logistics Vehicle System Replacement (LVSR). ***FY 2015 Plans:*** Continue to evaluate, test, and integrate system modifications to improve vehicle performance and correct deficiencies identified for application on Motor Transportation light, medium, and heavy tactical assets including testing in support of the Internally Transportable Vehicle (ITV). ***FY 2016 Base Plans:*** Continue to evaluate, test, and integrate system modifications to improve vehicle performance and correct deficiencies identified for application on Motor Transportation light, medium, and heavy tactical assets. ***FY 2016 OCO Plans:*** N/A					
Title: MTVR Trailers	0.086	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed testing of the modular trailer. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Family of Tactical Trailers	0.167	0.099	0.733	-	0.733
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Completed safety testing to maintain reliability and effectiveness of Light Tactical Trailers (LTT) with the High Mobility Multipurpose Wheeled Vehicle (HMMWV) fleet and Heavy Tactical Trailers (HTT) designed for the Logistics Vehicle System (LVS)/Logistical Vehicle System Replacement (LVSR). ***FY 2015 Plans:*** Continue reliability testing to ensure effectiveness of Light Tactical Trailers (LTT) with the High Mobility Multipurpose Wheeled Vehicle (HMMWV) fleet and also for the Heavy Tactical Trailers (HTT) designed for the Logistics Vehicle System (LVS)/Logistical Vehicle System Replacement (LVSR), enabling the fleet to maintain mobility requirements. ***FY 2016 Base Plans:*** Continue testing to ensure effectiveness of Light Tactical Trailers (LTT) with the High Mobility Multipurpose Wheeled Vehicle (HMMWV) fleet, Medium Tactical Vehicle Replacement (MTVR) Trailer with the MTVR, and also for the Heavy Tactical Trailers (HTT) designed for the Logistics Vehicle System (LVS)/Logistical Vehicle System Replacement (LVSR), enabling the fleet to maintain mobility requirements. The FY15 to FY16 increase is due to the inclusion of the MTVR Trailer to address safety and performance needs once fielded. ***FY 2016 OCO Plans:*** N/A					
Title: Family of Material Handling Equipment	0.157	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed exploring techniques and technology for survivability on various platforms and worked to help sustain reliability and performance of the equipment. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Family of Construction Equipment	-	0.200	-	-	-
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** Initiate exploration of techniques and technology for crew survivability on various platforms while also working to help sustain reliability and performance of the equipment. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	2.776	6.978	2.064	-	2.064

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/5230: *Motor T Mod*	2.856	2.964	1.108	-	1.108	4.344	4.023	3.325	3.392	Continuing	Continuing
• PMC/5045: *HMMWV*	0.979	57.255	-	-	-	-	-	-	-	-	539.382
• PMC/5097-01: *Family of Tactical Trailers*	3.962	0.175	3.157	-	3.157	3.017	1.950	3.181	3.247	Continuing	Continuing
• PMC/2061: *IRV*	2.193	5.593	2.640	-	2.640	2.700	2.749	2.801	2.857	Continuing	Continuing
• PMC/4630: *IRV*	0.132	0.158	0.162	-	0.162	0.165	0.168	0.171	0.174	Continuing	Continuing
• PMC/5097-02: *Flatrack Refueler Capability (FRC)*	8.883	-	-	-	-	-	-	-	-	-	50.619
• PMC/5097-03: *MTVR Trailers*	-	10.004	-	-	-	-	-	-	-	-	78.711
• PMC/5006: *P19R*	16.771	11.035	18.946	-	18.946	69.541	58.459	0.330	0.357	Continuing	Continuing
• PMC/6462: *Family of Material Handling Equipment*	36.227	12.037	-	-	-	8.406	11.587	8.855	9.090	Continuing	Continuing
• PMC/6544: *Family of Construction Equipment*	36.221	15.669	6.545	-	6.545	7.169	9.217	12.999	13.360	Continuing	Continuing
• PMC/7000: *Family of Material Handling Equipment*	-	0.070	0.050	-	0.050	0.051	0.052	0.053	0.054	Continuing	Continuing

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

The Improved Recovery Vehicle (IRV) program leverages Army developmental projects to create a system that more readily meets Marine Corps Heavy Recovery Vehicle requirements. Improvements include Engineering Change Proposals addressing safety, reliability, and technology upgrades.

The HMMWV Sustainment Modification Initiative (SMI) program was cancelled effective FY 2016. FY 2015 funding will support engineering studies and analysis to evaluate the vehicle performance, safety and reliability. Efforts will be focused on developing improvements to vehicle performance, safety and reliability.

The P-19 Replacement leverages COTS and NDI components in an effort to minimize costs, test requirements, and reduce development time. P-19R will supplant the aging A/S32P-19A fleet in support of expeditionary airfield operations and the supporting establishment. The vehicle will be outfitted with advanced fire suppression equipment and provide rescue and aircraft fire fighting capabilities to permanent and expeditionary airfields throughout the Marine Corps. The P-19 Replacement may also be employed to fight structure fires in support of base camps and as firefighting support to other elements of the MAGTF, such as ammunition supply points, Petroleum, Oil, and Lubricants (POL) distribution points, or hazardous material storage facilities.

Motor Transport Modification funding will focus on streamlined acquisitions of Commercial-Off-The-Shelf/Non-Developmental Items (COTS/NDI) that can be identified, integrated, and tested in a short amount of time. Successful modifications and tests are intended for follow-on procurement and incorporation into existing system component upgrades, SLEPs, or rapid COTS/NDI fielding for the Fleet Marine Forces (FMF).

The Family of Material Handling Equipment acquisition strategy will use RDT&E funding to explore current and new armor options that can be used to achieve optimum crew survivability performance.

The MTVR Trailer program's original acquisition strategy consisted of procuring three variants of trailers that would have greater mobility characteristics, while maximizing the commonality of parts, across the three trailer platform. FY05 RDT&E funds were used to procure six prototypes trailers (two of each variants) developed by Choctaw Manufacturing Developing Contractors (CMDC). Prior to a fielding decision, the original MTVR Trailer program was halted due to concerns the trailers did not meet the Commandant of the Marine Corps goal to lighten the MAGTF. As a result, the MTVR Trailer program was restructured for re-design of the cargo trailer and to delay procurement of the Water and General Purpose trailers. On 29 November 2012, a Combat Development & Integration (CD&I) letter directed that the trailer requirement would now be constructed as a modular trailer capable of hauling the water Six Container and all expeditionary power units, to include the 100Kw generator. The new modular design replaces the MK149, M353, and M105 trailer and will be designated as the MTVR Modular Trailer, MK593.

The Family of Construction Equipment acquisition strategy will use RDT&E funding to explore current and new armor options that can be used to achieve optimum crew survivability performance.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2509 / *Motor Transport Mod*

The Family of Tactical Trailer (FTT) acquisition strategy will use RDT&E funding to explore current and new technological options that can be used to achieve optimum lift within the desired weight and cube constraints in support of the "Lightening the MAGTF" initiative, as well as sustaining and/or improving capabilities. Transportation and expeditionary goals will be considered in the research and development for the light and medium/heavy trailer fleet.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2509 / *Motor Transport Mod*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Improved Recovery Vehicle	MIPR	TACOM : WARREN, MI	1.354	0.159	Mar 2014	0.208	Feb 2015	0.305	Apr 2016	-		0.305	Continuing	Continuing	Continuing
Improved Recovery Vehicle	WR	SPAWAR : Charleston, SC	0.000	0.100	Sep 2014	-		-		-		-	-	0.100	-
HMMWV Engineering Studies and Analysis	Various	Various : Various	0.000	-		5.073	Jun 2015	-		-		-	-	5.073	-
P-19 Replacement Development	C/FFP	OshKosh : Oshkosh, WI	6.616	0.841	Apr 2014	-		-		-		-	-	7.457	-
MTM (Heavy) Safety Testing	C/CPFF	OshKosh : Oshkosh, WI	0.000	-		0.054	Jan 2015	-		-		-	-	0.054	-
MTM (Heavy) Trailer Modification	Various	TBD : TBD	0.000	0.351	Sep 2014	-		-		-		-	-	0.351	-
MTM (Light) M&S Tool	MIPR	NSWC IH : Indian Head, MD	0.000	0.019	Jun 2014	-		-		-		-	-	0.019	-
FTT (Light) Reliability Testing	Various	TBD : TBD	0.000	0.083	Nov 2014	0.049	Jun 2015	-		-		-	-	0.132	-
FTT (Medium) ECP Development	C/CPFF	TBD : TBD	0.000	-		-		0.185	Mar 2016	-		0.185	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	Various : Various	20.117	-		-		-		-		-	-	20.117	19.769
		Subtotal	28.087	1.553		5.384		0.490		-		0.490	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
P19 Developmental Testing	C/BA	NATC : Carson City, NV	0.000	-		0.504	Jun 2015	-		-		-	-	0.504	-
P19 ATC Reliability Testing	MIPR	Aberdeen Testing Center : Aderdeen, MD	1.200	0.166	Sep 2014	0.504	Jun 2015	0.172	Jun 2016	-		0.172	Continuing	Continuing	Continuing
MTM (Light) Safety Testing	MIPR	Various : Various	0.000	-		0.054	Jun 2015	0.427	Feb 2016	-		0.427	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / *Marine Corps Cmbt Services Supt*	Project (Number/Name) 2509 / *Motor Transport Mod*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MTM (Light) Engineering Analysis Suppt	MIPR	DTIC : Ft. Belvoir, VA	0.000	0.227	Jun 2014	-		-		-		-	-	0.227	-
MTM (Heavy) Testing	TBD	Various : Various	0.000	-		-		0.427	Apr 2016	-		0.427	Continuing	Continuing	Continuing
MTVR Trailer Testing	SS/CPFF	NATC : Carson City, NV	1.374	0.086	Apr 2014	-		-		-		-	-	1.460	-
FTT (Heavy) Reliability Testing	MIPR	Aberdeen Testing Center : Aberdeen, MD	0.000	0.084	Mar 2015	0.050	Mar 2015	0.370	Mar 2016	-		0.370	Continuing	Continuing	Continuing
FTT (Medium) Testing	SS/CPFF	NATC : Carson City, NV	0.000	-		-		0.178	Aug 2016	-		0.178	Continuing	Continuing	Continuing
Family of Material Handling Equipment	MIPR	Aberdeen Test Center : Aberdeen, MD	0.000	0.157	May 2014	-		-		-		-	-	0.157	-
Family of Construction Equipment	MIPR	Aberdeen Test Center : Aberdeen, MD	0.000	-		0.200	Dec 2014	-		-		-	-	0.200	-
Prior Years Cumulative Funding	Various	Various : Various	6.405	-		-		-		-		-	-	6.405	-
		Subtotal	8.979	0.720		1.312		1.574		-		1.574	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HMMWV Program Management	Various	Various : Various	0.000	0.503	Aug 2014	0.282	Dec 2014	-		-		-	-	0.785	-
		Subtotal	0.000	0.503		0.282		-		-		-	-	0.785	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.066	2.776		6.978		2.064		-		2.064	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / *Marine Corps Cmbt Services Supt*	Project (Number/Name) 2509 / *Motor Transport Mod*	

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2509 / *Motor Transport Mod*

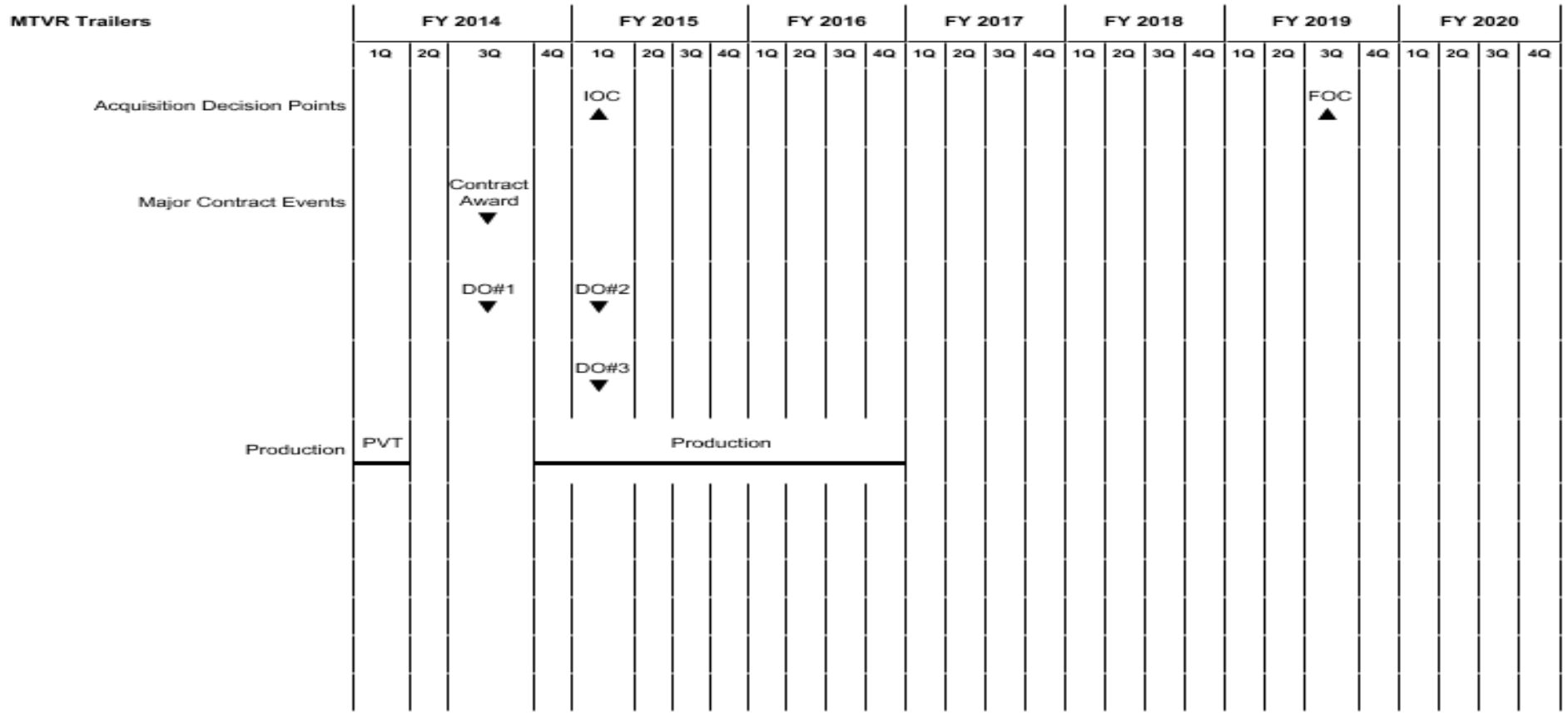

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2509 / *Motor Transport Mod*

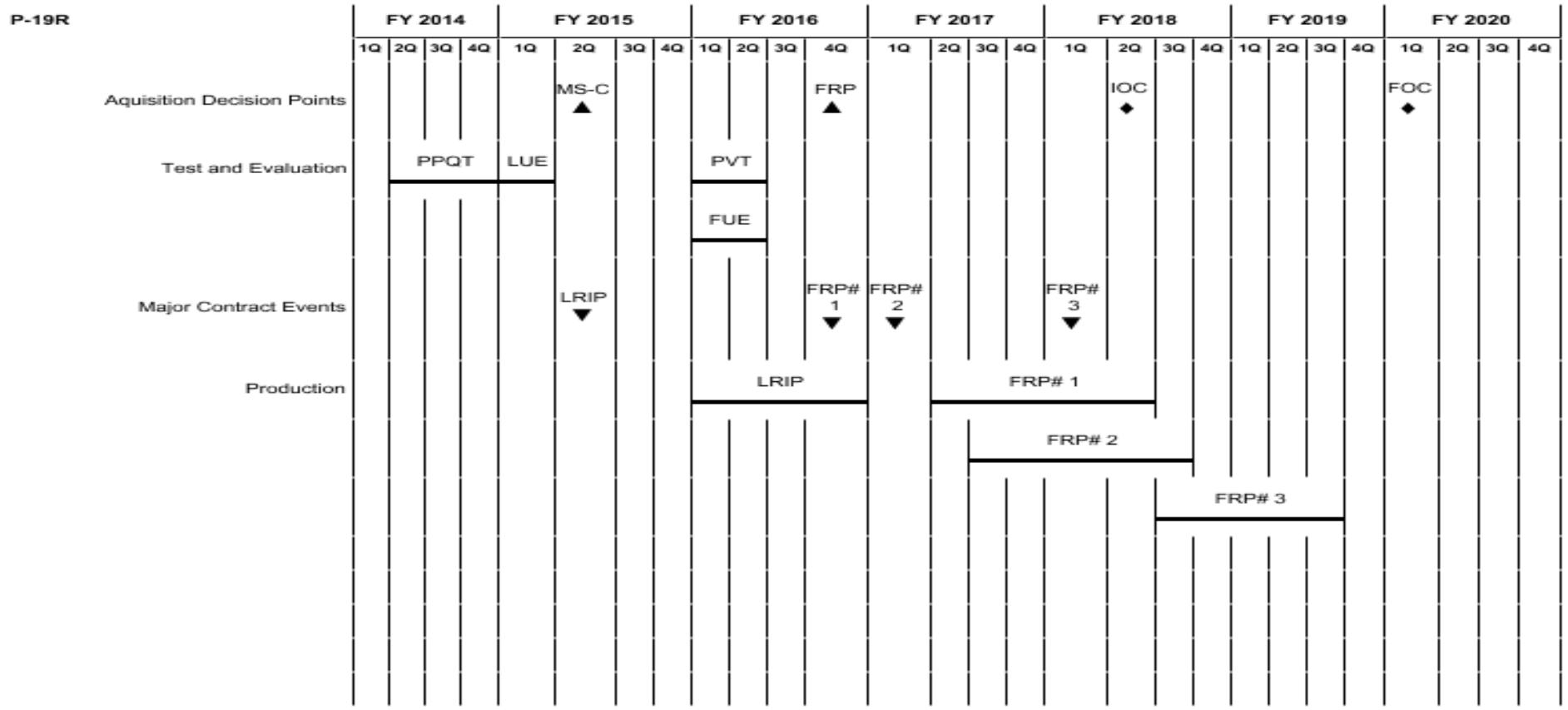

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Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2509 / *Motor Transport Mod*

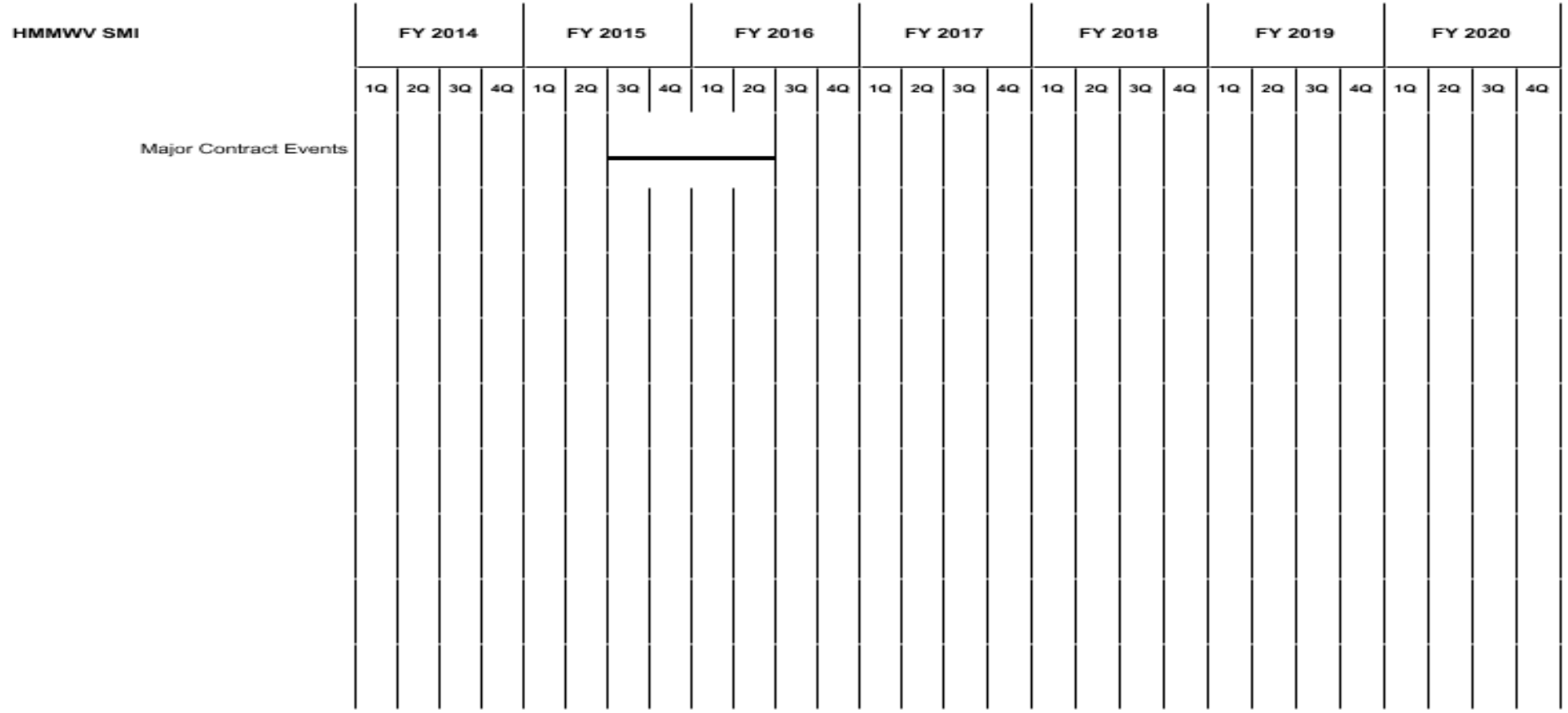

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2509 / *Motor Transport Mod*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MTVR Trailers				
Acquisition Decision Points: Initial Operating Capability	1	2015	1	2015
Acquisition Decision Points: Full Operating Capability	3	2019	3	2019
Major Contract Events: Production Contract Award	3	2014	3	2014
Major Contract Events: Delivery Order Award #1 (FY12 PMC)	3	2014	3	2014
Major Contract Events: Delivery Order Award #2 (FY13 PMC)	1	2015	1	2015
Major Contract Events: Delivery Order Award #3 (FY15 PMC)	1	2015	1	2015
Production: Production Verification Test Trailers	1	2014	1	2014
Production: Production	4	2014	4	2016
P-19R				
Aquisition Decision Points: Milestone C	2	2015	2	2015
Aquisition Decision Points: Full Rate Production Decision	4	2016	4	2016
Aquisition Decision Points: Initial Operating Capability	2	2018	2	2018
Aquisition Decision Points: Full Operating Capability	1	2020	1	2020
Test and Evaluation: Pre-Production Qualification Testing	2	2014	4	2014
Test and Evaluation: Limited User Evaluation	1	2015	1	2015
Test and Evaluation: Production Verification Testing	1	2016	2	2016
Test and Evaluation: Full User Evaluation	1	2016	2	2016
Major Contract Events: Low Rate Initial Production Award	2	2015	2	2015
Major Contract Events: Full Rate Initial Production Award #1	4	2016	4	2016
Major Contract Events: Full Rate Initial Production Award #2	1	2017	1	2017
Major Contract Events: Full Rate Initial Production Award #3	1	2018	1	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2509 / *Motor Transport Mod*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production: Low Rate Initial Production	1	2016	4	2016
Production: Full Rate Initial Production #1	2	2017	2	2018
Production: Full Rate Initial Production #2	3	2017	3	2018
Production: Full Rate Initial Production #3	3	2018	3	2019
HMMWV SMI				
Major Contract Events: Engineering Studies and Analysis	3	2015	2	2016

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0206624M / *Marine Corps Cmbt Services Supt*				Project (Number/Name) 2510 / *MAGTF CSSE & SE*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
2510: *MAGTF CSSE & SE*	12.648	4.179	4.930	9.167	-	9.167	7.285	3.167	4.461	4.053	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Environmental Control Equipment, Mobile Power Equipment and Advanced Power Sources are a part of Expeditionary Energy Initiatives

A. Mission Description and Budget Item Justification

Environmental Control Equipment:
The Enhanced Environmental Control Unit (E2CU) program is the second generation of a family of environmental control units from 9,000 BTU to 60,000 BTU/Hr cooling output. The E2CU program will provide tactical Heating, Ventilation and Air Conditioning (HVAC) and superior reliability for all MAGTF units in all operational concepts. E2CU will replace all legacy ECUs starting in 2014 in the following sizes: 9,000 BTU/Hr; 18,000 BTU/Hr. These higher reliability and higher efficiency sets will use EPA-approved refrigerants, will be more energy efficient, be more mobile, easier to repair, and quieter than their predecessors. A significant average fuel efficiency improvement over the current ECU family has been demonstrated. With environmental control systems consuming 50-70% of tactical electric power in theater, this savings will be a significant contribution to reducing the USMC fuel demand, and lightening the Marine Air-Ground Task Force (MAGTF). The Warfighter benefit includes a decreased logistics footprint, less reliance on petroleum-derived fuels, increased local energy security, and reduced tanker losses (fewer on the road). The operational imperative to reduce fuel usage will consequently reduce refueling operations and exposing Marines to hazardous fuel convoy operations. The funding decrease from FY15 to FY16 reflects the requirements and resource realignment of all commodity areas and budget adjustments made by the Marine Corps Combat Development Command.

Mobile Power Equipment:
The Family of Mobile Electric Power Equipment consists of skid and trailer mounted tactical generators ranging from 2 to 200 kilowatts, Mobile Electric Power Distribution Systems, Load Banks, and Electrician's Tool Kits. This equipment is procured and fielded to provide electricity on the battlefield. Combat, combat support, and combat service support units all require tactical power to operate weapons systems, Command, Control, Communications, Computers and Intelligence (C4I) systems, medical and messing facilities, environmental control equipment, and water purification systems. With over 10,000 generators and using diesel engines in the Operating Forces, improving their fuel efficiency and reliability will be a significant contribution to reducing the USMC fuel demand, and lightening the MAGTF. The Warfighter benefit includes a decreased logistics footprint, less reliance on petroleum-derived fuels, increased local energy security, and reduced tanker losses (fewer on the road). The operational imperative to reduce fuel usage will consequently reduce refueling operations and exposing Marines to hazardous fuel convoy operations.

Four discrete efforts will be pursued as follows:
(1) Hybrid Generator: Funding to integrate new AMMPS 10kW Generator and energy storage devices onto a Light Tactical Trailer. Will provide capability to deliver 10kW steady state, supply up to 13kW peak demand for several hours using stored energy, and provide 3kW silent operations for several hours (battery only). Will transition into production of a unit that can be integrated with the AMMPS generator.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

(2) Next Generation Power Distribution: Intelligent power management devices that can integrate with existing Mobile Electric Power Distribution System Replacement (MEPDIS-R) Boxes and AMMPS generators. Provides capability for safe, efficient centralized power distribution from a single source to multiple loads, Automatic phase balancing of loads, and power monitoring and data collection/dissemination for remote system monitoring.
(3) Next-Generation Floodlight System (FLS): Funding to integrate new 10kW AMMPS Generator and a new light tower (floodlight system) onto a Light Tactical Trailer. Provides tactical lighting and exportable 3-phase electrical power. Will transition into production of a unit that can be integrated with the AMMPS generator.
(4) 1kW Diesel Generator: Integration and product qualification testing of new 1kW diesel generator for USMC-unique applications. Generator procurement will be by customers on a DoD contract.
The funding decrease from FY15 to FY16 reflects the requirements and resource realignment of all commodity areas and budget adjustments made by the Marine Corps Combat Development Command.

Advanced Power Sources:
These R&D efforts will focus on achieving the Marine Corps goal of lightening the MAGTF and the individual Marine combat load though reduced battery weight and logistical fuel resupply needs. The Mobile Electric Hybrid Power System and Medium Hybrid Expeditionary Energy Systems (MHEES) will focus on hybrid power systems capable of improved fuel efficiency and silent operations in the 0.5-5kW power range. These systems will be smaller, lighter and more efficient systems. The conformal/CFX battery effort will focus on testing and integrating next generation batteries. The On Board Vehicle Power (OBVP) will focus on flexibility and efficiency of research and development to save fuel at idle conditions and improve vehicle energy efficiency on MTVR platforms. The funding increase from FY15 to FY16 reflects the requirements and resource realignment of all commodity areas and budget adjustments made by the Marine Corps Combat Development Command.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Environmental Control Equipment	0.917	0.435	0.202	-	0.202
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Initiated prototype testing of the Enhanced ECUs developed during FY13. ***FY 2015 Plans:*** -Continue prototype testing and integration of ECP (Engineering Change Proposals) for the Enhanced Environmental Control Units (E2CUs). ***FY 2016 Base Plans:*** -Initiate design of legacy Environmental Control Units to increase energy efficiency. ***FY 2016 OCO Plans:*** N/A					
Title: Mobile Power Equip/Hybrid Generator/Next Gen Power Distribution System	1.645	3.660	2.979	-	2.979
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: -Initiated testing and integration of the Hybrid Generator and Next Generation Power Distribution systems (AMEPDIS). ***FY 2015 Plans:*** -Continue testing of the Next Generation Power Distribution system (AMEPDIS). -Initiate integration and testing of AMMPS Generators with new COTS Floodlight System. -Initiate integration and testing of 1KW Generator with Ground Renewable Expeditionary Energy Systems (GREENS). ***FY 2016 Base Plans:*** -Initiate testing and evaluation of commercial micro-grid components and commercial Floodlight Sets. ***FY 2016 OCO Plans:*** N/A					
Title: Advanced Power Sources	1.617	0.835	5.986	-	5.986
Articles:	-	4	12	-	12
FY 2014 Accomplishments: -Completed testing of Medium Hybrid Expeditionary Energy Systems (MHEES) developmental articles. ***FY 2015 Plans:*** CONFORMAL/CFX BATTERY -Initiate test, integrate, and qualify Conformal/CFX batteries for Marine Corps use - Naval Surface Warfare Center Carderock Division, Carderock, MD will procure batteries and test. Plan for government testing in mid FY15. ON BOARD VEHICLE POWER (OBVP) -Continue development of NEXGEN On Board Vehicle Power, fuel efficiency study - Award two one-year RDT&E contracts to develop more fuel efficient OBVP kits. Each contractor to produce 2 each for total of 4 test articles. Plan for government testing in FY15 on MTVR platforms. ***FY 2016 Base Plans:*** MOBILE ELECTRIC HYBRID POWER SOURCES (MEHPS)					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiate Engineering, Manufacturing and Development (EMD) of the Mobile Electric Hybrid Power Sources- Award two RDT&E contracts. Each contractor to produce 6 each for a total of 12 test articles. Plan for government testing in FY17 with completion in FY18. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	4.179	4.930	9.167	-	9.167

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/6054: *Environmental Control Equipment*	11.593	0.994	0.094	-	0.094	0.698	1.003	4.287	3.397	Continuing	Continuing
• PMC/6366-1: *Mobile Power Equipment*	48.021	4.890	0.738	-	0.738	3.528	6.725	9.794	6.114	Continuing	Continuing
• PMC/6366-2: *Advanced Power Sources*	25.956	4.095	10.054	-	10.054	14.845	3.232	15.384	15.666	Continuing	Continuing

Remarks

D. Acquisition Strategy

Initial focus on development of more efficient 30,000 BTU/Hr and 60,000 BTU/Hr size model Environmental Control Units (ECUs), since they make up the greatest percentage of the inventory and are used extensively for shelter heating and cooling. Full and open competition. Three contractors to develop and deliver prototypes in two size models. Government testing to validate performance. Single contractor to produce both models using multi-year ID/IQ production contract. Low Rate Initial Production (LRIP), followed by LRIP testing, then Full Rate Production (FRP) to procure using PMC funds on annual Delivery Orders. ECUs are organically supported by Marines.

Initial focus on development of Hybrid Generator Systems using AMMPS generators began in FY13, and Power Distribution, followed by New Floodlight Set development in FY14. For each effort, strategies are very similar: Full and open competition. Three contractors to develop and deliver prototypes in two size models. Government testing to validate performance. Single contractor to produce both models using multi-year ID/IQ production contract. LRIP, followed by LRIP testing, then Full Rate Production to procure using PMC funds on annual Delivery Orders. All equipment is organically supported by Marines. The 1kW Generator effort will be to integrate and test these generators in USMC unique applications. Generators will be procured by others on a DoD contract.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

The acquisition strategy for the Renewable Energy Program is to focus on improvements for the next generation Solar Portable Alternative Communications Energy System (SPACES), Ground Renewable Expeditionary Energy System (GREENS)/Medium Hybrid Expeditionary Energy Systems (MHEES), and Mobile Electric Hybrid Power System (MEHPS). These R&D efforts will focus on achieving the Marine Corps goal of lightening the MAGTF and the individual Marine combat load through reduced battery weight and logistical fuel resupply needs. In particular, the development will focus on making these systems smaller, lighter and more efficient. In addition, this development effort will also focus on development needed to transition the Office of Naval Research (ONR), Reliable S (SAP - Service Accessible Point) Update Protocol (RSUP), Future Naval Capability (FNC) effort.

The acquisition strategy for the Battery Management and Sustainment System (BMASS) is to focus on the development of the next generation portable Marine Corps batteries and chargers and a Portable Lithium Battery Maintainer. These R&D efforts will focus on developing a capability which allow the Marine Corps the ability to support battery needs in all locations and environments of operation (land, sea and air). In particular, the development will focus on making the next generation Conformal/CFX battery.

The acquisition strategy for the On Board Vehicle Power Program is to focus on the continued adaptation and development of technologies transitioned from the Office of Naval Research Future Naval Capability. Primary focus will be on adaptation for different vehicle platform models (M1151, M1165) as well as updates to system configuration due to Armor requirement changes. Further, changes in deployment methodology with command guidance to focus on flexibility and efficiency will drive research and development to save fuel at idle conditions and improve energy export efficiency.

E. Performance Metrics

E2CU: Energy efficiency; size; weight; EPA-approved refrigerant; affordability; organically supportable.
MOBILE POWER: Energy efficiency; size; weight; affordability; organically supportable.
SPACES: 50% size reduction of controller, 50% reduction in panel surface area, 50% increase in panel efficiency
GREENS/MHEES/MEHPS): 20% reduction in weight, 50% increase in power capability, 20% reduction in volume
BMASS: Energy efficiency; size; weight; ability to charge specified batteries
OBVP: N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
E2CU DEVELOPMENT	C/FFP	VAR : VAR	3.002	-		-		0.202	Mar 2016	-		0.202	Continuing	Continuing	Continuing
APS OBVP MTVR DEVELOPMENT	C/IDIQ	TBD : TBD	0.000	-		0.300	Mar 2015	-		-		-	-	0.300	-
APS CONFORMAL/ CFXI BATTERY DEVELOPMENT	C/IDIQ	NSWC : CARDEROCK, MD	0.000	-		0.300	Mar 2015	-		-		-	-	0.300	-
APS MEHPS EMD	C/IDIQ	TBD : TBD	0.000	-		-		5.986	Dec 2015	-		5.986	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	VAR : VAR	8.120	-		-		-		-		-	-	8.120	-
		Subtotal	11.122	-		0.600		6.188		-		6.188	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AMEPDIS SUPPORT	Various	VAR : VAR	0.000	0.059	Aug 2014	0.050	Apr 2015	-		-		-	-	0.109	-
		Subtotal	0.000	0.059		0.050		-		-		-	-	0.109	-

Remarks

Travel to support testing verification for Mobile Power Distribution (AMEPDIS) in 2014-2015.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
E2CU TESTING	Various	ABERDEEN TEST CENTER : ABERDEEN, MD	0.000	0.917	Aug 2014	-		-		-		-	-	0.917	-
HYBRID GENERATOR/ NEXT GEN POWER DIST SYS	MIPR	ABERDEEN TEST CENTER : ABERDEEN, MD	0.000	1.586	Apr 2014	2.578	Mar 2015	-		-		-	-	4.164	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / *Marine Corps Cmbt Services Supt*	Project (Number/Name) 2510 / *MAGTF CSSE & SE*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
APS MHEES/MEHPS-L TESTING	WR	NSWC : CARDEROCK, MD	0.000	1.617	Mar 2014	-		-		-		-	-	1.617	-
APS CONFORMAL/CFXI BATTERY TEST PLAN AND PREP	WR	NSWC : CARDEROCK, MD	0.000	-		0.100	Mar 2015	-		-		-	-	0.100	-
APS OBVP MTVR TEST PLAN AND PREP	MIPR	ABERDEEN TEST CENTER : ABERDEEN, MD	0.000	-		0.100	Mar 2015	-		-		-	-	0.100	-
Prior Year Cumulative Funding	Various	Various : Various	1.339	-		-		-		-		-	-	1.339	-
E2CU INTEGRATION TESTING	MIPR	ABERDEEN TEST CENTER : ABERDEEN MD	0.000	-		0.435	Apr 2015	-		-		-	-	0.435	-
MPE MICRO GRID TESTING	MIPR	ABERDEEN TEST CENTER : ABERDEEN MD	0.000	-		-		2.003	Feb 2016	-		2.003	Continuing	Continuing	Continuing
MPE FLS AND 1KW INTEGRATION TESTING	MIPR	ABERDEEN TEST CENTER : ABERDEEN MD	0.000	-		1.032	Apr 2015	0.976	Apr 2016	-		0.976	Continuing	Continuing	Continuing
		Subtotal	1.339	4.120		4.245		2.979		-		2.979	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
APS PM support for development and test mgmt	C/FFP	MCSC : Quantico, VA	0.187	-		0.035	Mar 2015	-		-		-	-	0.222	-
		Subtotal	0.187	-		0.035		-		-		-	-	0.222	-

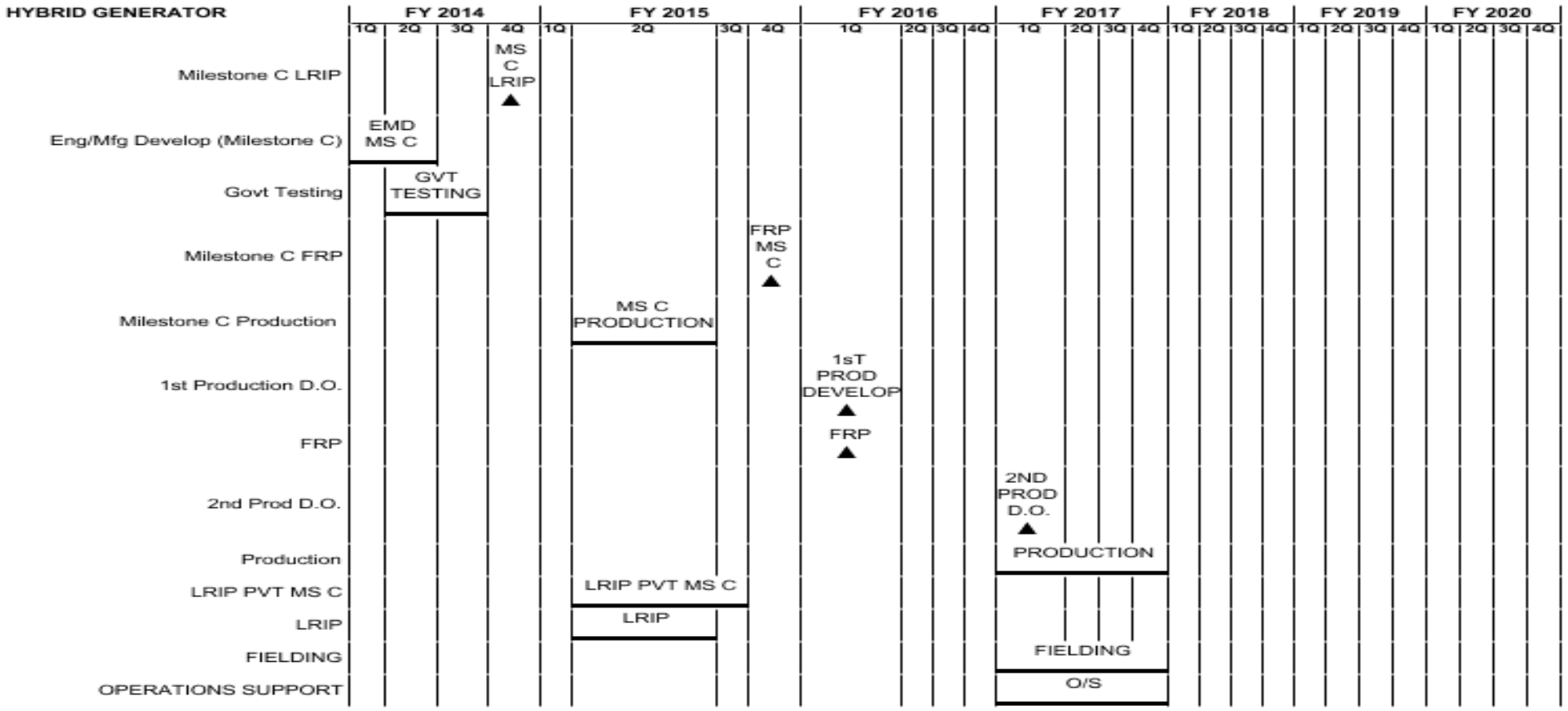
Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / *Marine Corps Cmbt Services Supt*	Project (Number/Name) 2510 / *MAGTF CSSE & SE*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.648	4.179		4.930		9.167		-		9.167	-	-	-

Remarks

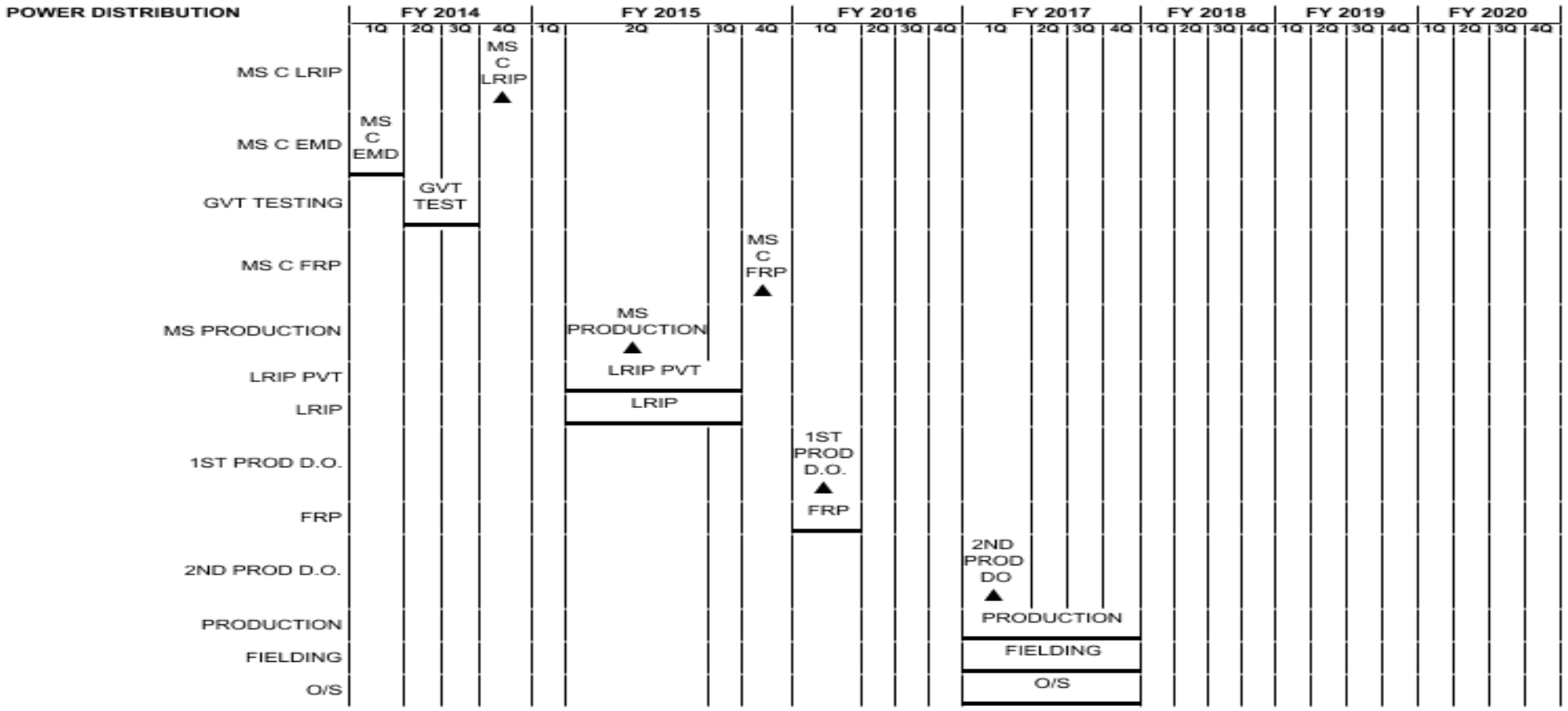
Environmental Control Equipment, Mobile Power Equipment and Advanced Power are part of Expeditionary Energy Initiatives.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*



2016PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*



2016PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

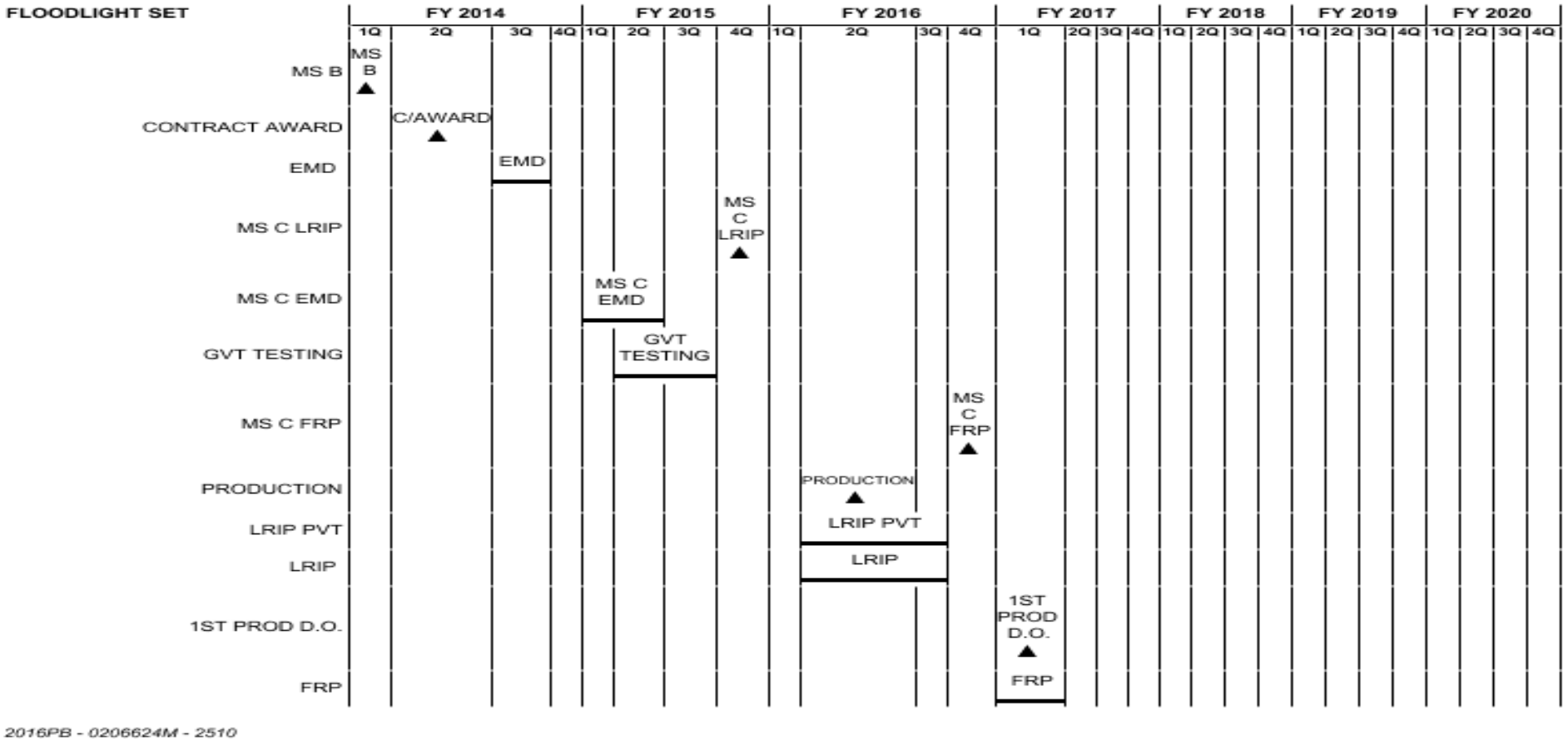
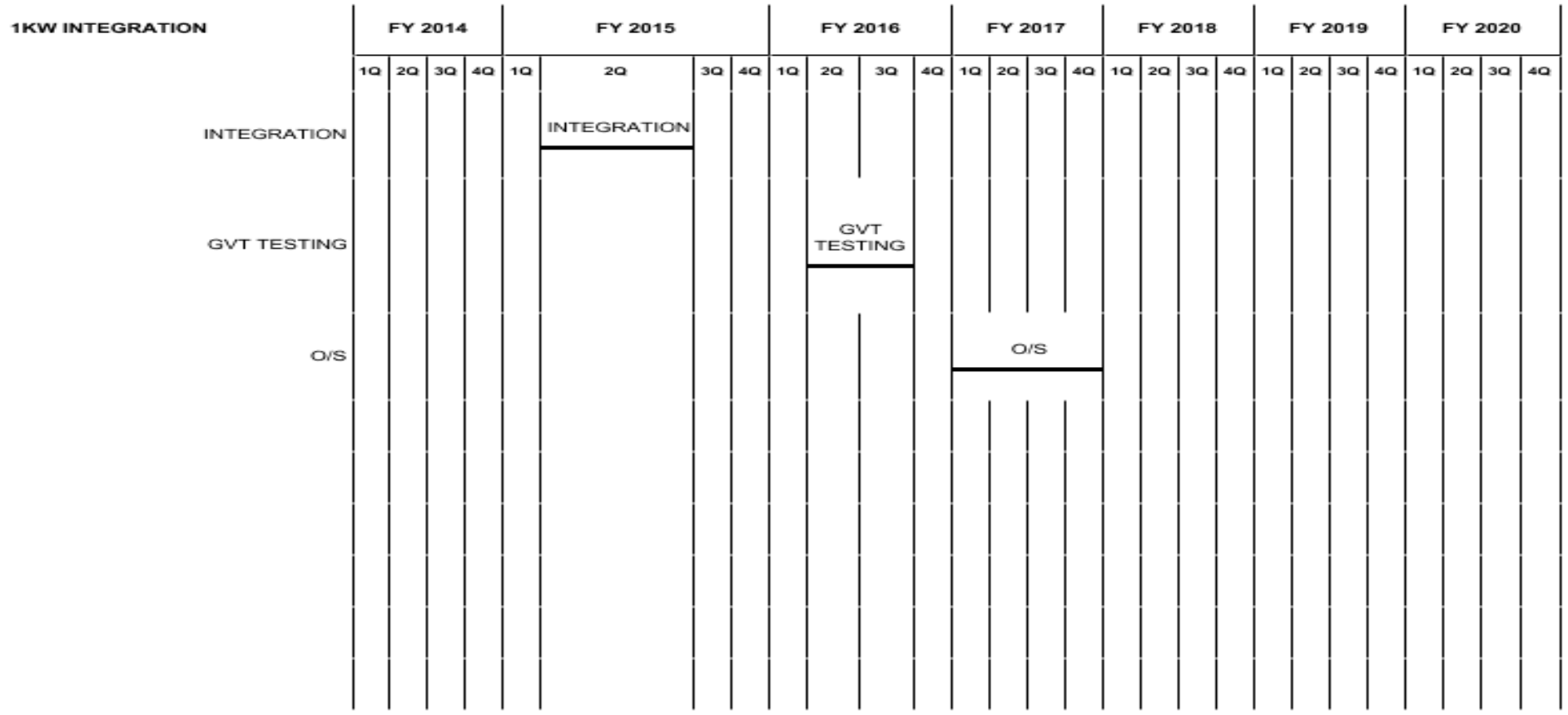
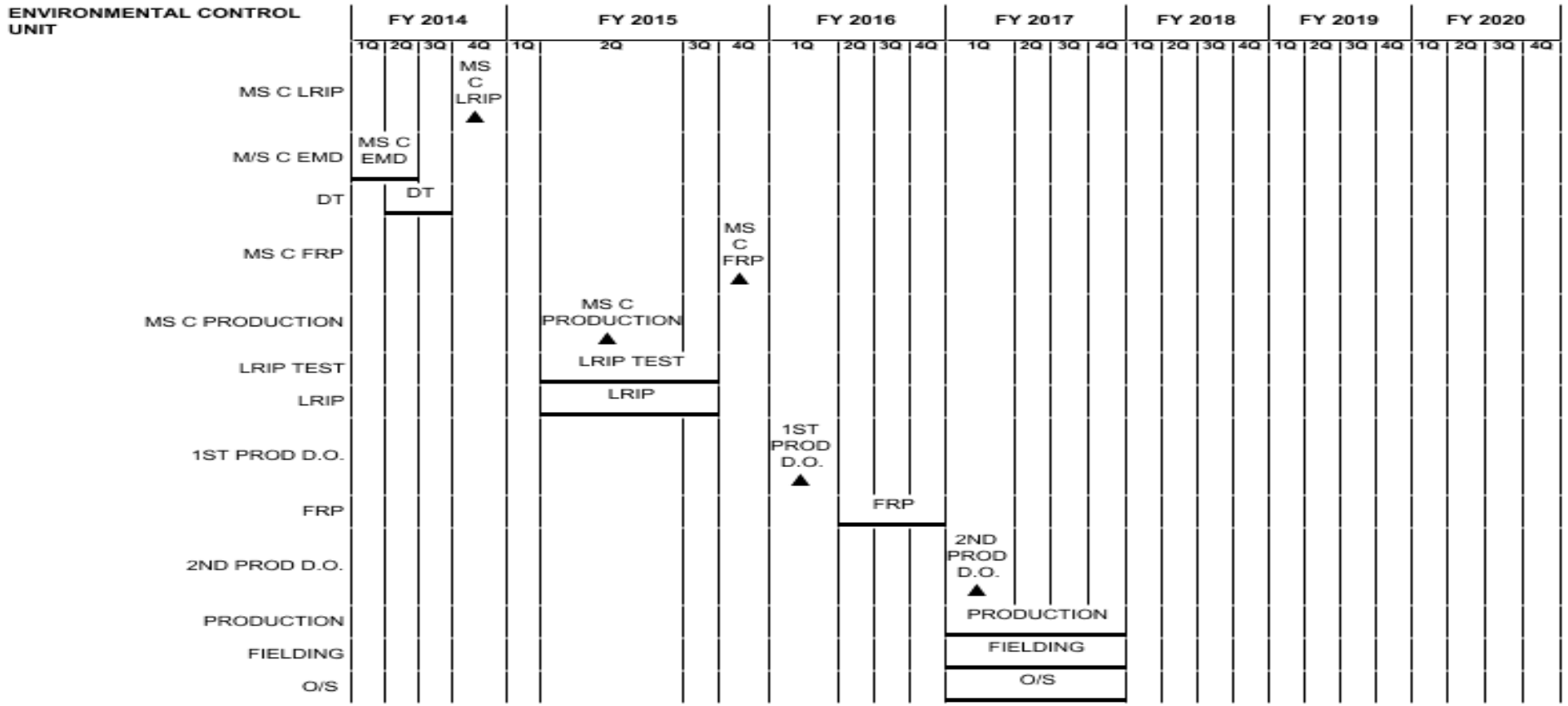


Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*



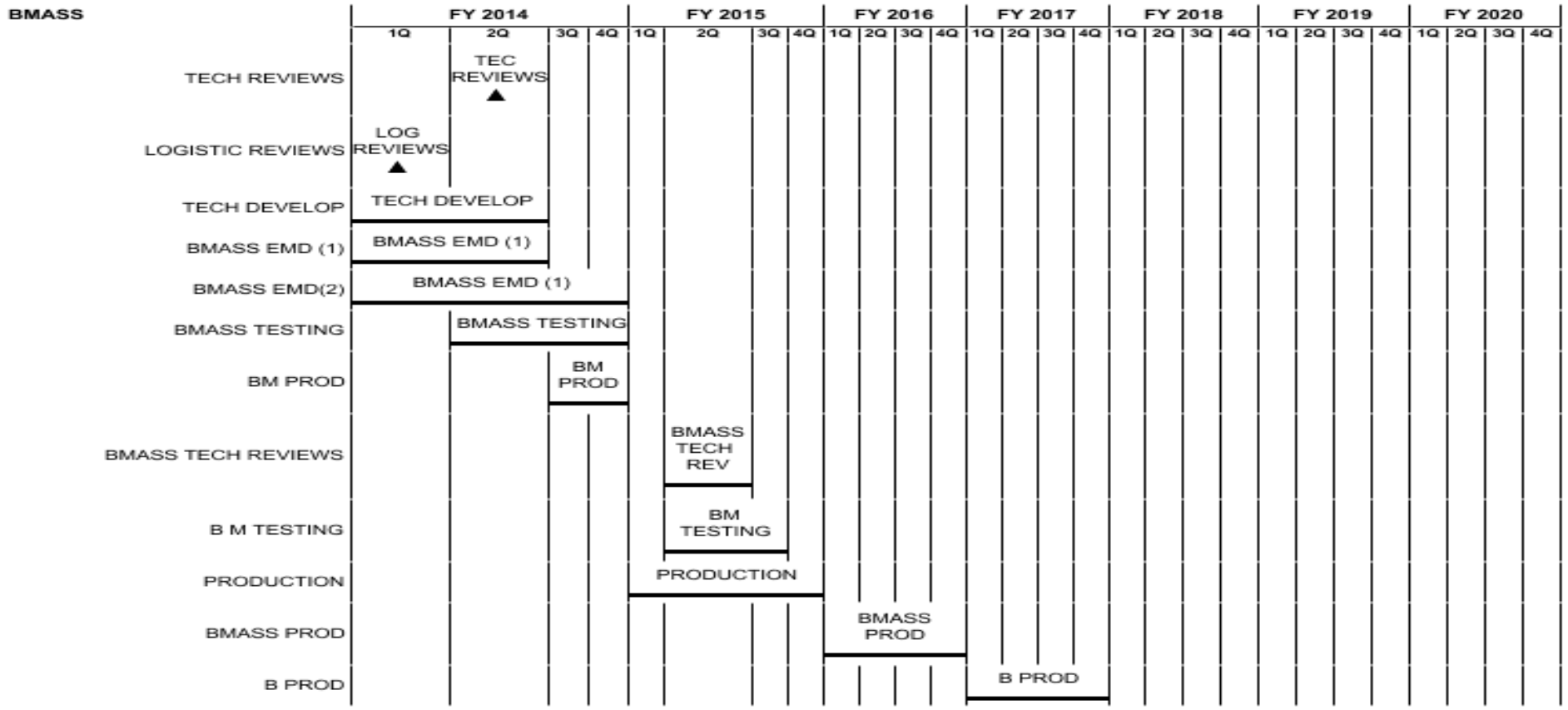
2016PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*



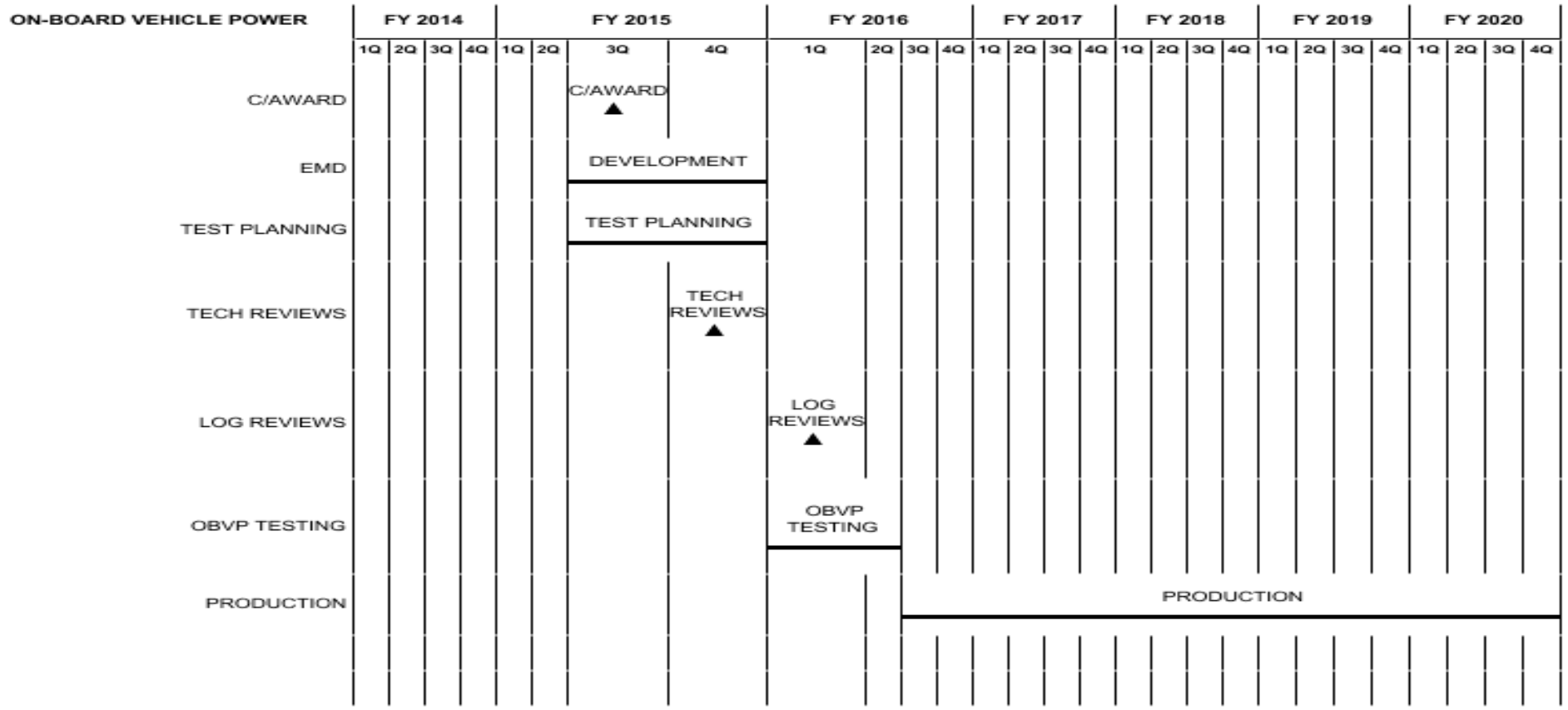
2016PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*



2016PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*



2016PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

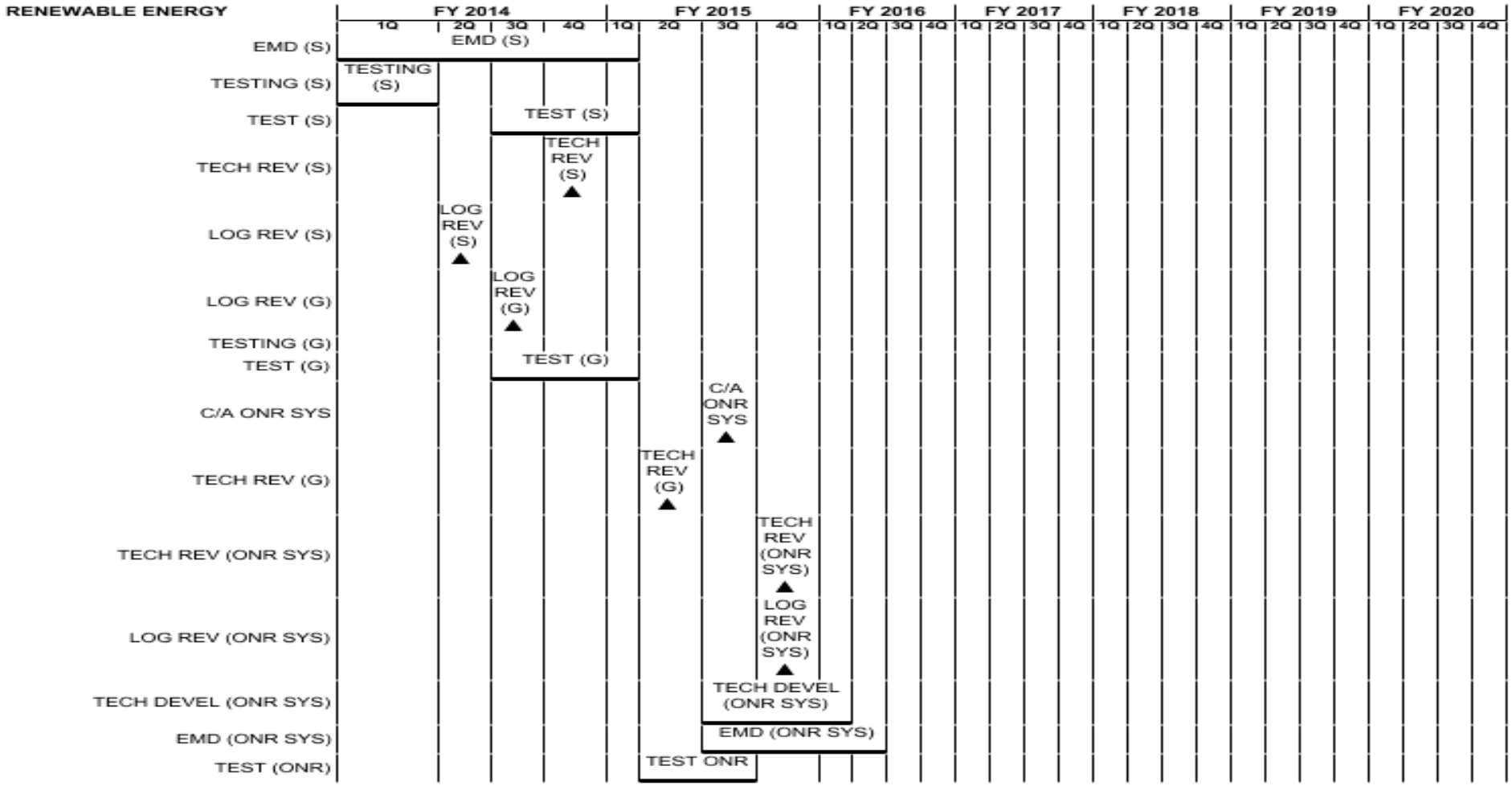
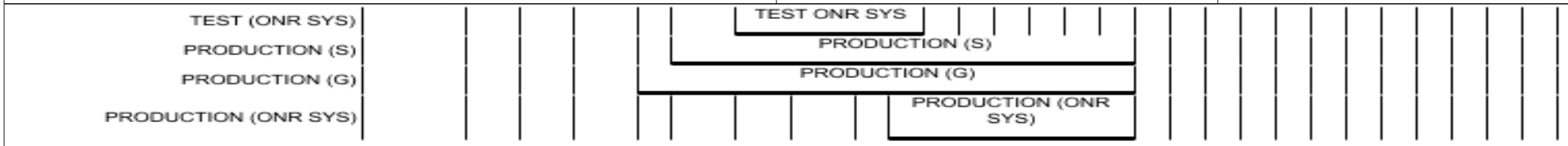
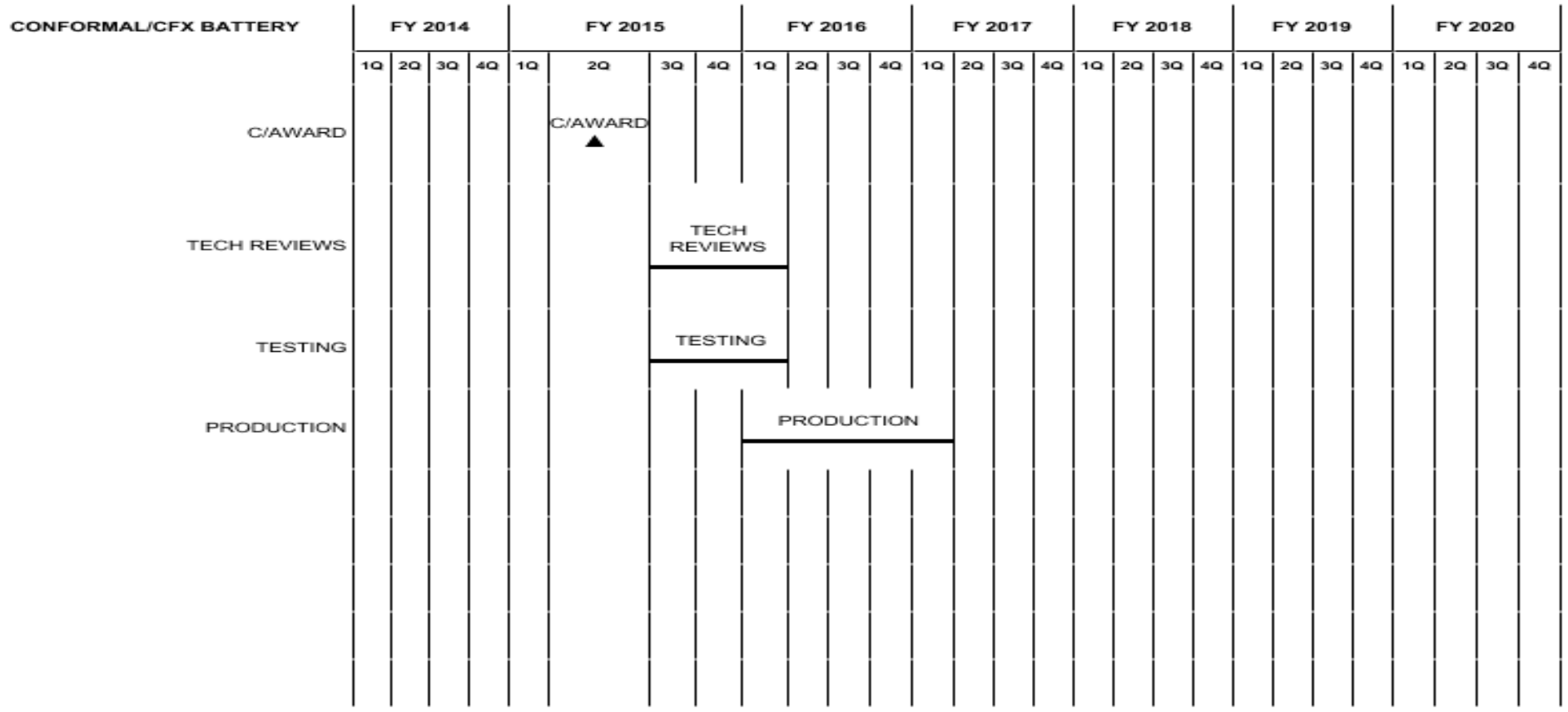


Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*



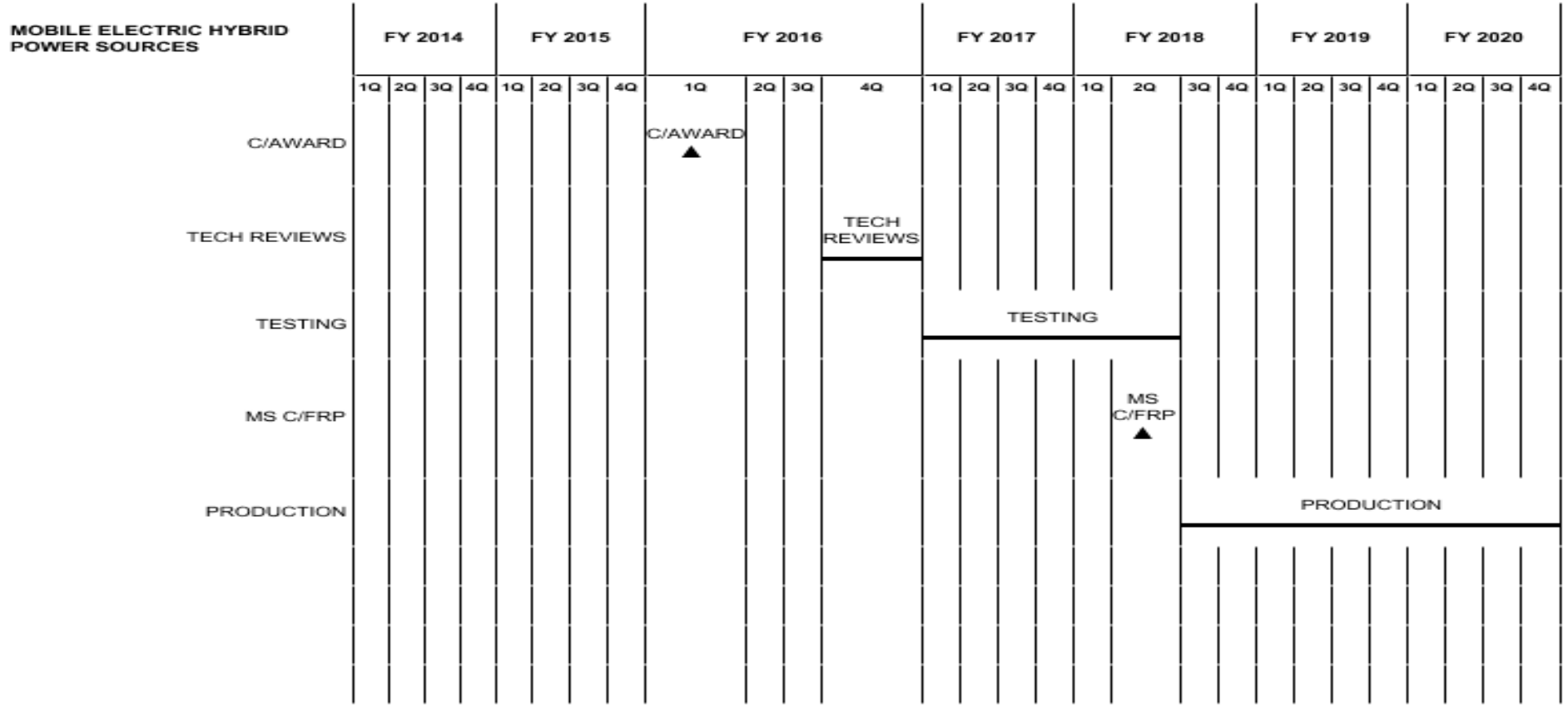
2016PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*



2016PB - 0206624M - 2510

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*



2016PB - 0206624M - 2510

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
HYBRID GENERATOR				
Milestone C LRIP:	4	2014	4	2014
Eng/Mfg Develop (Milestone C):	1	2014	2	2014
Govt Testing:	2	2014	3	2014
Milestone C FRP:	4	2015	4	2015
Milestone C Production:	2	2015	2	2015
1st Production D.O.:	1	2016	1	2016
FRP:	1	2016	1	2016
2nd Prod D.O.:	1	2017	1	2017
Production:	1	2017	4	2017
LRIP PVT MS C:	2	2015	3	2015
LRIP:	2	2015	2	2015
FIELDING:	1	2017	4	2017
OPERATIONS SUPPORT:	1	2017	4	2017
POWER DISTRIBUTION				
MS C LRIP:	4	2014	4	2014
MS C EMD:	1	2014	1	2014
GVT TESTING:	2	2014	3	2014
MS C FRP:	4	2015	4	2015
MS PRODUCTION:	2	2015	2	2015
LRIP PVT:	2	2015	3	2015
LRIP:	2	2015	3	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
1ST PROD D.O.:	1	2016	1	2016
FRP:	1	2016	1	2016
2ND PROD D.O.:	1	2017	1	2017
PRODUCTION:	1	2017	4	2017
FIELDING:	1	2017	4	2017
O/S:	1	2017	4	2017
FLOODLIGHT SET				
MS B:	1	2014	1	2014
CONTRACT AWARD:	2	2014	2	2014
EMD:	3	2014	3	2014
MS C LRIP:	4	2015	4	2015
MS C EMD:	1	2015	2	2015
GVT TESTING:	2	2015	3	2015
MS C FRP:	4	2016	4	2016
PRODUCTION:	2	2016	2	2016
LRIP PVT:	2	2016	3	2016
LRIP:	2	2016	3	2016
1ST PROD D.O.:	1	2017	1	2017
FRP:	1	2017	1	2017
1KW INTEGRATION				
INTEGRATION:	2	2015	2	2015
GVT TESTING:	2	2016	3	2016
O/S:	1	2017	4	2017
ENVIRONMENTAL CONTROL UNIT				
MS C LRIP:	4	2014	4	2014

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
M/S C EMD:	1	2014	2	2014
DT:	2	2014	3	2014
MS C FRP:	4	2015	4	2015
MS C PRODUCTION:	2	2015	2	2015
LRIP TEST:	2	2015	3	2015
LRIP:	2	2015	3	2015
1ST PROD D.O.:	1	2016	1	2016
FRP:	2	2016	4	2016
2ND PROD D.O.:	1	2017	1	2017
PRODUCTION:	1	2017	4	2017
FIELDING:	1	2017	4	2017
O/S:	1	2017	4	2017
BMASS				
TECH REVIEWS:	2	2014	2	2014
LOGISTIC REVIEWS:	1	2014	1	2014
TECH DEVELOP:	1	2014	2	2014
BMASS EMD (1):	1	2014	2	2014
BMASS EMD(2):	1	2014	4	2014
BMASS TESTING:	2	2014	4	2014
BM PROD:	3	2014	4	2014
BMASS TECH REVIEWS:	2	2015	2	2015
B M TESTING:	2	2015	3	2015
PRODUCTION:	1	2015	4	2015
BMASS PROD:	1	2016	4	2016
B PROD:	1	2017	4	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ON-BOARD VEHICLE POWER				
C/AWARD:	3	2015	3	2015
EMD:	3	2015	4	2015
TEST PLANNING:	3	2015	4	2015
TECH REVIEWS:	4	2015	4	2015
LOG REVIEWS:	1	2016	1	2016
OBVP TESTING:	1	2016	2	2016
PRODUCTION:	3	2016	4	2020
RENEWABLE ENERGY				
EMD (S):	1	2014	1	2015
TESTING (S):	1	2014	1	2014
TEST (S):	3	2014	1	2015
TECH REV (S):	4	2014	4	2014
LOG REV (S):	2	2014	2	2014
LOG REV (G):	3	2014	3	2014
TEST (G):	3	2014	1	2015
C/A ONR SYS:	3	2015	3	2015
TECH REV (G):	2	2015	2	2015
TECH REV (ONR SYS):	4	2015	4	2015
LOG REV (ONR SYS):	4	2015	4	2015
TECH DEVEL (ONR SYS):	3	2015	1	2016
EMD (ONR SYS):	3	2015	2	2016
TEST (ONR):	2	2015	3	2015
TEST (ONR SYS):	3	2015	2	2016
PRODUCTION (S):	2	2015	4	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2510 / *MAGTF CSSE & SE*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
PRODUCTION (G):	1	2015	4	2017
PRODUCTION (ONR SYS):	2	2016	4	2017
CONFORMAL/CFX BATTERY				
C/AWARD:	2	2015	2	2015
TECH REVIEWS:	3	2015	1	2016
TESTING:	3	2015	1	2016
PRODUCTION:	1	2016	1	2017
MOBILE ELECTRIC HYBRID POWER SOURCES				
C/AWARD:	1	2016	1	2016
TECH REVIEWS:	4	2016	4	2016
TESTING:	1	2017	2	2018
MS C/FRP:	2	2018	2	2018
PRODUCTION:	3	2018	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / *Marine Corps Cmbt Services Supt*	Project (Number/Name) 2929 / *Testing Measuring Diag Equip & SE*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2929: *Testing Measuring Diag Equip & SE*	6.120	1.897	0.248	0.516	-	0.516	0.544	0.580	0.622	0.636	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Marine Corps Family of Automatic Test Systems (ATS), formerly called Third Echelon Test Sets (TETS), provides automatic test program capability for use by technicians both in garrison and the forward edge of the battlefield; specifically in the areas of interactive electronic technical manuals, condition/predictive based maintenance, and embedded sensors and prognostics.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Automatic Test Systems (ATS)	1.897	0.248	0.516	-	0.516
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Researched new testing techniques to prevent obsolescence of legacy systems. -Developed integration techniques to address new testing solutions into fielded automatic test systems.					
FY 2015 Plans: -Continue to develop advanced technology concepts for automatic test and integrate the subsystems and components into fielded automatic test solutions to support weapon systems.					
FY 2016 Base Plans: -Continue to develop advanced technology concepts for automatic test and integrate the subsystems and components into fielded automatic test solutions to support weapon systems.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	1.897	0.248	0.516	-	0.516

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/4181-01: *TETS*	2.724	-	-	-	-	-	-	-	-	-	128.904

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2929 / *Testing Measuring Diag Equip & SE*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/4181-02: *Automatic Test Systems (ATS)*	17.276	14.786	13.238	-	13.238	13.389	4.007	6.538	5.032	Continuing	Continuing

Remarks

D. Acquisition Strategy

Automatic Test Systems (ATS) acquisition is being done through Marine Corps Systems Command (MCSC) contracts and in-house at Marine Corps Logistics Command (MCLC), Albany, GA, and Naval Supply Systems Command (NAVSUP), San Diego, CA.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2929 / *Testing Measuring Diag Equip & SE*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ATS Study & Hardware 5	C/FFP	NAVSUP : San Diego, CA	0.000	0.911	Sep 2014	-		-		-		-	-	0.911	-
ATS Study & Hardware 4	C/FFP	OSD : Washington, D.C.	0.000	0.500	Sep 2014	-		-		-		-	-	0.500	-
Prior Years Cumulative Funding	Various	N/A : N/A	2.716	-		-		-		-		-	-	2.716	-
ATS Technology Evaluation & Hardware	C/FFP	MCSC : Quantico, VA	0.000	0.185	Jan 2015	0.248	Mar 2015	0.318	Apr 2016	-		0.318	-	0.751	-
		Subtotal	2.716	1.596		0.248		0.318		-		0.318	-	4.878	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support (ATS)	WR	MCLB : Albany, GA	3.404	0.301	Nov 2013	-		0.198	Nov 2015	-		0.198	Continuing	Continuing	Continuing
		Subtotal	3.404	0.301		-		0.198		-		0.198	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	6.120	1.897		0.248		0.516		-		0.516	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2929 / *Testing Measuring Diag Equip & SE*

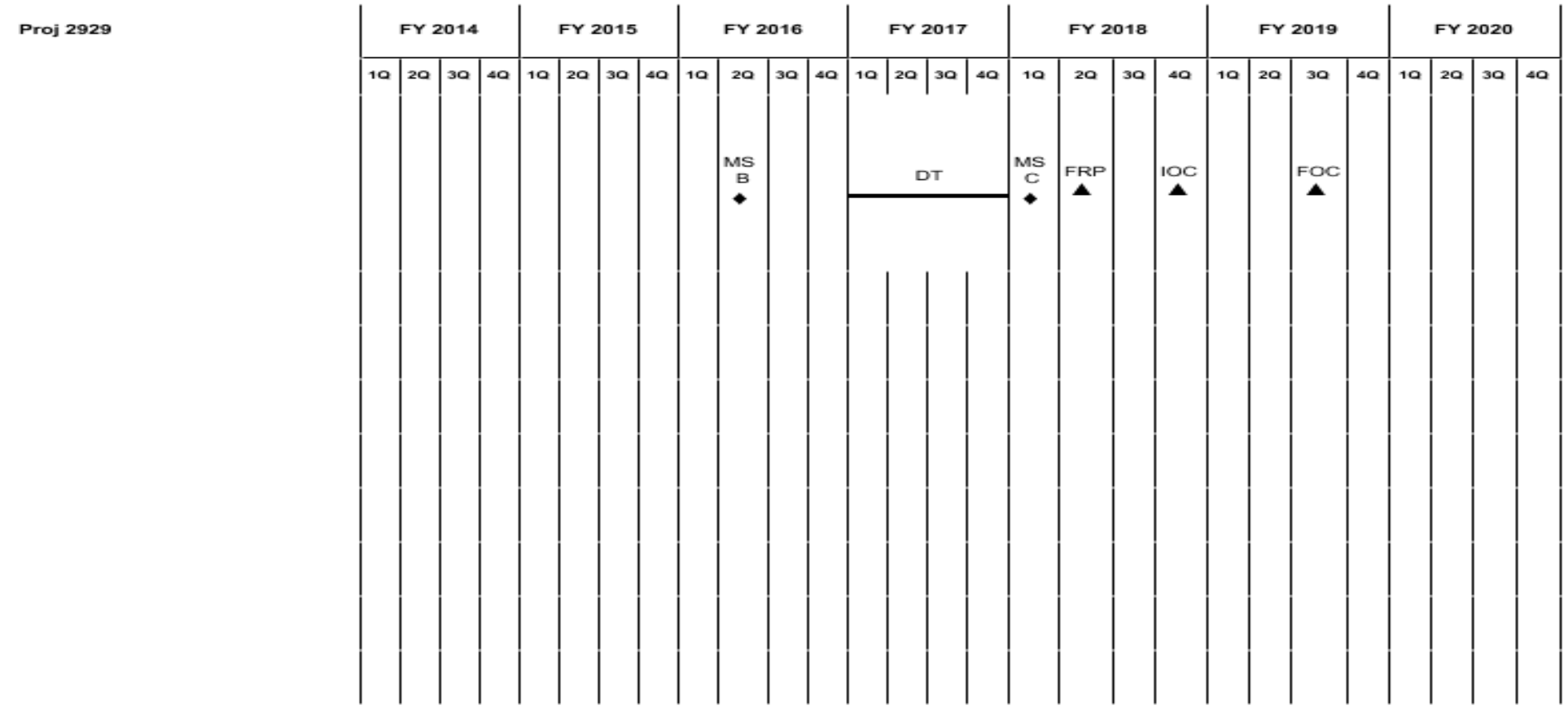


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 2929 / *Testing Measuring Diag Equip & SE*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2929				
Milestone B	2	2016	2	2016
Milestone C	1	2018	1	2018
Full Rate Production Decision	2	2018	2	2018
Initial Operational Capability (IOC)	4	2018	4	2018
Full Operational Capability (FOC)	3	2019	3	2019
Developmental Testing	1	2017	4	2017

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206624M / *Marine Corps Cmbt Services Supt*	Project (Number/Name) 9C90 / *MTVR Mod*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
9C90: *MTVR Mod*	40.863	2.602	1.187	4.066	-	4.066	1.251	0.775	1.118	0.145	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The MTVR Modification program line funds numerous modifications and initiatives that are required to address operational priorities, engineering change proposals, safety concerns, support equipment inefficiencies, tool malfunctions, product quality deficiencies, and other issues that affect vehicle reliability, availability, maintainability, readiness, as well as energy efficiency. A proactive and focused approach ensures proper vehicle sustainment and life-cycle management, and it allows the program office the flexibility to develop and implement improvements as needed to respond to the evolving needs of the Marine Corps.

The increase ($2.879M) from FY15 to FY16 is due to the transition of the Office of Naval Research's Future Naval Capability to the Program Office.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	1.298	-	1.969	-	1.969
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated PMO participation in the development of an Auxillary Power Unit (APU) which supports the Commandant of the Marine Corps (CMC) priorities for reducing energy costs, logistics footprint, and an improved environment.					
FY 2015 Plans: N/A					
FY 2016 Base Plans: Initiate product development in support of the Office of Naval Research (ONR) Future Naval Capability (FNC) initiative for fuel economy components on different variants of the MTVR vehicles in preparation of its transition to the program office. Also supports the development of various ECPs due to continual changes in the threat environment which requires on-going vehicle modifications.					
FY 2016 OCO Plans: N/A					
Title: Support	0.186	1.137	1.592	-	1.592
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 9C90 / *MTVR Mod*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: Continued activities in support of the MTVR vehicle to include (but not limited to) ECPs, safety, & survivability upgrades in response to continual changes in the threat environment to protect the warfighter and vehicle from possible catastrophic events, and in order to meet the current and future operations of Expeditionary Force 21. ***FY 2015 Plans:*** -Continue activities in support of the MTVR vehicle to include (but not limited to) ECPs, safety, & survivability upgrades in response to continual changes in the threat environment to protect the warfighter and vehicle from possible catastrophic events, and in order to meet the current and future operations of Expeditionary Force 21. -Resume support of energy initiatives aligning with the Commandant of the Marine Corps (CMC) priority for reducing energy costs, logistics footprint, and an improved environment. ***FY 2016 Base Plans:*** -Continue activities in support of the MTVR vehicle to include (but not limited to) ECPs, safety, & survivability upgrades in response to continual changes in the threat environment to protect the warfighter and vehicle from possible catastrophic events, and in order to meet the current and future operations of Expeditionary Force 21. -Continue support of energy initiatives aligning with the Commandant of the Marine Corps (CMC) priority for reducing energy costs, logistics footprint, and an improved environment. ***FY 2016 OCO Plans:*** N/A					
Title: Test and Evaluation	1.118	0.050	0.505	-	0.505
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued Test & Evaluation efforts supporting ECP/safety mods of the MTVR. -Initiated Energy Initiative Test & Evaluation efforts of an Auxillary Power Unit (APU) and a D-Cycle engine which supports the CMC's priority for reducing energy costs, logistics footprint, and an improved environment. -Initiated Modeling & Simulation testing to support the MTVR. ***FY 2015 Plans:*** Continue Modeling & Simulation testing to support the MTVR. ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 9C90 / *MTVR Mod*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiate Test & Evaluation efforts supporting ECP/safety mods of the MTVR. Also restarts Energy Initiative Test & Evaluation efforts which supports the CMC's priority for reducing energy costs, logistics footprint, and an improved environment. -Continue Modeling & Simulation testing to support the MTVR. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	2.602	1.187	4.066	-	4.066

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/5050: *MTVR Motor Transport Mods*	1.527	0.469	5.433	-	5.433	7.594	6.597	8.287	8.457	Continuing	Continuing
• PMC/5088: *MTVR*	-	0.584	-	-	-	-	-	-	-	-	476.977

Remarks

D. Acquisition Strategy

The strategy for the MTVR Modification initiative is to aid in the prevention of parts obsolescence, address safety concerns, and respond to emergent threats. A proactive and focused approach ensures proper vehicle sustainment and life-cycle management, and it allows the program office the flexibility to develop and implement improvements as required to respond to evolving needs.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 9C90 / *MTVR Mod*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Energy Efficiency (APU Spares)	SS/CPFF	Marving Land Systems : Los Angeles, CA	0.000	0.186	Feb 2014	-		-		-		-	-	0.186	-
Energy Efficiency (FNC) Development	TBD	TBD : TBD	0.000	-		-		1.722	Jun 2016	-		1.722	Continuing	Continuing	Continuing
ECP Development	WR	TBD : TBD	0.000	-		-		0.247	May 2016	-		0.247	Continuing	Continuing	Continuing
Energy Efficiency Efforts	MIPR	NAMC : Warren, MI	0.000	1.112	Jan 2015	-		-		-		-	-	1.112	-
Prior Years Cumulative Funding	Various	Various : Various	18.500	-		-		-		-		-	-	18.500	-
		Subtotal	18.500	1.298		-		1.969		-		1.969	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Energy Initiative	Various	Various : Various	0.300	-		0.600	May 2015	0.892	Jun 2016	-		0.892	Continuing	Continuing	Continuing
ECP Support	SS/CPFF	Oshkosh : Oshkosh, WI	4.554	-		0.262	Mar 2015	0.300	Mar 2016	-		0.300	Continuing	Continuing	Continuing
Safety Initiatives	SS/CPFF	Oshkosh : Oshkosh, WI	3.860	-		0.275	Jul 2015	0.200	Apr 2016	-		0.200	Continuing	Continuing	Continuing
Safety Initiatives	MIPR	TARDEC : Warren, MI	0.000	-		-		0.200	Jun 2016	-		0.200	-	0.200	-
Survivability Support (ECP)	MIPR	DTIC : Ft. Belvior, VA	0.000	0.186	Sep 2014	-		-		-		-	-	0.186	-
ECP Integration	SS/CPFF	Oshkosh : Oshkosh, WI	2.162	-		-		-		-		-	-	2.162	-
		Subtotal	10.876	0.186		1.137		1.592		-		1.592	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 9C90 / *MTVR Mod*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ECP/Integration/Safety Mod Testing	MIPR	ATC : Aberdeen, MD	1.600	0.030	Jul 2014	-		-		-		-	-	1.630	-
Energy Initiative Testing	MIPR	ATC : Aberdeen, MD	0.000	0.308	Feb 2014	-		0.278	Jul 2016	-		0.278	Continuing	Continuing	Continuing
Energy Initiative (APU)	WR	NSWC : Dalghren, VA	0.000	0.231	Mar 2014	-		-		-		-	-	0.231	-
Modeling and Simulation (SIL)	Reqn	NSWC : Indian Head, MD	0.000	0.032	Jun 2014	-		-		-		-	-	0.032	-
Modeling and Simulation (SIL)	MIPR	TARDEC : Warren, MI	0.810	-		0.050	Apr 2015	0.050	Jun 2016	-		0.050	0.300	1.210	-
Safety Testing	WR	NRL : Washington, DC	0.000	0.233	Sep 2014	-		0.177	Feb 2016	-		0.177	-	0.410	-
Energy Efficient Efforts	MIPR	NAMC : Warren, MI	0.000	0.284	Jan 2015	-		-		-		-	-	0.284	-
Prior Years Cumulative Funding	Various	Various : Various	9.077	-		-		-		-		-	-	9.077	-
		Subtotal	11.487	1.118		0.050		0.505		-		0.505	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	40.863	2.602		1.187		4.066		-		4.066	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 9C90 / *MTVR Mod*

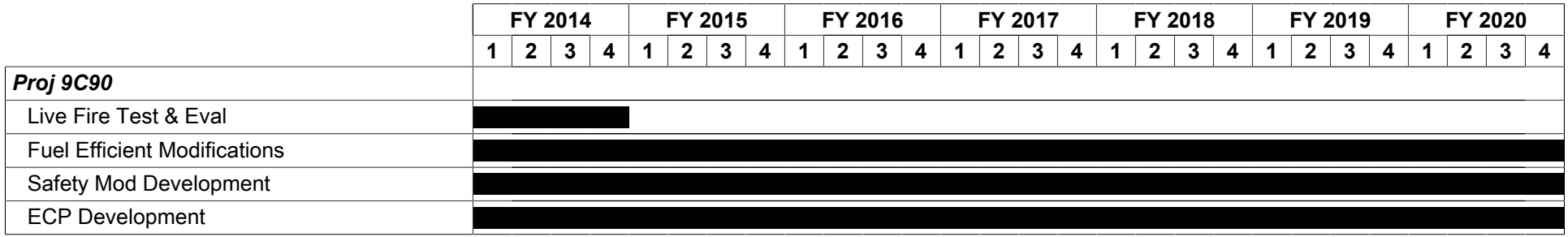


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206624M / *Marine Corps Cmbt Services Supt*	**Project (Number/Name)** 9C90 / *MTVR Mod*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9C90				
Live Fire Test & Eval	1	2014	4	2014
Fuel Efficient Modifications	1	2014	4	2020
Safety Mod Development	1	2014	4	2020
ECP Development	1	2014	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0206625M *I USMC Intelligence/Electronics Warfare Sys*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	71.584	35.213	14.170	13.152	-	13.152	16.580	12.428	22.173	18.018	Continuing	Continuing
2272: *Intel Command and Control (C2) Sys*	71.584	35.213	14.170	13.152	-	13.152	16.580	12.428	22.173	18.018	Continuing	Continuing

Note

Joint Surveillance Target Attack Radar System (JSTARS) capability is subsumed by Distributed Common Ground/Surface System - Marine Corps (DCGS-MC) PE 0305208M in FY 2015.

A. Mission Description and Budget Item Justification

This Program Element (PE) includes funds for Intelligence Command and Control (C2) which supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	33.394	14.179	13.735	-	13.735
Current President's Budget	35.213	14.170	13.152	-	13.152
Total Adjustments	1.819	-0.009	-0.583	-	-0.583
• Congressional General Reductions	-	-0.009			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.819	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-0.500	-	-0.500
• Rate/Misc Adjustments	-	-	-0.083	-	-0.083

Change Summary Explanation

The decrease of $0.583M in FY16 aligns funding profiles to the acquisition phase for the Intelligence Analysis System (IAS) and Counterintelligence (CI) and Human Intelligence (HUMINT) Equipment Program (CIHEP) programs, as well as other rate/miscellaneous adjustments. The decrease of $1.018M from FY15 to FY16 aligns funding to program schedules and reduces development of advanced SIGINT technology in the Tactical Signal Intelligence (SIGINT) Collection System (TSCS). It also reflects decreased efforts for Government Acceptance Testing and support of Engineering Change Proposals in SCI COMMS.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	Project (Number/Name) 2272 / *Intel Command and Control (C2) Sys*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2272: *Intel Command and Control (C2) Sys*	71.584	35.213	14.170	13.152	-	13.152	16.580	12.428	22.173	18.018	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Communication Emitter Sensing and Attacking System (CESAS) has the mission to disrupt, degrade or deny detected adversarial communication emitters. CESAS covers the High Frequency (HF), Very High Frequency (VHF) and Ultra High Frequency (UHF) frequency ranges against enemy emitters using modern modulation schemes. CESAS allows flexible employment to conduct Electronic Attack (EA) while on the move or in a stationary position, thus optimizing the Commanders' ability to employ this asset for the greatest success of the mission. Decrease of $5.686M from FY14 to FY15 due to completion of most Engineering and Manufacturing Development activities associated with the CESAS II development.

Counterintelligence (CI) and Human Intelligence (HUMINT) Equipment Program (CIHEP) provides the MAGTF with integrated, standardized, and interoperable information (automated data processing), communication, and specialized equipment to conduct the full spectrum of tactical CI/Force Protection to include Irregular Warfare, HUMINT, and technical collection operations. CIHEP provides each CI/HUMINT Company (CIHCo) with a suite of equipment comprised of commercial-off-the-shelf, government-off-the-shelf, and non-developmental items (COTS/GOTS/NDI). It integrates audio, video, imagery, communications, technical surveillance and computer equipment into lightweight, modular, scalable, deployable packages. CIHEP enhances the capability to collect, receive, process, and disseminate CI/HUMINT information from overt, sensitive, technical, tactical, and Force Protection, in the service, joint, and combined forces area of operations. The increase of $.5M from FY15 to FY16 reflects increased engineering and technical efforts inherent in activities prior to Full Rate Production decisions and Delivery/Fielding decisions, such as System Verification Reviews and Technical Engineering Reviews.

Intelligence Command and Control (C2) supports the employment of reconnaissance, surveillance, and target acquisition resources and the timely planning and processing of all-source intelligence. It ensures that all-source tactical intelligence is tailored to meet specific mission requirements. The systems below collect and convert raw intelligence data on the battlefield into processed information and deliver the processed products to the Intelligence Analysis Systems (IAS) for analysis and dissemination.

Intelligence Analysis System, Family of Systems (IAS FoS) provides timely planning and all source fusion, analysis, and dissemination of intelligence across the Intelligence Community of the Marine Air-Ground Task Force (MAGTF). IAS FoS is a scalable system that supports all missions, and provides a tactical intelligence capability tailored to meet specific mission requirements. Advanced analytics provides improved linking of structured and unstructured data sources, data and information discovery, and improved interoperability of data and exchange amongst the existing toolset applications. Funding allows the IAS FoS to stay up-to-date with current technology (COTS/GOTS) that allows an increase in response time of intelligence analysis process, better quality intelligence products, and timely dissemination for units in all deployed environments. $553K increase from FY15 to FY16 supports integration, system testing, and evaluation of advanced analytic technologies into the Intelligence Analysis System (IAS) Family of Systems (FoS).

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

Intelligence Broadcast Receiver (IBR) family conforms to the DoD Integrated Broadcast Service (IBS) objectives of interoperability and commonality across the Services to receive and process near real-time intelligence data. The Universal Serial Bus (USB) Embedded National Tactical Receiver (ENTR) system, the newest component of the IBR family, is an integral portion of 7 Programs of Record, providing a significant reduction in size and weight. The USB ENTR provides access to IBS data via Ultra High Frequency (UHF) Satellite Communications (SATCOM) broadcast channels delivering near real-time intelligence information within Combatant Commanders theater of operation allowing intelligence analysis to respond to accelerated operations cycles.

Intelligence Equipment Readiness (IER) supports rapid prototyping and integration of emerging technologies involving national systems data. IER provides a responsive capability to alleviate Marine Corps intelligence systems shortfalls created by rapidly evolving technology, missions and threats. The program provides for rapid technology insertion, training and logistics, and the time sensitive intelligence infrastructure requirements of Marine Corps Operating Forces and the theater and service intelligence organizations supporting those forces. IER addresses requirements that span the entire Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISR-E).

Joint Surveillance Target Attack Radar (JSTARS) receives near-real-time Moving Target Indicator and Synthetic Aperture Radar (SAR) data from the JSTARS E-8C aircraft. JSTARS Common Ground Stations (CGS) and Joint Service Workstations (JSWS) process, display, exploit and support evaluation of information received. In FY15 JSTARS will be subsumed into DCGS-MC (PE 0305208M).

MAGTF Secondary Imagery Dissemination System (MSIDS) Family of Systems (FoS) provides organic tactical digital imagery collection, transmission and receiving capability to the MAGTF Commander. MSIDS is comprised of components necessary to enable Marines to capture, manipulate, annotate, transmit and receive images in Near Real Time (NRT), internally with subordinate commands that are widely separated throughout the areas of operation and externally with higher and adjacent commands. MSIDS capability resides with the MAGTF G/S-2 sections and Ground Reconnaissance Battalions, Light Armored Reconnaissance Battalions, Infantry Battalion Scout Sniper Platoons and Marine Corps Forces Special Operations Command. The MSIDS FoS extends the digital imaging capability to all echelons within the Marine Expeditionary Force (MEF), down to and including battalions and squadrons. Captured images are capable of being forwarded throughout the MAGTF through the use of Base Station Workstation/Communication Interface (BW/CI), Out Station Workstation/Communication Interface (OW/CI) or existing C4ISR architecture. Images can also be transmitted to the Tactical Exploitation Group (TEG) for more detailed processing and analysis. The Video Exploitation Workstation (VEW) is used to import, manipulate, annotate still and video imager, create intelligence products, lift still frames from video, view multi-format TV signals and provide a field briefing capability.

Sensitive Compartmented Information Communications (SCI COMMS) - is a Super-High Frequency (SHF) multi-band satellite communications terminal, available in a transit case configuration that provides dedicated tactical communications capability at the Top Secret/Sensitive Compartmented Information (TS/SCI) and Secret Collateral levels to USMC intelligence units. TROJAN SPIRIT terminals provide connectivity into Joint Worldwide Intelligence Communications System (JWICS), National Security Agency Network (NSANET) and Secret Internet Protocol Router Network (SIPRNET) via the TROJAN Network Control Center. Funding supports research, development and testing of incremental product improvements, product interoperability and accreditation for Top Secret/Sensitive Compartmented Information (TS/SCI) connectivity. Decrease of $0.448M from FY14 to FY15 represents accelerated procurement of required test articles in FY14 on an existing Small Business Innovation Research (SBIR) contract. Decrease of $0.462M from FY15 to FY16 reflects decreased efforts for Government Acceptance Testing and support of Engineering Change Proposals.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

Tactical Exploitation of National Capabilities (TENCAP) exploits current national reconnaissance systems and programs by examining both technical and operational capabilities, implementing training, and sponsoring concept demonstrations to directly support Marine Corps operating forces. The goal is to pursue technologies which exploit data from national systems to enhance intelligence support to the Marine Air-Ground Task Force (MAGTF) and/or the supported Joint Task Force commander. The increase of $0.407M from FY15 to FY16 reflects increased engineering and technical efforts to develop and transition national capabilities to the tactical user.

Tactical Remote Sensor Systems (TRSS) provides all weather direction, location determination, targeting, and tactical indications and warning of enemy activity in the Marine Air-Ground Task Force (MAGTF) Commander's Area of Interest. TRSS is an equipment suite consisting of three primary sub-systems: Unattended Ground Sensors (UGS); Relay Systems; and monitoring systems. The sensor systems include seismic/acoustic sensors, electro-magnetic sensors, and infrared (passive) sensors. The relay systems include SATCOM retransmission systems. The monitoring system includes the Sensor Monitoring imaging sensors group and Hand-Held Monitors (HHM). The composition of the three sub-systems are comprised of several individual components. Upgrading individual components will occur on an as needed basis. TRSS 6.0 development improves the TRSS sensor management software in order to integrate TRSS sensor systems with theater-provided-equipment sensor systems and improve system interoperability.

Tactical Signal Intelligence (SIGINT) Collection System (TSCS): TSCS incorporates Team Portable Collection System (TPCS) and Radio Reconnaissance Equipment Program (RREP) into a single effort beginning in FY14. It provides modular, lightweight and team/man transportable/portable systems and components which provide signal intercept, collection, Direction-Finding (DF), reporting and collection management capability to MAGTF Commander. It provides the MAGTF Commander with a modular and scalable carry on/carry off suite of equipment which exploits information from more technically advanced target sets. TSCS uses rapid technology insertion processes and procedures to incorporate advanced SIGINT technology to allow the MAGTF Commander to maintain technological superiority. The decrease of $2.047M from FY15 to FY16 represents reduced development of advanced SIGINT technology.

Technical Control Analysis Center (TCAC), consisting of the AN/UYQ-83 TCAC Remote Analysis Workstation (RAWS), AN/MYQ-9 TCAC Transportable Workstation, Multi-Level Security (MLS)/Cross Domain Solution (CDS) and the One Roof system, is the focal point of Radio Battalions (RADBN), Marine Corps Forces Special Operations Command (MARFORSOC), and Fixed Wing Marine Electronic Attack Squadron (VMAQ) Signals Intelligence (SIGINT) operations. TCAC automatically collects, stores, retrieves and plays back digital audio signals; fuses and analyzes SIGINT data from tactical, theater and national collectors and databases for dissemination to tactical commanders. TCAC provides SIGINT analysis applications to deployable Marine Air-Ground Task Force (MAGTF) units capable of directing and managing the technical and operational functions of other RADBN SIGINT/Electronic Warfare (EW) assets. TCAC provides termination of national, theater and tactical data networks for data exchange with the tactical SIGINT/EW assets, the Intelligence Analysis System (IAS), national databases, and provides USMC tactical SIGINT collection and analytical data into the Real-Time Regional Gateway (RTRG) and Distributed Common Ground System - Marine Corps (DCGS-MC).

Wide Field of View Persistent Surveillance (WFVPS) is a Marine Corps UUNS (10-335UA) in response to a CENTCOM JUONS (CC-0424) call for a Wide Area Staring Sensor on-board an organic USMC small UAV supporting operations in Afghanistan. There is no additional funding for the WFVPS program beyond FY14.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: *Communication Emitter Sensing and Attacking System (CESAS): Product Development	4.481	0.425	0.450	-	0.450
Articles:	3	-	-	-	-
FY 2014 Accomplishments: -Continued development of CESAS II. Accepted, integrated and built three Engineering Development Models. -Conducted Non Developmental Item Integration Review and Test Readiness Review (Systems Engineering Technical Review events). After successful testing, conducted planning for Systems Verification Review in preparation for Milestone C. ***FY 2015 Plans:*** Complete development of CESAS II. ***FY 2016 Base Plans:*** Development of required modifications for CESAS II. ***FY 2016 OCO Plans:*** N/A					
Title: *Communication Emitter Sensing and Attacking System (CESAS): Test and Evaluation	1.598	0.051	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: - Initiated CESAS II developmental test and evaluation. - Conducted two phase development and environmental tests. ***FY 2015 Plans:*** Complete CESAS II developmental test and evaluation. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: *Communication Emitter Sensing and Attacking System (CESAS): Support	0.107	0.024	0.050	-	0.050
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continued program support for Milestone C including all acquisition documentation requirements such as Clinger Cohen Act, Acquisition Strategy and Integrated Master Schedule, production and sustainment planning. ***FY 2015 Plans:*** Continue to provide program support for CESAS II. ***FY 2016 Base Plans:*** Continue to provide program support for required modifications to CESAS II. ***FY 2016 OCO Plans:*** N/A					
Title: *Counterintel and Human Intel Equip (CIHEP): Support - Engineering and Technical	0.191	-	0.500	-	0.500
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued the engineering, integration and technical support for planned refresh of CIHEP hardware and software. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** -Initiate and provide interoperability between refreshed CIHEP Family of Systems components. -Continue engineering, integration and technical support required for planned CIHEP hardware and software refresh. ***FY 2016 OCO Plans:*** N/A					
Title: *Intelligence Analysis System (IAS): Product Development	1.571	1.340	1.791	-	1.791
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated integration, system testing and evaluation of advanced analytic technologies into the Intelligence Analysis System (IAS) Family of Systems (FoS). ***FY 2015 Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue integration, system testing, and evaluation of advanced analytic technologies into the Intelligence Analysis System (IAS) Family of Systems (FoS). -Initiate market research, evaluation and development of advanced analytics for transition into the IAS FoS. ***FY 2016 Base Plans:*** -Continue integration, system testing, and evaluation of advanced analytic technologies into the Intelligence Analysis System (IAS) Family of Systems (FoS). -Continue market research, evaluation and development of advanced analytics for transition into the IAS FoS. ***FY 2016 OCO Plans:*** N/A					
Title: *Intelligence Analysis System (IAS): Support	2.033	0.900	1.002	-	1.002
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued program management support for integration of advanced analytics tools into the IAS FoS software baseline. ***FY 2015 Plans:*** Continue program management support for integration of advanced analytics tools into the IAS FoS software baseline. ***FY 2016 Base Plans:*** Continue program management support for integration of advanced analytics tools into the IAS FoS software baseline. ***FY 2016 OCO Plans:*** N/A					
Title: *Intelligence Broadcast Receiver (IBR): Support - Engineering and Technical	0.961	0.100	0.100	-	0.100
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated interoperability software certification for Tactical Receive Segment (TRS) and Universal Serial Bus (USB) Embedded National Tactical Receiver (ENTR) firmware update. ***FY 2015 Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue the interoperability software certification for Tactical Receive Segment (TRS). ***FY 2016 Base Plans:*** Continue required recurring interoperability software certification for Tactical Receive Segment (TRS). ***FY 2016 OCO Plans:*** N/A					
Title: *Intelligence Equipment Readiness (IER): Product Development	0.411	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed integration of autotracker capability and functionality into DCGS-MC software baseline. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: *Joint Surveillance Target Attack Radar System (JSTARS): Product Development	2.316	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated integration of next generation Ground Moving Target Indicator (GMTI) exploitation system. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: *Joint Surveillance Target Attack Radar System (JSTARS): Test and Evaluation	1.154	-	-	-	-
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: Continued Test and evaluation support for the next generation GMTI exploitation system. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: *MAGTF Secondary Imagery Dissemination System (MSIDS): Support - Engineering and Technical	0.388	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued technical and engineering support required for the hardware and software refresh. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: *SCI COMMS: Support - Engineering and Technical Support	1.109	0.661	0.199	-	0.199
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated test and evaluation of SCI COMMS High Bandwidth Special Intelligence-Palletized Terminal (HBSI-PT) to include Bandwidth in order to test for interoperability and accreditation for Top Secret/Sensitive Compartmented Information (TS/SCI) connectivity with the TROJAN Network Center. ***FY 2015 Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Initiate engineering analysis and technical evaluation to identify and provide recommendations for resolution of critical technical, test and evaluation, and technology issues. ***FY 2016 Base Plans:*** Initiate and support Government Acceptance Testing (GAT). Support Engineering Change Proposals (ECP) for the Sensitive Compartmented Information Kit (SCIK) network refresh planned for FY 2017. ***FY 2016 OCO Plans:*** N/A					
Title: *Tactical Exploitation of National Capabilities (TENCAP): Product Development	0.629	1.225	1.356	-	1.356
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued to provide program management and support for the evaluation of innovative intelligence community and national intelligence systems applicability to the operating forces. -Conducted technical assessments and field utility evaluations for the integration of current and emerging intelligence capabilities into the tactical decision making process. -Continued to support operational planning and enhance operating force capabilities through development of advanced technologies for the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISRE) architecture. -Continued training and education efforts by providing the operating forces with supported simulation, visualization, and improved mission planning capabilities. -Continued to support the congressionally mandated TENCAP office and ongoing activities. ***FY 2015 Plans:*** -Continue support to program management of the Marine Corps TENCAP program for the evaluation of innovative intelligence community and national intelligence systems applicability to the operating forces. -Initiate providing subject matter experts and project management support for the execution of technical assessments and field utility evaluations for the integration of current and emerging intelligence capabilities into the tactical decision making process. -Continue to support operational planning and enhance operating force capabilities through the identification and development of advanced technologies for the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISRE) architecture. -Continue training and education efforts by providing the operating forces with supported simulation, visualization, and improved mission planning capabilities.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue to support the congressionally mandated TENCAP office and all associated ongoing activities, to include the interactions with national agencies, the intelligence community, research laboratories, private industry, and academia. ***FY 2016 Base Plans:*** -Continue support to program management of the Marine Corps TENCAP program for the evaluation of innovative intelligence community and national intelligence systems applicability to the operating forces. -Continue to provide subject matter experts and project management support for the execution of technical assessments and field utility evaluations for the integration of current and emerging intelligence capabilities into the tactical decision making process. -Continue to support operational planning and enhance operating force capabilities through the identification and development of advanced technologies for the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISRE) architecture. -Continue training and education efforts by providing the operating forces with supported simulation, visualization, and improved mission planning capabilities. -Continue to support the congressionally mandated TENCAP office and all associated ongoing activities, to include the interactions with national agencies, the intelligence community, research laboratories, private industry, and academia. ***FY 2016 OCO Plans:*** N/A					
Title: *Tactical Exploitation of National Capabilities (TENCAP): Technical Assessments	3.502	2.900	3.176	-	3.176
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued conducting research and development, advanced technology demonstrations, and integration of emerging technologies into Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISRE). -Continued conducting technical assessments and field utility evaluations of innovative capabilities for evaluating insertion into the MCISRE. -Continued coordinating with services, national agencies, laboratories, industry, and academia for exploration of collaborative S&T/R&D efforts to integrate intelligence capabilities into existing and future operating force systems and architectures. ***FY 2015 Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Continue the evaluation and assessment of emerging intelligence technologies for applicability to USMC needs and requirements. -Continue to conduct technical assessments and field utility evaluations of innovative capabilities for evaluating insertion into the MCISRE. -Continue to conduct research and development, advanced technology demonstrations, and integration of emerging technologies into the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISRE). -Continue coordination with services, national agencies, laboratories, industry, and academia for exploration of collaborative S&T/R&D efforts to integrate intelligence capabilities into existing and future operating force systems and architectures. ***FY 2016 Base Plans:*** -Continue to evaluate and assesses emerging intelligence technologies for applicability to USMC needs and requirements. -Continue to conduct technical assessments and field utility evaluations of innovative capabilities for evaluating insertion into the MCISRE. -Continue to conduct research and development, advanced technology demonstrations, and integration of emerging technologies into the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISRE). -Continue to coordinate with services, national agencies, laboratories, industry, and academia for exploration of collaborative S&T/R&D efforts to integrate intelligence capabilities into existing and future operating force systems and architectures. ***FY 2016 OCO Plans:*** N/A					
Title: *Tactical Remote Sensor System (TRSS): Product Development - CSR Integration	1.762	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued TRSS Common Sensor Radio (CSR) modernization initiative to standardize communication. This modernization effort was required to develop critical upgrades to TRSS systems to improve the sensor systems. ***FY 2015 Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: *Tactical Remote Sensor System (TRSS): Test and Evaluation - IOT&E ***Articles:*** ***FY 2014 Accomplishments:*** Continued test and evaluation events/IOT&E for the TRSS Common Sensor Radio (CSR) baseline. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A	0.417 -	- -	- -	- -	- -
Title: *Tactical Remote Sensor System (TRSS): Support - Engineering and Technical ***Articles:*** ***FY 2014 Accomplishments:*** Continued engineering and technical management support required for developing critical upgrades to TRSS systems. The TRSS modernization initiative will standardize communication and interoperability with other military equipment/sensor systems currently in use and being developed. ***FY 2015 Plans:*** Continue the engineering and technical management support required for developing critical upgrades to TRSS systems. ***FY 2016 Base Plans:*** Continue engineering and technical management support required for developing critical upgrades to TRSS systems. ***FY 2016 OCO Plans:***	0.996 -	0.100 -	0.100 -	- -	0.100 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: *Tactical Signal Intelligence (SIGINT) Collection System (TSCS): Product Development	2.269	1.739	0.397	-	0.397
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated development of TPCS Modular Case technology insertions and RREP Refresh of Direction Finding, Basic Collection, and Tactical workstation. TPCS and RREP are subsumed into the TSCS line in FY14.					
FY 2015 Plans: Continue development of TPCS and RREP technology refresh and technology insertions to support additional signals of interest.					
FY 2016 Base Plans: Continue development for ongoing TPCS and RREP technology refresh and technology insertions as well as potential engineering changes.					
FY 2016 OCO Plans: N/A					
Title: *Tactical Signal Intelligence (SIGINT) Collection System (TSCS): Test and Evaluation	0.719	0.609	0.100	-	0.100
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated test and evaluation of TPCS Modular Case technology insertions and RREP Refresh of Direction Finding, Basic Collection, and Tactical workstation. TPCS and RREP are subsumed into the TSCS line in FY14.					
FY 2015 Plans: Continue test and evaluation efforts for TPCS and RREP technology refresh and technology insertions to support additional signals of interest.					
FY 2016 Base Plans:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue test and evaluation efforts for ongoing TPCS and RREP technology refresh and technology insertions as well as potential engineering changes. ***FY 2016 OCO Plans:*** N/A					
Title: *Tactical Signal Intelligence (SIGINT) Collection System (TSCS): Support	2.254	0.609	0.413	-	0.413
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated program support and management for TPCS technology insertions to support additional signals of interest, RREP technology refresh of Advanced Collection kit and workstation. TPCS and RREP are subsumed into the TSCS line in FY14. ***FY 2015 Plans:*** Continue to provide program support and management for TPCS and RREP technology refresh and technology insertions to support additional signals of interest. ***FY 2016 Base Plans:*** Continue to provide program support and management for ongoing TPCS and RREP technology refresh and technology insertions as well as potential engineering changes. ***FY 2016 OCO Plans:*** N/A					
Title: *Technical Control and Analysis Center (TCAC): Product Development	4.249	1.760	1.848	-	1.848
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Initiated integration of TCAC Cyber Analysis tools and Cross Domain Solution into the TCAC Family of Systems (FoS). ***FY 2015 Plans:*** Continue integration, testing, and selection of next generation TCAC analysis tools and hardware components such as the Remote Analysis Work Station (RAWS) and Cross Domain Solution (CDS) into the TCAC FoS. ***FY 2016 Base Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue integration and testing of next generation TCAC analysis tools and hardware components such as the Transportable Workstation (TWS) and Real Time Regional Gateway (RTRG) Expeditionary nodes into the TCAC FoS. ***FY 2016 OCO Plans:*** N/A					
Title: *Technical Control and Analysis Center (TCAC): Support	2.095	1.727	1.670	-	1.670
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued technical support for the Integration of Cyber Analysis Tools into the TCAC FoS. ***FY 2015 Plans:*** Continue technical support for integration of next generation TCAC analysis tools and hardware components such as the RAWS and CDS into the TCAC FoS. ***FY 2016 Base Plans:*** Continue technical support for integration of next generation TCAC analysis tools and hardware components such as the TWS and RTRG Expeditionary nodes into the TCAC FoS. ***FY 2016 OCO Plans:*** N/A					
Title: *Wide Field of View Persistent Surveillance (WFVPS): Product Development	0.001	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed program close-out. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	35.213	14.170	13.152	-	13.152

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/474703: *TCAC*	0.801	12.226	10.999	-	10.999	4.934	1.840	6.393	6.521	Continuing	Continuing
• PMC/474717: *MSIDS*	1.635	-	-	-	-	-	-	-	-	Continuing	Continuing
• PMC/474719: *JSTARS*	1.881	-	-	-	-	-	-	-	-	-	5.938
• PMC/474761: *IAS*	27.840	10.122	5.603	-	5.603	21.633	1.939	9.725	9.929	Continuing	Continuing
• PMC/700000: *IAS SPARES*	0.100	0.101	0.101	-	0.101	0.155	0.158	0.160	0.164	Continuing	Continuing
• PMC/700004: *SCI COMMS SPARES*	0.100	0.700	-	-	-	-	-	-	-	-	0.800
• PMC/474709: *CIHEP*	0.095	5.582	5.211	-	5.211	5.247	-	1.031	1.052	Continuing	Continuing
• PMC/474702: *TSCS*	14.145	0.468	1.462	-	1.462	6.090	0.218	5.658	5.771	Continuing	Continuing
• PMC/474701: *CESAS*	0.023	3.230	0.701	-	0.701	2.253	-	-	-	Continuing	Continuing
• PMC/474700: *SCI COMMS*	11.660	2.230	1.500	-	1.500	0.200	0.235	0.239	0.244	Continuing	Continuing
• PMC/474704: *TRSS*	2.276	-	-	-	-	0.036	-	0.034	-	Continuing	Continuing
• PMC/700003: *TRSS SPARES*	0.122	0.100	0.100	-	0.100	0.064	-	0.066	0.002	Continuing	Continuing
• PMC/700005: *MSIDS SPARES*	0.188	0.100	0.100	-	0.100	0.100	0.100	0.100	0.102	Continuing	Continuing
• PMC/474732: *IER*	2.005	-	-	-	-	-	-	0.041	-	-	2.046
• PMC/474752: *IBR*	0.888	0.100	0.053	-	0.053	0.024	0.028	0.026	0.027	Continuing	Continuing

Remarks

Tactical Signal Intelligence (SIGINT) Collection System (TSCS)(MCPC 120514) incorporates Team Portable Collection System (TPCS)(MCPC 121498) and Radio Reconnaissance Equipment Program (RREP)(MCPC 122498) into a single program beginning in FY 2014.

D. Acquisition Strategy

(U) SCI COMMS: Transitions the USMC TROJAN SPIRIT systems to the High Bandwidth Special Intelligence Palletized Terminal (HBSI-PT). The palletized system enables global access to tactical, theater, and national intelligence data stores facilitating functions, which include tasking, reporting, and dissemination by elements ranging from Ground Combat Elements to a Marine Expeditionary Force Command Element.

(U) TCAC: The acquisition of components for the TCAC will maximize the use of existing equipment, NDI/COTS/GFE equipment/software.

(U) JSTARS: JSTARS will use ongoing Distributed Common Ground System - Marine Corps (DCGS-MC) contracts for continued development of a future Ground Moving Target Indicator (GMTI) capability.

(U) TRSS: TRSS makes maximum use of COTS, GOTS and NDI with Firm Fixed Price Production.

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(U) TPCS: TPCS will make incremental improvements through maximum use of COTS, GOTS and NDI with Firm Fixed Price production.

(U) WFVPS: FY14 program close-out.

(U) MSIDS: MSIDS makes maximum use of COTS, GOTS and NDI with Firm Fixed Price Production.

(U) IER: IER makes maximum use of COTS, GOTS and NDI with Firm Fixed Price Production.

(U) IAS: IAS makes maximum use of COTS, GOTS and NDI with Firm Fixed Price Production.

(U) RREP: RREP makes maximum use of COTS, GOTS and NDI with Firm Fixed Price Production.

(U) CIHEP: CIHEP makes maximum use of COTS, GOTS and NDI with Firm Fixed Price Production.

(U) IBR: IBR software upgrades are developed at Naval laboratories and integrated into the system.

(U) TENCAP: All work will be led in-house and necessary contractor support will be acquired using existing contracts. Research, test and integrate new technology and conduct advanced technology demonstrations to identify the most appropriate programs which are mature for integration of emerging technologies into the Marine Corps Intelligence, Surveillance, and Reconnaissance Enterprise (MCISR-E).

(U) CESAS: CESAS II development will consist of COTS and NDI integration into an existing GOTS architecture. Integration efforts will be conducted at Naval laboratories.

(U) Tactical Signal Intelligence (SIGINT) Collection System (TSCS): TSCS makes maximum use of COTS, GOTS and NDI with Firm Fixed Price Production.

E. Performance Metrics

N/A

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years Cummulative Funding	Various	Various : Various	14.233	-		-		-		-		-	-	14.233	-
CESAS	WR	SPAWAR : CHARLESTON, SC	0.289	1.224	Nov 2013	0.225	Nov 2014	0.450	Nov 2015	-		0.450	-	2.188	-
CESAS	C/FFP	SPAWAR8 : CHARLESTON, SC	1.238	1.004	Jun 2014	0.200	Nov 2014	-		-		-	-	2.442	-
CESAS	WR	NAWC : PT MUGU, CA	1.188	1.793	Dec 2013	-		-		-		-	-	2.981	-
CESAS	WR	NSWC : CRANE, IN	0.140	0.094	Dec 2013	-		-		-		-	-	0.234	-
CESAS	C/CPFF	NSMA : WASHINGTON, DC	0.000	0.366	Mar 2014	-		-		-		-	-	0.366	-
IAS	WR	SPAWAR3 : CHARLESTON, SC	4.322	1.571	May 2014	1.340	Jan 2015	1.791	Jan 2016	-		1.791	Continuing	Continuing	Continuing
IER	Various	VARIOUS : VARIOUS	2.593	0.411	Mar 2014	-		-		-		-	-	3.004	-
JSTARS	C/FFP	NRL : WASHINGTON, DC	0.000	2.316	Jan 2014	-		-		-		-	-	2.316	-
TENCAP	C/CPFF	MANTECH : STAFFORD, VA	0.000	0.629	Jan 2014	-		-		-		-	-	0.629	-
TENCAP	Various	Various : Various	0.000	2.697	Feb 2014	3.420	Nov 2014	3.827	Nov 2015	-		3.827	-	9.944	-
TENCAP	WR	SPAWAR : CHARLESTON, SC	0.000	0.605	Nov 2013	0.505	Nov 2014	0.505	Nov 2015	-		0.505	Continuing	Continuing	Continuing
TENCAP	FFRDC	MITRE : STAFFORD, VA	0.000	0.200	Apr 2014	0.200	Apr 2015	0.200	Apr 2016	-		0.200	Continuing	Continuing	Continuing
TRSS	WR	SPAWAR7 : CHARLESTON, SC	0.702	1.762	Jan 2014	-		-		-		-	-	2.464	-
TSCS	WR	SPAWAR : CHARLESTON, SC	0.000	1.593	Nov 2013	1.739	Jan 2015	0.397	Nov 2015	-		0.397	-	3.729	-
TSCS	C/CPFF	SPAWAR77 : CHARLESTON, SC	0.000	0.676	Jun 2014	-		-		-		-	-	0.676	-
TCAC	C/CPFF	SPAWAR2 : Charleston, SC	0.000	-		0.880	Jan 2015	0.968	Jan 2016	-		0.968	-	1.848	-

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TCAC	WR	SPAWAR8 : San Diego, CA	1.667	4.249	Jan 2014	0.880	Jan 2015	0.880	Jan 2016	-		0.880	Continuing	Continuing	Continuing
WFVPS	C/CPFF	NRL : WASHINGTON, DC	0.280	0.001	Mar 2014	-		-		-		-	-	0.281	-
		Subtotal	26.652	21.191		9.389		9.018		-		9.018	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CESAS	Various	MCSC : QUANTICO, VA	0.023	0.107	Sep 2014	0.024	Sep 2015	0.050	Sep 2016	-		0.050	-	0.204	-
CIHEP	WR	SPAWAR : CHARLESTON, SC	0.538	0.191	Jan 2014	-		0.500	Nov 2015	-		0.500	-	1.229	-
IAS	C/CPFF	SPAWAR-A : CHARLESTON, SC	13.468	2.033	Jan 2014	0.900	Jan 2015	1.002	Nov 2015	-		1.002	Continuing	Continuing	Continuing
IBR	WR	NSWC : CRANE, IN	0.167	0.450	Dec 2013	0.100	Jan 2015	0.100	Nov 2015	-		0.100	-	0.817	-
IBR	Various	VARIOUS : VARIOUS	0.000	0.511	Dec 2013	-		-		-		-	-	0.511	-
MSIDS	WR	SPAWAR-A1 : CHARLESTON, SC	0.000	0.388	Feb 2014	-		-		-		-	-	0.388	-
SCI COMMS	MIPR	US Army : Aberdeen, MD	0.000	0.529	Jun 2014	-		-		-		-	-	0.529	-
SCI COMMS	C/FFP	SSC LANT1 : Charleston, SC	0.166	0.242	Feb 2014	0.191	Jun 2015	-		-		-	-	0.599	-
SCI COMMS	MIPR	US Army, MITRE : Stafford, VA	0.160	0.188	Apr 2014	0.370	Mar 2015	-		-		-	-	0.718	-
SCI COMMS	C/FFP	MCSC : Quantico, VA	0.134	-		0.100	Jun 2015	-		-		-	-	0.234	-
SCI COMMS	WR	SSC LANT : Charleston, SC	0.000	0.150	Apr 2014	-		0.199	Jun 2016	-		0.199	-	0.349	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	Project (Number/Name) 2272 / *Intel Command and Control (C2) Sys*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TRSS	C/FFP	SPAWAR-A : CHARLESTON, SC	0.000	0.996	Apr 2014	-		-		-		-	-	0.996	-
TRSS	WR	SPAWAR-A2 : CHARLESTON SC	0.000	-		0.100	Nov 2014	0.100	Nov 2015	-		0.100	-	0.200	-
TSCS	WR	SPAWAR : CHARLESTON, SC	0.000	1.607	Nov 2013	-		-		-		-	-	1.607	-
TSCS	C/FFP	MCSC7 : QUANTICO, VA	0.000	0.577	Mar 2014	0.265	Mar 2015	0.403	Mar 2016	-		0.403	-	1.245	-
TSCS	Various	MCSC : QUANTICO, VA	0.000	0.070	Sep 2014	0.032	Sep 2015	0.010	Sep 2016	-		0.010	-	0.112	-
TSCS	C/FFP	MCSC8 : QUANTICO, VA	0.000	-		0.312	Jul 2015	-		-		-	Continuing	Continuing	Continuing
TCAC	C/FFP	MCSC : Quantico, Va	0.000	0.611	Jan 2014	-		-		-		-	-	0.611	-
TCAC	TBD	SPAWAR-P : San Diego, CA	0.797	1.484	May 2014	1.287	Jan 2015	1.187	Jan 2016	-		1.187	Continuing	Continuing	Continuing
TCAC	C/CPFF	SPAWAR-A : CHARLESTON, SC	0.382	-		0.440	Jan 2015	0.483	Jan 2016	-		0.483	Continuing	Continuing	Continuing
Prior Years Cumulative Funding	Various	Various : Various	22.285	-		-		-		-		-	-	22.285	-
		Subtotal	38.120	10.134		4.121		4.034		-		4.034	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CESAS	WR	SPAWAR : CHARLESTON, SC	0.000	1.023	Nov 2013	0.051	Nov 2014	-		-		-	-	1.074	-
CESAS	WR	NAWC : PT MUGU, CA	0.000	0.575	Dec 2013	-		-		-		-	-	0.575	-
JSTARS	C/FFP	NRL : WASHINGTON, DC	0.270	1.154	Jul 2014	-		-		-		-	-	1.424	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	Project (Number/Name) 2272 / *Intel Command and Control (C2) Sys*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
TRSS	WR	SPAWAR-A1 : CHARLESTON, SC	0.000	0.417	Mar 2014	-		-		-		-	-	0.417	-
TSCS	WR	SPAWAR : CHARLESTON, SC	0.000	0.719	Nov 2013	0.609	Jan 2015	0.100	Nov 2015	-		0.100	-	1.428	-
Prior Years Cumulative Funding	Various	Various : Various	6.542	-		-		-		-		-	-	6.542	-
		Subtotal	6.812	3.888		0.660		0.100		-		0.100	-	11.460	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	71.584	35.213		14.170		13.152		-		13.152	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

CESAS II Program Schedule

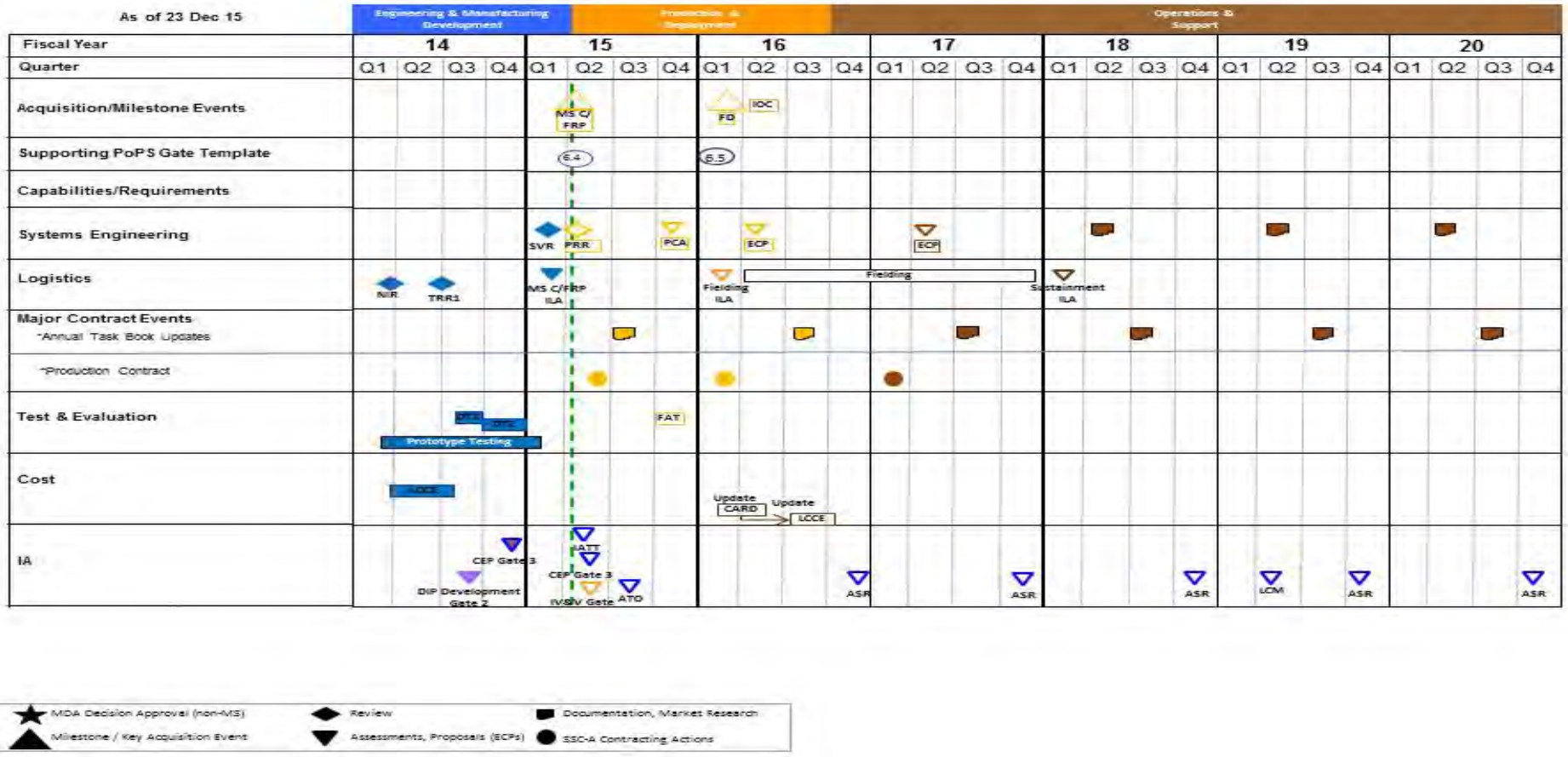

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

RREP Program Schedule

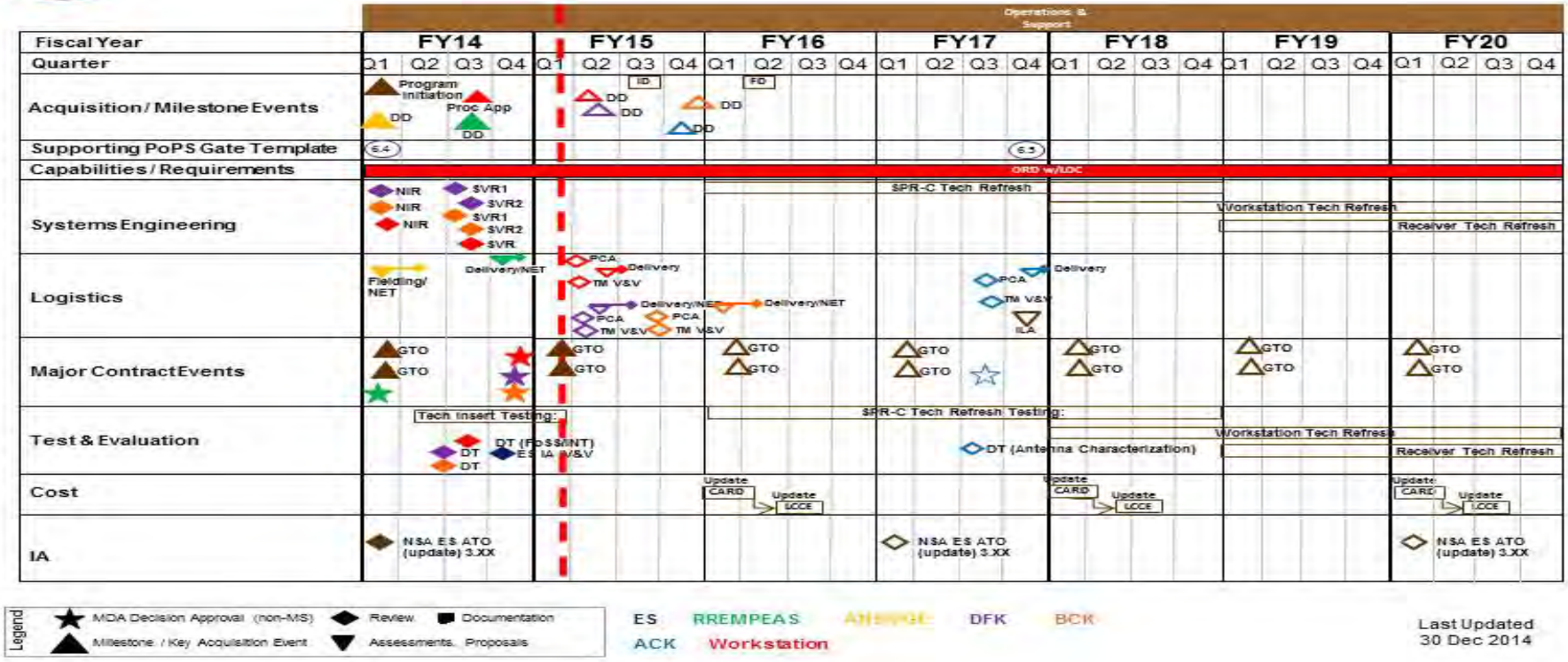

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

TPCS Program Schedule

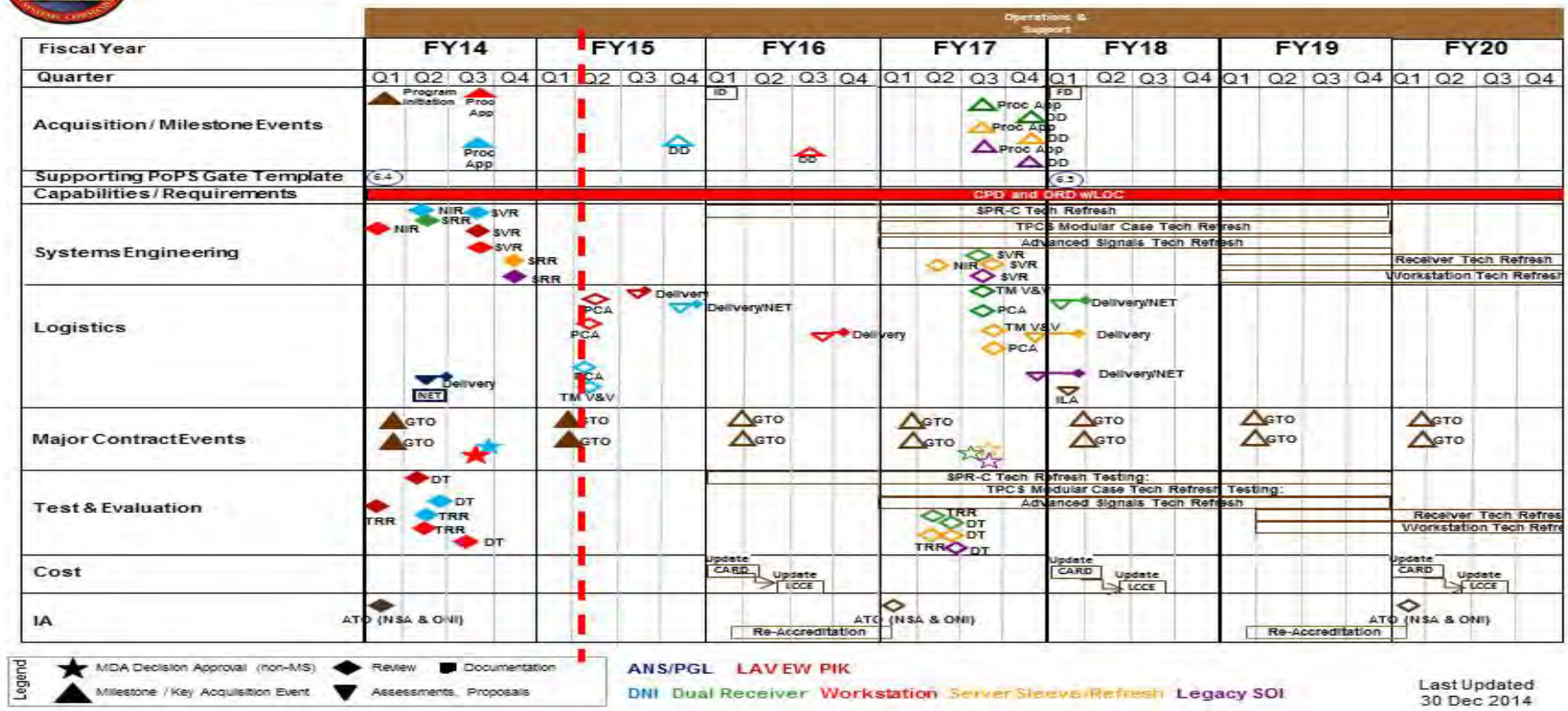

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

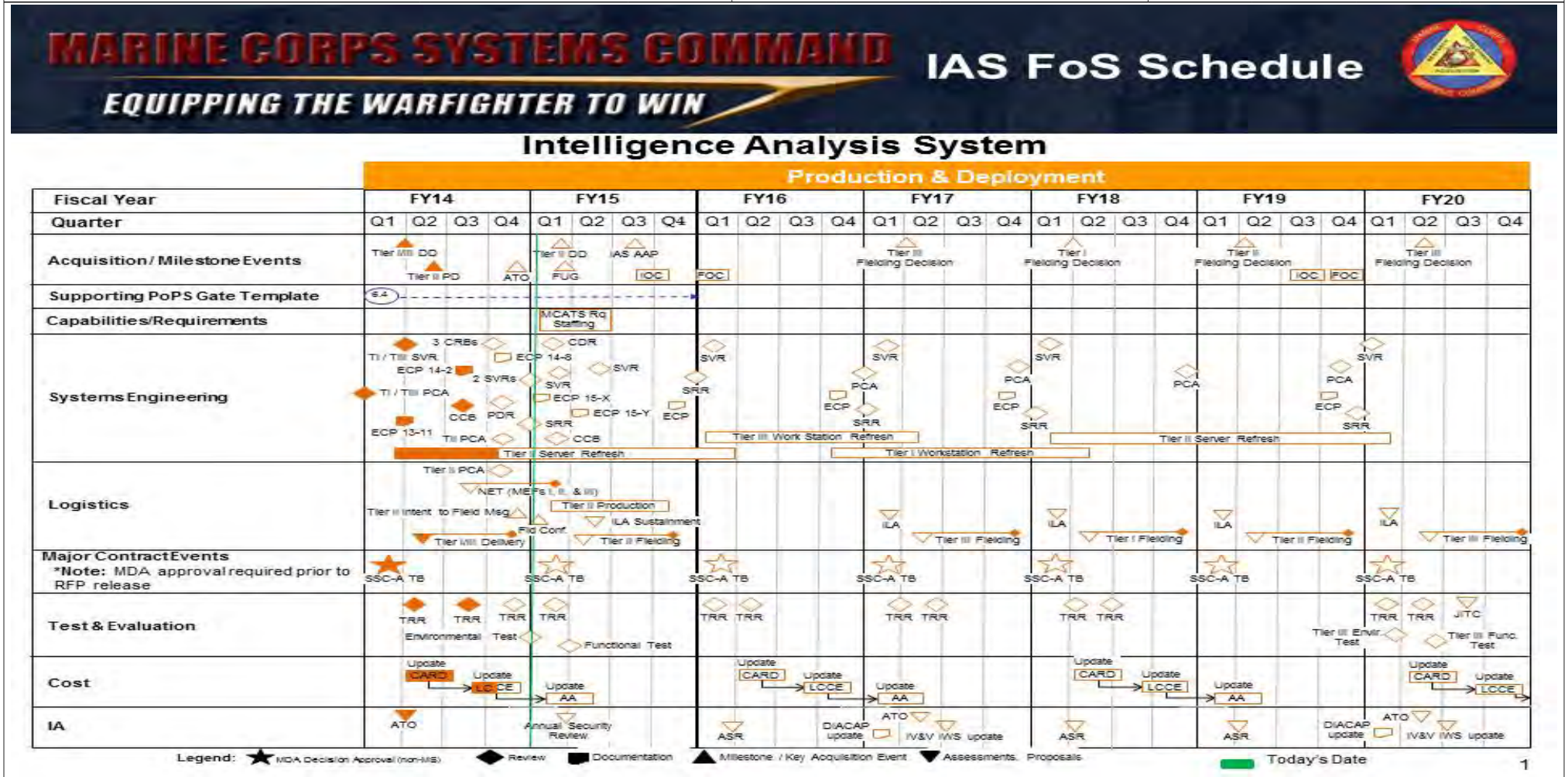

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

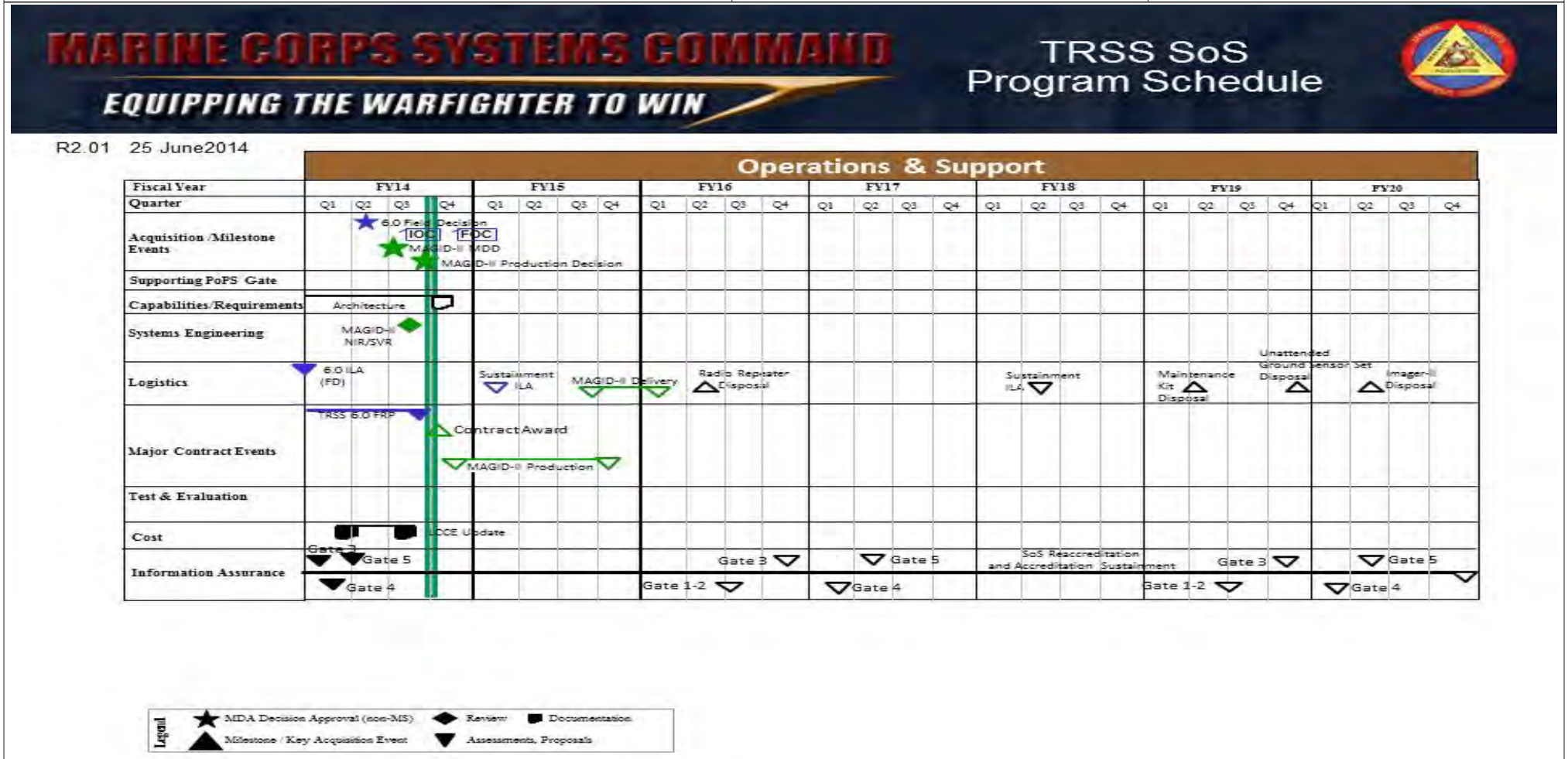

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

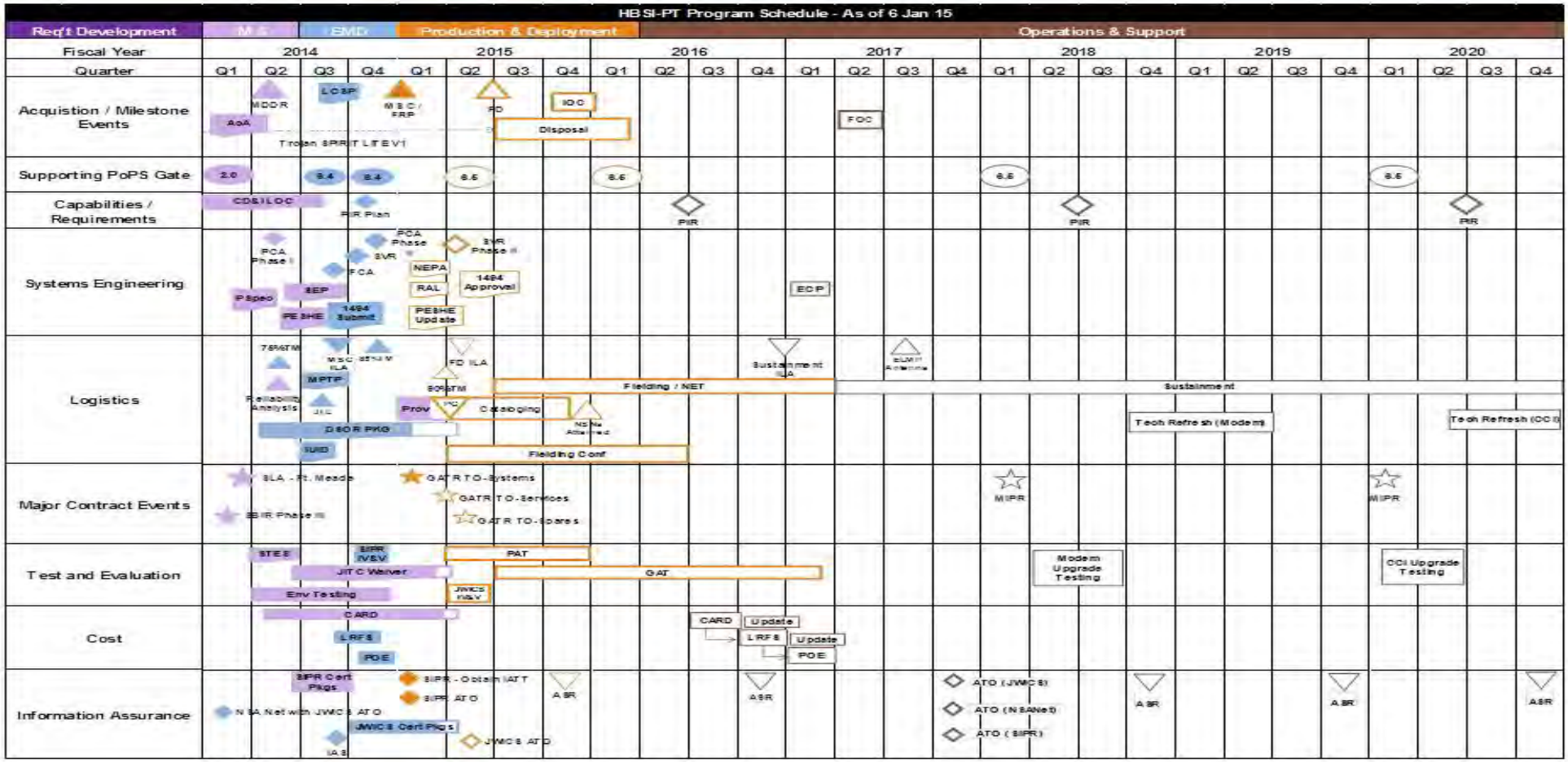

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

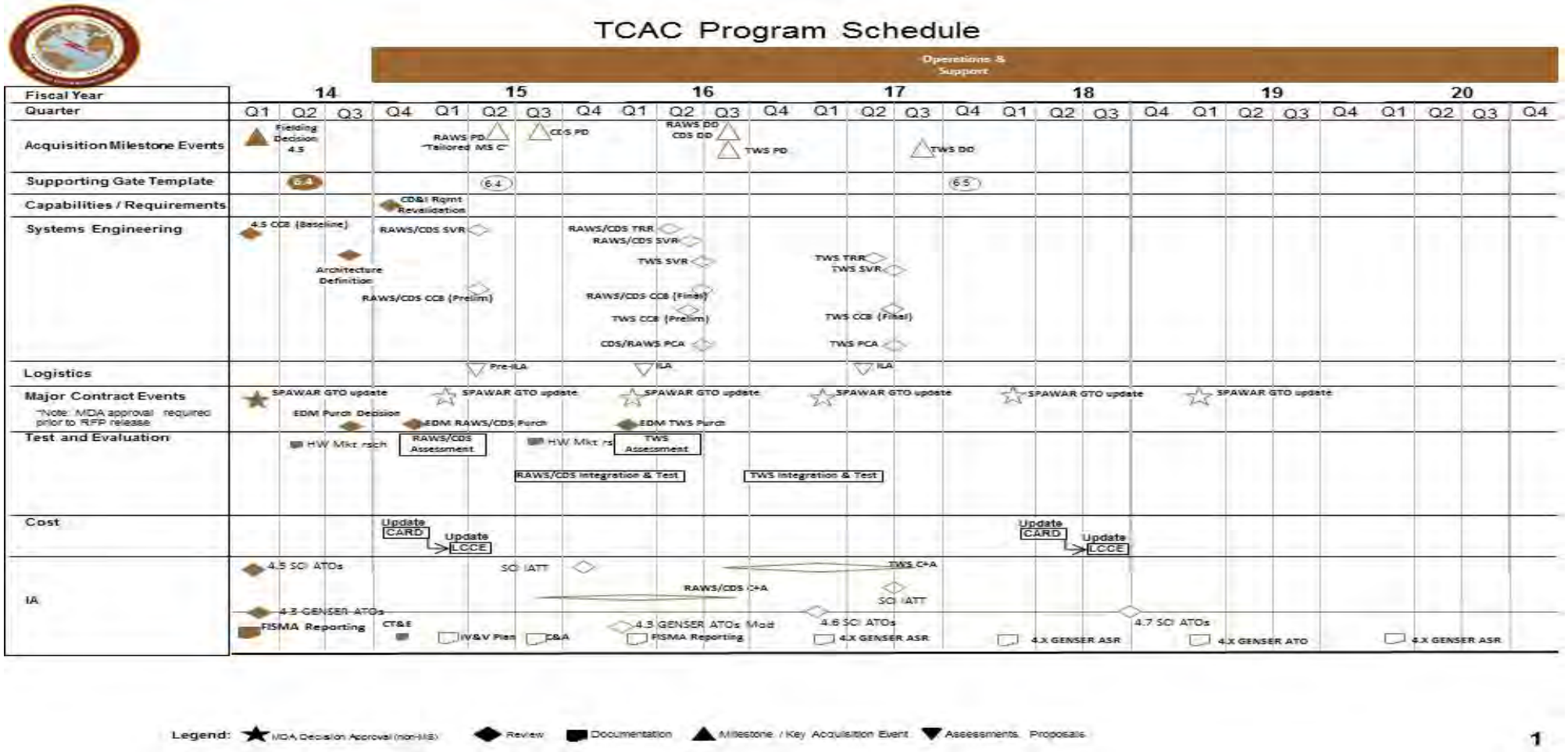

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

CIHEP FY14-15 Program Schedule

Updated: 20141222

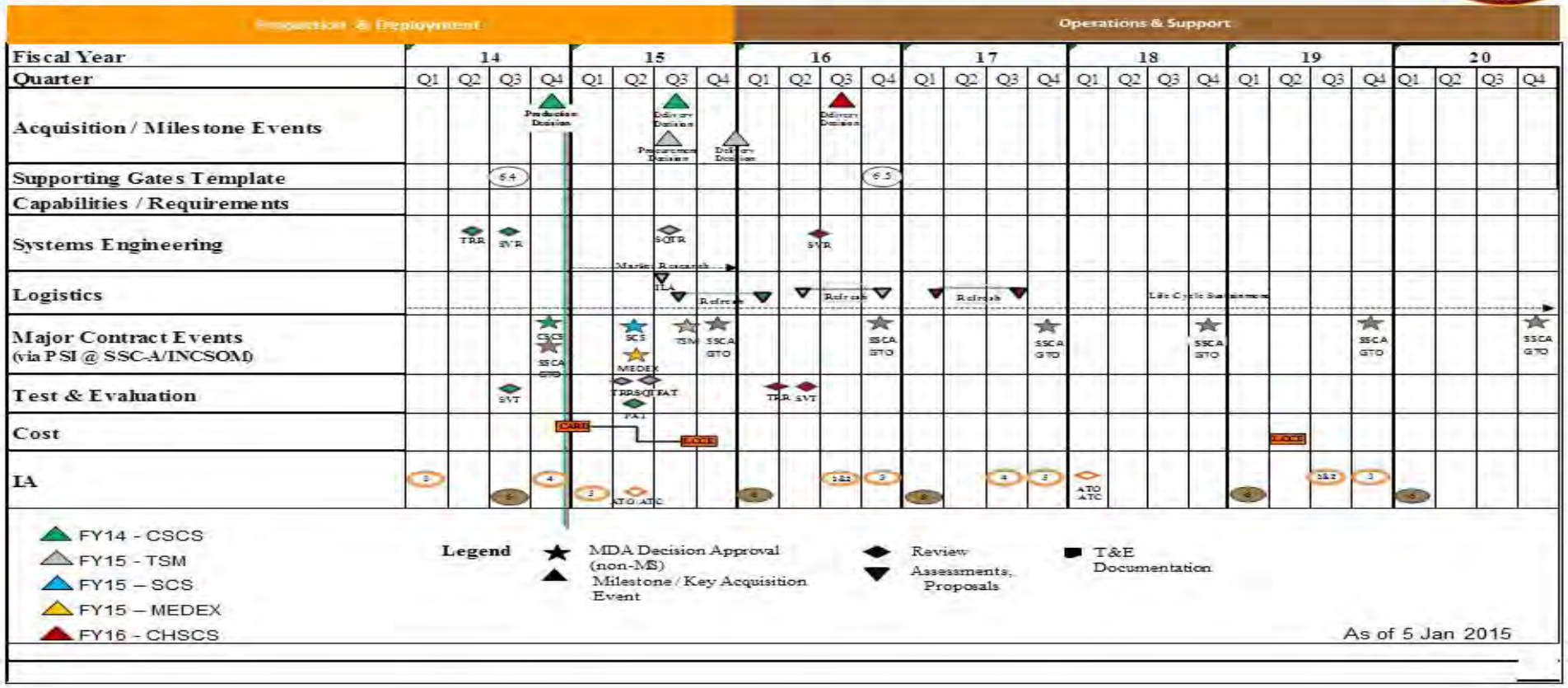

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** 2272 / *Intel Command and Control (C2) Sys*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2272				
TCAC 4.5 Fielding Decision (HW/SW Baseline)	1	2014	1	2014
TCAC Procurement Decision (HW/SW Server Refresh)	2	2015	2	2015
TCAC Fielding Decision (HW/SW Server Refresh)	4	2015	4	2015
TCAC Procurement Decision (HW/SW Laptop Refresh)	3	2016	3	2016
IAS Tier I/III Fielding Decision	2	2014	2	2014
IAS Tier II Fielding Decision	1	2015	1	2015
TRSS PIK IOC	3	2014	3	2014
CESAS MS C/ FRP	2	2015	2	2015
CESAS IOC	2	2016	2	2016
CESAS Fielding Decision	1	2016	1	2016
CIHEP Full Rate Production Decision TSM	3	2015	3	2015
CIHEP Delivery Decision	3	2015	3	2015
CIHEP FRP/Delivery Decision	3	2016	3	2016
CIHEP SVR	1	2015	1	2015
CIHEP System Verification Review	2	2016	2	2016
CIHEP Test Readiness Review	1	2016	1	2016
CIHEP Production Decision for CSCS	4	2014	4	2014
SCI COMMS MS C/FRP	1	2015	1	2015
SCI COMMS IOC	4	2015	4	2015
SCI COMMS FOC	2	2017	2	2017
SCI COMMS Fielding Decision	2	2015	2	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206625M / *USMC Intelligence/ Electronics Warfare Sys*	**Project (Number/Name)** *2272 / Intel Command and Control (C2) Sys*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
TSCS TPCS Initial Delivery ID/IOC (TPCS Tech Refresh)	1	2016	1	2016
TSCS RREP Initial Delivery ID/IOC (SS-3 MOD)	3	2015	3	2015
TSCS RREP Final Delivery FD/FOC (SS-3 MOD and Refresh)	2	2016	2	2016
TSCS TPCS Final Delivery FD/FOC (TPCS Tech Refresh)	1	2018	1	2018

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0206629M *I Amphibious Assault Vehicle*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	-	96.207	48.535	-	48.535	49.414	65.038	14.631	12.280	Continuing	Continuing
2938: *Amphibious Assault Vehicle*	0.000	-	96.207	48.535	-	48.535	49.414	65.038	14.631	12.280	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Assault Amphibious Vehicle (AAV) program provides life-cycle support to ensure cost-effective combat readiness for the AAV Family of Vehicles (FOV). This is accomplished through engineering changes resulting from continuous review of sub-systems to maintain system supportability, safety, reduce total ownership costs, improve fleet readiness, address obsolescence issues, and improve vehicle survivability and performance.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	96.207	48.535	-	48.535
Total Adjustments	-	96.207	48.535	-	48.535
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-8.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	104.207			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	48.535	-	48.535

Change Summary Explanation

The decrease ($47.672M) from FY15 to FY16 represents the completion of the AAV Survivability Upgrade prototype build and completion of nonrecurring engineering and design efforts for AAV turret and R7 recovery variant improvements.

NOTE: FY14 and prior funding is reflected in P.E. 0206623M/Project 0021.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206629M / *Amphibious Assault Vehicle*	Project (Number/Name) 2938 / *Amphibious Assault Vehicle*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2938: *Amphibious Assault Vehicle*	-	-	96.207	48.535	-	48.535	49.414	65.038	14.631	12.280	Continuing	Continuing
Quantity of RDT&E Articles		-	10	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Assault Amphibious Vehicle (AAV) program provides life-cycle support to ensure cost-effective combat readiness for the AAV Family of Vehicles (FOV). This is accomplished through engineering changes resulting from continuous review of sub-systems to maintain system supportability, safety, reduce total ownership costs, improve fleet readiness, address obsolescence issues, and improve vehicle survivability and performance. The AAV program also includes a survivability upgrade which will increase AAVP7A1 survivability and force protection while maintaining the required land and water mobility performance. This upgrade is derived from the need for an operationally effective amphibious armored personnel carrier capability bridge until the future amphibious combat vehicle reaches full operational capability.

The decrease ($47.672M) from FY15 to FY16 represents the completion of the AAV Survivability Upgrade prototype build and completion of nonrecurring engineering and design efforts for AAV turret and R7 recovery variant improvements.

NOTE: FY14 and prior funding is reflected in P.E. 0206623M/Project 0021.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	-	56.140	21.852	-	21.852
Articles:	-	10	-	-	-
Description: AAV Survivability Upgrade will improve the legacy AAV Force Protection capability. Improvements include improved underbelly protection, integrated blast mitigating seats, integrated spall liners, protected fuel storage, sponson armor, and selected improvements to maintain required water and land mobility. AAV modifications will provide NRE and design for AAV saftey, obsolescence, and performance improvement engineering change proposals.					
FY 2014 Accomplishments: FY14 accomplishments are justified in program element 0206623M and project 0021.					
FY 2015 Plans: -Complete Critical Design Review. Down select to prime contractor; award EMD prototype build option. -Continue nonrecurring engineering efforts to support AAV saftey improvements, turret improvements, electrical moderization and R7 Recovery Variant improvements.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206629M / *Amphibious Assault Vehicle*	**Project (Number/Name)** 2938 / *Amphibious Assault Vehicle*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiate prime contractor support for Developmental, Operational, and Live Fire Test and Evaluation (LFT&E). -Initiate nonrecurring engineering effort for the powerpack upgrade. ***FY 2016 OCO Plans:*** N/A					
Title: Support	-	23.786	15.559	-	15.559
Articles:	-	-	-	-	-
Description: Provide government engineering and technical support for AAV safety, obsolescence, and performance modifications, and Survivability Upgrade support. ***FY 2014 Accomplishments:*** FY14 accomplishments are justified in program element 0206623M and project 0021. ***FY 2015 Plans:*** -Continue nonrecurring engineering and design for AAV electrical and command and control (C2) systems modernization. -Initiate nonrecurring engineering and design for upgraded fire suppression system, and AAV obsolescence and performance modifications. -Continue to provide government engineering services in support of AAV safety, obsolescence, and performance modifications. -Provide material and travel associated with these efforts. ***FY 2016 Base Plans:*** -Initiate nonrecurring engineering and design for AAV hydraulic modernization and fuel cell day tank upgrade. -Continue nonrecurring engineering and design for AAV fire suppression system, electrical modernization, and command and control (C2) systems modernization. -Continue to provide technical and engineering services in support of AAV obsolescence and performance modifications. -Provide material and travel associated with these efforts. ***FY 2016 OCO Plans:*** N/A					
Title: Test and Evaluation	-	1.608	6.648	-	6.648
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206629M / *Amphibious Assault Vehicle*	**Project (Number/Name)** 2938 / *Amphibious Assault Vehicle*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: Developmental Operational and Livefire Test and Evaluation of safey improvements, upgrades, modifications and fact of life changes to ensure operational suitability and effectivness of the AAV family of vehicles. ***FY 2014 Accomplishments:*** FY14 accomplishments are justified in program element 0206623M and project 0021. ***FY 2015 Plans:*** Initiate government developmental, operational, and live fire test planning for survivability upgrade, enhanced applique armor kit (EAAK) Phase III and electromagnetic environmental effects (E3) Co-site testing. ***FY 2016 Base Plans:*** -Conduct developmental testing for survivability upgrade and initiate operational assessment and live fire test and evaluation activities in support of survivability upgrade. ***FY 2016 OCO Plans:*** N/A					
Title: Management and Engineering Technical Services	-	14.673	4.476	-	4.476
Articles:	-	-	-	-	-
Description: Management support services technical support for program office and field activities ***FY 2014 Accomplishments:*** FY14 accomplishments are justified in program element 0206623M and project 0021. ***FY 2015 Plans:*** -Continue program management services in support of ECP development, trade studies and analysis, supply chain and government property management in support of AAV sustainment and modification efforts. -Continue to provide program management services in support of AAV Survivability Upgrade. ***FY 2016 Base Plans:*** -Continue program management services in support of ECP development, trade studies and analysis, supply chain and government property management in support of AAV sustainment modification efforts. ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206629M / *Amphibious Assault Vehicle*	**Project (Number/Name)** 2938 / *Amphibious Assault Vehicle*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Accomplishments/Planned Programs Subtotals	-	96.207	48.535	-	48.535

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/2021: *AAV Product Improvement Program*	32.036	15.356	26.744	-	26.744	114.291	115.154	153.174	137.520	1,289.892	2,812.248
• RDTEN/0206623M: *MC Ground Combat Support Arms System*	31.543	-	-	-	-	-	-	-	-	-	168.605

Remarks

D. Acquisition Strategy

The USMC competitively awarded two contracts in FY14 for development efforts in support of upgrading 392 Assault Amphibious Vehicles. Down select to one contractor for manufacture of prototype vehicles occurs in FY15. The program's main focus is on improving Marine force protection capabilities. To support the required capabilities, the Survivability

Upgrade program will seek to incorporate Non-Developmental Items (NDI) and/or Commercial off the Shelf (COTS) solutions into the existing AAVP7A1 Reliability, Availability, Maintainability/Rebuild to Standard (RAM/RS). The acquisition strategy seeks to minimize cost and schedule, and maximize value, technology readiness, and commonality, while

ensuring the selected manufacturer meets selected capability attributes established for the AAVP7A1 RAM/RS. RDT&E funds competitive designs followed by contract options for EMD and production. IOC is scheduled for FY19.

E. Performance Metrics

Milestone Reviews:

Milestone C: 2nd quarter of FY17

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206629M / *Amphibious Assault Vehicle*	Project (Number/Name) 2938 / *Amphibious Assault Vehicle*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Syst Design & Dev / EMD	C/FFP	MCSC : Quantico, VA	0.000	-		50.029	Mar 2015	19.446	May 2016	-		19.446	Continuing	Continuing	Continuing
Other Product Development	C/BA	Various : Various	0.000	-		6.111	Mar 2015	2.406	Feb 2016	-		2.406	Continuing	Continuing	Continuing
		Subtotal	0.000	-		56.140		21.852		-		21.852	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	Various : Various	0.000	-		0.325	Oct 2014	0.465	Oct 2015	-		0.465	Continuing	Continuing	Continuing
In-House Technical Support	Various	Various : Various	0.000	-		23.461	Apr 2015	15.094	Feb 2016	-		15.094	Continuing	Continuing	Continuing
		Subtotal	0.000	-		23.786		15.559		-		15.559	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	Various	Various : Various	0.000	-		1.608	Mar 2015	6.648	Feb 2016	-		6.648	Continuing	Continuing	Continuing
		Subtotal	0.000	-		1.608		6.648		-		6.648	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support Svcs	C/FFP	MCSC : Quantico, VA	0.000	-		9.518	Apr 2015	1.180	Apr 2016	-		1.180	Continuing	Continuing	Continuing
Engineering and Technical Services	Various	Various : Various	0.000	-		5.155	Dec 2014	3.296	Mar 2016	-		3.296	Continuing	Continuing	Continuing
		Subtotal	0.000	-		14.673		4.476		-		4.476	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0206629M / *Amphibious Assault Vehicle*	Project (Number/Name) 2938 / *Amphibious Assault Vehicle*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		96.207		48.535		-		48.535	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206629M / *Amphibious Assault Vehicle*	**Project (Number/Name)** 2938 / *Amphibious Assault Vehicle*

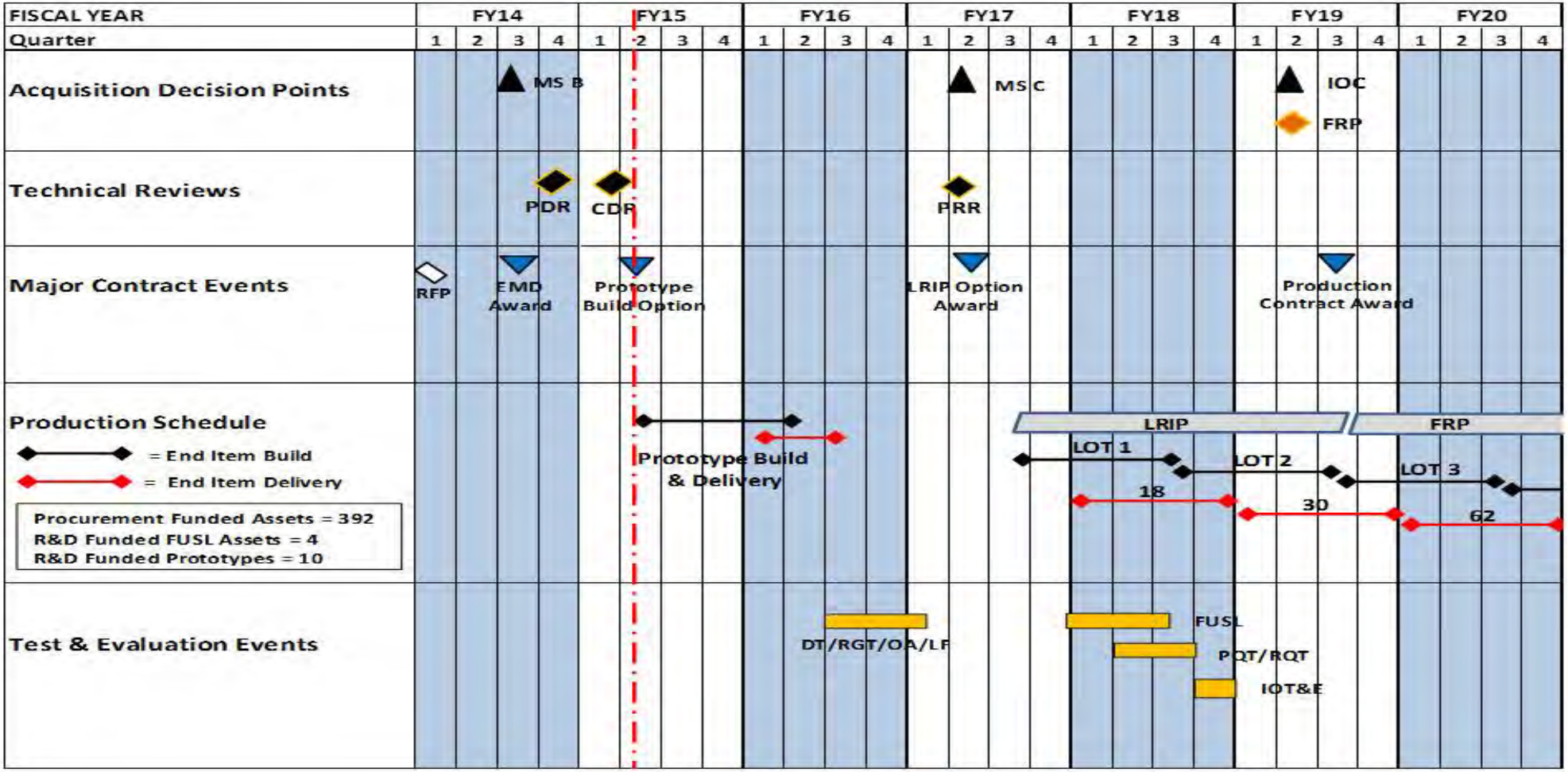

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0206629M / *Amphibious Assault Vehicle*	**Project (Number/Name)** 2938 / *Amphibious Assault Vehicle*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2938				
MS B	3	2014	3	2014
EMD Contract Award	3	2014	3	2014
CDR	2	2015	2	2015
Prototype Build Option	2	2015	2	2015
Developmental Test and Evaluation	3	2016	1	2017
MS C	2	2017	2	2017
LRIP Option Award	2	2017	2	2017
LRIP	3	2017	3	2019
IOT&E	4	2018	4	2018
Full Rate Production Contract Award	3	2019	3	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207161N *I Tactical Aim Missiles*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	335.144	17.518	37.258	76.016	-	76.016	60.772	36.489	33.189	0.213	3.965	600.564
0457: *AIM-9X*	334.171	16.488	37.258	76.016	-	76.016	60.772	36.489	33.189	0.213	3.965	598.561
0458: *AIM-9X Block III*	0.973	1.030	-	-	-	-	-	-	-	-	-	2.003
MDAP/MAIS Code: **Other MDAP/MAIS Code(s):** 442												

A. Mission Description and Budget Item Justification

The AIM-9X (Sidewinder) short-range air-to-air missile is a long term evolution of the AIM-9 series of fielded missiles. The AIM-9X missile program provides a launch and leave, air combat munition that uses passive infrared (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile (AMRAAM). Air superiority in the short-range air-to-air missile arena is essential and includes first shot, first kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M (fuze, rocket motor and warhead). Anti-Tamper features have been incorporated to protect improvements inherent in this design. AIM-9X is a Post Milestone III, Acquisition Category IC joint service program with Navy lead.

The Block II program has entered into Low Rate Initial Production (LRIP) and the LRIP-4 contract was awarded in June 2014. This budget line continues the development, test and integration of software updates to the missile and aircraft platform integration to ensure these capabilities perform in accordance with established requirements as documented in the Capabilities Production Document. Beginning in FY 2016, the program will join the US Air Force efforts already in progress to develop missile software improvements for the next incremental version 9.4 (v9.4) as well as hardware updates to improve Insensitive Muntions performance.

The AIM-9X Block III program has been cancelled and the hardware updates to improve Insensitive Munitions performance have been moved to the Block II program.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*		R-1 Program Element (Number/Name) PE 0207161N *I Tactical Aim Missiles*			
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	15.453	47.258	85.567	-	85.567
Current President's Budget	17.518	37.258	76.016	-	76.016
Total Adjustments	2.065	-10.000	-9.551	-	-9.551
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.590	-			
• SBIR/STTR Transfer	-0.525	-			
• Program Adjustments	-	-	-9.238	-	-9.238
• Rate/Misc Adjustments	-	-	-0.313	-	-0.313

Change Summary Explanation

The FY 2016 funding request was reduced by $0.200 million to account for the availability of prior year execution balances.

Schedule:
Project 0457: AIM-9X Block II schedule has been updated to reflect Developmental Test, Integrated Test and Operational Testing of Operational Flight Software version 9.4 including improvements associated with integrating the F/A-18 aircraft to utilize full capability of the Block II missile.

Project 0458: AIM-9X Block III schedule has been updated to reflect the Department's decision to cancel the Block III program.

Cost:
Project 0457 FY16 funding increase represents missile software improvements for the next incremental missile software version, Operational Flight Software v9.4, as well as hardware updates to improve Insensitive Munitions (IM) performance.

Project 0458: Program funds in FY15 were eliminated by Congressional mark. FY16 funding decrease results from the Department's decision to move the hardware updates to improve Insensitive Munitions performance to the Block II program, and cancel the AIM-9X Block III program.

Technical: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0207161N / *Tactical Aim Missiles*	Project (Number/Name) 0457 / *AIM-9X*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0457: *AIM-9X*	334.171	16.488	37.258	76.016	-	76.016	60.772	36.489	33.189	0.213	3.965	598.561
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: 442

A. Mission Description and Budget Item Justification

AIM-9X is a long-term evolution of the AIM-9, a fielded system, qualifying this as a research category operational systems development. The AIM-9X short range Air-to-Air missile modification program provides a launch and leave, air combat munition that uses passive Infra-Red (IR) energy for acquisition and tracking of enemy aircraft and complements the Advanced Medium Range Air-to-Air Missile. Air superiority in the short range Air-to-Air Missile arena is essential and includes first shot, first kill opportunity against an enemy employing IR countermeasures. The AIM-9X employs several components common with the AIM-9M (fuze, rocket motor and warhead).

The program entered the final planned Low Rate Initial Production (LRIP-4) in FY 2014 and will begin Block II Full Rate Production in FY 2015 and beyond.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Test and Evaluation (T&E) of System	2.765	0.656	3.200	-	3.200
Articles:	-	-	-	-	-
Description: Funding required for Test and Evaluation (T&E) and associated governmental support required to ensure the AIM-9X missile integration with threshold US Navy aircraft platforms. Beginning in FY 2016 the program will test the next incremental version of software improvements to the missile. ***FY 2014 Accomplishments:*** Continue Operational Testing and await final report in support of Full Rate Production and fielding of missile. Develop T&E requirements for Block II program Capabilities Production Document (CPD). ***FY 2015 Plans:*** Complete OT and await final Initial Operational Test & Evaluation and Beyond LRIP reports. Continue to develop and finalize T&E requirements for Block II program CPD. ***FY 2016 Base Plans:*** Begin Developmental Testing and Integrated Testing of Operational Flight Software version 9.4 including improvements associated with integrating the F/A-18 aircraft to utilize full capability of the Block II missile. ***FY 2016 OCO Plans:*** N/A					
Title: Product Development	13.356	36.377	72.729	-	72.729

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207161N / *Tactical Aim Missiles*	**Project (Number/Name)** 0457 / *AIM-9X*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
Description: Continuation of Primary Hardware Development/Pre-Planned Product Improvement efforts for the AIM-9X weapon system. This includes Systems Engineering / Program management, as well as support required, to ensure AIM-9X missile integration with threshold US Navy aircraft platforms. This also includes efforts to redesign missile components in order to resolve Block II component obsolescence, implement cost reduction initiatives, and to comply with the Insensitive Munitions (IM) requirements as established by Joint Requirements Oversight Council memo dated 11 February 2009. The IM improvements were realigned to this project (0457) from the AIM-9X Block III project (0458) beginning in FY 2016. The program will focus on implementing IM safety improvements to the warhead that were developed by Navy Research Laboratory, to incorporate into the AIM-9X Block II production missile in FY 2019. Beginning in FY 2016, the Navy will also join in the Air Force efforts that began in FY 2015 to develop software improvements for the next incremental version 9.4 (v9.4x) to incorporate into the FY 2017 AIM-9X Block II production missile. ***FY 2014 Accomplishments:*** Continue support of AIM-9X Block II integration. Continue support of Operational Test anomaly resolution. Identify missile component obsolescence redesign critical to maintaining production for the Block II missile system in accordance with the program Capabilities Production Document objectives. ***FY 2015 Plans:*** Implement Engineering Manufacturing Development required to redesign, integrate, test and qualify components due to obsolescence and implement cost reduction initiatives. Specific component improvements include the dome, the guidance unit, the processors, the control actuation system and battery, and associated operational flight software updates. In addition this line funds improvements to enhance IM compliance. Specific components include the warhead and missile container. ***FY 2016 Base Plans:*** Continue Engineering Manufacturing Development required to redesign, integrate, test and qualify components due to obsolescence and implement cost reduction initiatives. Continue to develop v9.4 Block II software improvements to utilize full capability of the missile. Continue to develop missile hardware design improvements necessary to enhance IM performance. ***FY 2016 OCO Plans:*** N/A					
Title: Transportation & Travel for Program Management	0.251	0.225	0.087	-	0.087

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207161N / *Tactical Aim Missiles*	**Project (Number/Name)** 0457 / *AIM-9X*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
Description: Transportation / Travel for AIM-9X effort. ***FY 2014 Accomplishments:*** Continue funding transportation and travel costs associated with supporting the AIM-9X missile program. ***FY 2015 Plans:*** Continue funding transportation and travel costs associated with supporting the AIM-9X missile program. ***FY 2016 Base Plans:*** Continue funding transportation and travel costs associated with supporting the AIM-9X missile program. ***FY 2016 OCO Plans:*** N/A					
Title: Support	0.116	-	-	-	-
Articles:	-	-	-	-	-
Description: Studies and Analysis ***FY 2014 Accomplishments:*** Continue studies and analysis in support of advanced development of AIM-9X Sidewinder. ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	16.488	37.258	76.016	-	76.016

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN 2209: *Sidewinder*	96.689	68.178	96.427	-	96.427	103.644	107.375	75.623	76.045	682.973	1,848.894
• MPAF 3479: *Sidewinder*	105.190	129.121	200.777	-	200.777	212.377	204.524	115.491	117.572	323.107	2,117.617

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207161N / *Tactical Aim Missiles*	**Project (Number/Name)** 0457 / *AIM-9X*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTE, AF 41: *Sidewinder*	12.376	29.739	43.360	-	43.360	52.836	13.984	13.244	13.481	1.620	469.137

Remarks

D. Acquisition Strategy

Milestone C decision for LRIP was held June 24, 2011, and the program has entered into LRIP contracts for Block II in FY 2011 and FY 2012. The LRIP-3 contract was awarded in August 2013. The final planned LRIP (LRIP-4) was awarded in June 2014. It will be followed by Block II FRP in FY 2015 and beyond.

E. Performance Metrics

Complete Initial Operational Testing and Evaluation and Beyond LRIP reports.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0207161N / *Tactical Aim Missiles*	Project (Number/Name) 0457 / *AIM-9X*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPFF	Raytheon Missile Systems : Tucson, AZ	11.261	5.767	Aug 2014	24.971	Jan 2015	46.418	Jun 2016	-		46.418	69.538	157.955	157.955
Software Development-9.400	SS/CPFF	Raytheon Missile Systems : Tucson, AZ	0.000	-		-		1.809	Jun 2016	-		1.809	49.098	50.907	50.907
Munition Improvement Study	SS/CPFF	Raytheon Missile Systems : Tucson, AZ	0.000	2.905	Dec 2013	-		-		-		-	-	2.905	2.905
Aircraft Integration	C/CPFF	The Boeing Company : St. Louis, MO	7.385	1.954	Feb 2014	0.859	Jan 2015	10.829	Dec 2015	-		10.829	2.440	23.467	23.467
Aircraft Integration	WR	NAWCWD : China Lake, CA	5.823	2.730	Nov 2013	10.342	Nov 2014	13.673	Nov 2015	-		13.673	2.440	35.008	-
Government Project Management	WR	NAWCAD : PAX River, MD	0.000	-		0.205	Dec 2014	-		-		-	-	0.205	-
Prior Year Prod Dev cost no longer funded in the FYDP	Various	Various : Various	250.910	-		-		-		-		-	-	250.910	-
		Subtotal	275.379	13.356		36.377		72.729		-		72.729	123.516	521.357	-

Remarks

Total prior years - FY95 and prior under PE 0603715D. The increase from FY15 to FY16 reflects the department's decision to realign the hardware updates to improve Insensitive Munitions performance out of the AIM-9X Block III program and into the AIM-9X Block II program.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Support Services	C/CPFF	COMOPTEVFOR : Norfolk, VA	0.000	0.116	Jul 2014	-		-		-		-	-	0.116	0.116
Management Support Services	C/CPFF	Mantech Systems : Fairfax, VA	0.652	-	Aug 2014	-		-		-		-	-	0.652	0.652
Prior Year Support Costs	C/CPFF	Various : Various	0.181	-		-		-		-		-	-	0.181	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0207161N / *Tactical Aim Missiles*	Project (Number/Name) 0457 / *AIM-9X*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	0.833	0.116		-		-		-		-	-	0.949	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Oper Test & Eval	WR	COMOPTEVFOR : Norfolk, VA	7.112	2.765	Oct 2013	0.656	Jun 2015	-		-		-	-	10.533	-
Development Testing	WR	NAWCWD : China Lake, CA	0.000	-		-		3.200	Nov 2015	-		3.200	11.001	14.201	-
Prior year T&E cost no longer funded in the FYDP	Various	Various : Various	39.952	-		-		-		-		-	-	39.952	-
		Subtotal	47.064	2.765		0.656		3.200		-		3.200	11.001	64.686	-

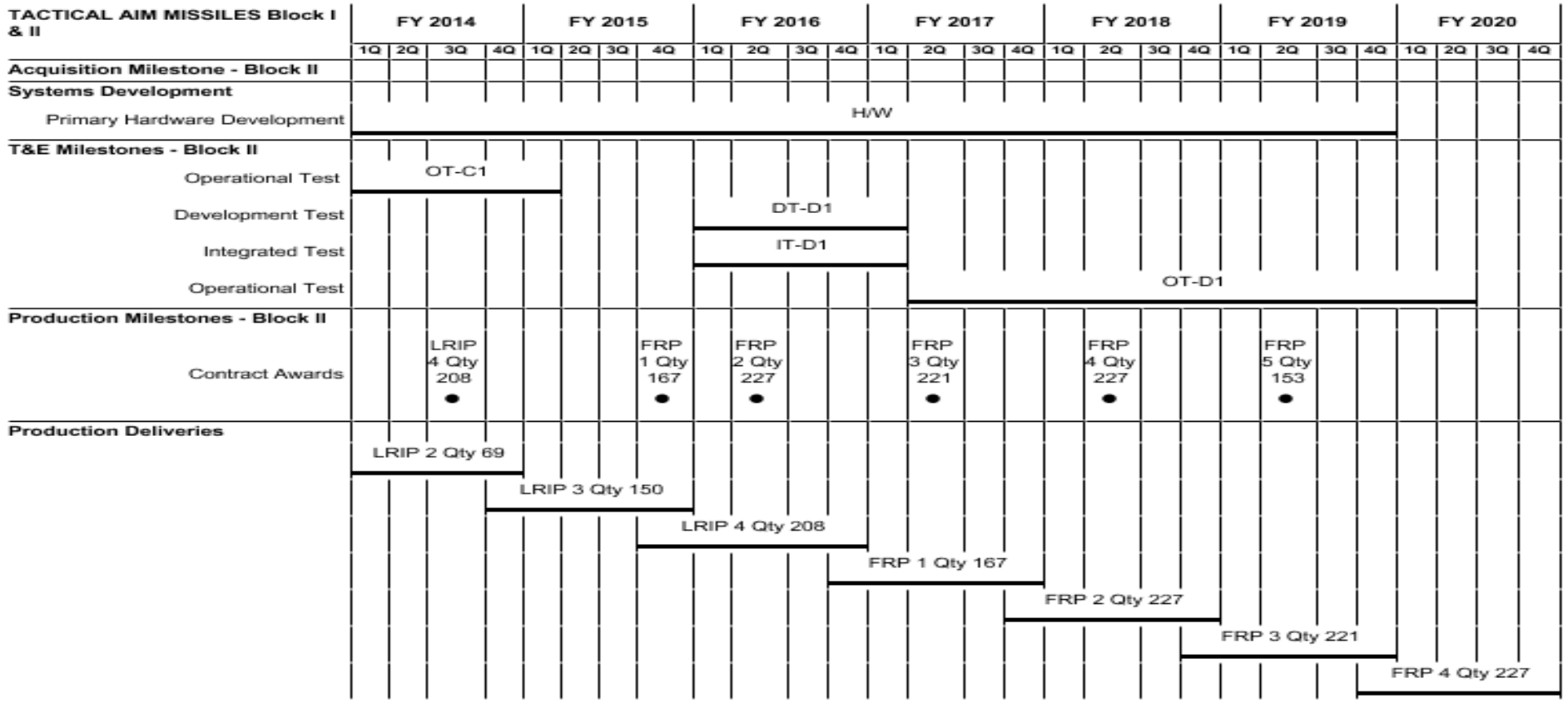
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Transportation - Material	WR	NAVAIR : Patuxent River, MD	0.241	0.083	Oct 2013	0.075	Oct 2014	0.050	Oct 2015	-		0.050	-	0.449	-
Travel - Obligation throughout the year	WR	NAWCAD : Patuxent River, MD	2.621	0.168	Oct 2013	0.150	Oct 2014	0.037	Oct 2015	-		0.037	0.111	3.087	-
Prior Year Mgmt cost no longer funded in the FYDP	Various	Various : Various	8.033	-		-		-		-		-	-	8.033	-
		Subtotal	10.895	0.251		0.225		0.087		-		0.087	0.111	11.569	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	334.171	16.488		37.258		76.016		-		76.016	134.628	598.561	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207161N / *Tactical Aim Missiles*	**Project (Number/Name)** 0457 / *AIM-9X*



2016PB - 0207161N - 0457

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207161N / *Tactical Aim Missiles*	**Project (Number/Name)** 0457 / *AIM-9X*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
TACTICAL AIM MISSILES Block I & II				
Systems Development: Primary Hardware Development: Hardware Development (Design, Development, Qual of H/W Improvements)	1	2014	4	2019
T&E Milestones - Block II: Operational Test: v9.3 Operational Test (OT-C1)	1	2014	1	2015
T&E Milestones - Block II: Development Test: v9.4 Development Test (DT-D1)	1	2016	1	2017
T&E Milestones - Block II: Integrated Test: v9.4 Integrated Test (IT-D1)	1	2016	1	2017
T&E Milestones - Block II: Operational Test: v9.4 Operational Test (OT-D1)	2	2017	2	2020
Production Milestones - Block II: Contract Awards: Low Rate Initial Production (LRIP 4) (WPN) Award / LRIP 4 Qty 208	3	2014	3	2014
Production Milestones - Block II: Contract Awards: Full Rate Production (FRP 1) Award / FRP 1 Qty 167	4	2015	4	2015
Production Milestones - Block II: Contract Awards: Full Rate Production (FRP 2) Award / FRP 2 Qty 227	2	2016	2	2016
Production Milestones - Block II: Contract Awards: Full Rate Production (FRP 3) Award / FRP 3 Qty 221	2	2017	2	2017
Production Milestones - Block II: Contract Awards: Full Rate Production (FRP 4) Award / FRP 4 Qty 227	2	2018	2	2018
Production Milestones - Block II: Contract Awards: Full Rate Production (FRP 5) Award / FRP 5 Qty 153	2	2019	2	2019
Production Deliveries: Low Rate Initial Production Lot 12 / LRIP 2 Qty 69	1	2014	4	2014
Production Deliveries: Low Rate Initial Production Lot 13 LRIP 3 Qty 150	4	2014	4	2015
Production Deliveries: Low Rate Initial Production Lot 14 LRIP 4 Qty 208	4	2015	4	2016
Production Deliveries: Full Rate Production Lot 15 FRP 1 Qty 167	4	2016	4	2017
Production Deliveries: Full Rate Production Lot 16 FRP 2 Qty 227	4	2017	4	2018
Production Deliveries: Full Rate Production Lot 17 FRP 3 Qty 221	4	2018	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207161N / *Tactical Aim Missiles*	**Project (Number/Name)** 0457 / *AIM-9X*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Deliveries: Full Rate Production Lot 18 FRP 4 Qty 227	4	2019	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0207161N / *Tactical Aim Missiles*	Project (Number/Name) 0458 / *AIM-9X Block III*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0458: *AIM-9X Block III*	0.973	1.030	-	-	-	-	-	-	-	-	-	2.003
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The AIM-9X Block III program funding was eliminated; the program has been cancelled in FY 2015. Hardware updates to improve Insensitive Munition performance have been moved to the Block II program.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)

	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	1.019	-	-	-	-
Articles:	-	-	-	-	-

Description: The AIM-9X Block III program has been cancelled in FY 2015, and the hardware updates to improve Insensitive Munitions (IM) performance have been moved to the Block II program.

FY 2014 Accomplishments:
Begin Engineering Manufacturing Development (EMD) of the AIM-9X Block III with completion of risk reduction activites. Award contracts/task orders for EMD hardware and software (S/W) systems for the AIM-9X Block III. Complete risk reduction efforts for IM improvements to the AIM-9X warhead and begin engineering analysis of rocket motor IM mitigation technologies into candidate rocket motor. Begin preliminary design review for candidate technologies and complete studies related to S/W modifications required for changes to the rocket motor, increased kinematics, and guidance & control algorithms. Refine cost estimates based on rocket motor technologies and impacts associated with IM requirements. Manufacturing of prototypes using producibility approaches and lessons learned. Will conduct IM and arena tests after subjecting prototypical warheads to thermal and mechanical environments, and assess anchored lethality models. Plan to integrate optimized Digital or Insensitive Detonator into selected warhead demonstration prototype and conduct IM and arena demonstrations in conjunction with selected warhead after environment testing.

FY 2015 Plans:
N/A

FY 2016 Base Plans:
N/A

FY 2016 OCO Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207161N / *Tactical Aim Missiles*	**Project (Number/Name)** 0458 / *AIM-9X Block III*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: Transportation & Travel for Program Management	0.011	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Management support, transportation of government funrnished materials, and travel costs associated with supporting the AIM-9X Block III missile program.					
FY 2015 Plans: N/A					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	1.030	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0207161N / *Tactical Aim Missiles*	Project (Number/Name) 0458 / *AIM-9X Block III*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Blk III Gov't In-House Support	WR	NAWCAD : Patuxent River, MD	0.000	0.404	Nov 2013	-		-		-		-	-	0.404	-
Blk III Gov't In-House Support	C/BA	NAWCWD : China Lake, CA	0.000	0.615	Nov 2013	-		-		-		-	-	0.615	-
		Subtotal	0.000	1.019		-		-		-		-	-	1.019	-

Remarks

The AIM-9X Block III program has been cancelled in FY 2015, and the hardware updates to improve Insensitive Munitions performance have been moved to the Block II program.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Support Costs	C/CPFF	Lockheed Martin : Fort Worth, TX	0.970	-		-		-		-		-	-	0.970	0.970
		Subtotal	0.970	-		-		-		-		-	-	0.970	0.970

Remarks

This line funded a a one-time study at Lockheed Martin to analyze missile weight on the F-35.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Blk III Travel- Obligation throughout the year	WR	NAVAIR : Patuxent River, MD	0.003	0.011	Oct 2013	-		-		-		-	-	0.014	-
		Subtotal	0.003	0.011		-		-		-		-	-	0.014	-

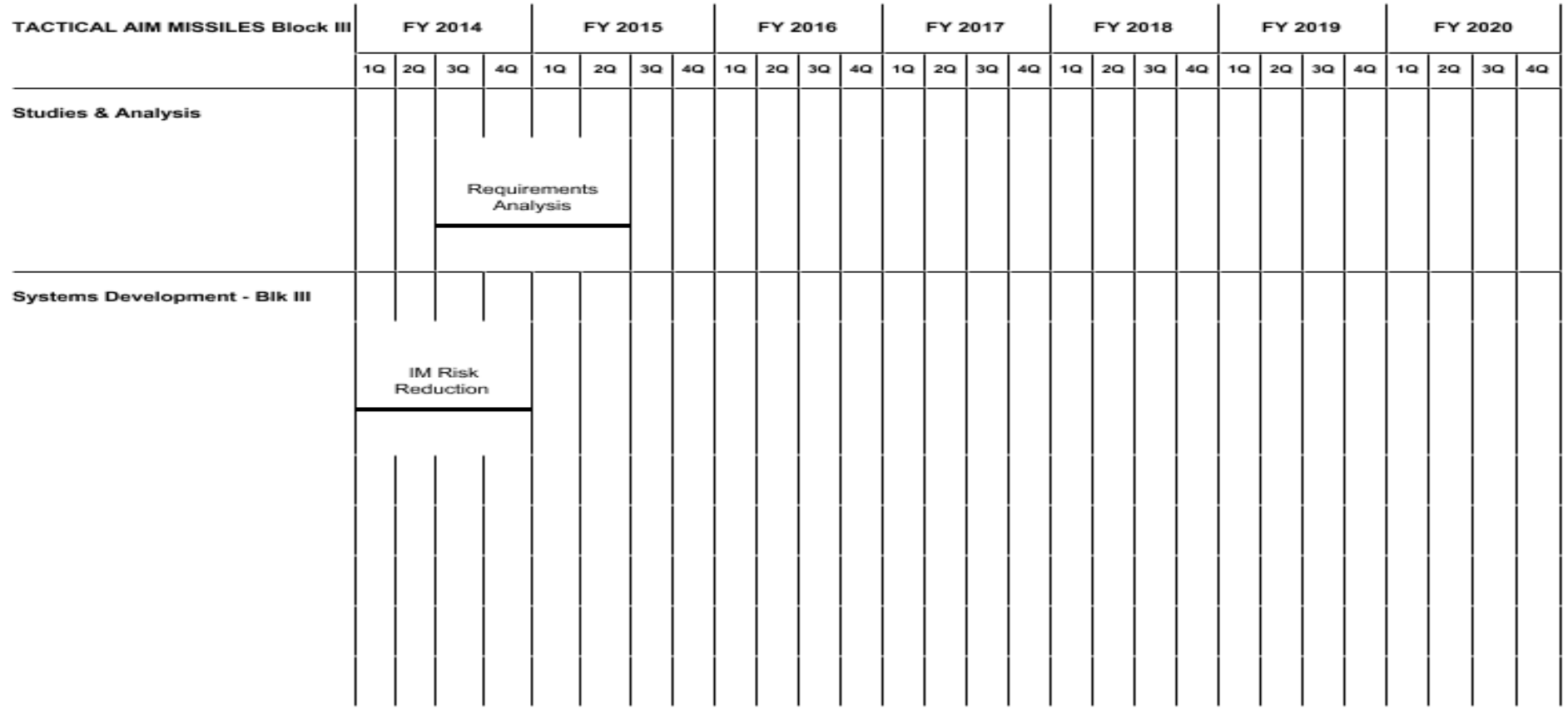
	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.973	1.030		-		-		-		-	-	2.003	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0207161N / *Tactical Aim Missiles*	Project (Number/Name) 0458 / *AIM-9X Block III*	

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207161N / *Tactical Aim Missiles*	**Project (Number/Name)** 0458 / *AIM-9X Block III*



2016PB - 0207161N - 0458

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207161N / *Tactical Aim Missiles*	**Project (Number/Name)** 0458 / *AIM-9X Block III*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
TACTICAL AIM MISSILES Block III				
Studies & Analysis: Threat Assessment & Requirement Analysis	3	2014	2	2015
Systems Development - Blk III: IM Risk Reduction (Warhead + Rocket Motor)	1	2014	4	2014

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207163N *I AMRAAM*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	116.619	2.575	10.210	32.172	-	32.172	44.094	46.007	32.156	32.828	139.573	456.234
0981: *AMRAAM*	116.619	2.575	10.210	32.172	-	32.172	44.094	46.007	32.156	32.828	139.573	456.234
MDAP/MAIS Code: 185												

A. Mission Description and Budget Item Justification

This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the Advanced Medium Range Air-to-Air Missile (AMRAAM) into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	2.613	10.210	32.549	-	32.549
Current President's Budget	2.575	10.210	32.172	-	32.172
Total Adjustments	-0.038	-	-0.377	-	-0.377
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.038	-			
• Program Adjustments	-	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.377	-	-0.377

Change Summary Explanation

The FY 2016 funding request was reduced by $0.100 million to account for the availability of prior year execution balances.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207163N *I AMRAAM*

Technical: FY16 includes funding for improved missile performance at longer range and increased survivability and lethality, and continues Basic and Advanced AIM-120C7 & AIM-120D Electronic Protection Improvement Program efforts to upgrade missile capability through software development, simulation and test efforts.

Schedule: Schedule growth for Advanced Electronic Protection Improvement Program (EPIP) IOC Tapes 1 & 2 for AIM-120C7 is due to additional scope and test execution anomalies.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0207163N / *AMRAAM*	Project (Number/Name) 0981 / *AMRAAM*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0981: *AMRAAM*	116.619	2.575	10.210	32.172	-	32.172	44.094	46.007	32.156	32.828	139.573	456.234
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This joint Navy/Air Force program is structured in response to the Joint Service Operational Requirement and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of the Advanced Medium Range Air-to-Air Missile (AMRAAM) into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks. Funding in FY15 through FY20 supports Navy unique Test & Evaluation for Navy fielding of the AIM-120C7 and AIM-120D Electronic Protection Improvement Program (EPIP) capability.

The Cost To Complete should be $139.443M vice $139.573M.
The Total Cost should be $456.104M vice $456.234M.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Aircraft integration	0.832	3.644	4.617	-	4.617
Articles:	-	-	-	-	-
Description: Aircraft integration activities and test and evaluation for Navy unique requirements. ***FY 2014 Accomplishments:*** Continue aircraft integration activities and test and evaluation for Navy unique requirements. ***FY 2015 Plans:*** Continue aircraft integration activities and test and evaluation for Navy unique requirements. Additional FY15 resources are required to begin AIM-120C7 Test & Evaluation of the EPIP capability for Navy fielding. ***FY 2016 Base Plans:*** Continue aircraft integration activities and test and evaluation for Navy unique requirements. Additional FY16 resources are required to begin software improvement efforts and continue AIM-120C7 and AIM-120D Test & Evaluation of EPIP capability for Navy fielding. ***FY 2016 OCO Plans:*** N/A					
Title: Identify potential improvements	0.426	0.436	0.444	-	0.444
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207163N / *AMRAAM*	**Project (Number/Name)** 0981 / *AMRAAM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: Engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems. ***FY 2014 Accomplishments:*** Continue engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems. Conduct Operational Flight Profile efforts. ***FY 2015 Plans:*** Continue engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems. Conduct Operational Flight Profile efforts. ***FY 2016 Base Plans:*** Continue engineering support of AMRAAM, including investigation and analysis of technologies that offer potential improvements in AMRAAM lethality/performance and compatibility with related weapons systems. Conduct Operational Flight Profile efforts. ***FY 2016 OCO Plans:*** N/A					
Title: System Improvement Program (SIP) efforts	1.317	6.130	27.111	-	27.111
Articles:	-	-	-	-	-
Description: System engineering and test activities in AMRAAM missiles which includes aircraft integration/ aircraft Operational Flight Profile efforts and Phase 4 test/equipment tasks. System engineering/aircraft integration activities for SIP with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements. ***FY 2014 Accomplishments:*** Continue system engineering/aircraft integration activities for SIP with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements. ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207163N / *AMRAAM*	**Project (Number/Name)** 0981 / *AMRAAM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue system engineering/aircraft integration activities for SIP with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements. Additional FY15 resources support the EPIP to improve AIM-120C7 performance to counter evolving Electronic Attack threats. ***FY 2016 Base Plans:*** Continue system engineering/aircraft integration activities for SIP with emphasis on Navy unique compatibility requirements and Navy aircraft integration/compatibility requirements. FY16 resources support EPIP to improve AIM-120C7 & AIM-120D performance to counter evolving Electronic Attack threats and software upgrades to improve missile performance at longer range and increase survivability and lethality. Additional details are held at a higher classification. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	2.575	10.210	32.172	-	32.172

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN/ 220600: *AMRAAM*	82.529	2.165	192.873	-	192.873	207.280	265.491	275.970	272.424	1,413.535	4,768.796
• MPAF/3479: *AMRAAM*	318.415	329.600	390.112	-	390.112	373.798	451.265	486.862	475.166	1,524.000	12,419.588
• RDTE,AF/673777: *AMRAAM*	68.564	82.195	46.160	-	46.160	55.444	61.612	65.733	66.910	86.000	843.943

Remarks

D. Acquisition Strategy

AMRAAM production procurements will continue across the FYDP with periodic pre-planned technical design refreshes and Value Engineering Change Proposals. The Air Dominance Division has implemented a multiple year production contract strategy (basic contract with 2 priced options).

E. Performance Metrics

Meeting cost, schedule, performance, funding and life cycle sustainment requirements in accordance with the Acquisition Program Baseline.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0207163N / *AMRAAM*	Project (Number/Name) 0981 / *AMRAAM*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Development (EGLIN)	SS/CPAF	RAYTHEON COMPANY : Tucson AZ	44.520	0.546	Jan 2014	4.660	Jan 2015	22.519	Jan 2016	-		22.519	212.717	284.962	284.962
Award Fees (EGLIN)	SS/CPAF	RAYTHEON COMPANY : Tucson AZ	6.360	0.096	Jan 2014	0.822	Jan 2015	3.974	Jan 2016	-		3.974	37.539	48.791	48.791
Primary Hdw Development (DAHLGREN)	WR	NSWC DAHLGREN D C XDM1 : Dahlgren VA	0.143	0.026	Nov 2013	0.028	Nov 2014	0.029	Nov 2015	-		0.029	0.254	0.480	-
Primary Hdw Development (NAWCAD)	WR	NAWCAD : Patuxent River MD	1.988	0.469	Nov 2013	0.447	Nov 2014	0.422	Nov 2015	-		0.422	3.229	6.555	-
Primary Hdw Development (NAWCWD)	WR	NAWCWD : China Lake CA	0.905	0.088	Dec 2013	0.088	Dec 2014	0.084	Dec 2015	-		0.084	0.592	1.757	-
Prior Years Dev Cost no longer funded in the FYDP	Various	Various : Various	22.670	-		-		-		-		-	-	22.670	-
		Subtotal	76.586	1.225		6.045		27.028		-		27.028	254.331	365.215	-

Remarks

Remarks: Percentage of award fees actually awarded in past award fee periods is 14.3%.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support (NSMA)	WR	NAVY SYST MGT ACT : Arlington VA	3.434	0.212	Jan 2014	0.217	Jan 2015	0.223	Jan 2016	-		0.223	1.952	6.038	-
Studies & Analyses - JHU/ APL	SS/FFP	NAVSEASYSCOM : Washington DC	1.661	0.214	May 2014	0.219	May 2015	0.221	May 2016	-		0.221	1.935	4.250	4.250
Prior Years Support costs no longer funded in the FYDP	Various	Various : Various	17.420	-		-		-		-		-	-	17.420	-
		Subtotal	22.515	0.426		0.436		0.444		-		0.444	3.887	27.708	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0207163N / *AMRAAM*	Project (Number/Name) 0981 / *AMRAAM*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Dev Test & Eval (NAWCWD)	WR	NAWCWD : China Lake CA	10.453	0.832	Nov 2013	3.644	Nov 2014	4.617	Nov 2015	-		4.617	35.724	55.270	-
		Subtotal	10.453	0.832		3.644		4.617		-		4.617	35.724	55.270	-

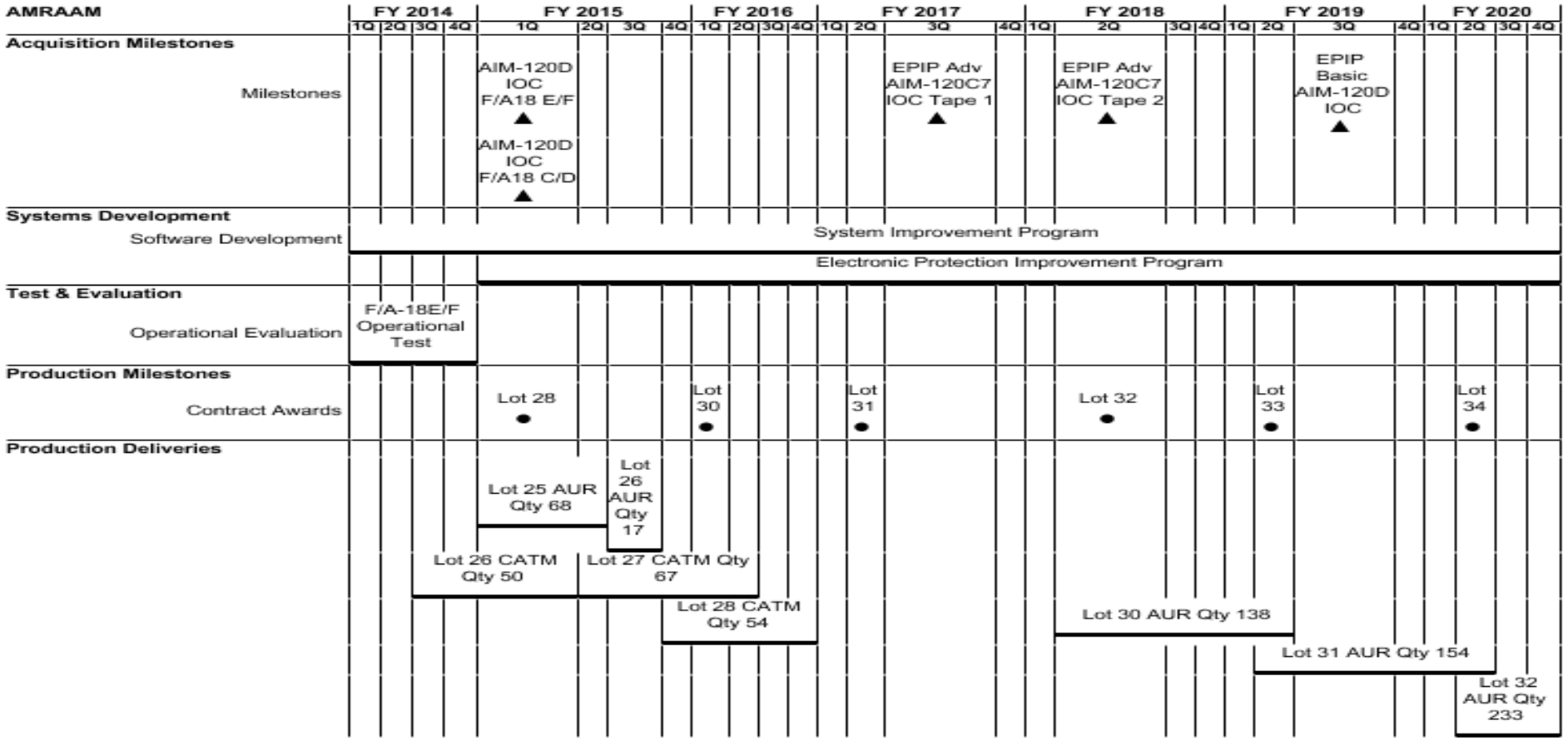
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	MIPR	PMA-259 : Eglin AFB FL	3.063	0.092	Oct 2013	0.085	Oct 2014	0.083	Oct 2015	-		0.083	0.586	3.909	-
Prior Years Mgmt Costs no longer funded in the FYDP	Various	Various : Various	4.002	-		-		-		-		-	-	4.002	-
		Subtotal	7.065	0.092		0.085		0.083		-		0.083	0.586	7.911	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	116.619	2.575		10.210		32.172		-		32.172	294.528	456.104	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207163N / *AMRAAM*	**Project (Number/Name)** 0981 / *AMRAAM*



2016PB - 0207163N - 0981

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207163N / *AMRAAM*	**Project (Number/Name)** 0981 / *AMRAAM*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
AMRAAM				
Acquisition Milestones: Milestones: EPIP Basic AIM-120D IOC	3	2019	3	2019
Acquisition Milestones: Milestones: EPIP Advanced AIM-120C7 IOC Tape 1	3	2017	3	2017
Acquisition Milestones: Milestones: EPIP Advanced AIM-120C7 IOC Tape 2	2	2018	2	2018
Acquisition Milestones: Milestones: AIM-120D IOC F/A18 E/F (Threshold)	1	2015	1	2015
Acquisition Milestones: Milestones: AIM-120D IOC F/A18 C/D	1	2015	1	2015
Systems Development: Software Development: System Improvement Program Start (P3I Follow-0n)	1	2014	4	2020
Systems Development: Software Development: Electronic Protection Improvement Program	1	2015	4	2020
Test & Evaluation: Operational Evaluation: Phase 4 F/A-18E/F Operational Test	1	2014	4	2014
Production Milestones: Contract Awards: Production Lot 28 Contract Award	1	2015	1	2015
Production Milestones: Contract Awards: Production Lot 30 Contract Award	1	2016	1	2016
Production Milestones: Contract Awards: Production Lot 31 Contract Award	2	2017	2	2017
Production Milestones: Contract Awards: Production Lot 32 Contract Award	2	2018	2	2018
Production Milestones: Contract Awards: Production Lot 33 Contract Award	2	2019	2	2019
Production Milestones: Contract Awards: Production Lot 34 Contract Award	2	2020	2	2020
Production Deliveries: Production Lot 25 AUR Qty 68	1	2015	2	2015
Production Deliveries: Production Lot 26 AUR Qty 17	3	2015	3	2015
Production Deliveries: Production Lot 26 CATM Qty 50	3	2014	1	2015
Production Deliveries: Production Lot 27 CATM Qty 67	2	2015	2	2016
Production Deliveries: Production Lot 28 CATM Qty 54	4	2015	4	2016
Production Deliveries: Production Lot 30 CATM Qty 29	4	2017	4	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0207163N / *AMRAAM*	**Project (Number/Name)** 0981 / *AMRAAM*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Deliveries: Production Lot 30 AUR Qty 138	2	2018	2	2019
Production Deliveries: Production Lot 31 AUR Qty 154	2	2019	2	2020
Production Deliveries: Production Lot 31 AUR Qty 233	2	2020	4	2020

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy												Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0208058N *I Joint High Speed Vessel (JHSV)*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	37.644	0.974	-	-	-	-	-	-	-	-	-	38.618
3134: *Intratheater Connectors (Contract Design)*	37.644	0.974	-	-	-	-	-	-	-	-	-	38.618

A. Mission Description and Budget Item Justification

Future joint forces will be responsive, deployable, agile, versatile, lethal, survivable and sustainable. The nation will need lift assets that can provide for assured access, decrease predictability and dwell time, and have the capacity to quickly deliver troops and equipment together in a manner that provides for unit integrity. Joint High Speed Vessel (JHSV) will provide Combatant Commanders high-speed, intra-theater sealift mobility with inherent cargo handling capability and the agility to achieve positional advantage over operational distances. Not limited to major ports, the JHSV will be able to operate in austere port environments.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	0.986	-	-	-	-
Current President's Budget	0.974	-	-	-	-
Total Adjustments	-0.012	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.012	-			

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0208058N / *Joint High Speed Vessel (JHSV)*	Project (Number/Name) 3134 / *Intratheater Connectors (Contract Design)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3134: *Intratheater Connectors (Contract Design)*	37.644	0.974	-	-	-	-	-	-	-	-	-	38.618
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Future joint forces will be responsive, deployable, agile, versatile, lethal, survivable, and sustainable. The nation will need lift assets that can provide for assured access, decrease predictability and dwell time, and have the capacity to quickly deliver troops and equipment together in a manner that provides for unit integrity. Joint High Speed Vessel (JHSV) will provide combatant commanders high-speed intra-theater sealift mobility with inherent cargo handling capability and the agility to achieve positional advantage over operational distances. Not limited to major ports, the JHSV will be able to operate in austere port environments.

The primary objective of the T&E program is to ensure the JHSV is effective and suitable for its intended mission. The focus will be on reducing test time and cost through an appropriate combination of DT and OT events in order to achieve compatible objectives.

DT&E efforts include modeling and simulation (M&S), design analysis, inspection, component testing, system level testing, demonstration, ship trials, and PDT&T events. The JHSV T&E Program will coordinate DT&E and OT&E to bring the lead ship to Initial Operational Capability (IOC) in the most efficient and timely manner possible.

Operational testing will include an Operational Assessment (OA), Initial Operational Test and Evaluation (IOT&E) and Follow-on Operational Test and Evaluation (FOT&E). JHSV OT&E will be conducted as Multi-service OT&E events.

The objective of Live Fire Test and Evaluation (LFT&E) is to provide a timely and reasonable assessment of the survivability of the system as it progresses through its development and prior to full-rate production. The program will utilize existing commercial and military technologies to modify commercial high-speed ferry designs for military use. LFT&E is included in OT&E.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Intratheater Connectors (Contract Design)	0.974	-	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed Post Delivery Test & Trials (PDT&T). Conduct FOT&E. Completed IOT&E. Completed Final Survivability Assessment Report.					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0208058N / *Joint High Speed Vessel (JHSV)*	**Project (Number/Name)** 3134 / *Intratheater Connectors (Contract Design)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Complete FOT&E. Complete Assessment Documentation. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.974	-	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• SCN/3043: *SCN Joint High Speed Vessel*	10.332	214.000	-	-	-	-	-	-	-	-	1,313.585
• SCN/5300: *SCN Joint High Speed Vessel*	-	-	26.235	-	26.235	6.545	-	-	-	-	32.780

Remarks

D. Acquisition Strategy

Two-phased strategy with competitive preliminary design effort leading to downselect to a single contractor. FPI contract type will be used for detail design and construction.

E. Performance Metrics

Completed the test plan development for the Total Ship Survivability Trial (TSST). Completed Initial Operational Test and Evaluation (IOT&E). Completed Live Fire Test & Evaluation (LFT&E).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0208058N / *Joint High Speed Vessel (JHSV)*	Project (Number/Name) 3134 / *Intratheater Connectors (Contract Design)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Ship Integration	C/CPIF	Alion/CSC : VAR	6.638	-		-		-		-		-	-	6.638	-
Systems Engineering	C/CPIF	CSC : VAR	3.984	-		-		-		-		-	-	3.984	-
Studies & Analysis	C/FP	Austal : Mobile, AL	1.300	-		-		-		-		-	-	1.300	-
		Subtotal	11.922	-		-		-		-		-	-	11.922	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NSWC-CD : Carderock, MD	2.000	-		-		-		-		-	-	2.000	-
Integrated Logistics Support	C/CPIF	Alion : VAR	1.276	-		-		-		-		-	-	1.276	-
Configuration/Acquisition Management	C/CPIF	Alion/CSC : VAR	2.738	-		-		-		-		-	-	2.738	-
Technical Data	WR	NSWC-CD : Carderock, MD	0.755	-		-		-		-		-	-	0.755	-
		Subtotal	6.769	-		-		-		-		-	-	6.769	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation	WR	VAR : VAR	1.458	-	Jan 2014	-		-		-		-	-	1.458	-
Operational Test & Evaluation	WR	COTF/MCOTEA/ ATEC : VAR	6.538	0.974	Jan 2014	-		-		-		-	-	7.512	-
Live Fire Test & Evaluation	WR	VAR : VAR	4.568	-	Jan 2014	-		-		-		-	-	4.568	-
		Subtotal	12.564	0.974		-		-		-		-	-	13.538	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0208058N / *Joint High Speed Vessel (JHSV)*	Project (Number/Name) 3134 / *Intratheater Connectors (Contract Design)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPIF	CSC/Alion : VAR	1.698	-		-		-		-		-	-	1.698	-
Government Engineering Support	WR	NSWC-CD/NSWC-DD : VAR	2.252	-		-		-		-		-	-	2.252	-
Program Management Support	C/CPIF	Alion/CSC : VAR	1.964	-		-		-		-		-	-	1.964	-
Travel	Various	NAVSEA : VAR	0.436	-		-		-		-		-	-	0.436	-
DAWDF	WR	Not Specified : Not Specified	0.039	-		-		-		-		-	-	0.039	-
		Subtotal	6.389	-		-		-		-		-	-	6.389	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.644	0.974		-		-		-		-	-	38.618	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0208058N / *Joint High Speed Vessel (JHSV)*	**Project (Number/Name)** 3134 / *Intratheater Connectors (Contract Design)*

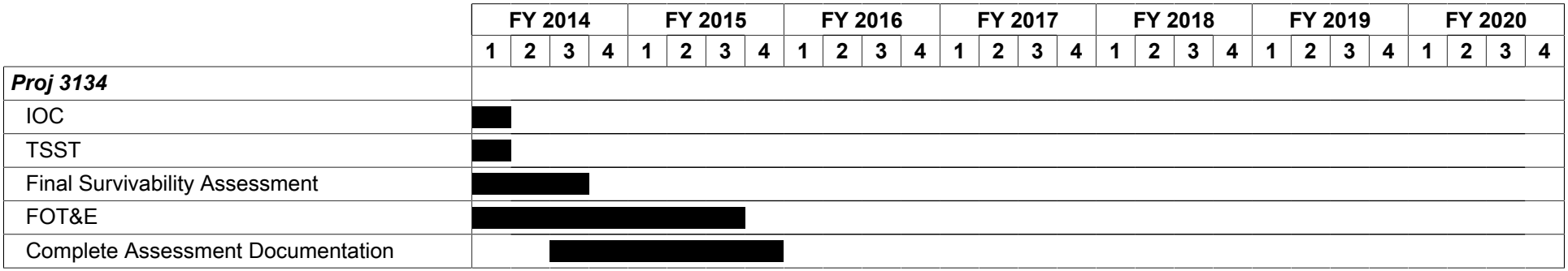


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0208058N / *Joint High Speed Vessel (JHSV)*	**Project (Number/Name)** 3134 / *Intratheater Connectors (Contract Design)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3134				
IOC	1	2014	1	2014
TSST	1	2014	1	2014
Final Survivability Assessment	1	2014	3	2014
FOT&E	1	2014	3	2015
Complete Assessment Documentation	3	2014	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0303109N *I Satellite Communications (Space)*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	4,595.343	63.642	41.729	53.239	-	53.239	45.403	37.053	47.088	43.889	Continuing	Continuing
0728: *EHF SATCOM Terminals*	631.684	19.774	24.803	33.967	-	33.967	33.801	24.657	34.370	30.906	Continuing	Continuing
0731: *FLTSATCOM*	25.070	9.010	4.752	3.101	-	3.101	-	-	-	-	-	41.933
2472: *Mobile User Objective Sys (MUOS)*	3,938.589	34.858	12.174	16.171	-	16.171	11.602	12.396	12.718	12.983	238.343	4,289.834
MDAP/MAIS Code: **Other MDAP/MAIS Code(s):** 290, 345												

A. Mission Description and Budget Item Justification

The Navy Multiband Terminal (NMT) Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) program for enhancing protected and survivable satellite communications to Naval forces. The NMT system provides an increase in single service capability from 1.5 Megabits per second (Mbps) to 8 Mbps, increases the number of coverage areas and retains Anti-Jam/Low Probability of Intercept (AJ/LPI) protection characteristics. It is compatible with today's Navy Low Data Rate/Medium Data Rate (LDR/MDR) terminals and will sustain the Military Satellite Communications (MILSATCOM) architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence in support of A2AD initiatives. The NMT system will replenish and improve on Navy terminal capabilities of the Military Strategic, Tactical & Relay System (MILSTAR), Defense Satellite Communications System (DSCS), Wideband Global Satellite (WGS) and Global Broadcast System (GBS). The new system will equip the warfighters with the assured, jam resistant, secure communications as described in the joint AEHF satellite communications system and WGS Operational Requirements Documents (ORD). The NMT will provide multiband Satellite Communications (SATCOM) capability for ship, submarine, and shore platforms.

The Joint Ultra-High Frequency (UHF) Military Satellite Communications (MILSATCOM) Network Integrated Control System (JMINI CS) is a legacy system that commenced in 1998. JMINI CS is a Navy-led, Joint-interest program providing integrated, dynamic, and centralized control of non-processed UHF MILSATCOM 5/25 kHz Demand Assigned Multiple Access (DAMA) and Demand Assigned Single Access (DASA) channels to maximize existing highly sought after SATCOM resources. The system also provides decentralized web-based management of those resources for use as a situational awareness tool for Combatant Commanders, Global SATCOM Support Centers, and Regional SATCOM Support Centers. The system is expected to operate well beyond the original 2015 End of Life (EoL) date to 2033. The JMINI CS Program will perform concept development and exploration to identify cost-effective solutions to address multiple life cycle support issues, in order to minimize loss of service to the fleet. The effort will involve evaluation, development, laboratory and integration testing of Commercial Off-The-Shelf (COTS) and Government off-the-shelf (GOTS) hardware and software to replace obsolete components or subsystems while maintaining interoperability with existing systems.

Maritime Integrated Broadcast Service (MIBS) (formerly Tactical Data Information Exchange Subsystem Broadcast (TADIXS-B)) Program Charter is to deliver Integrated Broadcast Service (IBS) data to operational and tactical decision makers aboard United States Navy ships, shore headquarters, and other joint platforms. It will provide means to disseminate organically derived data from Navy platforms to other tactical, operational, and strategic users in theatre. MIBS provides the Navy

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0303109N *I Satellite Communications (Space)*

a capability to deliver near real time data, enhancing the Common Operational Picture (COP), to support operations in all warfare areas, including: Ballistic Missile Defense (BMD), Anti-Air Warfare (AAW), Anti-Surface Warfare (ASW), Undersea Warfare (USW), Electronic Warfare (EW). The program encompasses Navy IBS systems (Joint Tactical Terminal - Maritime (JTT-M)). These systems will provide the Navy and other joint platforms with a coherent approach to fielding maritime IBS systems that takes advantage of all available pathways and services.

The Mobile User Objective System (MUOS) program provides for the development of the next generation Department of Defense (DoD) advanced narrowband communications satellite constellation. The current Ultra-High Frequency (UHF) Follow-On (UFO) constellation is projected to degrade below acceptable availability parameters in 2015. This MUOS Research Development Test & Evaluation, Navy (RDT&E,N) effort supports Full Operational Capability (FOC) in FY 2017.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	66.196	41.829	31.076	-	31.076
Current President's Budget	63.642	41.729	53.239	-	53.239
Total Adjustments	-2.554	-0.100	22.163	-	22.163
• Congressional General Reductions	-	-0.100			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.650	-			
• SBIR/STTR Transfer	-1.904	-			
• Program Adjustments	-	-	18.000	-	18.000
• Rate/Misc Adjustments	-	-	4.163	-	4.163

Change Summary Explanation

Schedule:
EHF SATCOM Terminals (project 0728)
No significant technical changes.

Mobile User Objective System (project 2472)
MUOS schedule reflects adjustments to test events (including End-to-End integration and test), and delays to the completion of the MUOS ground station in Niscemi.

Technical:
No significant technical changes.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303109N / *Satellite Communications (Space)*	Project (Number/Name) 0728 / *EHF SATCOM Terminals*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0728: *EHF SATCOM Terminals*	631.684	19.774	24.803	33.967	-	33.967	33.801	24.657	34.370	30.906	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: 290

A. Mission Description and Budget Item Justification

The Navy Multiband Terminal (NMT) Program is the required Navy component to the Advanced Extremely High Frequency (AEHF) Program for enhancing protected and survivable satellite communications to Naval forces. The NMT system provides an increase in single service capability from 1.5 Megabits per second (Mbps) to 8 Mbps, increases the number of coverage areas, and retains Anti-Jam/Low Probability of Intercept (AJ/LPI) protection characteristics. It is compatible with today's Navy Low Data Rate/Medium Data Rate (LDR/MDR) terminals and will sustain the Military Satellite Communications (MILSATCOM) architecture by providing connectivity across the spectrum of mission areas, to include land, air and naval warfare, special operations, strategic nuclear operations, strategic defense, theater missile defense, and space operations and intelligence. The NMT system will replenish and improve on Navy terminal capabilities of the Military Strategic, Tactical & Relay System (MILSTAR), Defense Satellite Communications System (DSCS), Wideband Global Satellite (WGS), and Global Broadcast System (GBS). The new system will equip the warfighters with assured, jam resistant, secure communications as described in both the joint AEHF Satellite Communications System and the WGS Operational Requirement Documents (ORD). Mission requirements specific to Navy operations, including threat levels and scenarios, are contained in the ORD. The NMT will provide multiband Satellite Communications (SATCOM) capability for ship, submarine, and shore platforms.

Joint Aerial Layer Network-Maritime (JALN-M) is the Navy implementation of the JALN architecture which provides assured communications in any environment, especially in an Anti-Access Area Denial (A2AD) environment. With disruption or loss of Space tier communications, JALN-M establishes and/or restores connectivity within the High Capacity Backbone (HCB) Common Data Link (CDL) tier, the Distribution Access Range Extension (DARE) tier, and the Transition tier in accordance with the JALN-M Initial Capabilities Document and the JALN Analysis of Alternatives (AoA) Final Report. JALN-M is a robust, assured communications capability providing joint connectivity via the HCB and Navy platform connectivity via a pseudo satellite DARE capability. JALN-M will use the Extended Data Rate (XDR) NMT waveform for intra-battle group DARE communications, a Common Data Link (CDL) waveform for the HCB cross-link capability, and will leverage enhanced Ultra High Frequency/High Frequency (UHF/HF) waveforms for coalition connectivity.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: NMT Development	19.774	7.238	16.967	-	16.967
Articles:	-	-	-	-	-
Description: Overall program efforts include investigation of emerging technologies through study, development, and associated testing for feasibility of satellite communications-related program insertion.					
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 0728 / *EHF SATCOM Terminals*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Prepared for Follow-on Operational Test and Evaluation (FOT&E) of the NMT system for testing with the on-orbit Extended Data Rate (XDR) waveform and demonstration of communications planning with the Tactical Mission Planning Sub-System (T-MPSS). Completed the development and integration of the Advanced Time Delay Multiple Access Interface Processor (ATIP) into the NMT Terminal. Performed system modifications to correct deficiencies discovered during testing. Continued on-going efforts to test the Enhanced Polar System (EPS) functionality within the NMT system. Developed Anti-Access Area Denial (A2AD) specifications, performed technical and system risk reduction, and solution analysis for Airborne Extended Data Rate (AXDR) and Advanced Extremely High Frequency (AEHF), to implement the A2AD mitigation strategy as prescribed in the Joint Aerial Layer Network (JALN) Analysis of Alternatives (AoA). ***FY 2015 Plans:*** Complete Follow-on Operational Test and Evaluation (FOT&E) of the NMT system for testing with the on-orbit Extended Data Rate (XDR) waveform and demonstration of communications planning with the Tactical Mission Planning Sub-System (T-MPSS). Continue on-going efforts to test the Enhanced Polar System (EPS) functionality within the NMT system. Begin Anti-Access Area Denial (A2AD) development for Advanced Time Division Multiple Access (TDMA) Interface Processor (ATIP) initiatives, Adaptive Coding terminal design development, and crypto interface. Perform technical and system risk reduction, and solution analysis for Airborne XDR and AEHF, and implement the A2AD mitigation strategy for NMT. ***FY 2016 Base Plans:*** Continue Anti-Access Area Denial (A2AD) development to include the Advanced Time Division Multiple Access (TDMA) Interface Processor (ATIP) initiatives. Initiate Adaptive Coding terminal design development, and Wideband Anti Jam Modem specification and crypto interface. Perform technical and system risk reduction, and solution analysis for Airborne XDR and Advanced Extremely High Frequency (AEHF), and implement the A2AD mitigation strategy for NMT. ***FY 2016 OCO Plans:*** N/A					
Title: Joint Aerial Layer Network Maritime (JALN-M)	-	17.565	17.000	-	17.000
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 0728 / *EHF SATCOM Terminals*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2015 Plans:*** Begin Joint Aerial Layer Network Maritime (JALN-M) System of Systems development, integration, and testing, to include development of capabilities for shipboard and submarine NMT systems to support Advanced Extremely High Frequency (AEHF) Airborne Extended Data Rate (XDR) waveform communications with the JALN-M Pod AXDR payload, High Capacity Backbone, and the Distribution Access Range Extension (DARE). Develop design specification of JALN-M payload requirements for integration into an airborne prototype Pod. Begin Anti-Access Area Denial (A2AD) development for JALN. Includes Advanced Time Division Multiple Access (TDMA) Interface Processor (ATIP) initiatives, Adaptive Coding terminal design development, and crypto interface to implement the A2AD mitigation strategy for JALN. ***FY 2016 Base Plans:*** Continue Joint Aerial Layer Network Maritime (JALN-M) System of Systems development, integration, and testing, to include development of capabilities for shipboard and submarine NMT systems to support Extremely High Frequency (EHF) Airborne Extended Data Rate (XDR) waveform communications with the JALN-M Pod AXDR payload, High Capacity Backbone, and the Distribution Access Range Extension (DARE). Develop design specification of JALN-M payload requirements for integration into an airborne prototype Pod. Continue Anti-Access Area Denial (A2AD) development to include Advanced Time Division Multiple Access (TDMA) Interface Processor (ATIP) initiatives to implement the A2AD mitigation strategy for JALN. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	19.774	24.803	33.967	-	33.967

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/3216: *Navy Multiband Terminal (NMT)*	183.620	247.617	118.113	-	118.113	47.315	78.186	106.653	93.633	101.633	1,413.343

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 0728 / *EHF SATCOM Terminals*

D. Acquisition Strategy

The NMT Follow-On Full Deployment (FOFD) contract will continue NMT production for Afloat platforms and Shore locations, in support of the Chief of Naval Operations and the Department of the Navy (DON), and will allow the NMT Program to complete Full Operational Capability (FOC). The competitive contract awarded to COMTECH in 2013 will support the development of Anti-Access Area Denial (A2AD).

E. Performance Metrics

The RDT&E goal for the NMT program is to create a military satellite communications system that consolidates capabilities of current and future satellite systems in a single terminal.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303109N / *Satellite Communications (Space)*	Project (Number/Name) 0728 / *EHF SATCOM Terminals*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPAF	Various : Various	126.499	-		-		-		-		-	-	126.499	-
Hardware Development	C/FFP	Harris : Melbourne, FL	6.136	-		-		-		-		-	-	6.136	-
NMT EDM Development	C/CPAF	Raytheon : Marlborough, MA	198.680	-		-		-		-		-	-	198.680	-
Hardware Development	WR	SSC PAC : San Diego, CA	1.009	-		-		-		-		-	-	1.009	-
Ancillary Hardware Development	C/CPAF	Raytheon : Marlborough, MA	55.923	-		-		-		-		-	-	55.923	-
Software Development	WR	NUWC : Newport, RI	8.581	-		-		-		-		-	-	8.581	-
Software Development	C/CPAF	Raytheon : Marlborough, MA	58.123	6.330	Mar 2014	16.808	Jan 2015	22.553	Jan 2016	-		22.553	Continuing	Continuing	Continuing
Systems Engineering	WR	SSC PAC : San Diego, CA	22.088	-		-		-		-		-	-	22.088	-
Systems Engineering	WR	NUWC : Newport, RI	30.404	1.033	Nov 2013	0.975	Nov 2014	2.008	Nov 2015	-		2.008	Continuing	Continuing	Continuing
Systems Engineering	C/CPAF	Linquest : San Diego, CA	34.905	-		-		-		-		-	-	34.905	-
Systems Engineering	C/CPAF	Systech : San Diego, CA	3.984	1.454	Nov 2013	1.365	Nov 2014	1.194	Nov 2015	-		1.194	Continuing	Continuing	Continuing
Software Development	C/CPFF	COMTECH : Tempe, AZ	12.600	7.547	Mar 2014	3.011	Dec 2014	4.900	Dec 2015	-		4.900	Continuing	Continuing	Continuing
		Subtotal	558.932	16.364		22.159		30.655		-		30.655	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	SSC PAC : San Diego, CA	11.412	-		-		-		-		-	-	11.412	-
Logistics Support	WR	SSC PAC : San Diego, CA	3.555	-		-		-		-		-	-	3.555	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303109N / *Satellite Communications (Space)*	Project (Number/Name) 0728 / *EHF SATCOM Terminals*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analysis	WR	NUWC : Newport, RI	6.869	-		-		-		-		-	-	6.869	-
Information Assurance	WR	SSC PAC : San Diego, CA	3.886	-		-		-		-		-	-	3.886	-
		Subtotal	25.722	-		-		-		-		-	-	25.722	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	SSC PAC : San Diego, CA	20.290	0.990	Nov 2013	0.917	Nov 2014	2.000	Nov 2015	-		2.000	Continuing	Continuing	Continuing
Operational Test & Evaluation 1	WR	COMOPTEVFOR : Norfolk, VA	4.566	1.000	Nov 2013	0.400	Nov 2014	0.352	Nov 2015	-		0.352	Continuing	Continuing	Continuing
Developmental Test & Evaluation	C/CPAF	Raytheon : Marlborough, MA	2.238	0.890	Nov 2013	0.819	Nov 2014	-		-		-	-	3.947	-
		Subtotal	27.094	2.880		2.136		2.352		-		2.352	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contract Management	C/CPFF	BAH : San Diego	8.741	0.250	Nov 2013	0.234	Nov 2014	0.220	Nov 2015	-		0.220	Continuing	Continuing	Continuing
Program Management	C/CPFF	BAH : San Diego	8.761	0.250	Nov 2013	0.234	Nov 2014	0.700	Nov 2015	-		0.700	Continuing	Continuing	Continuing
Acquisition Management	WR	NCCA : Various	0.653	-		-		-		-		-	-	0.653	-
Travel	Reqn	SPAWAR : Various	1.781	0.030	Nov 2013	0.040	Nov 2014	0.040	Nov 2015	-		0.040	Continuing	Continuing	Continuing
		Subtotal	19.936	0.530		0.508		0.960		-		0.960	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	631.684	19.774		24.803		33.967		-		33.967	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303109N / *Satellite Communications (Space)*	Project (Number/Name) 0728 / *EHF SATCOM Terminals*	

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 0728 / *EHF SATCOM Terminals*

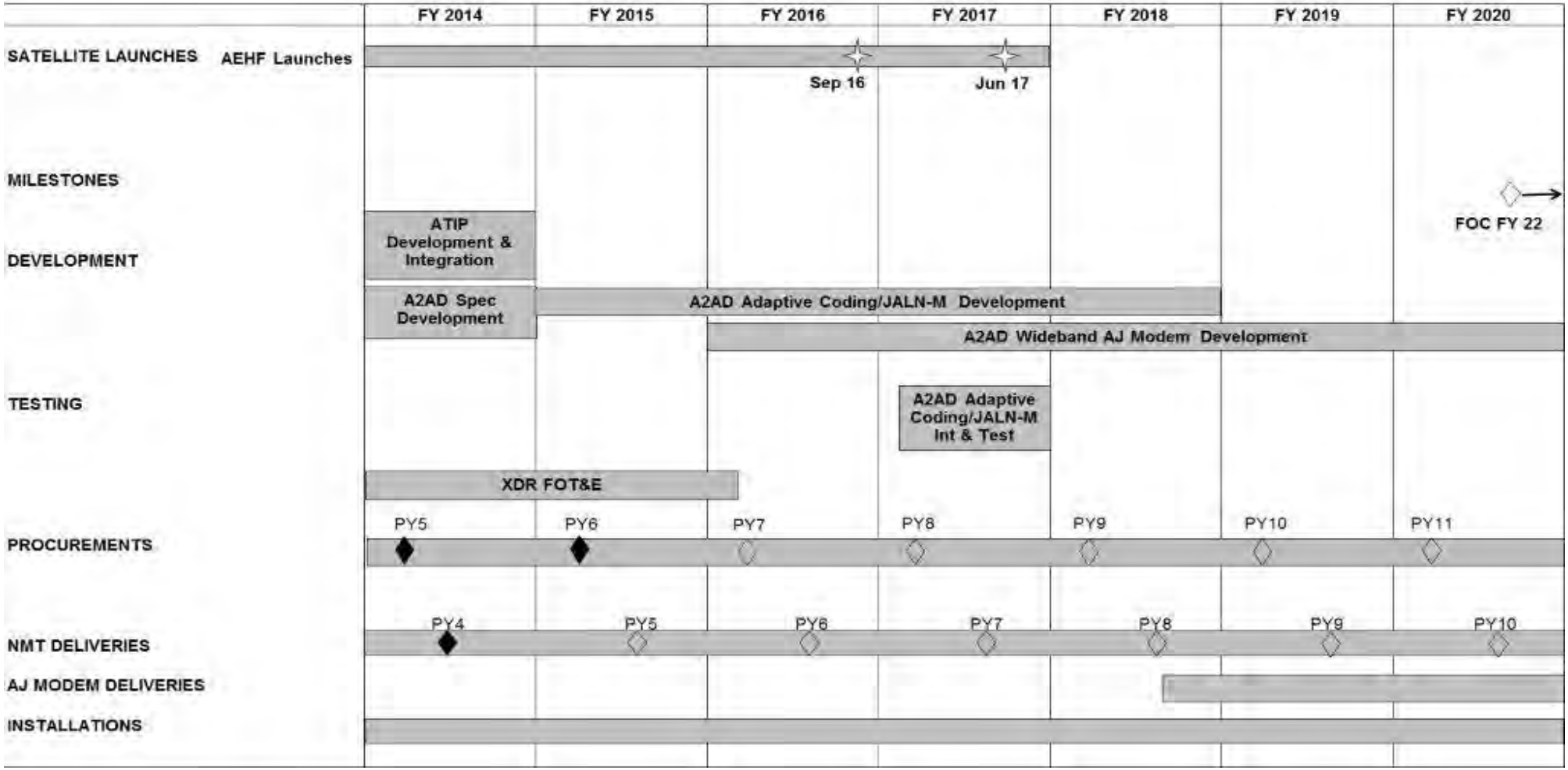

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 0728 / *EHF SATCOM Terminals*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0728				
ATIP Development & Integration	1	2014	4	2014
XDR FOT&E	1	2014	1	2016
A2AD Spec Development	1	2014	4	2014
Procurement Year 5 (PY5)	2	2014	2	2014
FRP PY4 Delivery	2	2014	2	2014
Procurement Year 6 (PY6)	2	2015	2	2015
FRP PY5 Delivery	3	2015	3	2015
Procurement Year 7 (PY7)	2	2016	2	2016
FRP PY6 Delivery	3	2016	3	2016
AEHF Launch SV-4	4	2016	4	2016
FRP PY7 Delivery	3	2017	3	2017
AEHF Launch SV-5	3	2017	3	2017
A2AD Adaptive Coding & JALN-M Development	1	2015	4	2018
A2AD Adaptive Coding & JALN-M Integration & Testing	1	2017	4	2017
A2AD Wideband AJ Modem Development	3	2018	4	2020
AJ Modem Deliveries	3	2018	4	2020
Procurement Year 8 (PY8)	2	2017	2	2017
Procurement Year 9 (PY9)	2	2018	2	2018
Procurement Year 10 (PY10)	2	2019	2	2019
Procurement Year 11 (PY11)	2	2020	2	2020
FRP PY8 Delivery	3	2018	3	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 0728 / *EHF SATCOM Terminals*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
FRP PY9 Delivery	3	2019	3	2019
FRP PY10 Delivery	3	2020	3	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303109N / *Satellite Communications (Space)*	Project (Number/Name) 0731 / *FLTSATCOM*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0731: *FLTSATCOM*	25.070	9.010	4.752	3.101	-	3.101	-	-	-	-	-	41.933
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Ultra-High Frequency (UHF) Military Satellite Communications (MILSATCOM) Network Integrated Control System (JMINI CS) is a legacy system that commenced development in 1998. JMINI CS is a Navy-led, Joint interest program providing integrated, dynamic, and centralized control of non-processed UHF MILSATCOM 5/25 kHz Demand Assigned Multiple Access (DAMA) and Demand Assigned Single Access (DASA) channels to maximize existing highly sought after SATCOM resources used to support operational missions as well as joint training and tactical exercises. The system provides decentralized web-based management of those resources for use as a situational awareness tool for Combatant Commanders and SATCOM Support Centers. The JMINI CS is required to operate beyond the original End of Life (EoL) of 2015 in order to continue to support mission critical operations through at least 2033. The JMINI CS Program of Record (POR) will perform concept development and exploration to identify cost-effective solutions to address multiple life cycle support issues in order to address the increasing risk of an unrecoverable hardware or software failure, which would result in a loss of service for the fleet. The effort will involve evaluation, prototype development, laboratory and integration testing of Commercial Off-The-Shelf (COTS) and Government Off-The-Shelf (GOTS) hardware and software to replace obsolete components or subsystems while maintaining interoperability with existing platforms/systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: JMINI CS	9.010	4.752	3.101	-	3.101
Articles:	-	1	-	-	-
FY 2014 Accomplishments: Completed software analysis and assessments, as well as cost-benefit analyses and market research of system design elements to determine the most cost effective and technically appropriate hardware and software solutions. Developed a system prototype and commenced software integration efforts based upon System Engineering Design Reviews conducted by the SPAWAR Technical Authority.					
FY 2015 Plans: Finalize prototype design, develop test plans and begin implementation of a comprehensive test strategy. Continue software development and integration of the system architecture.					
FY 2016 Base Plans: Completion of development effort in support of fielding decisions.					
FY 2016 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 0731 / *FLTSATCOM*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Accomplishments/Planned Programs Subtotals	9.010	4.752	3.101	-	3.101

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/3215: *JMINI*	-	6.947	5.691	-	5.691	-	-	-	-	-	92.371

Remarks

D. Acquisition Strategy

JMINI CS: The Joint Ultra-High Frequency (UHF) Military Satellite Communications (MILSATCOM) is an ACAT IV (T) system that is post-FRP. As a legacy system that commenced in 1998, JMINI CS is expected to operate well beyond the original 2015 End of Life (EoL) date. The projected EoL for JMINI CS extends past 2033. The JMINI CS Program of Record (POR) will evaluate the most cost-effective solutions to address multiple life cycle support issues, in order to minimize loss of service to the fleet. The effort will involve evaluating Commercial Off-The-Shelf (COTS) and Government Off-The-Shelf (GOTS) hardware and software, and conducting laboratory/ integration testing to ensure proper functionality and interoperability.

E. Performance Metrics

JMINI CS: The JMINI CS POR will perform concept development and exploration of the JMINI CS 5 kHz and 25 kHz systems, to analyze alternatives for the most advantageous use of new technologies to extend the JMINI CS system life span in order to minimize loss of service to the Fleet.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 0731 / *FLTSATCOM*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JMINI Contractor Engineering Support	C/CPFF	SSC PAC : San Diego, CA.	13.296	3.864	Dec 2013	-		-		-		-	-	17.160	-
JMINI Government Engineering	WR	SSC PAC : San Diego, CA.	7.808	4.846	Nov 2013	3.074	Nov 2014	2.606	Nov 2015	-		2.606	-	18.334	-
JMINI Certification Authority	WR	SSC LANT : Charleston, SC	0.598	0.100	Jan 2014	0.680	Jan 2015	-		-		-	-	1.378	-
		Subtotal	21.702	8.810		3.754		2.606		-		2.606	-	36.872	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IPv6 Support	WR	SSC PAC : San Diego	2.418	-		-		-		-		-	-	2.418	-
JMINI Obsolescense Forecast & Analysis	WR	NSWC : Corona	0.000	-		0.050	Nov 2014	-		-		-	-	0.050	-
		Subtotal	2.418	-		0.050		-		-		-	-	2.468	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JMINI Interoperability Test	WR	JITC : Ft. Huachaca	0.000	0.200	Feb 2014	0.222	Nov 2014	0.185	Dec 2015	-		0.185	-	0.607	-
JMINI Test & Evaluation	WR	COTF : Norfolk, VA	0.000	-		0.330	Nov 2014	-		-		-	-	0.330	-
MIBS Development Test & Evaluation	WR	SSC PAC : San Diego, CA.	0.409	-		-		-		-		-	-	0.409	-
		Subtotal	0.409	0.200		0.552		0.185		-		0.185	-	1.346	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 0731 / *FLTSATCOM*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JMINI Program Management	C/CPFF	BAH : San Diego, CA.	0.498	-		-		-		-		-	-	0.498	-
JMINI Program Management	C/CPFF	STF : San Diego, CA.	0.000	-		0.396	Nov 2014	0.310	Nov 2015	-		0.310	-	0.706	-
MIBS Program Management	WR	SSC PAC : San Diego, CA.	0.043	-		-		-		-		-	-	0.043	-
		Subtotal	0.541	-		0.396		0.310		-		0.310	-	1.247	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.070	9.010		4.752		3.101		-		3.101	-	41.933	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 0731 / *FLTSATCOM*

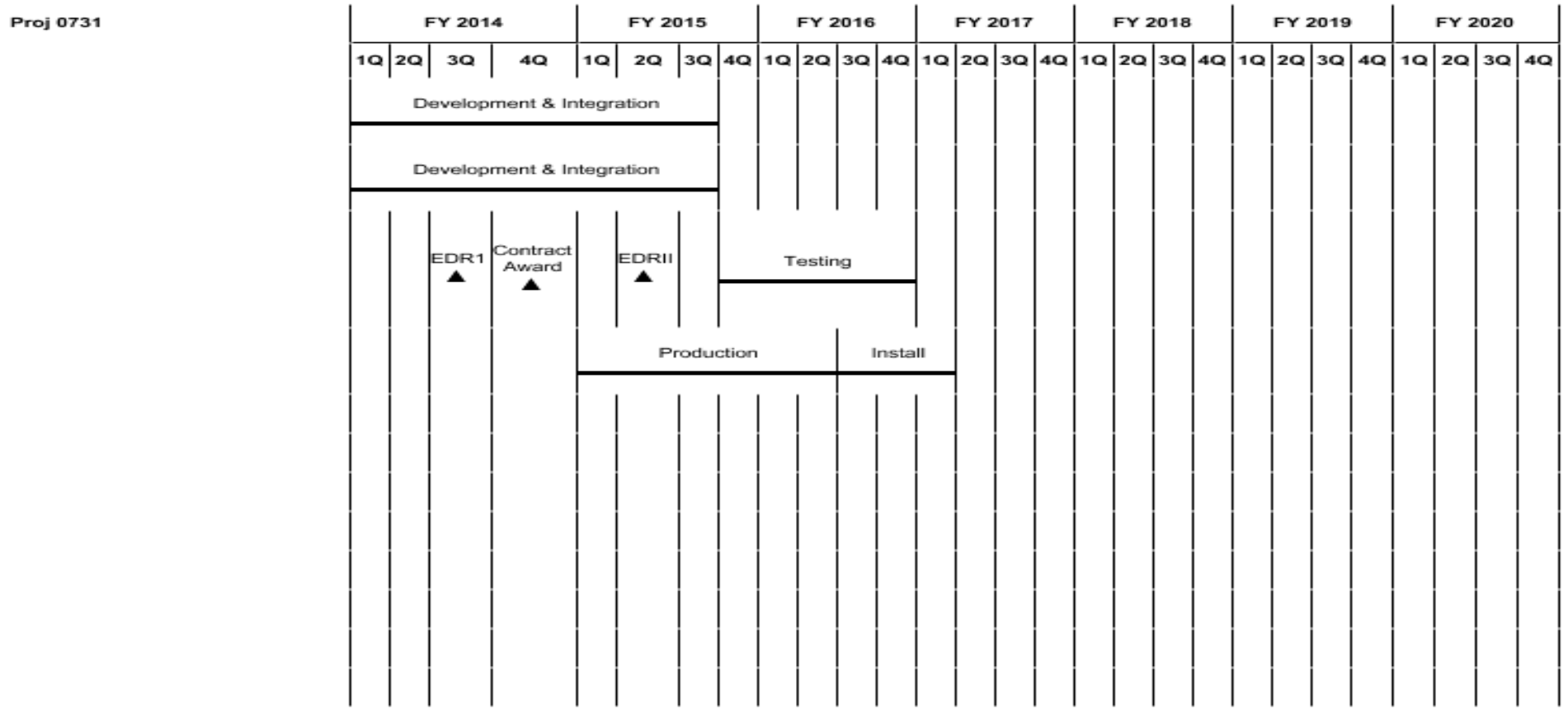

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 0731 / *FLTSATCOM*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0731				
Software development, test, and integration	1	2014	3	2015
Prototype development and testing	1	2014	3	2015
Engineering Design Review I (EDRI)	3	2014	3	2014
Engineering Design Review II (EDRII)	2	2015	2	2015
System Testing	4	2015	4	2016
Production Contract Award	4	2014	4	2014
Production	1	2015	2	2016
Install	3	2016	1	2017

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303109N / *Satellite Communications (Space)*	Project (Number/Name) 2472 / *Mobile User Objective Sys (MUOS)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2472: *Mobile User Objective Sys (MUOS)*	3,938.589	34.858	12.174	16.171	-	16.171	11.602	12.396	12.718	12.983	238.343	4,289.834
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: 345

A. Mission Description and Budget Item Justification

The Mobile User Objective System (MUOS) program provides for the development of the next generation Department of Defense (DoD) advanced narrowband communications satellite constellation. The current Ultra-High Frequency (UHF) Follow-On (UFO) constellation is projected to degrade below acceptable availability parameters in 2015.

This MUOS Research Development Test & Evaluation, Navy (RDT&E,N) effort supports Full Operational Capability (FOC) in FY 2017.

FY16: Conduct Assessment of Operational Test Readiness 2 (AOTR 2), Operational Test Readiness Review 2 (OTRR 2), and the Multiservice Operational Test and Evaluation 2 (MOT&E 2). Continue Information Assurance (IA) vulnerability fixes identified during the Information Assurance Control & Validation (IACV) at all sites and regression test (acceptance test) of IA issues. Conduct engineering activities to address IA and emergent system requirements/enhancements in relation to operational environment.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Mobile User Objective Sys (MUOS)	34.858	12.174	16.171	-	16.171
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed On-Orbit testing phase for Satellite 2, continued contractor System Integration End to End (E2E) Risk Reduction (RR) testing, began Metrics & Capability Assessment. Conducted pre-Multiservice Operational Test and Evaluation (MOT&E) engineering activities. Provided fixes to waveform and ground software resulting from system testing, and Information Assurance Vulnerability Alerts. Implemented Engineering Change Proposals requiring Ground software changes. Completed the accreditation effort to obtain the Interim Authority To Operate (IATO) for Niscemi. Continued fixing Information Assurance (IA) vulnerabilities identified during the Information Assurance Control & Validation (IACV) effort for Geraldton, Wahiawa, and Northwest.					
FY 2015 Plans: Conduct follow-on IACVs at each ground site to obtain IATO extensions. Continue Information Assurance (IA) vulnerability fixes identified during the IACVs at all sites. Continue research for emerging IA issues, maintain					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 2472 / *Mobile User Objective Sys (MUOS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
security accreditations, regression test (acceptance test) and implement mandated security changes to ensure system readiness/availability. Conduct terminal integration and testing of MUOS capable terminal hardware/ software devices to ensure interoperability with the MUOS ground systems. Conduct developmental and test readiness events in preparation for program level TECHEVAL. Continue engineering capability assessments in preparation for FY16 MOT&E. ***FY 2016 Base Plans:*** Conduct terminal integration and testing of MUOS capable terminal hardware/software devices to ensure interoperability with the MUOS ground systems. Continue engineering capability assessments in preparation for FY16 MOT&E. Conduct Assessment of Operational Test Readiness 2 (AOTR 2), Operational Test Readiness Review 2 (OTRR 2), and the Multiservice Operational Test and Evaluation 2 (MOT&E 2). Continue IA vulnerability fixes identified during the IACVs at all sites and regression test (acceptance test) of IA issues. Conduct engineering activities to address IA and emergent system requirements/enhancements in relation to operational environment. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	34.858	12.174	16.171	-	16.171

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• WPN/2433: *Mobile User Objective System (MUOS)*	16.914	206.700	39.932	-	39.932	10.085	10.161	10.587	10.809	832.471	2,945.109

Remarks

D. Acquisition Strategy

Research Development Test & Evaluation, Navy (RDT&E,N) funds in FY14 planned for the continuation of the Risk Reduction & Design Development (RRDD) contract for the first 2 MUOS satellites, ground infrastructure, waveform development and associated system engineering and integration, test and evaluation. Funds in FY15 and out planned for engineering activities to address IA and emergent system requirements/enhancements in relation to operational environment.

Weapons Procurement, Navy (WPN) funds in FY14 and beyond used for production support of the remaining satellites and launch services.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 2472 / *Mobile User Objective Sys (MUOS)*

E. Performance Metrics

FY 2014 and beyond: Installation and test initial and follow-on waveforms; complete acceptance testing of entire ground system. Conduct IA, ground, and waveform assessment and remediation of findings. Conduct End-to-End (E2E) Risk Reduction testing and integration activities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303109N / *Satellite Communications (Space)*	Project (Number/Name) 2472 / *Mobile User Objective Sys (MUOS)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RRDD AOS Contract	C/CPAF	Lockheed Martin (LM) : Sunnyvale, CA	3,506.290	20.876	Mar 2014	4.898	Jan 2015	12.683	Nov 2015	-		12.683	250.874	3,795.621	Continuing
CE Contracts & Demos	C/FFP	LM / Raytheon / Spec Astro / Boeing : VAR	21.320	-		-		-		-		-	-	21.320	Continuing
CAD Contracts	C/FFP	LM / Raytheon : VAR	105.154	-		-		-		-		-	-	105.154	Continuing
AoA for MUOS	MIPR	Aerospace : El Segundo, CA	2.782	-		-		-		-		-	-	2.782	Continuing
Government Studies	MIPR	Aerospace : El Segundo, CA	0.711	-		-		-		-		-	-	0.711	Continuing
Crypto Procurement	MIPR	NSA : Fort Meade, MD	3.703	-		-		-		-		-	-	3.703	Continuing
UHF Augmentation	C/CPAF	Lockheed Martin (LM) : Sunnyvale, CA	0.491	-		-		-		-		-	-	0.491	Continuing
		Subtotal	3,640.451	20.876		4.898		12.683		-		12.683	250.874	3,929.782	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
UFO TT&C Terminal Upgrades	WR	SSC PAC : San Diego, CA	10.691	-		-		-		-		-	-	10.691	Continuing
Facilities Modifications	WR	SSC LANT : Norfolk, VA	2.772	-		-		-		-		-	-	2.772	Continuing
Australian Site Prep	C/FFP	Boeing : Brisbane, AUS	24.870	-		-		-		-		-	-	24.870	Continuing
Studies & Analyses (EELV)	MIPR	SMC/FMAIC : El Segundo, CA	0.825	-		-		-		-		-	-	0.825	Continuing
ISCS Integration	WR	NAVSOC : Point Mugu, CA	7.419	-		-		-		-		-	-	7.419	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303109N / *Satellite Communications (Space)*	Project (Number/Name) 2472 / *Mobile User Objective Sys (MUOS)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Narrowband SATCOM SE Group (NSSEG) - MUOS E2E	WR	SSC LANT : Charleston, SC	2.492	-		-		-		-		-	-	2.492	Continuing
		Subtotal	49.069	-		-		-		-		-	-	49.069	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	SSC PAC : San Diego, CA	18.728	3.990	Feb 2014	3.728	Nov 2014	1.745	Nov 2015	-		1.745	3.159	31.350	Continuing
Operational Test & Evaluation	WR	OPTEVFOR : Norfolk, VA	4.392	0.762	Nov 2013	1.170	Nov 2014	0.250	Nov 2015	-		0.250	-	6.574	Continuing
		Subtotal	23.120	4.752		4.898		1.995		-		1.995	3.159	37.924	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPAF	Accenture : San Diego, CA	134.249	-		-		-		-		-	-	134.249	Continuing
Contractor Engineering Support	C/CPFF	Vector Planning and Services, Inc. : San Diego, CA	8.581	3.413	Jul 2014	-		-		-		-	-	11.994	Continuing
Contractor Engineering Support	Various	Various : Various	0.000	-		0.950	Nov 2014	0.347	Oct 2015	-		0.347	12.113	13.410	Continuing
Government Engineering	WR	SSC PAC : San Diego, CA	32.480	4.492	Feb 2014	0.920	Dec 2014	0.805	Dec 2015	-		0.805	11.990	50.687	Continuing
Program Mgmt Support	C/CPAF	Booz Allen Hamilton : McLean, VA	41.862	-		-		-		-		-	-	41.862	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303109N / *Satellite Communications (Space)*	Project (Number/Name) 2472 / *Mobile User Objective Sys (MUOS)*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	Booz Allen Hamilton : McLean, VA	2.549	1.258	Dec 2013	0.408	Dec 2014	0.341	Dec 2015	-		0.341	9.906	14.462	Continuing
Travel	WR	PMW 146 : San Diego, CA	2.529	0.067	Oct 2013	0.100	Oct 2014	-		-		-	-	2.696	Continuing
Frequency Filing	C/FFP	ITU : Geneva, CH	0.855	-		-		-		-		-	-	0.855	Continuing
IPA/ICAT	WR	Aerospace : El Segundo, CA	0.390	-		-		-		-		-	-	0.390	Continuing
Acquisition Workforce Fund	C/FP	Not Specified : Not Specified	2.454	-		-		-		-		-	-	2.454	Continuing
		Subtotal	225.949	9.230		2.378		1.493		-		1.493	34.009	273.059	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3,938.589	34.858		12.174		16.171		-		16.171	288.042	4,289.834	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 2472 / *Mobile User Objective Sys (MUOS)*

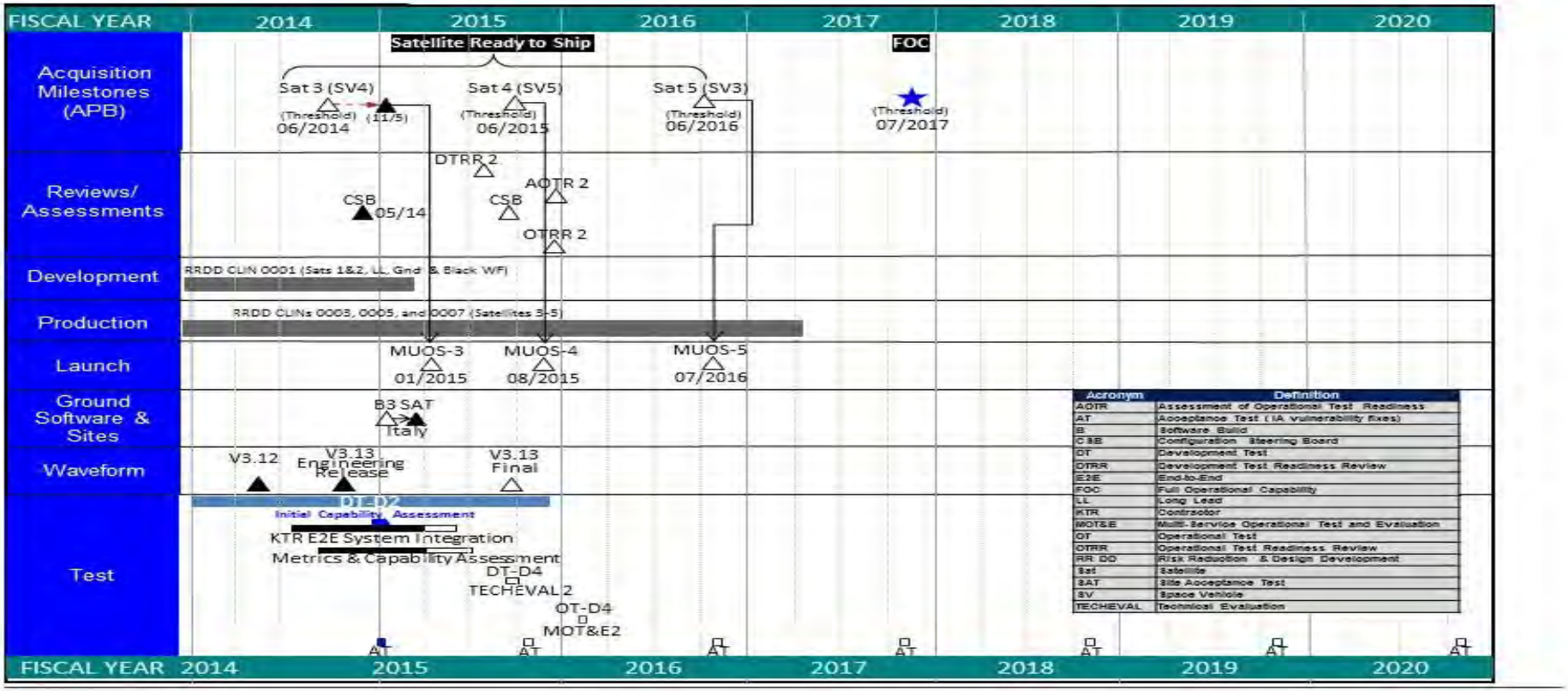

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 2472 / *Mobile User Objective Sys (MUOS)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2472				
Waveform Version 3.12 Delivery to Information Repository	2	2014	2	2014
KTR System Integration	3	2014	2	2015
Configuration Steering Board (FY14)	3	2014	3	2014
Metrics & Capability Assessment	3	2014	3	2015
Waveform Version 3.13 (Engineering Release) Delivery to Information Repository	4	2014	4	2014
Acceptance Test FY14 (AT)	4	2014	1	2015
Initial Capability Assessment	4	2014	1	2015
Italy Build 3.1	1	2015	1	2015
Ready to Ship date #3	1	2015	1	2015
Launch of Satellite #3 (MUOS 3)	2	2015	2	2015
Configuration Steering Board (FY15)	3	2015	3	2015
Development Test Readiness Review (DTRR) 2	3	2015	3	2015
Waveform Version 3.13 (Final) Release Delivery to Information Repository	3	2015	3	2015
DT-D4 Tech Eval 2	3	2015	4	2015
Ready to Ship date #4	3	2015	3	2015
Acceptance Test FY15 (AT)	4	2015	4	2015
Launch of Satellite #4 (MUOS 4)	4	2015	4	2015
Operational Test Readiness Review (OTRR) #2	1	2016	1	2016
Assessment of Operational Test Readiness (AOTR)	1	2016	1	2016
OT-D4 Multi-Service Operational Testing & Evaluation (MOT&E 2) Report	1	2016	1	2016
Ready to Ship date #5	3	2016	3	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303109N / *Satellite Communications (Space)*	**Project (Number/Name)** 2472 / *Mobile User Objective Sys (MUOS)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acceptance Test FY16 (AT)	4	2016	4	2016
Launch of Satellite #5 (MUOS 5)	4	2016	4	2016
Full Operational Capability (FOC)	4	2017	4	2017
Acceptance Test FY17 (AT)	4	2017	4	2017
Acceptance Test FY18 (AT)	4	2018	4	2018
Acceptance Test FY19 (AT)	4	2019	4	2019
Acceptance Test FY20 (AT)	4	2020	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0303138N *I Consolidated Afloat Network Ent Services(CANES)*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	115.289	23.965	22.773	21.677	-	21.677	22.854	22.352	22.558	23.016	319.363	593.847
0725: *Communication Automation*	1.213	0.972	3.009	-	-	-	-	-	-	-	-	5.194
9C87: *CANES Integration*	114.076	22.993	19.764	21.677	-	21.677	22.854	22.352	22.558	23.016	319.363	588.653

Note

Automated Digital Network System (ADNS) - FY14-15 funding resides in PE 0303138N. FY16-20 funding was realigned into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

A. Mission Description and Budget Item Justification

Consolidated Afloat Networks & Enterprise Services (CANES) is the Navy's only Program of Record (POR) to replace existing afloat networks and provide the necessary infrastructure for applications, systems, and services required for the Navy to dominate the Cyber Warfare domain. CANES is the technical and infrastructure consolidation of existing, separately managed afloat networks including Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange System - Maritime (CENTRIXS-M), Sensitive Compartmented Information (SCI) Networks, and Submarine Local Area Network (SubLAN). These legacy afloat network designs are currently End of Life and CANES will replace these unaffordable and obsolete networks.

The fundamental goal of CANES is to bring Infrastructure as a Service (IaaS) and Platform as a Service (PaaS), within which current and future iterations of Navy Tactical Network computing and storage capabilities will reside. CANES will provide complete infrastructure inclusive of hardware, software, processing, storage, and end user devices for Unclassified, Coalition, Secret and SCI for all basic network services (email, web, chat, collaboration) to a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, Regional Network Operations and Security Centers (RNOSC) and Aircraft. In addition, hosted applications and systems inclusive of Command and Control, Intelligence, Surveillance and Reconnaissance, Information Operations, Logistics and Business domains require the CANES infrastructure to operate in the tactical environment. Integrating these applications and systems is accomplished through Application Integration (AI), the engineering process used to evaluate and validate compatibility between CANES and the Navy-validated applications, systems and services that will utilize the CANES infrastructure and services. Specific programs, such as Distributed Common Ground System - Navy (DCGS-N), Global Command and Control System - Maritime (GCCS-M), Naval Tactical Command Support System (NTCSS), and Undersea Warfare Decision Support System (USW-DSS), are dependent on the CANES Common Computing Environment (CCE) to field, host, and sustain their capability because they no longer provide their own hardware. CANES requires that Automated Digital Network System (ADNS) field prior to or concurrently with CANES due to the architectural reliance between the two programs.

CANES will develop updates on a rolling four year hardware baseline and a two year software baseline. CANES is based on the overarching concept of reducing the number of afloat network baselines and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics, and training efforts into a unified support structure. Platform Sets define phases of CANES system development efforts. Each platform set consists of different ship class design baselines.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0303138N *I Consolidated Afloat Network Ent Services(CANES)*

In FY 2016, CANES RDT&E investment will support completion of Technical Insertion (TI) software baseline development and initiate development for TI 2 hardware and software baseline including E2C laboratory test efforts. Perform systems engineering efforts to complete functional baselines and updates to technical data packages. Initiate Development Testing (DT) in support of submarine testing.

The Communications Automation Program - This project is a continuing program that provides for automation and communications upgrades for Fleet tactical users. It includes Automated Digital Network System (ADNS) and High Frequency Internet Protocol/Sub Network Relay.

ADNS is the method by which Tactical Navy units transfer Internet Protocol (IP) data to Navy and Department of Defense communities on the Global Information Grid (GIG). ADNS is the gateway to technical Wide Area Network (WAN) afloat for Internet Protocol network operations, supporting information dissemination and external connectivity. ADNS allows services and applications to interconnect to the Defense Information Systems Network (DISN) ashore via multiple Radio Frequency (RF) resources and pier connectivity.

In FY 2016-2020 ADNS funding resides in PE 0204163N (Fleet Tactical Development).

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	24.476	22.780	25.968	-	25.968
Current President's Budget	23.965	22.773	21.677	-	21.677
Total Adjustments	-0.511	-0.007	-4.291	-	-4.291
• Congressional General Reductions	-	-0.007			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.511	-			
• Program Adjustments	-	-	-	-	-
• Rate/Misc Adjustments	-	-	-4.291	-	-4.291

Change Summary Explanation

The FY 2016 funding request was reduced by $0.7 million to account for the availability of prior year execution balances.

Technical: N/A

Funding:
N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0303138N *I Consolidated Afloat Network Ent Services(CANES)*

Schedule:
Impacts resulting from operational ship availability timelines for the CANES Initial Operational Test and Evaluation (IOT&E) and Follow-On Test and Evaluation (FOT&E) test platforms caused the Unit Level DT1, Unit Level DT2, IOT&E and Force Level DT and Force Level FOT&E test events to be re-phased. The delays to the ship availability timeline also caused IOC to be re-phased based on IOC definition in the program's Capability Development Document (CDD) for IOC to be declared once first installation is completed. CANES development of Platform Sets 2, 3 & 4 has been re-phased to include development in FY 2014 to align with ship installation schedules of platforms added to the CANES Target Inventory Objective. CANES Limited Deployment re-phased to reflect Limited Deployment authorization provided at Milestone C.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	Project (Number/Name) 0725 / *Communication Automation*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0725: *Communication Automation*	1.213	0.972	3.009	-	-	-	-	-	-	-	-	5.194
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Automated Digital Network System (ADNS) - FY14-15 funding resides in PE 0303138N. FY16-20 funding was realigned into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

A. Mission Description and Budget Item Justification

This project unit is a continuing program that provides for automation and communications upgrades for Fleet tactical users.

Automated Digital Network System (ADNS) provides routing, switching, baseband, configuration and monitoring capabilities for interconnecting naval, coalition and joint enclaves worldwide. ADNS utilizes off the shelf equipment and network protocols as specified by the Joint Technical Architecture. ADNS Increment (INC) II provides capabilities of network to Satellite Communications (SATCOM), load balancing, radio frequency restoral, Quality of Service (QoS) to include application prioritization, traffic management, compression and enhancements designed to maximize use of "effective" available bandwidth for surface, shore, and airborne platforms. ADNS INC III combines all Navy Tactical Voice, Secure Communications Interoperability Protocol (SCIP) Inter-Working Function, Video, and data requirements into a converged IP data stream. ADNS INC III supports higher bandwidth satellites, providing up to 25 mega bytes per second (Mbps) of throughput on Unit Level ships and up to 50 Mbps on Force Level ships. INC III architecture also incorporates an IPv4/IPv6 dual stack and Cipher-Text (CT) security architecture to align to the Global Information Grid (GIG) in order to mesh Navy Tactical surface, subsurface, and airborne platforms into a single IP environments with gateway functions to coalition and joint networks, in addition to greater security utilizing the High Assurance Internet Protocol Encryptor (HAIPE) devices. ADNS will serve as the Navy tactical interface for IP Networking for the JALN-M system. ADNS will investigate emerging technologies to integrate with additional Department of Defense C4I Programs to improve interstrike group networking and extend the network to the tactical edge.

In FY 2016-2020, ADNS funding resides in PE 0204163N (Fleet Tactical Development).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Automated Digital Network System (ADNS)	0.972	3.009	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 0725 / *Communication Automation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continued testing and interfaces with Enterprise Network Management System (ENMS), IPv6 transition, and final phase out of serial links. Integrated Super High Frequency (SHF) split Internet Protocol(IP). Interfaced testing for emerging Line-of-Sight (LOS) links. ***FY 2015 Plans:*** Continue testing and interfaces with ENMS, IPv6 transition, and integration of SHF. Continue the Interface Design Development (IDD) and integration with network applications, develop LOS link, Defense Information Systems Network (DISN) integration and development of Cipher-Text (CT) Piers. Investigate and recommend platform network devices, network design support to include integration with Wide Area Network (WAN) and Joint Aerial Layer Network - Maritime (JALN-M) system. ***FY 2016 Base Plans:*** In FY 2016-2020, ADNS funding resides in PE 0204163N (Fleet Tactical Development). ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.972	3.009	-	-	-

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/2915: *CANES (ADNS Only)*	52.098	56.626	-	-	-	-	-	-	-	-	160.060

Remarks

D. Acquisition Strategy

Automated Digital Network System (ADNS): Evolutionary acquisition approach with overlapping development and implementation phases for defined INC I, II, and III baselines. INC I , II , and III will use competitively awarded contracts to implement changes consistent with acquisition initiatives. ADNS leverages Commercial-Off-The-Shelf (COTS) and Government Off-the-Shelf (GOTS) products while capitalizing on acquisition reform initiatives to achieve material savings in the logistics, installation, integration and training areas. Where feasible, differing types of advantageous contract vehicles will be used to provide flexibility, decrease contract administrative costs, and encourage acquisition streamlining through the use of COTS/GOTS products.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 0725 / *Communication Automation*

E. Performance Metrics

ADNS - Included in the ADNS program goals are the improvements to bandwidth throughput, connectivity to multiple Radio Frequency (RF) paths, greater security, and system capability delivered within a smaller form factor. The ADNS program will, at a minimum, provide bandwidth throughput enhancements resulting in an increase from 2 megabytes per
second (Mbps) to 25 Mbps. ADNS will also provide the ability to transport data across multiple paths simultaneously vice the current limitations of single or secondary paths. ADNS will provide greater security posture by encrypting each enclave, increase performance of the routing and transport architecture while reducing physical footprint and cost, and securing the core via Cipher-Text.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 0725 / *Communication Automation*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering-ADNS	WR	SSC : PAC	0.220	0.233	Nov 2013	2.483	Dec 2014	-		-		-	-	2.936	-
Integration and Test-ADNS	WR	SSC : PAC	0.767	0.392	Dec 2013	0.150	Feb 2015	-		-		-	-	1.309	-
Systems Engineering-ADNS	WR	SSC : LANT	0.000	0.271	Aug 2014	0.211	Nov 2014	-		-		-	-	0.482	-
		Subtotal	0.987	0.896		2.844		-		-		-	-	4.727	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Dev Support-ADNS	WR	SSC : LANT	0.000	-		0.015	Dec 2014	-		-		-	-	0.015	-
		Subtotal	0.000	-		0.015		-		-		-	-	0.015	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation-ADNS	WR	COMOPTEVFOR : Norfolk, VA	0.046	-		-		-		-		-	-	0.046	-
		Subtotal	0.046	-		-		-		-		-	-	0.046	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support-ADNS	C/CPFF	Systems Research & Application : San Diego, CA	0.071	0.076	Aug 2014	0.150	Jul 2015	-		-		-	-	0.297	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	Project (Number/Name) 0725 / *Communication Automation*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support-ADNS	C/CPFF	Science Applications International Corporation : San Diego, CA	0.109	-		-		-		-		-	-	0.109	-
		Subtotal	0.180	0.076		0.150		-		-		-	-	0.406	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.213	0.972		3.009		-		-		-	-	5.194	-

Remarks

Automated Digital Network System (ADNS) - Prior to FY13 funding resides in PE 0204163N. FY13-15 funding resides in PE 0303138N. FY16-20 funding was realigned back into PE 0204163N for Major Automated Information System (MAIS) transparency compliance.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 0725 / *Communication Automation*	

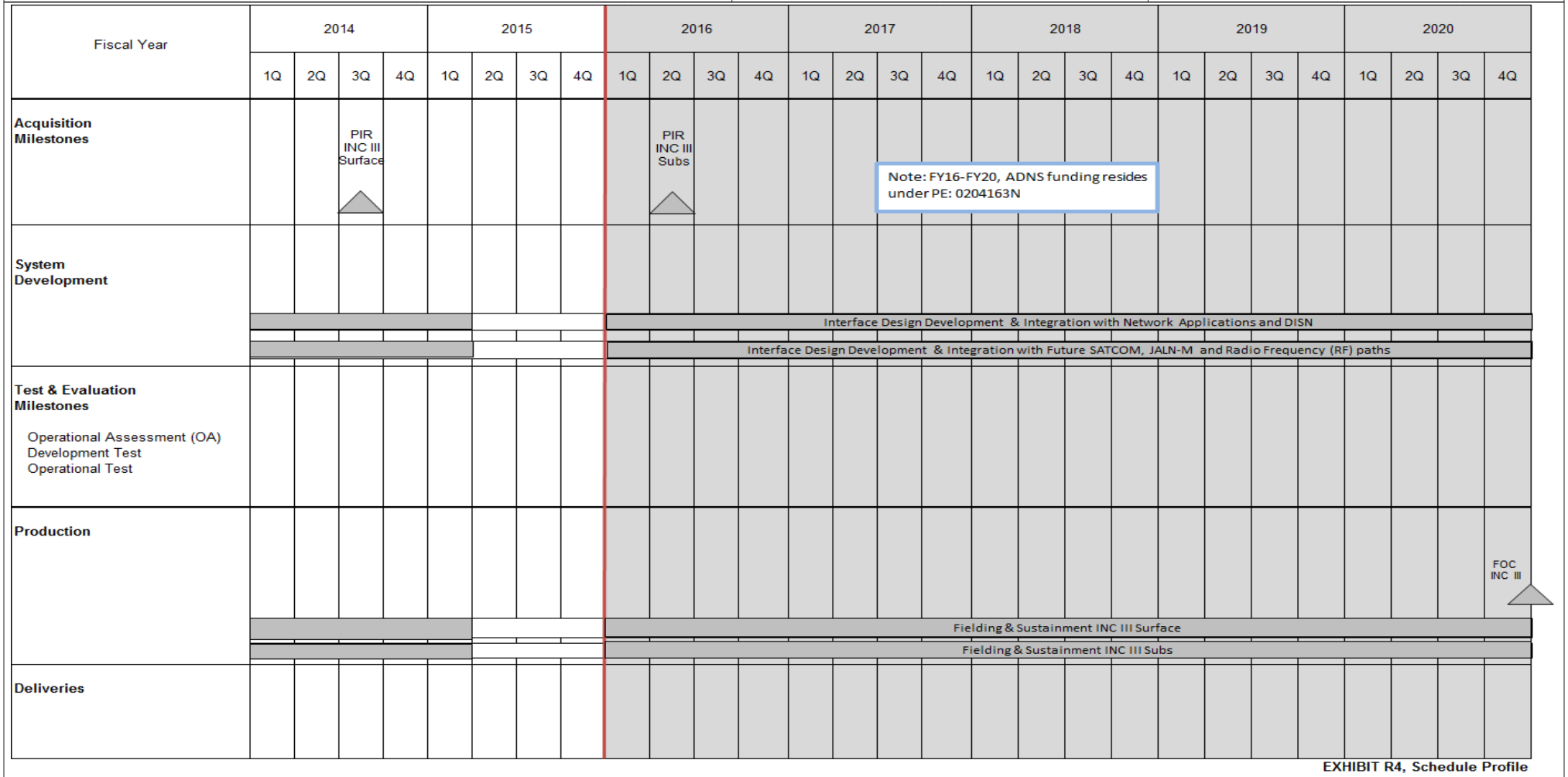

EXHIBIT R4, Schedule Profile

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 0725 / *Communication Automation*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Fiscal Year				
Acquisition Milestones: ADNS: INCREMENT III_Surface Post Implementation Review	3	2014	3	2014
Acquisition Milestones: ADNS: INCREMENT III_Subs Post Implementation Review	2	2016	2	2016
System Development: ADNS: INCREMENT III_Interface Design Development and Integration with Network Applications and Defense Information Systems Network (DISN)	1	2014	4	2020
System Development: ADNS: INCREMENT III_Interface Design Development and Integration with SATCOM, Joint Aerial Layer Network-Maritime (JALN-M) and Radio Frequency (RF) paths	1	2014	4	2020
Production: ADNS: INCREMENT III_Fielding and Sustainment INC III Surface	1	2014	4	2020
Production: ADNS: INCREMENT III_Fielding and Sustainment INC III Submarines	1	2014	4	2020
Production: ADNS: INCREMENT III_Full Operational Capability	4	2020	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	Project (Number/Name) 9C87 / *CANES Integration*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
9C87: *CANES Integration*	114.076	22.993	19.764	21.677	-	21.677	22.854	22.352	22.558	23.016	319.363	588.653
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Consolidated Afloat Networks & Enterprise Services (CANES) is the Navy's only Program of Record (POR) to replace existing afloat networks and provide the necessary infrastructure for applications, systems, and services required for the Navy to dominate the Cyber Warfare domain. CANES is the technical and infrastructure consolidation of existing, separately managed afloat networks including Integrated Shipboard Network Systems (ISNS), Combined Enterprise Regional Information Exchange System - Maritime (CENTRIXS-M), Sensitive Compartmented Information (SCI) Networks, and Submarine Local Area Network (SubLAN). These legacy afloat network designs are currently End of Life and CANES will replace these unaffordable and obsolete networks.

The fundamental goal of CANES is to bring Infrastructure as a Service (IaaS) and Platform as a Service (PaaS), within which current and future iterations of Navy Tactical Network computing and storage capabilities will reside. CANES will provide complete infrastructure, inclusive of hardware, software, processing, storage, and end user devices for Unclassified, Coalition, Secret and SCI for all basic network services to a wide variety of Navy surface combatants, submarines, Maritime Operations Centers, Regional Network Operations and Security Centers (RNOSC) and Aircraft. In addition, hosted applications and systems inclusive of Command and Control, Intelligence, Surveillance and Reconnaissance, Information Operations, Logistics and Business domains require the CANES infrastructure to operate in the tactical environment. Integrating these applications and systems is accomplished through Application Integration (AI), the engineering process used to evaluate and validate compatibility between CANES and the Navy-validated applications, systems and services that will utilize the CANES infrastructure and services. Specific programs, such as Distributed Common Ground System - Navy (DCGS-N), Global Command and Control System - Maritime (GCCS-M), Naval Tactical Command Support System (NTCSS), and Undersea Warfare Decision Support System (USW-DSS), are dependent on the CANES Common Computing Environment (CCE) to field, host, and sustain their capability because they no longer provide their own hardware. CANES requires that Automated Digital Network System (ADNS) field prior to or concurrently with CANES due to the architectural reliance between the two programs.

CANES will develop updates on a rolling four year hardware baseline and a two year software baseline. CANES is based on the overarching concept of reducing the number of afloat network baselines and providing enhanced efficiency through a single engineering focus on integrated technical solutions. This will allow for streamlined acquisition, contracting test events, and significant lifecycle efficiencies through consolidation of multiple current configuration management baselines, logistics, and training efforts into a unified support structure. Platform Sets define phases of CANES system development efforts. Each platform set consists of different ship class design baselines.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: CANES Integration	22.993	19.764	21.677	-	21.677
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 9C87 / *CANES Integration*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: Completed DT1 and DT2 on unit level platform. Initiated development for TI software baseline and Platform Set 3 & 4 baseline development. Performed systems engineering efforts to complete functional baselines and performed updates to technical data packages. Continued testing events in E2C laboratory on Platform Sets 2, 3 & 4 and purchased necessary lab assets and test articles in support of testing events. Peformed IOT&E on unit level platform. Achieved IOC upon completion of first CANES installation. ***FY 2015 Plans:*** Continue development of TI software baseline. Complete Platform Set 3 & 4 baseline development. Perform systems engineering efforts to complete functional baselines and updates to technical data packages. Continue testing events at E2C laboratory for TI software baseline and Platform Set 3 & 4. Perform DT and FOT&E in support of force level testing and perform DT Assist for TI software development. Achieve Full Deployment Decision(FDD). ***FY 2016 Base Plans:*** Complete TI software baseline development and initiate development for TI 2 hardware and software baseline including E2C laboratory test efforts. Perform systems engineering efforts to complete functional baselines and updates to technical data packages. Initiate Development Testing (DT) in support of submarine testing. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	22.993	19.764	21.677	-	21.677

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/2915: *CANES*	273.242	279.363	278.991	-	278.991	279.272	361.129	338.817	340.636	4,602.229	7,089.718
• OPN/2925: *CANES Intell*	55.262	61.215	28.695	-	28.695	51.478	48.333	47.963	48.926	749.200	1,228.708

Remarks

D. Acquisition Strategy

CANES is an ACAT IAM MAIS program. The program office is employing a multiple-phase, multiple-award down-select contract strategy to reduce program risks and maintain competition in both design development and production during contract performance. Two competitive contracts were awarded to design, develop, and deliver all hardware and the associated operating system, virtualization and other commercial software needed to deliver a functional network. The Limited Deployment (LD)

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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contract was awarded to Northrop Grumman (NG) in 2QFY12. Milestone C was achieved in 1QFY13. In 4QFY14, a separate full and open indefinite delivery indefinite quantity (IDIQ) multiple award contract (MAC) production contract was awarded to support future production.

E. Performance Metrics

Early RDT&E investment and sustainment of dual design contractors through the development phase reduced Total Ownership Cost (TOC) from Milestone B to Milestone C. Cost avoidance throughout the life of the program is based on 1) reducing the number of networks through the use of mature, certified, cross domain technologies; 2) reducing the infrastructure footprint and associated costs for hardware afloat; and 3) providing increased capability to meet current and projected war fighter requirements.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 9C87 / *CANES Integration*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	Lockheed Martin : San Diego, CA	22.329	-		-		-		-		-	-	22.329	22.329
Primary Hardware Development	C/CPFF	Northrop Grumman : Herndon, VA	26.867	-		-		-		-		-	-	26.867	26.957
Primary Hardware Development	WR	SPAWAR Systems Center : San Diego, CA and Charleston, SC	16.561	10.687	Nov 2013	10.960	Nov 2014	11.682	Nov 2015	-		11.682	192.514	242.404	209.438
Primary Software Development	WR	SPAWAR Systems Center : San Diego, CA and Charleston, SC	10.468	4.785	Nov 2013	3.012	Nov 2014	3.418	Nov 2015	-		3.418	52.439	74.122	48.574
Systems Engineering	WR	SPAWAR Systems Center : San Diego, CA and Charleston, SC	18.091	4.539	Nov 2013	2.608	Nov 2014	2.962	Nov 2015	-		2.962	45.743	73.943	50.798
Systems Engineering	MIPR	US ARMY CECOM (MITRE) : San Diego, CA	2.047	0.151	Sep 2014	0.326	Feb 2015	0.370	Nov 2015	-		0.370	5.722	8.616	19.934
Systems Engineering	C/CPFF	BAH : San Diego, CA	0.690	-		-		-		-		-	-	0.690	0.690
Primary Hardware Development	WR	NUWC : Newport, RI	2.923	-		-		-		-		-	-	2.923	5.120
Primary Software Development	C/CPFF	NSMA : Washington DC	0.234	0.507	Aug 2014	-		-		-		-	0.378	1.119	-
Primary Software Development	WR	NAWCAD : Patuxent River, MD	0.000	0.050	Apr 2014	-		-		-		-	0.050	0.100	-
		Subtotal	100.210	20.719		16.906		18.432		-		18.432	296.846	453.113	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 9C87 / *CANES Integration*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies Delete& Design	MIPR	Washington HQ Services : Washington DC	0.650	-		-		-		-		-	-	0.650	0.650
Certification Authority	C/CPFF	TBD : San Diego	0.000	0.527	Sep 2014	0.626	Jan 2015	0.711	Dec 2015	-		0.711	10.987	12.851	-
		Subtotal	0.650	0.527		0.626		0.711		-		0.711	10.987	13.501	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	MIPR	JITC : Fairfax, VA	1.118	-		0.229	Nov 2014	0.260	Nov 2015	-		0.260	4.015	5.622	4.673
Operational Test & Evaluation	WR	COMOPTEVFOR : Norfolk, VA and Washington, DC	1.015	0.345	Aug 2014	0.485	Jan 2015	0.550	Nov 2015	-		0.550	8.510	10.905	5.891
Development Test & Evaluation	C/BA	SPAWAR Systems Center : San Diego, CA	0.000	0.201	Aug 2014	0.226	Nov 2014	0.257	Nov 2015	-		0.257	3.967	4.651	-
Development Test & Evaluation	MIPR	DTIC : Ft Belvoir, VG	0.000	0.100	Aug 2014	-		-		-		-	-	0.100	-
		Subtotal	2.133	0.646		0.940		1.067		-		1.067	16.492	21.278	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	SPAWAR Systems Center : San Diego, CA and Charleston, SC	2.742	0.268	Aug 2014	-		-		-		-	-	3.010	2.742

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 9C87 / *CANES Integration*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management & Acquisition Support	C/CPFF	Systems Research & Application : San Diego, CA	4.456	0.400	Dec 2013	0.794	Jul 2015	0.902	Dec 2015	-		0.902	13.945	20.497	14.326
Financial Management Support	C/CPFF	INDUS Technology : San Diego, CA	1.167	-		-		-		-		-	-	1.167	1.167
Cost Estimation and Analyses	C/CPFF	Booz Allen Hamilton : San Diego, CA	1.420	-		-		-		-		-	-	1.420	1.420
Logistics Support	C/CPFF	TCI : San Diego, CA	1.298	-		-		-		-		-	-	1.298	1.298
Program Management	C/CPFF	CSA : San Diego, CA	0.000	0.204	Feb 2014	0.498	Dec 2014	0.565	Dec 2015	-		0.565	8.732	9.999	-
Engineering	C/CPFF	SAIC : San Diego, CA	0.000	0.229	Jan 2014	-		-		-		-	-	0.229	-
		Subtotal	11.083	1.101		1.292		1.467		-		1.467	22.677	37.620	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	114.076	22.993		19.764		21.677		-		21.677	347.002	525.512	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 9C87 / *CANES Integration*

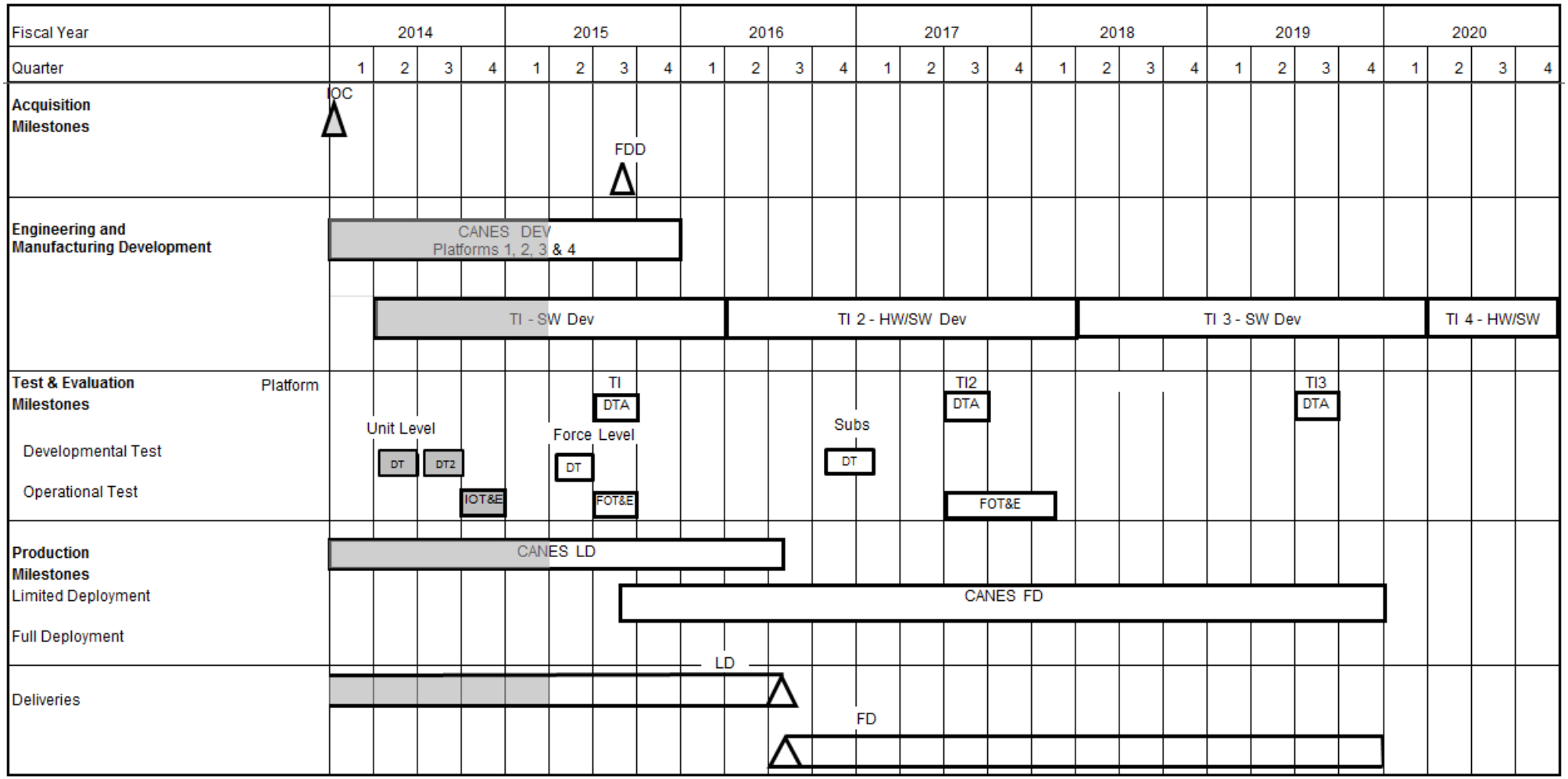

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 9C87 / *CANES Integration*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Fiscal Year				
Acquisition Milestone: Acquisition Milestone - Initial Operational Capability (IOC)	1	2014	1	2014
Acquisition Milestone: Acquisition Milestone - Full Deployment Decision Review (FDD)	3	2015	3	2015
Engineering and Manufacturing Development: Platform: Engineering and Manufacturing Development - Platform Set 1, 2, 3 & 4	1	2014	4	2015
Engineering and Manufacturing Development: Platform: Engineering and Manufacturing Development - Technical Insertion (TI) Software Development	2	2014	1	2016
Engineering and Manufacturing Development: Platform: Engineering and Manufacturing Development - TI 2 Hardware (HW)/SW Development	2	2016	1	2018
Engineering and Manufacturing Development: Platform: Engineering and Manufacturing Development - TI 3 SW Development	2	2018	1	2020
Engineering and Manufacturing Development: Platform: Engineering and Manufacturing Development - TI 4 Hardware (HW)/SW Development	2	2020	4	2020
Test & Evaluation Milestone: Development Test: Developmental Test - Force Level	2	2015	2	2015
Test & Evaluation Milestone: Development Test: Developmental Test - Sub	4	2016	1	2017
Test & Evaluation Milestone: Development Test: Development Test Assist - TI	3	2015	3	2015
Test & Evaluation Milestone: Development Test: Development Test Assist- TI2	3	2017	3	2017
Test & Evaluation Milestone: Development Test: Development Test Assist- TI3	3	2019	3	2019
Test & Evaluation Milestone: Development Test: Developmental Test - (1) - Unit Level	2	2014	2	2014
Test & Evaluation Milestone: Development Test: Developmental Test - (2) - Unit Level	3	2014	3	2014
Test & Evaluation Milestone: Operational Test: Operational Test - Initial Operational Test & Evaluation (IOT&E)	4	2014	4	2014
Test & Evaluation Milestone: Operational Test: Operational Test Force Level - FOT&E	3	2015	3	2015
Test & Evaluation Milestone: Operational Test: Operational Test - FOT&E Sub	3	2017	1	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303138N / *Consolidated Afloat Network Ent Services(CANES)*	**Project (Number/Name)** 9C87 / *CANES Integration*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestone: Limited Deployment: Production Milestone - Limited Deployment (LD)	1	2014	3	2016
Production Milestone: Full Deployment: Production Milestone - Full Deployment (FD)	3	2015	4	2019
Deliveries: Deliveries - Limited Deployment (LD)	1	2014	3	2016
Deliveries: Deliveries - Full Deployment (FD)	3	2016	4	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0303140N *I Information Sys Security Program*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	344.847	25.604	23.016	28.102	-	28.102	29.595	28.829	22.823	23.292	Continuing	Continuing
0734: *Communications Security R&D*	336.744	23.213	19.134	25.974	-	25.974	27.474	26.725	20.644	21.069	Continuing	Continuing
3230: *Information Assurance*	8.103	2.391	3.882	2.128	-	2.128	2.121	2.104	2.179	2.223	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Information Systems Security Program (ISSP) ensures the protection of Navy and joint cyberspace systems from exploitation and attack through the implementation of statutory and regulatory requirements. Cyberspace systems include wired and wireless telecommunications systems, Information Technology (IT) systems, and the content processed, stored, or transmitted therein. The ISSP includes the protection of the Navy's National Security Systems and Information (NSSI). The ISSP must be rapid, predictive, adaptive, and tightly coupled to cyberspace technology. Through modeling and simulation of Department of Defense (DoD) and commercial cyberspace systems evolution, the ISSP provides architectures, products, and services based on mission impacts, information criticality, threats, vulnerabilities, and required defensive countermeasure capabilities.

FY16 will focus on efforts that address the risk management of cyberspace, which includes the capabilities to protect, detect, restore, and respond. The ISSP provides the Navy with the following cybersecurity elements: (1) defense of NSSI, including the Nuclear Command, Control, and Communications (NC3) system, naval weapons systems, critical naval infrastructure, joint time and navigation systems, and industrial control systems; (2) assured separation of information levels and user communities, including allied, coalition, non-Governmental, Defense Industrial Base, and other public partners; (3) technologies supporting the Navy's Computer Network Defense (CND) service provider operations to include Task Force Cyber Awakening (TFCA) initiatives, specifically Navy Cyber Situational Awareness (NCSA) and Operation Rolling Tide (ORT)/Cyber Remediation capabilities that will accelerate the Navy's ability to prevent, constrain, and mitigate cyber-attacks and critical vulnerabilities; (4) assurance of the Navy's telecommunications infrastructure and the wireless spectrum; (5) assurance of joint-user cyberspace domains, using a defense-in-depth architecture; (6) assurance of the critical computing base and information store; (7) assurance of mobile and cloud computing; and (8) supporting assurance technologies, including the Public Key Infrastructure (PKI) and Key Management (KM).

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*			R-1 Program Element (Number/Name) PE 0303140N *I Information Sys Security Program*		
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	23.514	23.053	25.423	-	25.423
Current President's Budget	25.604	23.016	28.102	-	28.102
Total Adjustments	2.090	-0.037	2.679	-	2.679
• Congressional General Reductions	-	-0.037			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.100	-			
• SBIR/STTR Transfer	-0.010	-			
• Rate/Misc Adjustments	-	-	2.679	-	2.679

Change Summary Explanation

The FY 2016 funding request was reduced by $3.0 million to account for the availability of prior year execution balances.

Technical:
Computer Network Defense (CND):
- Additional capabilities to include network vulnerability remediation, security compliance reporting and mapping of Navy networks in order to accelerate advanced Task Force Cyber Awakening (TFCA) initiatives, specifically Navy Cyber Situational Awareness (NCSA) and Operation Rolling Tide (ORT)/Cyber Remediation

Navy Cryptography (Crypto):
- Intermediary Application (iApp) requirement will be met by Key Management iApp development initiative

Key Management (KM):
- Operational Test (OT) events changed to Operational Assessment (OA), since Full Rate Production (FRP) follow on tests are informal test events and do not require formal evaluations.
- Capability Increment 2 (CI-2) Spiral 2 Spin 1 Full Rate Fielding Decision (FRFD) event changed to a Fielding Decision (FD) since CI-2 FRFD completed in FY13
- Next Generation Fill Device was removed. Requirement will be met by Simple Key Loader (SKL) follow-on efforts.

Information Assurance (IA) / Cybersecurity:
- Replaced the term "IA" with "Cybersecurity" per Department of Defense Instruction (DoDI) 8500.01 March 14, 2014 update

Schedule:
Computer Network Defense (CND):

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0303140N *I Information Sys Security Program*

- All CND builds were accelerated to include TCFA/NCSA/ORT/Cyber Remediation capabilities
- All CND build's "Development, Integration & Test" phase completion time increased from 5 to 6 quarters in order to incorporate new cyber remediation capabilities

Navy Cryptography (Crypto):
- VINSON/Advanced Narrowband Digital Voice Terminal (ANDVT) Cryptographic Modernization (VACM) Milestone C (MS C) shifted from 2QFY14 to 3QFY14 to reflect actual date milestone was achieved by Air Force (AF). Initial Operational Test and Evaluation (IOT&E) start shifted from 4QFY14 to 1QFY15, Full Rate Production (FRP) decision shifted from 2QFY15 to 3QFY15, and Initial Operational Capability (IOC) shifted from 2QFY16 to 3QFY16, due to (1) QTR shift in MS C.
- Link 22 (L22) Technical Readiness Review (TRR) 2 shifted from 3QFY14 to 2QFY15, L22 Full Development Delivery shifted from 4QFY14 to 2QFY15, and L22 Production Readiness Review (PRR) shifted from 4QFY14 to 2QFY15, due to changes in vendor's schedule
- Additional Transmission Security (TRANSEC) study and analysis continued to 2QFY15 and initiation of Modern TRANSEC development shifted from 4QFY14 to 3QFY15, due to National Security Agency (NSA) directives

Key Management (KM):
- Tactical Key Loader (TKL) Full Operational Capability (FOC) accelerated from 2QFY15 to 3QFY14 due to actual date FOC achieved
- CI-2 Spiral 2/Spin 1 Development Test (DT) shifted from 2QFY14 to 3QFY14 and CI-2 Spiral 2/Spin 1 OA shifted from 3QFY14 to 4QFY14, due to actual date Full Rate Field Decision (FRFD) achieved
- CI-2 Spiral 2/Spin 1 Fielding Decision (FD) shifted from 4QFY14 to 2QFY15 and CI-2 Spiral 2/Spin 3 FD accelerated from 4QFY16 to 3QFY16, in accordance with NSA schedule
- Removed Next Generation Field Device testing event.

Public Key Infrastructure (PKI):
- PKI R-4 removed; under $1M

Funding:
Computer Network Defense (CND): $7.5M increase in FY16 supports Task Force Cyber Awakening (TFCA), specifically Navy Cyber Situational Awareness (NCSA) and Operation Rolling Tide (ORT)/Cyber Remediation capabilities to include network vulnerability remediation, security compliance reporting and mapping of Navy networks in order to achieve improved network defense and security wholeness.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0303140N / *Information Sys Security Program*				Project (Number/Name) 0734 / *Communications Security R&D*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
0734: *Communications Security R&D*	336.744	23.213	19.134	25.974	-	25.974	27.474	26.725	20.644	21.069	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Information Systems Security Program (ISSP) Research Development Test & Evaluation (RDT&E) efforts provide cybersecurity and Defensive Cyberspace Operations (DCO) solutions to protect the forward deployed, bandwidth-limited, highly mobile naval information subscriber and the associated command, control, and communications required to achieve the integrated military advantage from Net-Centric operations. The ISSP addresses engineering design, development, modeling, simulation, test, and evaluation for the unique cybersecurity challenges associated with dispersed, bandwidth limited, and forward-tactical connected U.S. Navy communications systems.

This project includes a rapidly evolving design and application engineering effort to modernize cryptographic equipment and ancillaries with state-of-the-art replacements to counter evolving and increasingly sophisticated threats. Communications Security (COMSEC) and Transmission Security (TRANSEC) evolution are from stand-alone, dedicated devices to embedded modules incorporating National Security Agency (NSA) approved cryptographic engines, loaded with the certified algorithms and key, and interconnected via industry-defined interfaces. This includes the Department of Defense (DoD) Information Networks (DoDIN) capability requirements document for the development of Content Based Encryption (CBE).

In addition to protecting national security information, the ISSP provides enterprise-wide cyber security for statutorily protected information. The ISSP must also provide solutions to the most advanced state-sponsored and criminal-intent Advanced Persistent Threats (APT), including those to Platform Information Technology (PIT), weapons systems, Industrial Control Systems (ICS), and Supervisory Control and Data Acquisition (SCADA).

The ISSP provides dynamic risk-managed cybersecurity solutions to the Navy information infrastructure, not just security devices placed within a network. Extensive effort will be placed on rapidly providing solutions. Few technology areas change as fast as telecommunications and computers; resulting in the need for continuous evaluation, development, and testing of cybersecurity products and cyber defense strategies. The ISSP efforts in support of this environment include developing or applying: (1) Computer Network Defense (CND) cybersecurity technologies required to support strategic and tactical cyber operations; (2) Task Force Cyber Awakening (TFCA) initiatives, specifically Navy Cyber Situational Awareness (NCSA) and Operation Rolling Tide (ORT)/Cyber Remediation capabilities that will accelerate the Navy's ability to prevent, constrain, and mitigate cyber-attacks and critical vulnerabilities; (3) technology to interconnect networks of dissimilar classification and need-to-know, known respectively as Cross Domain Solutions (CDS) and Virtual Secure Enclaves (VSE); (4) new Cryptography secure voice and secure data prototypes and protocols and associated technology for capable programmable COMSEC and TRANSEC devices and software; (5) Key Management (KM); (6) Public Key Infrastructure (PKI) and associated access control technologies that provide assured and persistent Identity and Access Management (IdAM) for persons, virtual instances, and connected devices.

FY 16 Highlights for Information Systems Security Programs (ISSP):

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 0734 / *Communications Security R&D*

ISSP efforts that address the risk management of cyberspace, which includes the capabilities to protect, detect, restore, and respond to the following: (1) Technologies supporting the Navy's Computer Network Defense (CND) service provider operations to TFCA initiatives, specifically NCSA and ORT/Cyber Remediation capabilities that will accelerate the Navy's ability to prevent, constrain, and mitigate cyber-attacks and critical vulnerabilities; (2) Navy Crypto engineering efforts to modernize cryptographic equipment and ancillaries with state-of-the-art replacements to counter evolving and increasingly sophisticated threats assurance of the Navy's telecommunications infrastructure and the wireless spectrum; (3) supporting assurance technologies, including Key Management (KM) and the Public Key Infrastructure (PKI); (4) Cybersecurity Services that continue to provide security systems engineering support for the development of DoD and Department of Navy (DoN) cybersecurity architectures and the transition of new technologies to address Navy cybersecurity challenges.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Computer Network Defense (CND)	7.533	8.361	15.893	-	15.893
Articles:	-	-	-	-	-

FY 2014 Accomplishments:
Provided initial Operation Rolling Tide (ORT)/Cyber Remediation analysis within the Navy's CND program in order to achieve improved network defense and security wholeness. Developed, integrated and tested CND Build 2 and initiated future builds. Ensured Navy networks met Department of Defense (DoD) mandates and initiatives for securing the DoD Information Networks (DoDIN). Developed, integrated, and tested Defense-in-Depth (DiD) and Situational Awareness (SA) technologies for knowledge-empowered CND operations for afloat and shore installations. Supported the development and deployment of new capabilities into the Navy's architecture, and provided technical guidance to ensure CND requirements were met by Consolidated Afloat Networks and Enterprise Services (CANES). Implemented DoD and US Cyber Command (USCC) cybersecurity mandates. Evaluated needs derived from the CND Capabilities Steering Group (CCSG) and developed, updated, and integrated the CND suites. Furthered efforts to virtualize CND capabilities and consolidate cybersecurity services in the ONE-Net environment. Continued to support Command 10th Fleet (C10F) Navy Cyber Situational Awareness (NCSA) efforts by deploying integrated tools at the C10F Maritime Operations Center (MOC) to support Command and Control (C2) of the communications systems. Developed and furthered the Joint Capability Technology Demonstration (JCTD) Virtual Secure Enclaves (VSE) to segment networks and adaptively manage operational risks.

FY 2015 Plans:
Continue to provide ORT/Cyber Remediation initiatives within the Navy's CND program in order to achieve improved network defense and security wholeness. Continue to develop, integrate, and test CND Builds, DiD and SA technologies for knowledge-empowered CND operations for shore sites and afloat platforms. Continue to develop new capabilities for the Navy's C2 architecture and provide technical guidance to ensure CND requirements are met by CANES. Continue to implement DOD and USCC cybersecurity tools and mandated

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 0734 / *Communications Security R&D*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
tools into ONE-Net and IT-21 networks. Continue to evaluate needs derived from stakeholders and the CCSG, and develop, update, and integrate CND suites. Provide Vulnerability Remediation Asset Manager (VRAM) tool to include Online Compliance Reporting System (OCRS) capabilities and Assured Compliance Assessment Solution (ACAS) rollup. Begin development and implementation of an optimal technical and governance solution for interception of outbound encrypted traffic. Initiate integration and testing of Secure Socket Layer (SSL) intercept to achieve compliance with Defense Information Security Agency (DISA) firewall security guidance. Continue to further efforts to virtualize CND capabilities and consolidate cybersecurity services in the ONE-Net environment. Start analysis to replace and assume acquisition management of Navy Cyber Defense Operations Command's (NCDOC) tactical sensor infrastructure. Continue to support C10F NCSA efforts by deploying integrated tools at the C10F MOC to support C2 of the communications systems. Continue to develop JCTD delivered VSE to segment networks and adaptively manage operational risks.					
FY 2016 Base Plans: $7.5M increase supports Task Force Cyber Awakening (TFCA), specifically NCSA and ORT/Cyber Remediation initiatives. Funding will provide additional capabilities within the Navy's CND program in order to accelerate advanced cybersecurity initiatives to achieve improved network defense and security wholeness. Additional capabilities to include network vulnerability remediation, security compliance reporting, mapping of Navy networks in order to automate real time cybersecurity capabilities critical to the warfighter and will support C2 of Cyber by providing a Data-as-a-Service capability to monitor the cyber environment (CE) by ingesting data from numerous data feeds then plan and direct kinetic/non-kinetic operations within the CE. Continue to develop, integrate, and test CND Builds, DiD and SA technologies for knowledge-empowered CND operations for shore sites and afloat platforms. Continue to develop new capabilities for the Navy's C2 architecture and provide technical guidance to ensure CND requirements are met by CANES. Continue to implement DOD and USCC cybersecurity tools and mandates into ONE-Net and IT-21 networks. Continue to evaluate needs derived from stakeholders and the CCSG, and develop, update, and integrate CND suites. Provide VRAM tool to include OCRS and Continuous Monitoring Risk Score (CMRS) capabilities. Continue to develop and implement an optimal technical and governance solution for interception of outbound encrypted traffic. Continue integration and testing of SSL intercept to achieve compliance with DISA firewall security guidance. Further efforts to virtualize CND capabilities and consolidate cybersecurity services in the ONE-Net environment. Continue analysis to replace and assume acquisition management of NCDOC tactical sensor infrastructure. Continue to support C10F NCSA efforts by deploying integrated tools at the C10F MOC to support C2 of the communications					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
systems. Continue to develop JCTD delivered VSE to segment networks and adaptively manage operational risks. ***FY 2016 OCO Plans:*** N/A					
Title: Navy Cryptography (Crypto)	9.950	5.931	5.414	-	5.414
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued initial Transmission Security (TRANSEC) study and continued analysis for a replacement product for legacy devices and investigated strategies for TRANSEC development efforts. Provided Vinson/Advanced Narrowband Digital Voice Terminal (ANDVT) Cryptographic Modernization (VACM) technical engineering support on behalf of Navy, achieved Milestone C (MS C), and performed Navy system integration tests on Production Representative Engineering Design Models (PREDMs). Continued to provide security engineering support for modernization of space crypto systems, embeddable crypto modernization strategies, and Next Generation Crypto initiatives, tactical radios, and Communication Data Link System (CDLS)/Tactical Common Data Link (TCDL). Investigated impacts of upcoming National Security Agency (NSA) security enhancements for crypto modernization products to include Enhanced FireFly (EFF) and initiated development and testing efforts. Completed Link-22 Modernized Link Level Communications Security (MLLC) Test Readiness Review (TRR) 1 and continued to provide Navy engineering support to NSA for certification authority, acquisition authority and data testing on all crypto modernization efforts. Initiated engineering support for the modernization of VACM ancillary devices on behalf of Navy. Achieved Full Operational Capability (FOC) of KG-45A devices. ***FY 2015 Plans:*** Deliver 10 Link-22 MLLC Full Development units. Continue studies and analysis for TRANSEC replacement products and initiate development efforts for legacy devices, to include other Navy Program of Record (POR) interdependencies. Continue to provide security engineering support for modernization of space crypto systems, embeddable crypto modernization strategies, and Next Generation Crypto initiatives to include tactical radios and CDLS/TCDL. Continue to provide engineering support to NSA certification authority, acquisition authority and data testing on all crypto modernization efforts. Continue to investigate impacts of upcoming NSA security enhancements for crypto modernization products to include EFF efforts. Research and study the follow-on alternatives for Secure Telephone Equipment (STE) modernization. Continue to provide VACM technical engineering support on behalf of DoN. Perform VACM Initial Operational Test & Evaluation (IOT&E) and achieve Full Rate Production (FRP) decision. Continue to provide engineering support for the modernization of VACM					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
ancillary devices. Complete Link-22 Modernized Link Level Communications Security (MLLC) Test Readiness Review (TRR) 2. Complete Link-22 MLLC Production Readiness Review (PRR). ***FY 2016 Base Plans:*** Continue development of TRANSEC replacement products and initiate developmental testing across multiple products. Continue to provide security engineering support for modernization of space crypto systems, embeddable crypto modernization strategies, and Next Generation Crypto initiatives to include tactical radios and CDLS/TCDL. Continue to provide support for NSA certification authority, acquisition authority and data testing for all Crypto Modernization efforts. Continue to investigate impacts of upcoming NSA security enhancements for crypto modernization products. Initiate EFF development and testing across multiple products. Achieve VACM Initial Operational Capability (IOC). Complete modernization of VACM ancillary devices. ***FY 2016 OCO Plans:*** N/A					
Title: Key Management (KM)	2.641	2.472	2.229	-	2.229
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued capability, engineering, development, verification testing, monitored vendor Developmental Testing (DT), and Operational Assessment (OA) completion in support of Key Management Infrastructure (KMI) Capability Increment (CI)-2 Spiral 2/ Spin 1. Continued transition strategy and defined requirements for incorporation of other KMI roles into Navy architecture. Continued to define capability requirements for KMI CI-3. Continued migrating Communications Security (COMSEC) Material Work Station (CMWS) to the KMI environment. Continued the development, engineering and testing of Key Management Infrastructure Intermediary Application (iApp) which will enhance the accounting for and distribution of KMI key delivery for afloat networks. Conducted shipboard bandwidth assessment with Spiral 2 in support of KMI Management Client (MGC). Initiated Spiral 2/Spin 2 development and test efforts. Continued to provide engineering support to National Security Agency (NSA) to ensure Navy requirements are met in KMI Spiral 2/Spin 2. Achieved Tactical Key Loader (TKL) FOC. ***FY 2015 Plans:*** Achieve KMI CI-2 Spiral 2/Spin 1 Fielding Decision (FD). Continue to monitor and track capability verification testing to include vendor DT, OA and achieve FD in support of KMI CI-2 Spiral 2/Spin 2. Continue to define KMI CI-3 capability requirements. Continue migrating CMWS, the follow on to Simple Key Loader (SKL) into the KMI					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
environment. Continue the development, engineering and testing of iApp which will enhance the accounting for and distribution of KMI key delivery for afloat networks. Initiate Spiral 2/Spin 3 development efforts and provide engineering support to NSA to ensure Navy requirements are met. ***FY 2016 Base Plans:*** Continue Spiral 2/Spin 3 capability engineering, development, vendor DT, and OA and achieve FD on KMI CI-2 Spiral 2/Spin 3. Continue to define capability requirements for KMI CI-3. Continue migrating CMWS, the follow on to SKL into the KMI environment. Complete the development, engineering and testing to the iApp which will enhance the accounting for and distribution of KMI key delivery for afloat networks. Initiate development and provide engineering support to NSA to ensure Navy requirements are met in KMI Spiral 2/Spin 4 capabilities and complete vendor DT for KMI Spiral 2/Spin 4. ***FY 2016 OCO Plans:*** N/A					
Title: Public Key Infrastructure (PKI)	0.409	0.315	0.354	-	0.354
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Completed development of PKI solutions, including the SECRET Internet Protocol Router Network (SIPRNet) Shipboard Validation Authority (SVA) and Cryptographic Log-on (CLO) capability to non-Microsoft systems and Microsoft non-Domain services. Completed research on microsoft and non-microsoft PKI solutions for Navy Program of Record (POR). Completed research and testing of Defense Information Systems Agency (DISA) Online Certificate Status Protocol (OCSP) enhancements for certificate authentication in the Navy afloat and shore environments. Completed investigating virtualization of Navy Certificate Validation Infrastructure (NCVI) servers. Continued to ensure Navy compliance and compatibility with new PKI-related cryptographic algorithms, to include Elliptic Curve Cryptography (ECC) and Secure Hash Algorithms (SHA-256). Ensured compliance and compatibility with certificate changes on the Common Access Card (CAC), Alternate Logon Token (ALT), and SIPRNet hardware token. Continued to ensure compatibility and interoperability of PKI with Computer Network Defense (CND) systems architecture. Began testing and evaluation of the Non-Classified Internet Protocol Router Network (NIPRNet) Enterprise Alternate Token System (NEATS) for shore and afloat role-based tokens. Continued to research and develop tools to support certificates for Non-Person Entity (NPE) devices and tactical/ austere environments. Began researching Identity and Access Management (IdAM) technologies to increase information security. ***FY 2015 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue Navy compliance and compatibility with DoD PKI implementation, cryptographic algorithms and development efforts, to include CND, ECC, SHA-256, NCVI, CAC, ALT, and SIPRNet Token. Continue research, test and evaluation of NEATS, PKI authentication capabilities to support mobile devices, tools to support certificates for NPE and IdAM to support in tactical/austere environments and increase information security. ***FY 2016 Base Plans:*** Continue Navy compliance and compatibility with DoD PKI implementation, cryptographic algorithms and development efforts, to include CND, ECC, SHA-256, NCVI, CAC, ALT, and SIPRNet Token. Continue research, test and evaluation of NEATS, PKI authentication capabilities to support mobile devices, tools to support certificates for NPE and IdAM in tactical/austere environments and increase information security. ***FY 2016 OCO Plans:*** N/A					
Title: Cybersecurity Services	2.680	2.055	2.084	-	2.084
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued to provide security systems engineering support for the development of DoD and DoN cybersecurity architectures and the transition of new technologies to address Navy cybersecurity challenges. Provided updates to reflect emerging priorities and address Navy specific threats. Coordinated cybersecurity activities across the virtual Systems Command (SYSCOM) via the Cybersecurity Trusted Architecture (TA) to ensure the security design and integration of cybersecurity products and services is consistent across the Navy for major initiatives such as the future afloat, ashore, and Outside the Continental United States (OCONUS) networks. Provided cybersecurity risk analysis and recommended risk mitigation strategies for Navy critical networks and Command, Control, Communications, Computers and Intelligence (C4I) systems. Coordinated with the Navy acquisition community to ensure cybersecurity requirements are identified and addressed within the development cycles for emerging Navy network and C4I capabilities. Continued to evaluate products for security issues and develop guidance and procedures for the design and integration of risk mitigation strategies via appropriate cybersecurity controls. ***FY 2015 Plans:*** Continue to provide security systems engineering support for the development of DoD and DoN cybersecurity architectures and the transition of new technologies to address Navy cybersecurity challenges. Continue to provide updates to reflect emerging priorities and address Navy specific threats. Continue to coordinate					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
cybersecurity activities across the virtual SYSCOM via the Cybersecurity TA to ensure the security design and integration of cybersecurity products and services is consistent across the Navy for major initiatives such as the future afloat, ashore, and OCONUS networks. Continue to provide cybersecurity risk analysis and recommended risk mitigation strategies for Navy critical networks and C4I systems. Continue to coordinate with the Navy acquisition community to ensure cybersecurity requirements are identified and addressed within the development cycles for emerging Navy network and C4I capabilities. Continue to evaluate products for security issues and develop guidance and procedures for the design and integration of risk mitigation strategies via appropriate cybersecurity controls. ***FY 2016 Base Plans:*** Continue to provide security systems engineering support for the development of DoD and DoN cybersecurity architectures and the transition of new technologies to address Navy cybersecurity challenges. Continue to provide updates to reflect emerging priorities and address Navy specific threats. Continue to coordinate cybersecurity activities across the virtual SYSCOM via the Cybersecurity TA to ensure the security design and integration of cybersecurity products and services is consistent across the Navy for major initiatives such as the future afloat, ashore, and OCONUS networks. Continue to provide cybersecurity risk analysis and recommended risk mitigation strategies for Navy critical networks and C4I systems. Continue to coordinate with the Navy acquisition community to ensure cybersecurity requirements are identified and addressed within the development cycles for emerging Navy network and C4I capabilities. Continue to evaluate products for security issues and develop guidance and procedures for the design and integration of risk mitigation strategies via appropriate cybersecurity controls. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	23.213	19.134	25.974	-	25.974

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN/3415: *Info Sys Security Program (ISSP)*	125.902	108.002	135.687	-	135.687	82.905	85.848	86.376	88.273	Continuing	Continuing

Remarks

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D. Acquisition Strategy

Computer Network Defense (CND): The CND Acquisition Category (ACAT) IVT program is a layered protection strategy, using Commercial Off-The-Shelf (COTS) and Government Off-The-Shelf (GOTS) hardware and software products that collectively provide an effective network security infrastructure. The rapid advance of cyber technology requires an efficient process for updating CND tools deployed to afloat and shore platforms. Recognizing the need for future CND capability improvements, CND implements an evolutionary acquisition strategy that delivers CND capabilities in multiple builds and functionality releases that address validated requirements.

Navy Cryptography (Crypto): Modernized crypto devices will replace legacy crypto in accordance with the Chairman of the Joint Chiefs of Staff (CJCS) mandate (CJCS Instruction 6510) as well as the National Security Agency (NSA) planned decertification, which improves the security of the Navy's data in transit. Strategies followed by other lead agencies include VINSON/Advanced Narrowband Digital Voice Terminal Crypto Modernization (VACM) and KG-3X which are led by the United States Air Force (USAF).

Key Management (KM): Key Management Infrastructure (KMI) is a NSA led Joint ACAT I program. It is the next generation Electronic Key Management System (EKMS) that provides the infrastructure for management, ordering and distribution of key material as well as directly supporting the key requirements of all Crypto modernization efforts. KMI will follow an increment/spiral development strategy. The KMI program will continue to develop alternative architecture implementations for communities within the Navy to implement Intermediary Application (iApp) as a key management solution.

Public Key Infrastructure (PKI): Department of Defense (DoD) PKI is an ACAT I program led by the NSA and the DoD Chief Information Officer (CIO) who are the Milestone Decision Authority (MDA). The Navy PKI project supports the DoD-wide implementation of PKI products and services across Navy afloat, non-Navy Marine Corps Intranet (NMCI), and Outside the Continental United States (OCONUS) networks.

E. Performance Metrics

Computer Network Defense (CND):
* Provide the ability to protect from, react to, and restore operations after an intrusion or other catastrophic event through validated contingency plans for 100% of CND systems.
* Develop dynamic security defense capabilities, based on the CND posture as an active response to threat attack sensors and vulnerability indications to provide adequate defenses against subversive acts of trusted people and systems, both internal and external, by integration of anomaly-based detection solutions into the design solutions for 100% of authorized Navy enclaves.
* Defend against the unauthorized use of a host or application, particularly operating systems, by development and/or integration of host-based intrusion prevention system design solutions for 100% of authorized Navy enclaves.
* Continue to develop and provide cyber situational awareness to the Commander United States Tenth Fleet (C10F) Maritime Operations Center (MOC).

Navy Cryptography (Crypto):
* Meet 100% of Chairman of the Joint Chiefs of Staff Instruction (CJCSI 6510) Cryptographic Modernization (CM) requirements within the current Fiscal Year Defense Plan (FYDP) by conducting a gap analysis and building a CM roadmap and implementation plan to allow the Navy Network Warfare Command (NETWAR) FORCEnet Enterprise to establish operational priorities based on risk assessments. The gap analysis is an effort to analyze current integrated legacy cryptographic devices within

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the Department of the Navy (DoN) inventory with known algorithm vulnerability dates, assess lifecycle sustainment issues, and identify transition device schedules, where they exist.
* Meet 100% of Top Secret (TS) and SECRET CJCSI 6510 by fielding modern cryptographic devices or request "key extension" via the Joint Staff Military Communications-Electronics Board (MCEB).
* Increase the functionality of cryptographic devices by replacing 2 legacy cryptographic devices with 1 modern device, where possible, identify, and implement modern small form factor, multi-channel cryptography devices (e.g., KIV-7M replacing KIV-7HS, KIV-7HSB, KG-84, KWR-46, KL-51, etc.).

Key Management (KM):
* Meet 100% of DON, US Coast Guard (USCG) key management requirements. USCG and Military Sealift Command (MSC) replace existing Electronic Key Management System (EKMS) Tier 2 systems with a Key Management Infrastructure (KMI) Intermediary Application (iApp). Littoral Combat Ship (LCS) implements iApp to automate key deliver to the platforms.
* Complete iApp engineering efforts, testing and begin transition to LCS, USCG Cutters and MSC in FY17.
* Incorporate 100% of the Communication Security (COMSEC) Manager Workstation (CMWS) requirements into the iApp baseline.
* Refine and provide Navy unique requirements into the National Security Agency (NSA) KMI Capability Increment (CI)-3 Capability Development Document (CDD).

Public Key Infrastructure (PKI):
* Provide integration support to ensure Navy networks and Programs of Record (POR) comply with Department of Defense (DoD) PKI requirements on Non-Classified Internet Protocol Router Network (NIPRNet) and SECRET Internet Protocol Router Network (SIPRNet), per Department of Defense Instruction (DoDI) 8520.02.
* Ensure 100% interoperability with DoD and Federal partners by researching and evaluating enhanced cryptographic algorithms and DoD certificate changes.

Cybersecurity Services:
* Ensure 100% interoperability and application of commercial standards compliance for Information Systems Security Program (ISSP) products by researching and conducting selective evaluations, integrating and testing commercial-off-the-shelf/Non-Developmental Item cybersecurity products. Evaluation may include defensible network boundary capabilities such as firewalls, secure routers and switches, guards, Virtual Private Networks (VPN), and network Intrusion Prevention Systems (IPS).
* Provide 100% of the services delineated in OPNAVINST 5239.1C by serving as the Navy's cybersecurity technical lead by developing cybersecurity risk analysis and recommended risk mitigation strategies for critical Navy networks and Command, Control, Communications, Computers, and Intelligence (C4I) systems.
* Coordinate cybersecurity activities across the Navy Enterprise via the Cybersecurity Trusted Architecture (TA) to measure effectiveness of Navy networks. Ensure the security design and integration of Computer Adaptive Network Defense-in-Depth (CANDiD) products and services and that they are 100% interoperable and operationally acceptable across the Navy for major initiatives such as the future afloat, ashore, and Outside the Continental United States (OCONUS) networks.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	Various	Various : Various	179.534	0.653	Dec 2013	0.218	Dec 2014	0.268	Dec 2015	-		0.268	Continuing	Continuing	Continuing
Hardware Development (WR)	WR	SSC LANT : Charleston, SC	3.696	0.225	Dec 2013	0.741	Dec 2014	0.780	Dec 2015	-		0.780	Continuing	Continuing	Continuing
Hardware Development (WR)	WR	SSC PAC : San Diego, CA	4.898	2.119	Dec 2013	2.122	Dec 2014	2.235	Dec 2015	-		2.235	Continuing	Continuing	Continuing
Hardware Development	C/CPFF	Raytheon : Los Angeles, CA	2.212	2.640	Apr 2014	-		-		-		-	-	4.852	-
Hardware Development	C/CPFF	SSC LANT : Charleston, SC	0.000	0.479	Dec 2013	0.625	Dec 2014	0.658	Dec 2015	-		0.658	Continuing	Continuing	Continuing
Hardware Development	C/CPFF	SSC PAC : San Diego, CA	0.000	1.170	Dec 2013	1.175	Dec 2014	1.237	Dec 2015	-		1.237	Continuing	Continuing	Continuing
Software Development	Various	Various : Various	65.410	0.790	Dec 2013	-		-		-		-	Continuing	Continuing	Continuing
Software Development (WR)	WR	SSC LANT : Charleston, SC	0.000	1.530	Dec 2013	2.020	Dec 2014	2.127	Dec 2015	-		2.127	Continuing	Continuing	Continuing
Software Development (WR)	WR	SSC PAC : San Diego, CA	3.464	4.566	Dec 2013	4.019	Dec 2014	5.982	Dec 2015	-		5.982	Continuing	Continuing	Continuing
Software Development	C/CPFF	SSC LANT : Charleston, SC	0.000	1.313	Dec 2013	1.789	Dec 2014	1.884	Dec 2015	-		1.884	Continuing	Continuing	Continuing
Software Development	C/CPFF	SSC PAC : San Diego, CA	0.000	1.353	Dec 2013	1.942	Dec 2014	3.794	Dec 2015	-		3.794	Continuing	Continuing	Continuing
Software Development	MIPR	Defense Technical Information Center : Fort Belvoir, VA	0.000	0.839	Dec 2013	0.603	Dec 2014	2.265	Dec 2015	-		2.265	Continuing	Continuing	Continuing
		Subtotal	259.214	17.677		15.254		21.230		-		21.230	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Architecture	Various	Various : Various	2.275	0.792	Dec 2013	0.460	Dec 2014	0.484	Dec 2015	-		0.484	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Architecture	WR	SSC LANT : Charleston, SC	0.000	0.440	Dec 2013	0.806	Dec 2014	0.849	Dec 2015	-		0.849	Continuing	Continuing	Continuing
Architecture	WR	SSC PAC : San Diego, CA	0.000	0.210	Dec 2013	0.220	Dec 2014	0.232	Dec 2015	-		0.232	Continuing	Continuing	Continuing
Architecture	MIPR	Dept of Energy : Washington, DC	0.000	1.400	Feb 2014	-		-		-		-	-	1.400	-
Requirements Analysis	Various	Various : Various	4.071	1.203	Dec 2013	0.220	Dec 2014	0.891	Dec 2015	-		0.891	Continuing	Continuing	Continuing
Studies & Design	Various	Various : Various	4.050	-		0.359	Dec 2014	0.377	Dec 2015	-		0.377	Continuing	Continuing	Continuing
Studies & Design	WR	NRL : Washington, DC	0.000	0.750	Dec 2013	0.750	Dec 2014	0.790	Dec 2015	-		0.790	Continuing	Continuing	Continuing
Systems Engineering	Various	Various : Various	3.044	-		-		-		-		-	-	3.044	-
		Subtotal	13.440	4.795		2.815		3.623		-		3.623	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System DT&E	Various	Various : Various	37.665	0.124	Dec 2013	0.423	Dec 2014	0.445	Dec 2015	-		0.445	Continuing	Continuing	Continuing
		Subtotal	37.665	0.124		0.423		0.445		-		0.445	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	C/CPFF	BAH : San Diego, CA	26.286	0.589	Dec 2013	0.622	Dec 2014	0.656	Dec 2015	-		0.656	Continuing	Continuing	Continuing
Travel	WR	SPAWAR : San Diego, CA	0.139	0.028	Oct 2013	0.020	Oct 2014	0.020	Dec 2015	-		0.020	Continuing	Continuing	Continuing
		Subtotal	26.425	0.617		0.642		0.676		-		0.676	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	336.744	23.213		19.134		25.974		-		25.974	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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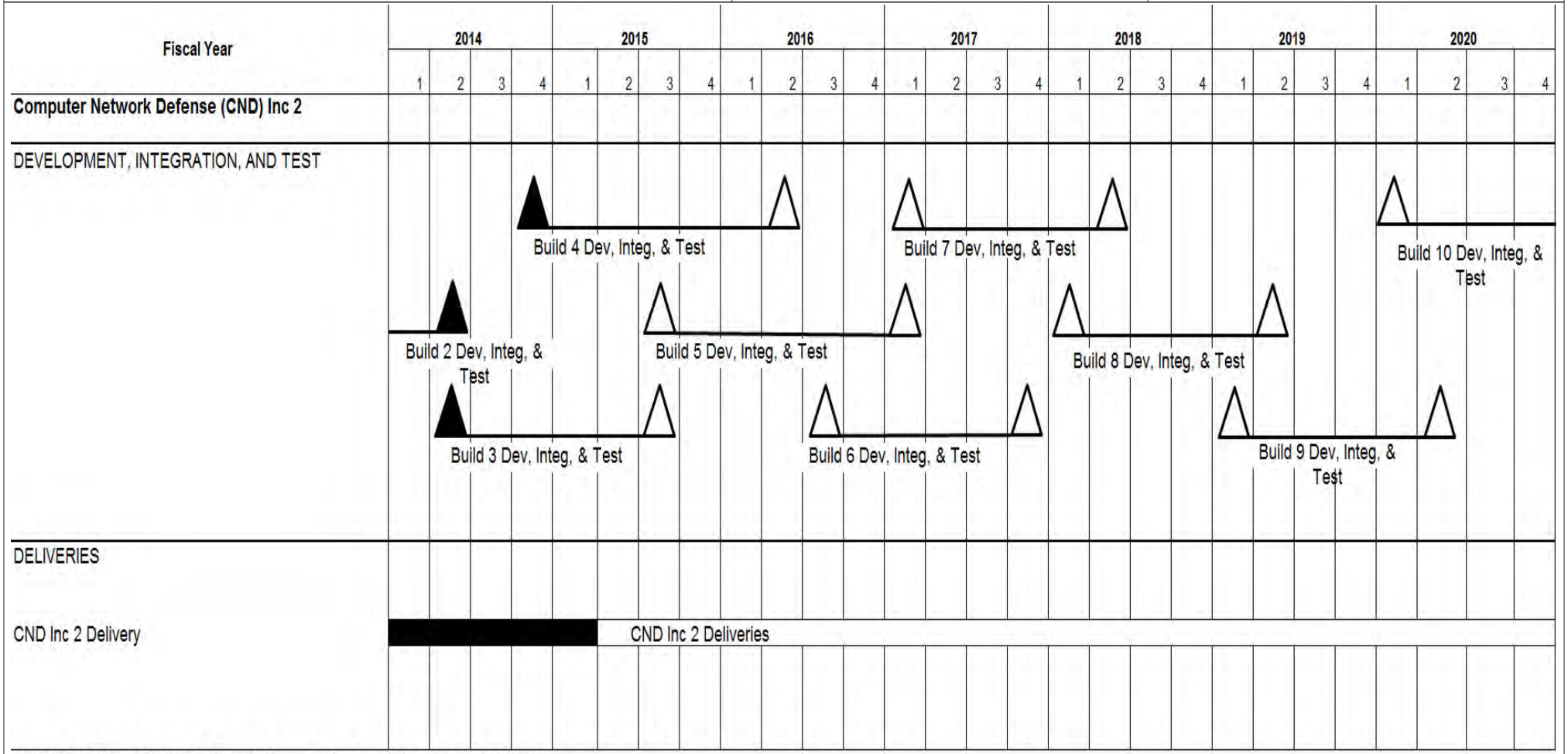
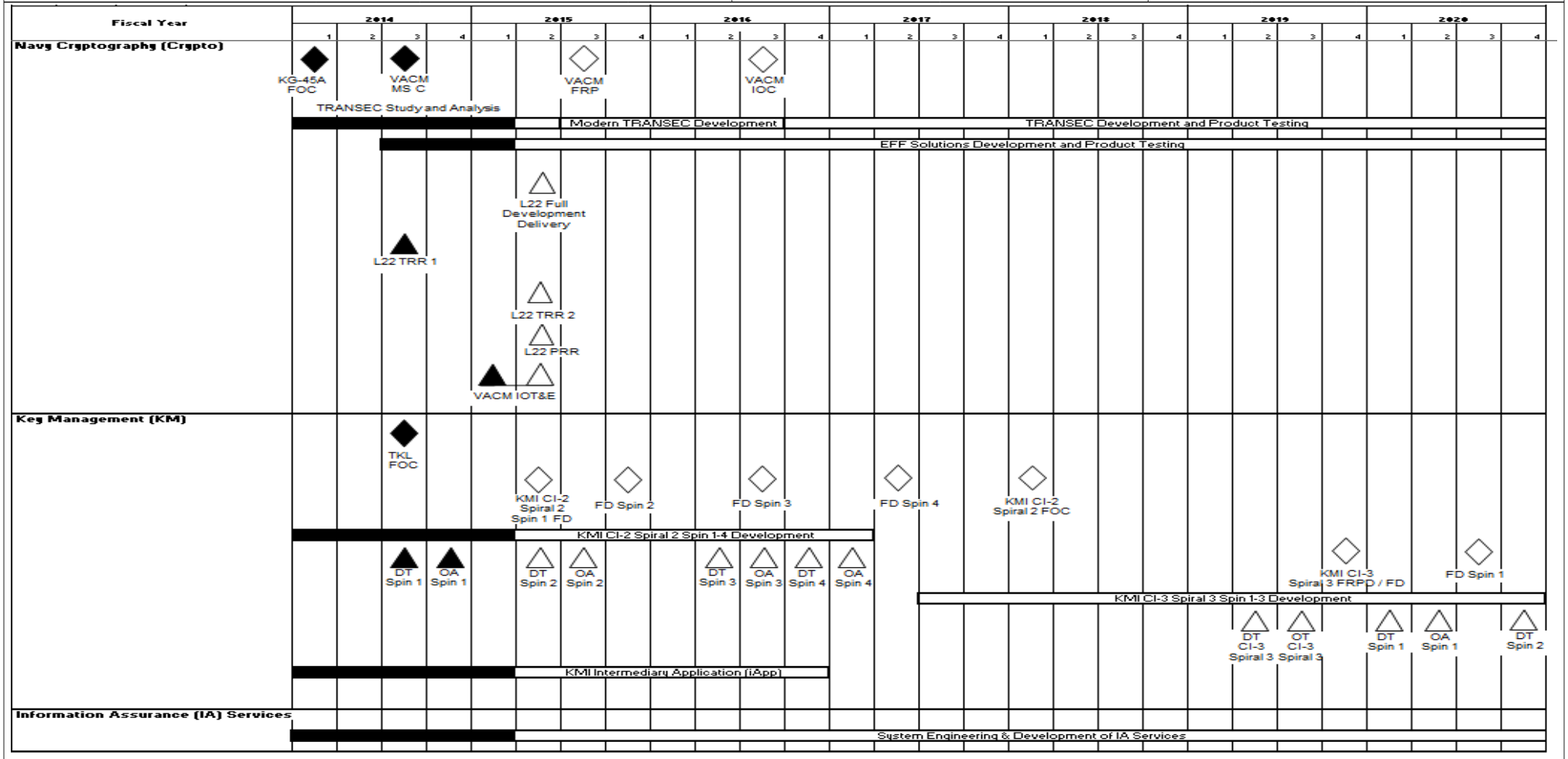


Note 1: Reference Section B Change Summary for schedule notes and explanations

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 0734 / *Communications Security R&D*



Note 1: Reference Section B Change Summary for schedule notes and explanations

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 0734 / *Communications Security R&D*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0734				
CND - Build 2 Dev, Integ, & Test	1	2014	2	2014
CND - Build 3 Dev, Integ, & Test	2	2014	3	2015
CND - Build 4 Dev, Integ, & Test	4	2014	2	2016
CND - Build 5 Dev, Integ, & Test	3	2015	4	2016
CND - Build 6 Dev, Integ, & Test	3	2016	4	2017
CND - Build 7 Dev, Integ, & Test	1	2017	2	2018
CND - Build 8 Dev, Integ, & Test	1	2018	2	2019
CND - Build 9 Dev, Integ, & Test	1	2019	2	2020
CND - Build 10 Dev, Integ, & Test	1	2020	4	2020
CND - Inc 2 Deliveries	1	2014	4	2020
Crypto - KG-45A FOC	1	2014	1	2014
Crypto - VACM MS C	3	2014	3	2014
Crypto - VACM FRP	3	2015	3	2015
Crypto - VACM IOC	3	2016	3	2016
Crypto - VACM IOT&E	1	2015	2	2015
Crypto - TRANSEC Study & Analysis	1	2014	2	2015
Crypto - TRANSEC Development and Product Testing	3	2015	4	2020
Crypto - EFF Solutions Development and Product Testing	3	2014	4	2020
Crypto - L22 TRR 1	3	2014	3	2014
Crypto - L22 Full Development Article Delivery	2	2015	2	2015
Crypto - L22 TRR 2	2	2015	2	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 0734 / *Communications Security R&D*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Crypto - L22 PRR	2	2015	2	2015
Key Management - TKL FOC	3	2014	3	2014
Key Management - KMI CI-2 Spiral 2 Spin 1 FD	2	2015	2	2015
Key Management - FD Spin 2	4	2015	4	2015
Key Management - FD Spin 3	3	2016	3	2016
Key Management - FD Spin 4	2	2017	2	2017
Key Management - KMI CI-2 Spiral 2 FOC	1	2018	1	2018
Key Management - KMI CI-2 Spiral 2 Spin 1-4 Development	1	2014	1	2017
Key Management - KMI CI-3 Spiral 3 Spin 1-3 Development	3	2017	4	2020
Key Management - KMI Intermediary Application (iAPP)	1	2014	4	2016
Key Management - DT CI-2 Spiral 2 Spin 1	3	2014	3	2014
Key Management - OA CI-2 Spiral 2 Spin 1	4	2014	4	2014
Key Management - DT CI-2 Spiral 2 Spin 2	2	2015	2	2015
Key Management - OA CI-2 Spiral 2 Spin 2	3	2015	3	2015
Key Management - DT CI-2 Spiral 2 Spin 3	2	2016	2	2016
Key Management - OA CI-2 Spiral 2 Spin 3	3	2016	3	2016
Key Management - DT CI-2 Spiral 2 Spin 4	4	2016	4	2016
Key Management - OA CI-2 Spiral 2 Spin 4	1	2017	1	2017
Key Management - DT CI-3 Spiral 3	2	2019	2	2019
Key Management - OT CI-3 Spiral 3	3	2019	3	2019
Key Management - KMI CI-3 Spiral 3 FRPD/FD	4	2019	4	2019
Key Management - FD Spin 1	3	2020	3	2020
Key Management - DT CI-3 Spiral 3 Spin 1	1	2020	1	2020
Key Management - OA CI-3 Spiral 3 Spin 1	2	2020	2	2020
Key Management - DT CI-3 Spiral 3 Spin 2	4	2020	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 0734 / *Communications Security R&D*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Cybersecurity - Systems Engineering & Development of Cybersecurity Services	1	2014	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303140N / *Information Sys Security Program*	Project (Number/Name) 3230 / *Information Assurance*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3230: *Information Assurance*	8.103	2.391	3.882	2.128	-	2.128	2.121	2.104	2.179	2.223	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The goal of the Information Assurance (IA) program is to ensure the continued protection of Navy and joint information and information systems from hostile exploitation and attack. ISSP activities address the triad of Defense Information Operations: protection, detection, and reaction. Evolving attack sensing (detection), warning, and response (reaction) responsibilities extend far beyond the traditional ISSP role in protection or Information Systems Security (INFOSEC). Focused on the highly mobile forward deployed subscriber, the Navy's adoption of Network-Centric Warfare (NCW) places demands upon the ISSP, as the number of users expands significantly and the criticality of their use escalates. Today, the ISSP protects an expanding core of services critical to the effective performance of the Navy's mission.

The rapid rate of change in the underlying commercial and government information infrastructures makes the provision of security an increasingly complex and dynamic problem. IA technology mix and deployment strategies must evolve quickly to meet rapidly evolving threats and vulnerabilities. No longer can information security be divorced from the information infrastructure. The ISSP enables the Navy's war fighter to trust in the availability, integrity, authentication, privacy, and non-repudiation of information.

This project includes funds for advanced technology development, test and evaluation of naval information systems security based on leading edge technologies that will improve information assurance (e.g., situational awareness and information infrastructure protection) across all command echelons to tactical units afloat and war fighters ashore. This effort will provide the research to develop a secure seamless interoperable, common operational environment of networked information systems in the battle space and for monitoring and protecting the information infrastructure from malicious activities. This effort will provide naval forces a secure capability and basis in its achievement of protection from unauthorized access and misuse, and optimized IA resource allocations in the information battle space. This program will also develop core technology to: (1) improve network infrastructure resistance and resiliency to attacks; (2) enable the rapid development and certification of security-aware applications and information technologies in accordance with the Common Criteria for IA and IA-enabled information technology products by the National Security Telecommunications and Information Systems Security Instructions; and (3) measure the effectiveness and efficiency of IA defensive capabilities under naval environments.

The program will develop common architectural frameworks that facilitate integration of network security capabilities, enable effective seamless interoperation, and contribute to a common consistent picture of the networked environment with respect to information assurance and security. This effort will address the need for a common operational picture for IA, as well as assessment of security technology critical to the success of the mission. This effort will also initiate requirements definition for situational awareness capabilities to support computer network defense in a highly-distributed, homogeneous, and heterogeneous networks including mobile and embedded networked devices. This effort also includes the architectural definition of situational awareness and visualization capabilities to support active computer network defense and support underlying data mining and correlation tools. This includes addressing the capability to remotely manage and securely control the configurations of network security components to implement changes in real time or near real time. Program will also initiate requirements definition for secure coalition data exchange and interoperation among security levels and classifications, and ensure approaches address various security level technologies as well as emerging

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 3230 / *Information Assurance*

architectural methods of providing interoperability across different security levels. Examine multi-level aware applications and technologies including databases, web browsers, routers/switches, etc. Efforts will also initiate infrastructure protection efforts as the Navy develops network centric architectures and warfare concepts, ensuring an evolutionary development of security architectures and products for IA that addresses Navy infrastructure requirements. IA will ensure the architectures evolve to provide proper protection as technology, DoD missions, and threats continuously evolve. IA includes defensive protections as well as intrusion monitoring (sensors), warning mechanisms, and response capabilities in the architecture. Ensure the unique security and performance requirements of tactical systems, including those operating various security levels are addressed. Also, the program will initiate the efforts to conceptualize new network centric warfare technology to protect our assets, such as secure network gateways, routers, components and tools that improve the survivability of Navy networks. Last, IA will provide systems security engineering, certification and accreditation support for high-confidence naval information systems and ensure certification and accreditation approaches are consistent with Navy and DoD requirements.

FY16 : Continue development of new network security demands addressing nation-state level sponsored activity.
Incorporate security services to thwart Denial of Network Service (DNS) attacks, distributed denial of service, botnet and other sophisticated attacks.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Information Assurance (IA)	2.391	3.882	2.128	-	2.128
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued the development of new network security technology focused on addressing nation state level sponsored activity. Continued the development of a security framework for a federated, cross-domain SOA ensuring the framework addresses all critical aspects of SOA including cross-domain service discovery, identity management, and service invocation, while minimizing inference attacks. Continued the development of a security framework for mobile communication devices that allows the use/ integration of commercial technology in a secure manner, such as to support the integration of Droid and/or iPhone devices. Continued the efforts focused on identity management and secure data storage, processing and exchange. Continued the development of mobile security techniques that introduce time and location based security parameters for geo-location and asset protection and management while addressing the specific issues of geo-location and mapping in GPS-constrained environments.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 3230 / *Information Assurance*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continued the development of critical cryptographic technology to support Navy unique platforms and requirements such as UAS ensuring the technology addresses the limited size, weight and power issues, and multiple data classification processing requirements, while as providing on-the-fly programmability of mission data and key material to support various missions such as COMSEC, ELINT, SIGINT, etc. Continued systems security engineering, certification and accreditation support for high-confidence naval information systems and ensure certification and accreditation approaches are consistent with Navy and DoD requirements. Completed the characterization of attacks/profiles to increase detection rates of the technology, especially for identifying new/emerging malicious code. Completed the development of attribution technology, focusing on nation-state activities across network boundaries that obfuscate traffic using techniques such as anonymization. Completed the incorporation of security services to thwart DNS attacks, distributed denial of service attacks, and botnet attacks, as well as sophisticated attacks to control the core operating environment. Completed the development of a security framework for a federated, cross-domain services oriented architecture (SOA) ensuring the framework addresses all critical aspects of SOA including service discovery, identity management, and service invocation, while minimizing inference attacks. Completed the development of several mobile security techniques that introduce time and location based security parameters for geo-location and asset protection and management while addressing the specific issues of geo-location and mapping in GPS-constrained environments. Completed the characterization of several nation state sponsored attacks/profiles that were used to increase detection rates of DoD sensor technology. Initiated the development of new sensing and instrumentation technology to support attack prediction and to measure the effectiveness of network security technology.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 3230 / *Information Assurance*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Initiated the development of technology to provide prediction/early warning sensing of impending attacks based on network traffic and user behavior.					
FY 2015 Plans: Continue at a reduced level of effort the development of a security framework for mobile communication devices. Emphasize addressing the security issues associated with bring-your-own-device/bring-your-own-application (BYOD/BYOA), such as to support the integration of Droid and/or iPhone devices. Continue at a reduced level of effort the development of new network security technology focused on addressing nation state level sponsored activity. Continue at a reduced level of effort the development of enabling technology building blocks for identity management and secure data storage, processing and exchange. Initiate and complete the Weaselboard Project to study and assess vulnerabilities with Shipboard Supervisory Control and Data Acquisition (SCADA) information which conducts an operational demonstration on a Naval platform.					
FY 2016 Base Plans: Continue the development of new sensing and instrumentation technology to support attack prediction and to measure the effectiveness of network security technology. Continue the development of technology to provide prediction/early warning sensing of impending attacks based on network traffic and user behavior. Continue the development of critical cryptographic technology to support Navy unique platforms and requirements such as UASs (e.g., UAVs, UUV) ensuring the technology addresses the limited size, weight and power issues, and multiple data classification processing requirements, while as providing on-the-fly programmability of mission data and key material to support various missions such as COMSEC, ELINT, SIGINT, etc. Continue systems security engineering, certification and accreditation support for high-confidence naval information systems and ensure certification and accreditation approaches are consistent with Navy and DoD requirements.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 3230 / *Information Assurance*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Complete the development of a security framework for mobile communication devices. Emphasize addressing the security issues associated with bring-your-own-device/bring-your-own-application (BYOD/BYOA), such as to support the integration of Droid and/or iPhone devices. Complete the development of new network security technology focused on addressing nation state level sponsored activity. Enhance the security framework for a federated SOA infrastructure to support cross-domain services. Complete the efforts focused developing enabling technology building blocks for identity management and secure data storage, processing and exchange. Initiate the development of new host-based security technology focused on addressing data-at-rest requirements, protection of the operating system and applications from nation state-sponsored activities, and methods for system and software updates that do not invalidate the security framework of the host workstation. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	2.391	3.882	2.128	-	2.128

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Protection of Navy and joint information from hostile exploitation and attack.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303140N / *Information Sys Security Program*	Project (Number/Name) 3230 / *Information Assurance*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	NRL : Washington, DC	8.103	2.391	Nov 2013	3.882	Nov 2014	2.128	Nov 2015	-		2.128	Continuing	Continuing	Continuing
		Subtotal	8.103	2.391		3.882		2.128		-		2.128	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.103	2.391		3.882		2.128		-		2.128	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 3230 / *Information Assurance*

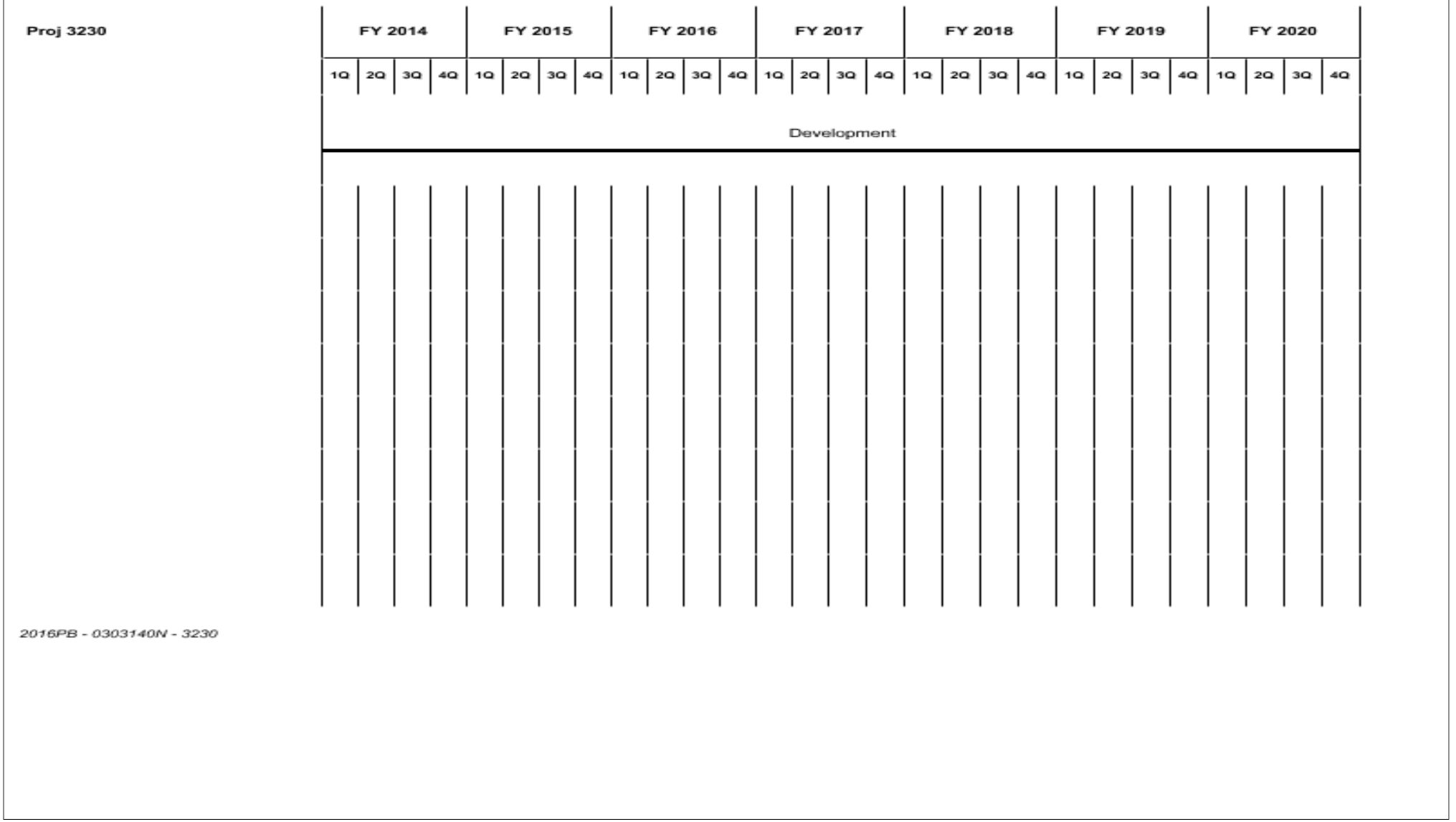


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303140N / *Information Sys Security Program*	**Project (Number/Name)** 3230 / *Information Assurance*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3230				
Development	1	2014	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0303150M *I WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	0.071	-	-	0.294	-	0.294	-	-	-	-	-	0.365
4041: *Global Force Mgmt - DI (GFM-DI) for Global Cmd and Cont Sys (GCCS)*	0.071	-	-	0.294	-	0.294	-	-	-	-	-	0.365

A. Mission Description and Budget Item Justification

PE 0303150M reflects a portion of the Global Force Management-Data Initiative (GFM-DI) advocated by the VCJCS. Funding enhancements support GFM-DI implementation of the Force Management and Adaptive Planning Processes by FY13 and Financial, Health Records, and Information Assurance by FY16.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	-	0.296	0.296	-	0.296
Current President's Budget	-	-	0.294	-	0.294
Total Adjustments	-	-0.296	-0.002	-	-0.002
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.296			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	-0.002	-	-0.002

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303150M / *WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM*	Project (Number/Name) 4041 / *Global Force Mgmt - DI (GFM-DI) for Global Cmd and Cont Sys (GCCS)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
4041: *Global Force Mgmt - DI (GFM-DI) for Global Cmd and Cont Sys (GCCS)*	0.071	-	-	0.294	-	0.294	-	-	-	-	-	0.365
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Global Command and Control System (GCCS) consists of Command and Control (C2) subsystems which provide Combatant Commanders, the Joint Staff and other Tactical Commanders a near real time picture of the battle space necessary to conduct joint and multinational operations of U.S. Military Forces. This effort specifically supports developmental efforts for Global Force Management-Data Initiative (GFM-DI). GFM-DI will make force structure authorization data visible, accessible and understandable across the Department and will provide the authoritative data source for all DoD force structure as directed by Joint Planning Guidance VII, dated June 2006. Joint Force Requirements Generator II (JFRG II) is a Marine Corps C2 subsystem which supports GFM-DI through the incorporation of force structure data elements within the Service force deployment planning system.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Joint Forces Requirements Generator (JFRG)	-	-	0.294	-	0.294
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: N/A					
FY 2016 Base Plans: Initiate efforts to Test, Certify and Deploy modernized information system to realize the incorporation of Global Force Management-Data Initiative (GFM-DI) data elements.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	-	0.294	-	0.294

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303150M / *WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM*	**Project (Number/Name)** 4041 / *Global Force Mgmt - DI (GFM-DI) for Global Cmd and Cont Sys (GCCS)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTE/2510: *JFRG*	-	0.203	0.204	-	0.204	0.204	0.208	0.203	0.208	Continuing	Continuing

Remarks

D. Acquisition Strategy

This will be a phased implementation led by the Joint Staff J8 Models and Analysis Support Office (MASO). JFRG II PMO supports this strategy by redesigning, developing and implementing a modernized system in order to incorporate GFM-DI force structure data elements within the Marine Corps force deployment planning and execution capability. JFRG is funded in C2510 under PE 0206313M from FY16 throughout the FYDP (see other Appropriation funding).

E. Performance Metrics

Technical: This exhibit reflects GFM-DI efforts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0303150M / *WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM*	Project (Number/Name) 4041 / *Global Force Mgmt - DI (GFM-DI) for Global Cmd and Cont Sys (GCCS)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/FFP	TBD : TBD	0.071	-		-		0.294	Aug 2016	-		0.294	612.000	612.365	-
		Subtotal	0.071	-		-		0.294		-		0.294	612.000	612.365	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.071	-		-		0.294		-		0.294	612.000	612.365	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303150M / *WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM*	**Project (Number/Name)** 4041 / *Global Force Mgmt - DI (GFM-DI) for Global Cmd and Cont Sys (GCCS)*

JFRG II Program Schedule

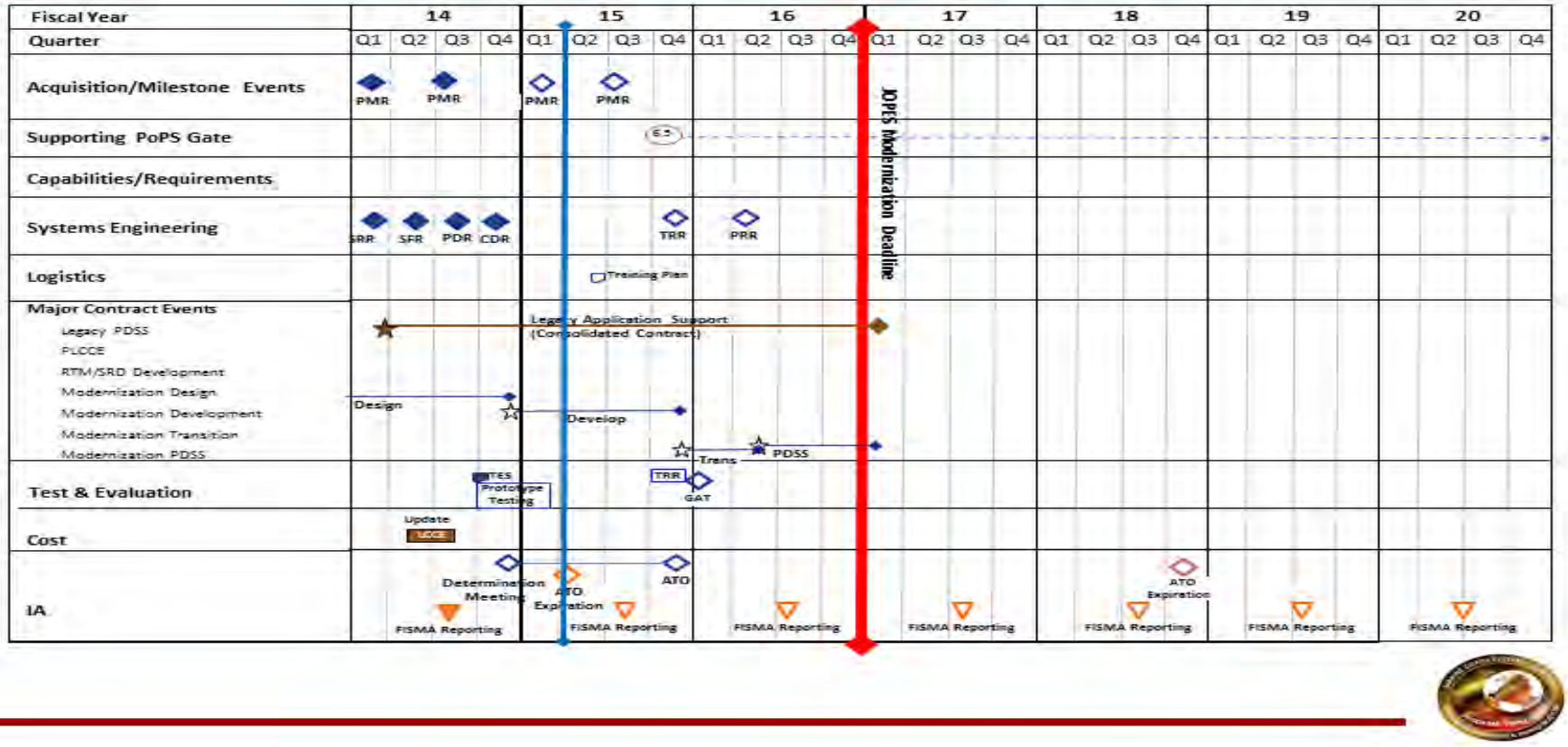

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0303150M / *WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM*	**Project (Number/Name)** 4041 / *Global Force Mgmt - DI (GFM-DI) for Global Cmd and Cont Sys (GCCS)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4041				
TRR	4	2015	4	2015
PRR	2	2016	2	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305160N *I Navy Meteorological and Ocean Sensors-Space(METOC)*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	1.558	0.726	0.359	0.599	-	0.599	60.679	0.680	0.677	0.691	Continuing	Continuing
0524: *Navy METOC Support (SPACE)*	1.558	0.726	0.359	0.599	-	0.599	0.670	0.680	0.677	0.691	Continuing	Continuing
1452: *GEO SAT*	0.000	-	-	-	-	-	60.009	-	-	-	-	60.009

A. Mission Description and Budget Item Justification

This program element supports the Navy's requirements in meteorological and oceanographic (METOC) space-based remote sensors. These requirements include commitments to satellite, sensor, and operational demonstration/development activities as well as the transition to fleet applications associated with two satellite programs: 1) the joint Defense Meteorological Satellite Program (DMSP), 2) the Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2) altimetry satellite funded entirely by Navy.

The Navy METOC Space-Based Sensing Capabilities project provides for Navy participation in Navy/Air Force cooperative efforts leading to DMSP sensor development, and specifically participation in the calibration and validation of instruments and delivery of satellite products to the fleet. The passive microwave instruments carried on the DMSP satellites provide global and atmospheric data of direct operational relevance, including sea surface wind, sea ice, and precipitation.

The GEOSAT Follow-On-2 (GFO-2) program will provide a polar-orbiting satellite that measures sea surface topography using a precise altimeter.
Both the GEOSAT Follow-On-2 and Navy METOC Support (Space) projects fulfill Navy's obligation to develop naval service-unique, mission critical space-based METOC technology.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	0.742	0.359	0.645	-	0.645
Current President's Budget	0.726	0.359	0.599	-	0.599
Total Adjustments	-0.016	-	-0.046	-	-0.046
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.016	-			
• Rate/Misc Adjustments	-	-	-0.046	-	-0.046

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305160N *I Navy Meteorological and Ocean Sensors-Space(METOC)*

Change Summary Explanation

The FY 2016 funding request was reduced by $0.1 million to account for the availability of prior year execution balances.

Schedule: The Navy has delayed all Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2) altimetry satellite development efforts until FY 2017.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305160N / *Navy Meteorological and Ocean Sensors-Space(METOC)*	Project (Number/Name) 0524 / *Navy METOC Support (SPACE)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0524: *Navy METOC Support (SPACE)*	1.558	0.726	0.359	0.599	-	0.599	0.670	0.680	0.677	0.691	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Meteorology and Oceanography (METOC) Space-Based Sensing Capabilities project provides for Navy participation in the Defense Meteorological Satellite Program (DMSP) Special Sensor Microwave/Imager and Special Sensor Microwave Imager Sounder calibration/validation efforts in support of the fleet operational requirements. The passive microwave instrument carried on DMSP provides global oceanic and atmospheric data of direct operational relevance, including sea surface wind speed, sea ice, and precipitation.

The METOC Space-Based Sensing Capabilities project ensures the naval service's operational requirements are satisfied primarily through demonstration of technologies for inclusion on operational constellations such as DMSP, the Joint Polar Satellite System (JPSS) and the National Oceanic and Atmospheric Administration's Geostationary Operational Environmental Satellites (GOES). These efforts fulfill naval service unique requirements that are not funded within the DMSP, JPSS or GOES programs, and are in accordance with current inter-agency agreements.

The primary focus of the FY 2016 request is to continue assessment of planned environmental satellite sensor launches scheduled in FY16.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: METOC Space-Based Sensing Capabilities	0.726	0.359	0.599	-	0.599
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued performance assessment on National Polar-orbiting Operational Environmental Satellite System Preparatory Project (NPP) and Defense Meteorological Satellite Program (DMSP) satellite sensor suites. Continued assessment of planned Joint Polar Satellite System (JPSS) sensors and assessment of other national, commercial, and foreign earth observing satellite system's sensor data for use in Navy Atmospheric and Oceanographic Prediction Models.					
FY 2015 Plans: Continue performance assessment of planned national earth observing satellite system's sensor data Sentinel 3a and 3b launch for use in Navy Atmospheric and Oceanographic Prediction Models.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305160N / *Navy Meteorological and Ocean Sensors-Space(METOC)*	**Project (Number/Name)** 0524 / *Navy METOC Support (SPACE)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue performance assessment on NPP and DMSP satellite sensor suites. Continue assessment of planned environmental satellite sensor launches such as Geostationary Operational Environmental Satellite R-Series (GOES-R) and Global Change Observation Mission (GCOM) W-2 scheduled in FY16. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.726	0.359	0.599	-	0.599

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTEN/0603207N/2342: *METOC DATA ASSIMILATION AND MOD*	9.942	4.937	8.168	-	8.168	9.372	9.430	10.107	10.290	Continuing	Continuing
• OPN/4226: *Meteorological Equipment*	19.118	12.825	15.090	-	15.090	13.397	12.992	13.342	13.132	Continuing	Continuing

Remarks

D. Acquisition Strategy

Naval service unique, space based Meteorology and Oceanography (METOC) requirements. Particular sensors or data sources with unique naval service mission needs are targeted to accelerate acquisition or ensure threshold accomplishment of Joint or converged national program plans. The Joint Polar Satellite System (JPSS) program will collect global microwave radiometry and sounding data to produce microwave imagery and other meteorological and oceanographic data. Conical Microwave Imager Sounder (CMIS) can be viewed as the follow-on instrument to the Special Sensor Microwave (SSM) instruments Navy developed for the Defense Meteorological Satellite Program. These CMIS sensors will be acquired as part of the JPSS architecture which supports these Navy requirements in the future. Maintenance of rigorous sensor calibration and data validation for operational SSM instruments continues along with algorithm development in support of fleet applications. The Advanced Altimeter technologies will improve radar altimeter resolution and aerial coverage to support Navy requirements for sea surface topography measurement in the littorals.

E. Performance Metrics

Goal: Provide precise and near real-time METOC forecasting to the warfighter using existing and future space-based satellite derived data, including ocean surface wind speed, rain rate, ice concentration, and soil moisture measurements.
Metric: Provide precise ocean surface wind speed within plus or minus 2.0 meters per second, the rain over land and ocean rate within plus or minus 5.0 millimeters per hour, soil moisture measurements within plus or minus 10%; and sea ice concentrations within plus or minus 10%.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305160N / *Navy Meteorological and Ocean Sensors-Space(METOC)*	Project (Number/Name) 0524 / *Navy METOC Support (SPACE)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	Naval Research Laboratory : Monterey, CA	1.272	0.601	Nov 2013	0.289	Nov 2014	0.483	Nov 2015	-		0.483	Continuing	Continuing	Continuing
		Subtotal	1.272	0.601		0.289		0.483		-		0.483	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Support	WR	SSC Pacific : San Diego, CA	0.230	0.100	Nov 2013	0.050	Nov 2014	0.083	Nov 2015	-		0.083	Continuing	Continuing	Continuing
		Subtotal	0.230	0.100		0.050		0.083		-		0.083	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Management	C/CPFF	PSS/BAH : San Diego, CA	0.056	0.025	Nov 2013	0.020	Nov 2014	0.033	Nov 2015	-		0.033	Continuing	Continuing	Continuing
		Subtotal	0.056	0.025		0.020		0.033		-		0.033	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.558	0.726		0.359		0.599		-		0.599	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305160N / *Navy Meteorological and Ocean Sensors-Space(METOC)*	**Project (Number/Name)** 0524 / *Navy METOC Support (SPACE)*

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Proj 0524																												
Navy METOC Support (SPACE): Schedule Detail																												

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305160N / *Navy Meteorological and Ocean Sensors-Space(METOC)*	**Project (Number/Name)** 0524 / *Navy METOC Support (SPACE)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0524				
Navy METOC Support (SPACE): Schedule Detail	1	2014	1	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0305160N / *Navy Meteorological and Ocean Sensors-Space(METOC)*				Project (Number/Name) 1452 / *GEO SAT*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
1452: *GEO SAT*	-	-	-	-	-	-	60.009	-	-	-	-	60.009
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides a Polar-orbiting satellite (the Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2)) that measures sea surface topography using a precise altimeter. Mission data will be collected by the Spacecraft Operations Center and passed to the Payload Operations Center, and Altimetry Data Fusion Center, which are co-located at the Naval Oceanographic Office, Stennis Space Center, MS. Mission data is used in global and regional scale ocean forecast models. GFO-2 will provide a capability for precise mesoscale (e.g., fronts and eddies) and basin-scale oceanography. This capability will support tactical anti-submarine warfare, mine warfare, naval special warfare mission planning, tactical decision aids, and sensor/weapon performance prediction. GFO-2 will also provide an undersea warfare battlespace characterization capability that supports submarine detectability, weapon settings, sound velocity profiles, tropical cyclone intensity, and track forecasts.

GFO-2 data will be made freely available to other agencies, such as the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration, who value its input to studies involving global warming and climate change, including El Nino Southern Oscillation effects.
Ocean topography data was previously provided by GEOSAT from 1985 until the satellite failed in January 1990. The Geodetic/geophysical Satellite Follow-On satellite was launched in February 1998 and deorbited in November 2008. The GEOSAT GFO-2 will provide for the continuation of this capability.

The Navy has delayed all Geodetic/geophysical Satellite (GEOSAT) Follow-On 2 (GFO-2) altimetry satellite development efforts until FY 2017.

B. Accomplishments/Planned Programs ($ in Millions)

N/A

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Navy will revise Acquisition Strategy to support restart in FY17.

E. Performance Metrics

Goal: Provide Meteorology and Oceanography (METOC) GEOSAT derived mission data to improve the accuracy of global and regional scale oceanographic forecast models.
Metric: Anti-Submarine Warfare capability is highly dependent on the operational environment. GEOSAT Follow-On 1 demonstrated that a space based altimeter provided the equivalent of approximately a 500-fold increase in available subsurface observations and a 10-fold increase in available surface observations, critical

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305160N / *Navy Meteorological and Ocean Sensors-Space(METOC)*	**Project (Number/Name)** 1452 / *GEO SAT*

to characterization of the ocean environment and oceanographic modeling. War-gaming models show that this increased knowledge of the subsurface acoustic propagation resulting from one altimeter reduced the probability of losing a ship to subsurface attack from 80% to 20% for various scenarios.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305160N / *Navy Meteorological and Ocean Sensors-Space(METOC)*	**Project (Number/Name)** 1452 / *GEO SAT*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	TBD	TBD : TBD	0.000	-		-		-		-		-	60.009	60.009	-
		Subtotal	0.000	-		-		-		-		-	60.009	60.009	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		-		-		-	60.009	60.009	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305160N / *Navy Meteorological and Ocean Sensors-Space(METOC)*	**Project (Number/Name)** 1452 / *GEO SAT*

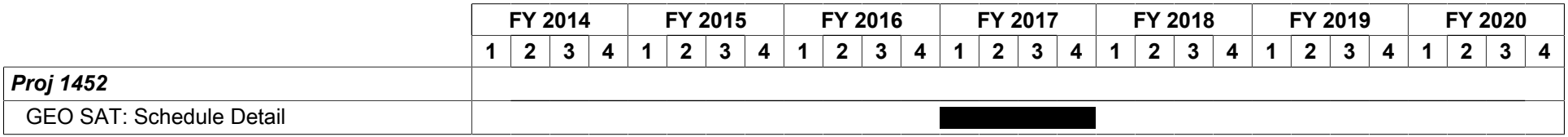

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305160N / *Navy Meteorological and Ocean Sensors-Space(METOC)*	**Project (Number/Name)** 1452 / *GEO SAT*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1452				
GEO SAT: Schedule Detail	1	2017	4	2017

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305192N *I JT Military Intel Programs*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	5.758	6.166	6.207	-	6.207	6.270	6.352	6.491	6.627	Continuing	Continuing
2295: *JDISS/LOCE Integration*	0.000	5.758	6.166	6.207	-	6.207	6.270	6.352	6.491	6.627	Continuing	Continuing

A. Mission Description and Budget Item Justification

The details of this program element are classified CONFIDENTIAL and are submitted annually to Congress in the classified budget justification books.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	4.799	6.166	6.257	-	6.257
Current President's Budget	5.758	6.166	6.207	-	6.207
Total Adjustments	0.959	-	-0.050	-	-0.050
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.959	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	-0.050	-	-0.050

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305204N *I Tactical Unmanned Aer Vehicles*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	180.885	8.381	8.505	8.550	-	8.550	8.797	8.910	9.095	9.286	Continuing	Continuing
2478: *Tactical Control System*	180.885	8.381	8.505	8.550	-	8.550	8.797	8.910	9.095	9.286	Continuing	Continuing

A. Mission Description and Budget Item Justification

Tactical Unmanned Aerial Vehicle is a Joint Military Intelligence Program

This Program Element (PE) provides for the joint tactical MQ-8 Fire Scout System support for DoD to provide the warfighters with the capability for day/night aerial Intelligence, Surveillance and Reconnaissance, Target Acquisition, intelligence, communications/data relay, and minefield detection. This PE includes the Tactical Control System (TCS) which provides a multi-level, scalable, and flexible operator control of the air vehicles and payloads, as well as direct receipt and dissemination of unmanned aerial vehicles sensor data.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	8.381	8.505	8.624	-	8.624
Current President's Budget	8.381	8.505	8.550	-	8.550
Total Adjustments	-	-	-0.074	-	-0.074
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	-0.074	-	-0.074

Change Summary Explanation

Schedule:
Updated TCS schedule to coincide with MQ-8 Fire Scout schedule milestones.

MQ-8 related milestones
Revised milestone terminology: Removed Rapid Deployment Capability (RDC) terminology to align with transition of RDC capabilities to the program of record.
Updated associated T&E events to remove reference to RDC.
Updated Milestone C decision to align with planning for the restructured ACAT ID program.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305204N *I Tactical Unmanned Aer Vehicles*

Technical: None

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305204N / *Tactical Unmanned Aer Vehicles*	Project (Number/Name) 2478 / *Tactical Control System*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2478: *Tactical Control System*	180.885	8.381	8.505	8.550	-	8.550	8.797	8.910	9.095	9.286	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This program supports the MQ-8 Fire Scout System Tactical Control System (TCS), a standards-based system, that provides interoperability and commonality for Command and Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance interfaces of Unmanned Aircraft Systems (UAS). TCS software, operating on Mission Control Station (also referred to as Ground Control Station) hardware, utilizes North Atlantic Treaty Organization (NATO) Standardization Agreements (STANAG)-4586 architecture communicating across a Tactical Common Data Link.

TCS provides a full range of scalable UAS capabilities from passive receipt of air vehicle and payload data to full air vehicle and payload command and control. TCS offers the warfighter a common core operating environment to simultaneously receive, process, and disseminate data from different UAS types for intelligence, reconnaissance, surveillance, and combat assessment.

This program supports enhancements and updates to TCS in order to continue to meet supported air vehicle enhancements, incorporation of new technologies that will be used to enhance overall system performance, incorporate new payloads and payload capabilities (such as advanced sensors and weapons), incorporate multi-vehicle control, incorporate NATO STANAG-4586 and Command, Control, Communications, Computers and Intelligence enhancements, and alignment with OSD direction for UAS control segments.

TCS software is incorporated into the MQ-8 Fire Scout System and fields in conjunction with MQ-8. TCS software addresses MQ-8 requirements validated by the Joint Requirements Oversight Council in the MQ-8 Capability Production Document (May 2007) and multiple Joint Emergent Operational Need/Urgent Operational Needs statements. TCS supported by a Operational Requirements Document (Feb 2000).

TCS maximizes the use of contractor and government off-the-shelf hardware and software whenever possible and incorporates software/hardware enhancements where appropriate to maintain growth potential and minimize hardware and operating system dependence. TCS software is interoperable and is compliant with the OSD Command and Control, Communications, Intelligence Joint Technical Architecture, Distributed Common Ground System standards, Global Command and Control System, and NATO standards. TCS hardware and software upgrades will support the Navy's Common Control System migration.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: TCS Development and Integration	7.727	7.846	7.882	-	7.882
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305204N / *Tactical Unmanned Aer Vehicles*	**Project (Number/Name)** 2478 / *Tactical Control System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continued TCS integration with MQ-8 development. Continued new TCS capabilities to support requirements for Littoral Combat Ship efforts. Continued TCS STANAG 4586 compliance. Continued TCS C4ISR interface integration and testing for MQ-8 systems. Continued hardware and operating system independence initiatives. Continued radar and payload integration, MQ-8C integration, and commenced preparations for Common Control Software Integration and demonstrations. ***FY 2015 Plans:*** Continue Tactical Command System (TCS) integration and test with MQ-8 development. Continue new TCS capabilities to support requirements for Littoral Combat Ship (LCS) efforts. Continue TCS Standarization Agreements (STANAG)-4586 compliance. Continue TCS C4ISR interface integration and testing for MQ-8 systems. Continue hardware and operating system independence initiatives. Continue radar and payload integration, MQ-8C Integration, and continue preparations for Common Control System integration and demonstrations. Continue technology refresh, LINUX transition, and move to service oriented architecture. ***FY 2016 Base Plans:*** Continue TCS integration and test with MQ-8 development. Continue new TCS capabilities to support requirements for LCS efforts. Continue TCS STANAG 4586 compliance. Continue TCS C4ISR interface integration and testing for MQ-8 systems. Continue hardware and operating system independence initiatives. Continue radar and payload integration, MQ-8C integration, and continue preparations for Common Control System integration and demonstrations. Continue technology refresh, LINUX transition, and move to service oriented architecture. ***FY 2016 OCO Plans:*** N/A					
Title: Technical and Engineering Services	0.654	0.659	0.668	-	0.668
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued government engineering support, contractor support, program support, and travel for the TCS program. ***FY 2015 Plans:*** Continue government engineering support, contractor support, program support, and travel for the TCS program. ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305204N / *Tactical Unmanned Aer Vehicles*	**Project (Number/Name)** 2478 / *Tactical Control System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue government engineering support, contractor support, program support, and travel for the TCS program. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	8.381	8.505	8.550	-	8.550

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Tactical Control System (TCS) program is Government owned, non-proprietary software that currently supports the MQ-8 Fire Scout program. The TCS program continues to focus on Navy requirements and standards based on interoperability. Government-owned TCS software development toolkit is available to all UAS developers and manufacturers that allows a low-cost integration into the open architecture non-proprietary TCS system. TCS will provide software modules to the Navy Common Control System (CCS) and the TCS tech refresh hardware will support migration to CCS software.

E. Performance Metrics

Successfully complete Navy payloads integration, to include Coastal Battlefield Reconnaissance and Analysis. Support MQ-8C Endurance Upgrade, Radar, and Weapons capabilities and transition of those capabilities into the MQ-8 Program of Record. Successfully complete Littoral Combat Ship Integration. Complete Developmental and Operational Test.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305204N / *Tactical Unmanned Aer Vehicles*	**Project (Number/Name)** 2478 / *Tactical Control System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Software Development 2	SS/CPIF	Raytheon : Falls Church,VA	14.288	7.727	Nov 2013	7.846	Nov 2014	7.882	Nov 2015	-		7.882	39.610	77.353	77.353
Prior Year Cost no longer Funded in the FYDP	C/CPAF	Raytheon : Falls Church,VA	148.237	-		-		-		-		-	-	148.237	148.237
		Subtotal	162.525	7.727		7.846		7.882		-		7.882	39.610	225.590	225.590

Remarks

Awarded 85.6% of award fees in past award fee periods.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test and Evaluation	WR	Various : Various	1.250	0.023	Nov 2013	0.023	Nov 2014	0.023	Nov 2015	-		0.023	Continuing	Continuing	Continuing
		Subtotal	1.250	0.023		0.023		0.023		-		0.023	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various : Various	3.109	0.187	Nov 2013	0.190	Nov 2014	0.193	Nov 2015	-		0.193	Continuing	Continuing	Continuing
Government Engineering Support	WR	Various : Various	9.459	0.227	Nov 2013	0.226	Nov 2014	0.229	Nov 2015	-		0.229	Continuing	Continuing	Continuing
Program Management Support	Various	Various : Various	4.242	0.194	Nov 2013	0.197	Nov 2014	0.200	Nov 2015	-		0.200	Continuing	Continuing	Continuing
Travel	WR	NAVAIR : Patuxent River, MD	0.300	0.023	Nov 2013	0.023	Nov 2014	0.023	Nov 2015	-		0.023	Continuing	Continuing	Continuing
		Subtotal	17.110	0.631		0.636		0.645		-		0.645	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305204N / *Tactical Unmanned Aer Vehicles*	Project (Number/Name) 2478 / *Tactical Control System*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks															
Travel Contract Type is TO.															

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	180.885	8.381		8.505		8.550		-		8.550	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305204N / *Tactical Unmanned Aer Vehicles*	**Project (Number/Name)** 2478 / *Tactical Control System*

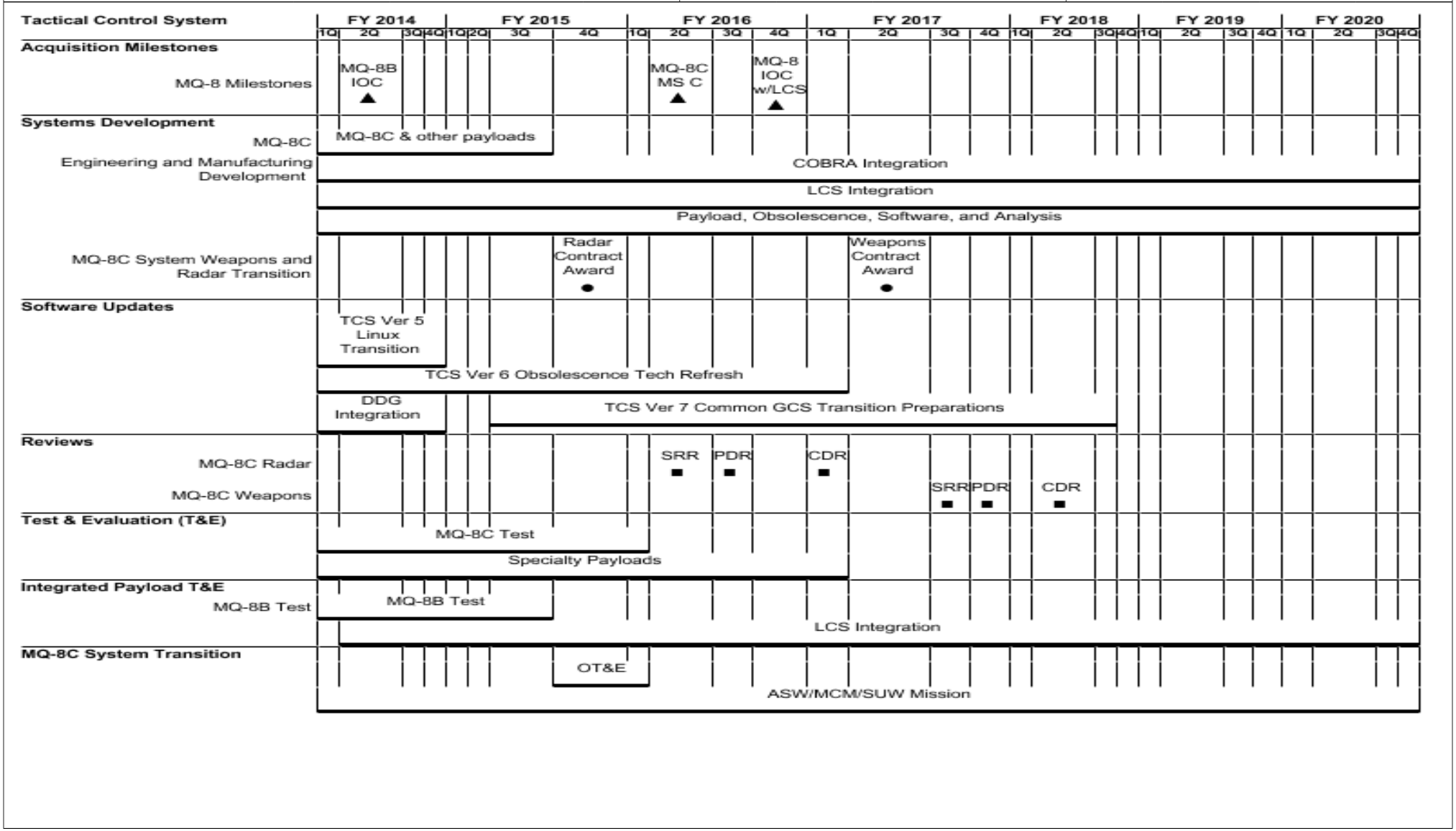
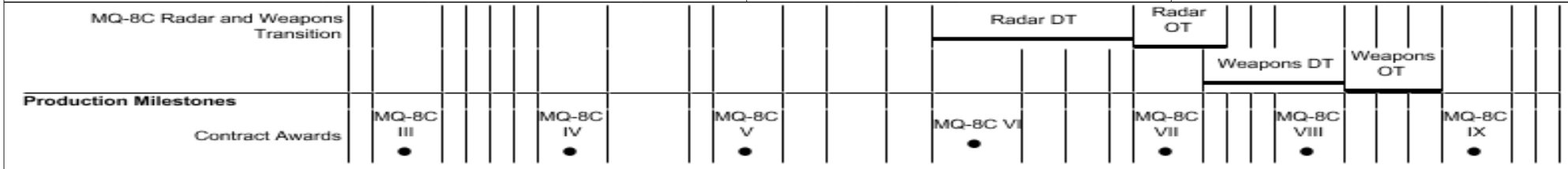


Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305204N / *Tactical Unmanned Aer Vehicles*	**Project (Number/Name)** 2478 / *Tactical Control System*



2016PB - 0305204N - 2478

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305204N / *Tactical Unmanned Aer Vehicles*	**Project (Number/Name)** 2478 / *Tactical Control System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Tactical Control System				
Acquisition Milestones: MQ-8 Milestones: MQ-8 Initial Operational Capability (IOC)	2	2014	2	2014
Acquisition Milestones: MQ-8 Milestones: MQ-8 Initial Operational Capability (IOC) MQ-8C Littoral Combat Ship (LCS)	4	2016	4	2016
Acquisition Milestones: MQ-8 Milestones: MQ-8C Milestone C	2	2016	2	2016
Systems Development: MQ-8C: MQ-8C and other payloads	1	2014	3	2015
Software Updates: TCS Ver 5 Linux Transition	1	2014	4	2014
Software Updates: TCS Ver 6 Obsolescence Tech Refresh	1	2014	1	2017
Software Updates: TCS Ver 7 Common GCS Transition Preparations	3	2015	3	2018
Software Updates: DDG Integration	1	2014	4	2014
Systems Development: Engineering and Manufacturing Development: Coastal Battlefield Reconnaissance and Analysis Integration (COBRA), BLK 1/2/3	1	2014	4	2020
Systems Development: Engineering and Manufacturing Development: Littoral Combat Ship (LCS) Integration	1	2014	4	2020
Systems Development: Engineering and Manufacturing Development: Payload, Obsolescence, Software, and Analysis	1	2014	4	2020
Systems Development: MQ-8C System Weapons and Radar Transition: Radar Contract Award	4	2015	4	2015
Systems Development: MQ-8C System Weapons and Radar Transition: Weapons Contract Award	2	2017	2	2017
Reviews: MQ-8C Radar: System Requirements Review (SRR)	2	2016	2	2016
Reviews: MQ-8C Radar: Preliminary Design Review (PDR)	3	2016	3	2016
Reviews: MQ-8C Radar: Critical Design Review (CDR)	1	2017	1	2017
Reviews: MQ-8C Weapons: System Requirements Review	3	2017	3	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305204N / *Tactical Unmanned Aer Vehicles*	**Project (Number/Name)** 2478 / *Tactical Control System*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Reviews: MQ-8C Weapons: Preliminary Design Review	4	2017	4	2017
Reviews: MQ-8C Weapons: Critical Design Review	2	2018	2	2018
Test & Evaluation (T&E): MQ-8C Development Test	1	2014	1	2016
Test & Evaluation (T&E): Specialty Payloads	1	2014	1	2017
Integrated Payload T&E: MQ-8B Test: MQ-8B	1	2014	3	2015
Integrated Payload T&E: MQ-8B Test: Littoral Combat Ship (LCS) Integration	2	2014	4	2020
MQ-8C System Transition: Operational Test and Evaluation (OT&E)	4	2015	1	2016
MQ-8C System Transition: ASW/MCM/SUW Mission	1	2014	4	2020
MQ-8C System Transition: MQ-8C Radar and Weapons Transition: Radar Developmental Test (DT)	2	2017	1	2018
MQ-8C System Transition: MQ-8C Radar and Weapons Transition: Radar Operational Test (OT)	2	2018	3	2018
MQ-8C System Transition: MQ-8C Radar and Weapons Transition: Weapons Developmental Test (DT)	3	2018	2	2019
MQ-8C System Transition: MQ-8C Radar and Weapons Transition: Weapons Operational Test (OT)	3	2019	1	2020
Production Milestones: Contract Awards: Air Vehicles MQ-8C III	2	2014	2	2014
Production Milestones: Contract Awards: Air Vehicles MQ-8C IV	3	2015	3	2015
Production Milestones: Contract Awards: Air Vehicles MQ-8C V	2	2016	2	2016
Production Milestones: Contract Awards: Air Vehicles MQ-8C VI	2	2017	2	2017
Production Milestones: Contract Awards: Air Vehicles MQ-8C VII	2	2018	2	2018
Production Milestones: Contract Awards: Air Vehicles MQ-8C VIII	2	2019	2	2019
Production Milestones: Contract Awards: Air Vehicles MQ-8C IX	2	2020	2	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305205N *I (U)UAS Integration and Interoperability*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	-	-	41.831	-	41.831	40.847	20.795	17.759	11.394	Continuing	Continuing
3379: *Common Control System*	0.000	-	-	41.831	-	41.831	40.847	20.795	17.759	11.394	Continuing	Continuing

A. Mission Description and Budget Item Justification

This PE funds the Unmanned System (UxS) Common Control System (CCS). The primary mission of CCS is to provide common control across the Navy's UxS portfolio to add warfighting capability, eliminate redundant software development efforts, encourage innovation and improve cost control of unmanned systems. CCS provides the primary control system software for the Unmanned Carrier Launched Airborne Surveillance and Strike (UCLASS) System.

This program will define, develop and deliver a CCS to operate respective Naval Unmanned Air System (UAS) systems to include a common framework, user interface, and common components that will be integrated and tested with unique or legacy platform required components. CCS is being developed by the government and the first software increment will be provided to the UCLASS air system Prime Contractors as Government Furnished Equipment (GFE) to support the UCLASS Early Operational Capability/Initial Operational Capability (EOC/IOC). CCS will leverage existing government owned products as well as competitive procurements to support UCLASS, and will transition Triton (MQ-4), Fire Scout (MQ-8), and other UxS platforms as funding and schedule permit.

The CCS will provide an open software architecture, based on the OSD Unmanned Control Segment (UCS) Architecture, that is agile and scalable to evolving Service requirements and is supportive of affordable safety/airworthiness certification and Information Assurance (IA) certification. CCS will provide UxS Primary Mission Control, Mission Planning, Dynamic Airspace, External Messaging and Communication, Sensor Product Payload (Processing, Exploitation and Dissemination (PED)), Support Services, Infrastructure/Governance and a Decoupled Presentation Layer.

CCS is responsible for conducting systems engineering, development, integration, system-level test, fielding and life cycle support. CCS is the shore/ship/portable based mission planning and execution software component planned for Navy Group two through five UAS's. CCS will maintain configuration control to include responsibility for future upgrades, sustainment, and transition of other UAS.

The CCS Integrated Product Team (IPT) will be the Lead Systems Integrator (LSI) and, as such, will maintain Configuration Management (CM) of all CCS components to include Commercial-off-the-Shelf (COTS) infrastructure, common services and applications, unique services and applications, and presentation layer software. This also includes CM of CCS specifications and interfaces as appropriate. The CCS program will also perform testing and qualification of CCS components prior to delivery back to the platform program office for final integration and testing.

The CCS was budgeted in PE 0604404N: Unman Carrier Launch A/B Surv & Strike (UCLASS) Sys prior to FY16.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*			R-1 Program Element (Number/Name) PE 0305205N *I (U)UAS Integration and Interoperability*		
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	-	41.831	-	41.831
Total Adjustments	-	-	41.831	-	41.831
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	42.300	-	42.300
• Rate/Misc Adjustments	-	-	-0.469	-	-0.469

Change Summary Explanation

The Common Control System (CCS) was budgeted in PE 0604404N: Unman Carrier Launch A/B Surv & Strike (UCLASS) Sys prior to FY16. CCS Increment I development began 3Q2013.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305205N / *(U)UAS Integration and Interoperability*	Project (Number/Name) 3379 / *Common Control System*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3379: *Common Control System*	-	-	-	41.831	-	41.831	40.847	20.795	17.759	11.394	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This PE funds the Unmanned System (UxS) Common Control System (CCS). The primary mission of CCS is to provide common control across the Navy's UxS portfolio to add warfighting capability, eliminate redundant software development efforts, encourage innovation and improve cost control of unmanned systems. CCS provides the primary control system software for the Unmanned Carrier Launched Airborne Surveillance and Strike (UCLASS) System.

This program will define, develop and deliver a CCS to operate respective Naval Unmanned Air System (UAS) systems to include a common framework, user interface, and common components that will be integrated and tested with unique or legacy platform required components. CCS is being developed by the government and the first software increment will be provided to the UCLASS air system Prime Contractors as Government Furnished Equipment (GFE) to support the UCLASS Early Operational Capability/Initial Operational Capability (EOC/IOC). CCS will leverage existing government owned products as well as competitive procurements to support UCLASS, and will transition Triton (MQ-4), Fire Scout (MQ-8), and other UxS platforms as funding and schedule permit.

The CCS will provide an open software architecture, based on the OSD Unmanned Control Segment (UCS) Architecture, that is agile and scalable to evolving Service requirements and is supportive of affordable safety/airworthiness certification and Information Assurance (IA) certification. CCS will provide UxS Primary Mission Control, Mission Planning, Dynamic Airspace, External Messaging and Communication, Sensor Product Payload (Processing, Exploitation and Dissemination (PED)), Support Services, Infrastructure/Governance and a Decoupled Presentation Layer.

CCS is responsible for conducting systems engineering, development, integration, system-level test, fielding and life cycle support. CCS is the shore/ship/portable based mission planning and execution software component planned for Navy Group two through five UAS's. CCS will maintain configuration control to include responsibility for future upgrades, sustainment, and transition of other UAS.

The CCS Integrated Product Team (IPT) will be the Lead Systems Integrator (LSI) and, as such, will maintain Configuration Management (CM) of all CCS components to include Commercial-off-the-Shelf (COTS) infrastructure, common services and applications, unique services and applications, and presentation layer software. This also includes CM of CCS specifications and interfaces as appropriate. The CCS program will also perform testing and qualification of CCS components prior to delivery back to the platform program office for final integration and testing.

The Common Control System was budgeted in PE 0604404N: Unman Carrier Launch A/B Surv & Strike (UCLASS) Sys prior to FY16.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Increment I	-	-	34.331	-	34.331

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305205N / *(U)UAS Integration and Interoperability*	**Project (Number/Name)** 3379 / *Common Control System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
Description: Common Control System (CCS) Increment 1 provides Unmanned Aviation Vehicle Command and Control (UAVC2) and Mission Management/Planning capability required to support UCLASS Air System (AS) prime vendor development, integration and test. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** FY16 plans include continuation of CCS Increment 1 software development, integration and test in support of UCLASS AS prime development. Effort will support integration and test of the CCS Inc 1 software baseline into the UCLASS Control System hardware instantiations (CVN/Land based) and the AS vendor's unique software capabilities/services. Effort will additionally ensure that maximum commonality and applicablity is maintained for continued transition of other UAS. ***FY 2016 OCO Plans:*** N/A					
Title: Increment II	-	-	7.500	-	7.500
Articles:	-	-	-	-	-
Description: CCS Increment II aligns the CCS UCLASS baseline with Triton (MQ-4C) Integrated Flight Capability (IFC), Unmanned Aviation Vehicle Command and Control (UAVC2), and Mission Management/ Planning capabilities. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305205N / *(U)UAS Integration and Interoperability*	**Project (Number/Name)** 3379 / *Common Control System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY16 plans include requirements identification, definition, analysis, Triton Mission Control System (MCS) migration trade study, and development of MCS migration plans. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	-	-	41.831	-	41.831

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTEN/0604404N: *UCLASS*	115.275	403.008	134.708	-	134.708	326.387	509.504	727.924	842.455	Continuing	Continuing

Remarks

D. Acquisition Strategy

PEO(U&W) issued an Acquisition Decision Memorandum (ADM) 5000 Ser PEO(U&W)/11-093 dated July 1, 2011 to establish the Common Control System (CCS) to achieve Unmanned Aircraft System (UAS) common control across Program Executive Office Unmanned Aviation and Weapon Systems (PEO(U&W)) UAS platforms to eliminate redundant efforts, encourage innovation and improve cost control of unmanned aviation. In coordination with the ADM the program will define, develop and deliver a common control system to operate respective naval Unmanned Systems (UxS)s. This will include a common framework, a common user interface and common components that will be integrated and tested with unique components on emerging or legacy platforms. CCS is being developed initially for the Unmanned Carrier-Launched Airborne Surveillance and Strike (UCLASS) Acquisition Category (ACAT) 1D program and will be provided to the air vehicle prime as Government-Furnished Equipment (GFE) to support the UCLASS Early Operational Capability/Initial Operational Capability (EOC/IOC). The CCS acquisition approach defines increments for each UAS platform that transitions to CCS. CCS will leverage existing government-owned products as well as employ competitive procurement vehicles to support UCLASS and will transition Triton, Firescout, and other UxS platforms as funding and schedule permit.

E. Performance Metrics

CCS uses a Service-Oriented Architecture based on the OSD Unmanned Control Segment architecture. CCS does not have its own Capability Development Document (CDD) but inherits the common requirements from each supported platform's CDD through the respective specification trees. CCS must therefore support the Key Performance Parameters , Measures of Suitability/Effectiveness , Concepts of Operations , etc., flowed down from each supported platform.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305205N / *(U)UAS Integration and Interoperability*	**Project (Number/Name)** 3379 / *Common Control System*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Software Development	C/CPFF	TBD : TBD	0.000	-		-		17.200	Jan 2016	-		17.200	-	17.200	17.200
Primary Software Development	C/CPFF	Raytheon : Dulles, VA	0.000	-		-		5.750	Apr 2016	-		5.750	-	5.750	5.750
Secondary Software Development	WR	NAWC-WD : China Lake, CA	0.000	-		-		2.800	Nov 2015	-		2.800	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		25.750		-		25.750	-	-	-

Remarks

The FY16 Primary Software Development contract is listed as TBD for the performing activity and location because this effort will be competitively awarded in FY16.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-AD : Pax River, MD	0.000	-		-		6.473	Nov 2015	-		6.473	Continuing	Continuing	Continuing
Lead Systems Engineering and Integration	WR	NAWC-WD : Pt Mugu, CA	0.000	-		-		5.800	Nov 2015	-		5.800	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		12.273		-		12.273	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DT&E	WR	NAWC-AD : Pax River, MD	0.000	-		-		1.180	Nov 2015	-		1.180	Continuing	Continuing	Continuing
DT&E	WR	NAWC-WD : Pt Mugu, CA	0.000	-		-		1.585	Nov 2015	-		1.585	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		2.765		-		2.765	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305205N / *(U)UAS Integration and Interoperability*	Project (Number/Name) 3379 / *Common Control System*	

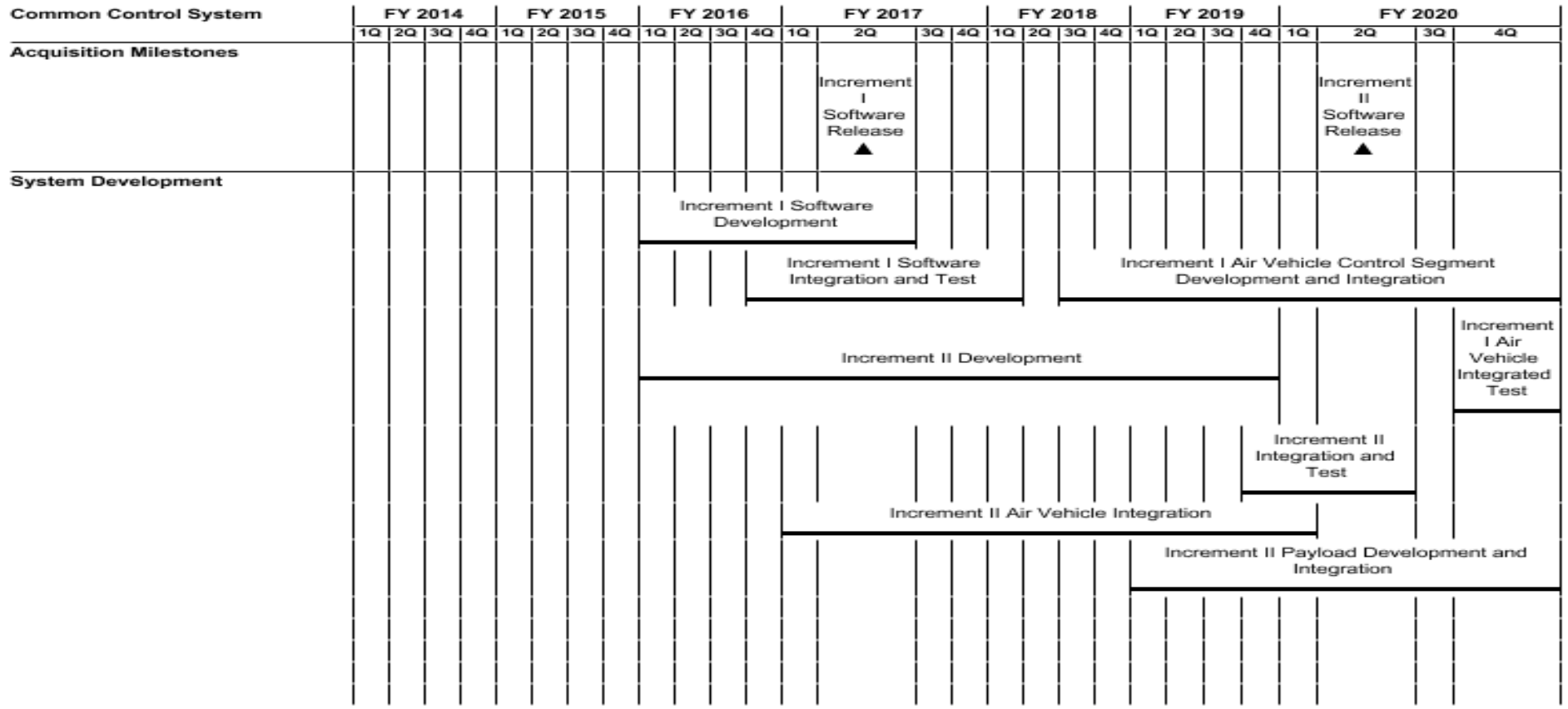
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	WR	NAWC-AD : Pax River, MD	0.000	-		-		1.043	Nov 2015	-		1.043	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		1.043		-		1.043	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		41.831		-		41.831	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305205N / *(U)UAS Integration and Interoperability*	**Project (Number/Name)** 3379 / *Common Control System*



2016PB - 0305205N - 3379

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305205N / *(U)UAS Integration and Interoperability*	**Project (Number/Name)** 3379 / *Common Control System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Common Control System				
Acquisition Milestones: Increment I Software Release	2	2017	2	2017
Acquisition Milestones: Increment II Software Release	2	2020	2	2020
System Development: Increment I Software Development	1	2016	2	2017
System Development: Increment I Software Integration and Test	4	2016	1	2018
System Development: Increment I Air Vehicle Control Segment Development and Integration	3	2018	4	2020
System Development: Increment I Air Vehicle Integrated Test	4	2020	4	2020
System Development: Increment II Development	1	2016	4	2019
System Development: Increment II Integration and Test	4	2019	2	2020
System Development: Increment II Air Vehicle Integration	1	2017	1	2020
System Development: Increment II Payload Development and Integration	1	2019	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305208M *I (U)Distributed Common Ground/Surface Systems*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	57.183	5.207	11.606	1.105	-	1.105	0.143	0.985	1.488	0.286	Continuing	Continuing
2268: *Distributed Common Ground System (DCGS-MC)*	57.183	5.207	11.606	1.105	-	1.105	0.143	0.985	1.488	0.286	Continuing	Continuing

Note

Effective FY 2014 the Increment II Advanced Analytics/All Source capability was realigned to Intelligence Analysis System (PE 0206625M). Effective FY 2015 the Joint Surveillance Target Attack Radar System (JSTARS) capability (PE 0206625M) is subsumed by DCGS-MC. Topographic Production Capability (TPC) Family of Systems (FOS) and Tactical Exploitation Group (TEG) Family of Systems (FOS) have merged into DCGS-MC. Funding for these efforts under PE 0206625M has been realigned to DCGS-MC PE 0305208M effective FY 2011.

A. Mission Description and Budget Item Justification

DCGS-MC, in compliance with the Department of Defense DCGS Family of Systems (FOS) concept, is a service-level effort to migrate select USMC Intelligence, Surveillance and Reconnaissance (ISR) processing and exploitation capabilities into a single, integrated, net-centric baseline that will be interoperable with other services and agencies.

Multiple functional capability sets will be configured to support Marine intelligence analysts across the Marine Air-Ground Task Force (MAGTF). The goal of DCGS-MC is to make external and internal ISR data more visible, accessible, and understandable.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	5.527	11.613	1.123	-	1.123
Current President's Budget	5.207	11.606	1.105	-	1.105
Total Adjustments	-0.320	-0.007	-0.018	-	-0.018
• Congressional General Reductions	-	-0.007			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.320	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	-0.018	-	-0.018

Change Summary Explanation

Funding increase from FY 2014 to FY 2015 supports Virtual Imagery Processor - Marine Corps (VIP-MC) engineering and manufacturing development and research, development and testing of geospatial intelligence (GEOINT) optimization efforts, hardware refresh and antenna optimization. The funding decrease

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305208M *I (U)Distributed Common Ground/Surface Systems*

from FY 2015 to FY 2016 is attributed to the completion of testing associated with Virtual Imagery Processor-Marine Corps (VIP-MC) hardware and software optimization, antenna optimization, Geodetic Survey Sets and integration into DCGS.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305208M / *(U)Distributed Common Ground/Surface Systems*	Project (Number/Name) 2268 / *Distributed Common Ground System (DCGS-MC)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2268: *Distributed Common Ground System (DCGS-MC)*	57.183	5.207	11.606	1.105	-	1.105	0.143	0.985	1.488	0.286	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Effective 2014 the Rapid Technology Insertion Efforts/All Source capability was realigned to Intelligence Analysis System (PE 0206625M). Effective FY 2015 the Joint Surveillance Target Attack Radar System (JSTARS) capability (PE 0206625M) is subsumed by DCGS-MC.

A. Mission Description and Budget Item Justification

Distributed Common Ground /Surface System-Marine Corps (DCGS-MC), in compliance with the Department of Defense DCGS Family of Systems concept, is a Service-level effort to migrate select USMC Intelligence, Surveillance and Reconnaissance (ISR) processing and exploitation capabilities into a single, integrated, net-centric baseline that will be interoperable with other Services and Agencies.

Multiple functional capability sets will be configured to support Marine intelligence analysts across the Marine Air-Ground Task Force (MAGTF). The goal of DCGS-MC is to make external and internal ISR data more visible, accessible, and understandable. The funding decrease ($10.501M) from FY2015 to FY2016 is attributed to the completion of testing associated with Virtual Imagery Processor-Marine Corps (VIP-MC) hardware and software optimization, antennae optimization, Geodetic Survey Set and integration into DCGS.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Test and Evaluation	1.089	3.500	0.623	-	0.623
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued Developmental Testing in support of DCGS-MC GEOINT IOT&E initiatives. -Continued Developmental Testing in association with OUSD-I C4ISR related Exercises. -Completed VIP-MC field user evaluation -Initiated TEG prototype testing					
FY 2015 Plans: -Initiate Post Milestone C System Engineering Test Review (SETR) activities associated with DCGS-MC Engineering Change Proposals, software integration and associated test events. -Continue EDS-MC and VIP-MC test efforts to support commonality of HW/SW baselines.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208M / *(U)Distributed Common Ground/Surface Systems*	**Project (Number/Name)** 2268 / *Distributed Common Ground System (DCGS-MC)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiate testing of TEG and TPC Common hardware and software baseline. ***FY 2016 Base Plans:*** -Continue testing and information assurance assessments on major DCGS-MC/GEOINT FoS S/W updates. ***FY 2016 OCO Plans:*** N/A					
Title: Product Development	3.259	5.763	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued research and development efforts for DCGS-MC GEOINT capabilities. Expanded services and development associated with the Ozone Widget framework, DCGS-Enterprise StoreFront and Common Data Link (CDL) enhancements. -Continued research and development efforts associated with follow-on versions of the DCGS Integration Backbone (DIB). -Continued DCGS-MC CDL optimization and Human Systems Interface (HSI) analysis and refinement. Effective FY14 the Advanced Analytics/All Source capability was realigned to Intelligence Analysis System (PE 0206625M). -Continued to support architecture studies related to intelligence, surveillance, and reconnaissance activities and Virtual Rapid Prototyping Lab (VRPL), resulting in delivery of Full Motion Video Capability. -Initiated contribution to DCGS "enterprise" software development as a part of the DCGS enterprise core software ***FY 2015 Plans:*** -Continue development and optimization efforts for DCGS-MC GEOINT. -Expand services and development associated with the Ozone Widget framework, DCGS-Enterprise StoreFront and CDL enhancements. -Continue research and development efforts associated with follow-on versions of the DCGS Integration Backbone (DIB). -Continue DCGS-MC Common Data Link (CDL) optimization between Joint Surveillance Target Attack Radar System (JSTARS) and Tactical Wideband Interoperable Surface Terminal antennas (TWISTER). -Initiate development of Virtual Imagery Processor - Marine Corps (VIP-MC) hardware baseline commonality across the Enterprise DIB Services (EDS).					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208M / *(U)Distributed Common Ground/Surface Systems*	**Project (Number/Name)** 2268 / *Distributed Common Ground System (DCGS-MC)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiate integration of future enhancements via capability drops into the current DCGS-MC software baseline. Effective FY 2015, JSTARS (PE 0206625M) capability is subsumed into DCGS-MC. -Develop EMD prototypes for Imagery workstation ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Management Services - Engineering and Technical Services	0.276	0.300	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued system requirements analysis and review associated with DCGS-MC GEOINT Optimization Engineering Change Proposals (ECPs), Configuration Control Boards, and agile aligned Preliminary Design Review (PDR). ***FY 2015 Plans:*** -Continue requirements analysis that align to future enhancements with updated technology. -Continue ongoing software upgrades across all DCGS-GEOINT programs to ensure capability remains Information Assurance (IA) compliant. -Initiate Virtual Imagery Processor - Marine Corps (VIP-MC) Systems Verification Review (SVR) Product Readiness Review (PRR) Physical Configuration Audit (PCA) and Critical Design Review (CDR). -Initiate TEG FOS - Systems Verification Review (SVR), Product Readiness Review (PRR), Physical Configuration Audit (PCA) and Critical Design Review (CDR). ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Support	0.583	2.043	0.482	-	0.482
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208M / *(U)Distributed Common Ground/Surface Systems*	**Project (Number/Name)** 2268 / *Distributed Common Ground System (DCGS-MC)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Conducted DCGS-MC Common Data Link (CDL) optimization and Human Systems Interface (HSI) analysis and refinement. ***FY 2015 Plans:*** -Conduct DCGS-MC Common Data Link (CDL) optimization between JSTARS and TWISTER antenna. -Establish VIP-MC HW baseline using commonality across the EDS. -Continue system/engineering requirement analysis and review for future Capability Drops such as All Source Fusion and Signals Intelligence. ***FY 2016 Base Plans:*** -Will refine system requirements through government lab support. -Continue system/engineering requirement analysis and review for future Capability Drops such as All Source Fusion and Signals Intelligence. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	5.207	11.606	1.105	-	1.105

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC 4767: *Distributed Common Ground System*	11.392	20.620	1.947	-	1.947	2.168	7.976	13.005	12.878	-	83.113

Remarks

D. Acquisition Strategy

The Acquisition Strategy shall follow a hybrid approach consisting of a viable mix of alternatives that allows flexibility, agility and rapid fielding of new capabilities. An evolutionary acquisition approach will provide users with time-phased increments of capabilities that (while less than the full requirement), promote earlier delivery, improve affordability, and reduce risk. The evolutionary approach enables DCGS-MC to effectively assess and leverage emerging technologies to accelerate introduction into MCISR-E. The DCGS-MC capabilities will be fielded in increments through operational capability drops

E. Performance Metrics

-Milestone Assessment Team (MAT) Reviews 15 July 2014 and 18 Aug 2014
-Quarterly Dashboard Input

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208M / *(U)Distributed Common Ground/Surface Systems*	**Project (Number/Name)** 2268 / *Distributed Common Ground System (DCGS-MC)*

-IOT&E

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305208M / *(U)Distributed Common Ground/Surface Systems*	Project (Number/Name) 2268 / *Distributed Common Ground System (DCGS-MC)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DCGS PRIOR YEAR CUMMULATIVE FUNDING	Various	N/A : N/A	18.676	-		-		-		-		-	-	18.676	-
DCGS	WR	NRL : Washington, DC	2.541	-		1.575	Feb 2015	-		-		-	Continuing	Continuing	Continuing
DCGS	WR	SSCA : Charleston, SC	26.658	0.819	Mar 2014	3.775	Jan 2015	-		-		-	Continuing	Continuing	Continuing
DCGS	C/FFP	MCSELMS : Quantico, VA	0.000	0.332	Apr 2014	-		-		-		-	-	0.332	-
DCGS	WR	NSWC : Crane, IN	0.000	0.550	Mar 2014	0.413	Jan 2015	-		-		-	-	0.963	-
DCGS	C/FFP	SSC-A : Charleston, SC	0.000	0.958	Aug 2014	-		-		-		-	-	0.958	-
DCGS	WR	DMO : Boston, MA	0.000	0.600	Jan 2014	-		-		-		-	-	0.600	-
		Subtotal	47.875	3.259		5.763		-		-		-	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DCGS PRIOR YEAR CUMMULATIVE FUNDING	Various	N/A : N/A	2.202	-		-		-		-		-	-	2.202	-
DCGS	C/FFP	Seaport : Stafford, VA	0.779	0.583	Mar 2014	-		-		-		-	-	1.362	-
DCGS	C/FFP	SSCA : Charleston, SC	1.189	-		1.107	Feb 2015	-		-		-	-	2.296	-
DCGS	WR	SSC-P : San Diego, CA	0.000	-		0.616	Mar 2015	-		-		-	-	0.616	-
DCGS	C/FFP	DMO : Hanscom AFB, MA	0.000	-		0.320	Feb 2015	0.175	Feb 2016	-		0.175	-	0.495	-
DCGS	C/BA	SDL : Logan, Utah	0.000	-		-		0.307	Nov 2015	-		0.307	-	0.307	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305208M / *(U)Distributed Common Ground/Surface Systems*	Project (Number/Name) 2268 / *Distributed Common Ground System (DCGS-MC)*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	4.170	0.583		2.043		0.482		-		0.482	-	7.278	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DCGS PRIOR YEAR CUMMULATIVE FUNDING	Various	N/A : N/A	2.418	-		-		-		-		-	-	2.418	-
DCGS	WR	NRL : Washington, DC	0.625	0.600	Feb 2014	-		0.208	Dec 2015	-		0.208	-	1.433	-
DCGS	C/FFP	SSCA : Charleston, SC	1.297	0.190	Jun 2014	3.068	Feb 2015	0.208	Dec 2015	-		0.208	-	4.763	-
DCGS	WR	NSWC-CRANE : Crane, IA	0.000	-		0.432	Jan 2015	0.207	Jan 2016	-		0.207	-	0.639	-
DCGS	WR	MCOTEA : Washington, DC	0.000	0.299	Oct 2013	-		-		-		-	-	0.299	-
		Subtotal	4.340	1.089		3.500		0.623		-		0.623	-	9.552	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DCGS	C/FFP	MITRE : Stafford, Va	0.798	0.276	Apr 2014	0.300	Jan 2015	-		-		-	-	1.374	-
		Subtotal	0.798	0.276		0.300		-		-		-	-	1.374	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	57.183	5.207		11.606		1.105		-		1.105	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208M / *(U)Distributed Common Ground/Surface Systems*	**Project (Number/Name)** 2268 / *Distributed Common Ground System (DCGS-MC)*

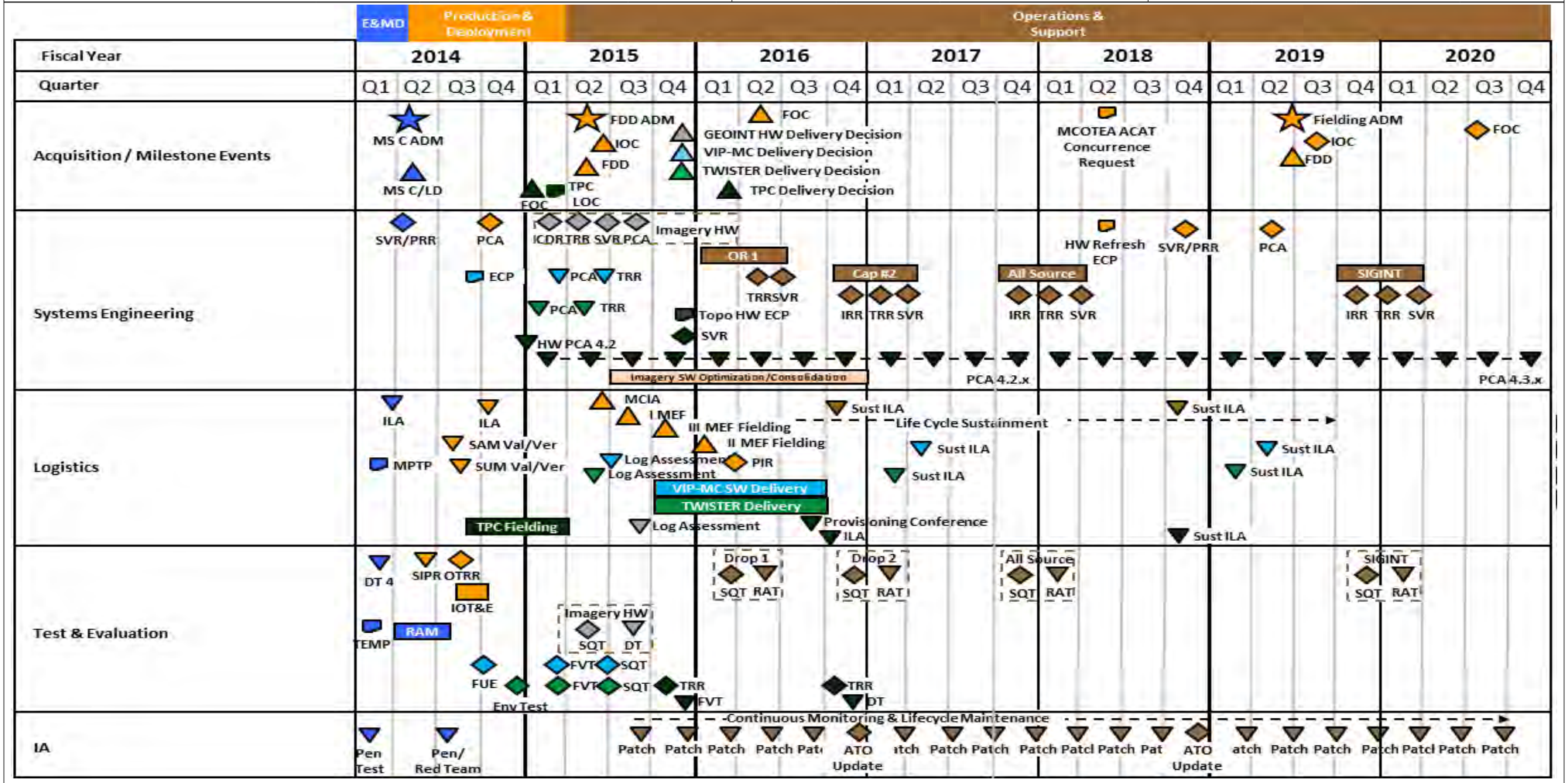

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208M / *(U)Distributed Common Ground/Surface Systems*	**Project (Number/Name)** 2268 / *Distributed Common Ground System (DCGS-MC)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2268				
DCGS-MC GEOINT, Milestone C for Enterprise DIB Services (EDS)	2	2014	2	2014
DCGS-MC GEOINT Initial Operational Test and Evaluation for EDS	3	2014	3	2014
DCGS-MC GEOINT Fielding Decision for EDS	2	2015	2	2015
DCG-MC GEOINT Initial Operational Capability for EDS	2	2015	2	2015
DCGS-MC GEOINT Full Operational Capability for EDS	2	2016	2	2016
Fielding DCGS-MC Imagery Workstations	4	2015	4	2015
Fielding VIP-MC	4	2015	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305208N *I Distributed Common Ground Sys*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	167.617	17.718	18.146	33.149	-	33.149	37.737	22.669	32.004	32.327	Continuing	Continuing
2174: *Distributed Common Ground System-Navy (DCGS-N)*	167.617	17.718	18.146	1.730	-	1.730	1.722	0.322	0.353	0.271	58.900	266.779
2227: *Distributed Common Ground System (DCGS-N) Inc 2*	0.000	-	-	31.419	-	31.419	36.015	22.347	31.651	32.056	Continuing	Continuing
MDAP/MAIS Code: **Other MDAP/MAIS Code(s):** MN40, M464												

A. Mission Description and Budget Item Justification

The Distributed Common Ground System - Navy (DCGS-N) is the Navy's portion of the Under Secretary of Defense, Intelligence (USD (I)) DCGS-N Family of Systems (FoS). The Department of Defense (DoD) has defined a DCGS architecture that will be compatible and interoperable across all of the Services' Intelligence, Surveillance and Reconnaissance (ISR) systems and operations. DCGS accesses and ingests data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers. This collected data is shared across a Joint enterprise using the DCGS Integration Backbone (DIB) and in time, the Defense Intelligence Information Enterprise (DI2E) to enhance access and sharing of ISR information across Joint forces through the use of common enterprise standards and services. DCGS FoS supports Joint Task Force (JTF)-level and below combat operations with critical intelligence for battle management and information dominance across the full spectrum of operations, including peace, conflict, war, and Overseas Contingency Operations (OCO). DCGS is a cooperative effort between the services, agencies, and DoD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS-N core components include the Analyst Work Station from the Global Command and Control System (GCCS) - Integrated Imagery and Intelligence (I3), Generic Area Limitation Environment (GALE) Signal Intelligence (SIGINT), Common Geo-positioning Services (CGS), Image Product Library (IPL), Modernized Integrated Database (MIDB), Joint Concentrator Architecture (JCA) and Track Management Services.

The DCGS-N system represents the integration of 1) The processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signals Intelligence (SIGINT); 2) Precision target geopositioning, mensuration, and imagery dissemination capabilities; 3) Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); and 4) Sharing of Intelligence, Surveillance, Reconnaissance and Targeting and Command and Control information via DIB, DI2E, and Net-Centric Enterprise Services (NCES) standards with a wide range of customers (e.g., Global Command and Control System - Maritime (GCCS-M)), Joint Mission Planning System (JMPS), and many others.

The DCGS-N Enterprise Node (DEN), which incorporates current DIB standards and DI2E policy, facilitates interoperability and data sharing among the DCGS FoS. DCGS-N ensures compliance with the DoD DCGS network architecture.

The Navy is establishing an ISR Enterprise way ahead that will emphasize a reach back strategy to provide intelligence products to support deployed ship and shore operations. The Navy will also migrate to a Service Oriented Architecture (SOA) that requires the development, integration, and testing of a Maritime ISR Enterprise

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305208N *I Distributed Common Ground Sys*

capability, development and migration of ISR SOA applications, and development and integration to leverage a Common Computing Environment (CCE). Additionally, DCGS-N will become the focal point for migration of Maritime Domain Awareness (MDA) fusion and analysis (MFAS) tool applications for the Navy.

DCGS-N Increment 2 addresses a critical shortfall in Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capability and capacity to support operational, tactical planning, and execution across the full range of joint military operations. Existing TCPED shortfalls will be exacerbated by planned Navy, Joint, and Allied fielding of new Intelligence, Surveillance and Reconnaissance (ISR) platforms. Currently fielded systems provide localized processing capabilities that will be overwhelmed in future years without a significant change in the way the Navy processes, exploits and disseminates intelligence data. DCGS-N Increment 2 will deliver all source fusion and analytical capabilities; provide Maritime Domain Awareness (MDA) capabilities and integrate Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capabilities to improve the use and analysis of sensor and platform data. Distributed Common Ground System- Navy (DCGS-N) Increment 2 will be based on an enterprise solution to share this information across commands, services, and agencies to promote shared situational awareness. DCGS-N Increment 2 consists of multiple releases. The first release provides an enhanced Navy Intelligence, Surveillance and Reconnaissance (ISR) enterprise that converges and builds on the DCGS-N Increment 1 and Maritime Domain Awareness Enterprise Nodes; leverages the Defense Intelligence Information Enterprise (DI2E); is compliant with the Common Computing Environment (CCE); federates ISR and TCPED workflow and production improving throughput through automation; exploits new and evolving unmanned systems sensor data; provides Multi-Intelligence (Multi-INT) cross-queuing and modular tools. The second release enhances afloat ISR capabilities by providing a set of software centric tools providing Multi-INT fusion and analysis, behavior prediction and intelligent knowledge management designed to operate in disconnected or denied communications environment. Follow-on releases will be developed based on Fleet requirements.

Intelligence Carry-On Program (ICOP) is a suite of multi-source intelligence and analytical capabilities which includes an integrated Three-Dimensional (3-D) operational picture displaying intelligence and other data sources to provide a richer and more complete picture of the battle space on Unit Level platforms. The system supports a full motion video capability that receives, processes, exploits, and disseminates organic and non-organic data as well as the ability to process and correlate Electronic Intelligence (ELINT) and external Communications Intelligence (COMINT Externals). It integrates mature Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) applications with shared storage and communication paths to reach back to the DCGS-N Enterprise Node (DEN), and it provides data sharing to the Maritime Operations Centers (MOC) and national ISR systems, making tactical users a part of the larger ISR enterprise.

In FY16, DCGS-N Increment 1 will support development, integration and regression testing required to align with emerging national imagery standards.

In FY16 , DCGS-N Increment 2 will deliver Fleet Capability Release-0 (FCR-0) in support of the Program Executive Officer, Command, Control, Communications, Computers and Intelligence (PEO C4I) prototype effort. Increment 2 will begin development of Fleet Capability Release (FCR) 1.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy					Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*			R-1 Program Element (Number/Name) PE 0305208N *I Distributed Common Ground Sys*		
B. Program Change Summary ($ in Millions)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Previous President's Budget	17.718	18.146	19.699	-	19.699
Current President's Budget	17.718	18.146	33.149	-	33.149
Total Adjustments	-	-	13.450	-	13.450
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	13.685	-	13.685
• Rate/Misc Adjustments	-	-	-0.235	-	-0.235

Change Summary Explanation

Technical: Not applicable.

Schedule: 1) DCGS-N Increment 1's Full Deployment was moved to 1 QTR of FY15 to align with completion of fielding plan. Increment 1 Block 2 Development Test/Operational Assessment (DT/OA) was moved a half QTR to the right to align with Consolidated Afloat Networks and Enterprise Services (CANES) lab schedule availability.

2) DCGS-N Increment 2's development, milestones, and fielding have been updated.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0305208N / *Distributed Common Ground Sys*				Project (Number/Name) 2174 / *Distributed Common Ground System-Navy (DCGS-N)*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
2174: *Distributed Common Ground System-Navy (DCGS-N)*	167.617	17.718	18.146	1.730	-	1.730	1.722	0.322	0.353	0.271	58.900	266.779
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: MN40

A. Mission Description and Budget Item Justification

The Distributed Common Ground System - Navy (DCGS-N) is the Navy's portion of the Under Secretary of Defense, Intelligence (USD (I)) DCGS-N Family of Systems (FoS). The Department of Defense (DoD) has defined a DCGS architecture that will be compatible and interoperable across all of the Services' Intelligence, Surveillance and Reconnaissance (ISR) systems and operations. DCGS accesses and ingests data from space borne, airborne, subsurface, and surface ISR collection assets, intelligence databases and intelligence producers. This collected data is shared across a Joint enterprise using the DCGS Integration Backbone (DIB) and in time, the Defense Intelligence Information Enterprise (DI2E) to enhance access and sharing of ISR information across Joint forces through the use of common enterprise standards and services. DCGS FoS supports Joint Task Force (JTF)-level and below combat operations with critical intelligence for battle management and information dominance across the full spectrum of operations, including peace, conflict, war, and Overseas Contingency Operations (OCO). DCGS is a cooperative effort between the services, agencies, and DoD to provide systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance platforms. DCGS-N core components include the Analyst Work Station from the Global Command and Control System (GCCS) - Integrated Imagery and Intelligence (I3), Generic Area Limitation Environment (GALE) Signal Intelligence (SIGINT), Common Geo-positioning Services (CGS), Image Product Library (IPL), Modernized Integrated Database (MIDB), Joint Concentrator Architecture (JCA) and Track Management Services.

The DCGS-N system represents the integration of 1) The processing and exploitation of tactical and Imagery Intelligence (IMINT) and Signals Intelligence (SIGINT); 2) Precision target geopositioning, mensuration, and imagery dissemination capabilities; 3) Selected national IMINT requirements and processing capabilities from the National Geospatial-Intelligence Agency (NGA); and 4) Sharing of Intelligence, Surveillance, Reconnaissance and Targeting and Command and Control information via DIB, DI2E, and Net-Centric Enterprise Services (NCES) standards with a wide range of customers (e.g., Global Command and Control System - Maritime (GCCS-M)), Joint Mission Planning System (JMPS), and many others.

The DCGS-N Enterprise Node (DEN), which incorporates current DIB standards and DI2E policy, facilitates interoperability and data sharing among the DCGS FoS. DCGS-N ensures compliance with the DoD DCGS network architecture.

The Navy is establishing an ISR Enterprise way ahead that will emphasize a reach back strategy to provide intelligence products to support deployed ship and shore operations. The Navy will also migrate to a Service Oriented Architecture (SOA) that requires the development, integration, and testing of a Maritime ISR Enterprise capability, development and migration of ISR SOA applications, and development and integration to leverage a Common Computing Environment (CCE). Additionally, DCGS-N will become the focal point for migration of Maritime Domain Awareness (MDA) fusion and analysis (MFAS) tool applications for the Navy.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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DCGS-N Increment 2 addresses a critical shortfall in Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capability and capacity to support operational, tactical planning, and execution across the full range of joint military operations. Existing TCPED shortfalls will be exacerbated by planned Navy, Joint, and Allied fielding of new Intelligence, Surveillance and Reconnaissance (ISR) platforms. Currently fielded systems provide localized processing capabilities that will be overwhelmed in future years without a significant change in the way the Navy processes, exploits and disseminates intelligence data. DCGS-N Increment 2 will deliver all source fusion and analytical capabilities; provide Maritime Domain Awareness (MDA) capabilities and integrate Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capabilities to improve the use and analysis of sensor and platform data. Distributed Common Ground System- Navy (DCGS-N) Increment 2 will be based on an enterprise solution to share this information across commands, services, and agencies to promote shared situational awareness. DCGS-N Increment 2 consists of multiple releases. The first release provides an enhanced Navy Intelligence, Surveillance and Reconnaissance (ISR) enterprise that converges and builds on the DCGS-N Increment 1 and Maritime Domain Awareness Enterprise Nodes; leverages the Defense Intelligence Information Enterprise (DI2E); is compliant with the Common Computing Environment (CCE); federates ISR and TCPED workflow and production improving throughput through automation; exploits new and evolving unmanned systems sensor data; provides Multi-Intelligence (Multi-INT) cross-queuing and modular tools. The second release enhances afloat ISR capabilities by providing a set of software centric tools providing Multi-INT fusion and analysis, behavior prediction and intelligent knowledge management designed to operate in disconnected or denied communications environment. Follow-on releases will be developed based on Fleet requirements.

Intelligence Carry-On Program (ICOP) is a suite of multi-source intelligence and analytical capabilities which includes an integrated Three-Dimensional (3-D) operational picture displaying intelligence and other data sources to provide a richer and more complete picture of the battle space on Unit Level platforms. The system supports a full motion video capability that receives, processes, exploits, and disseminates organic and non-organic data as well as the ability to process and correlate Electronic Intelligence (ELINT) and external Communications Intelligence (COMINT Externals). It integrates mature Commercial Off-the-Shelf (COTS) and Government Off-the-Shelf (GOTS) applications with shared storage and communication paths to reach back to the DCGS-N Enterprise Node (DEN), and it provides data sharing to the Maritime Operations Centers (MOC) and national ISR systems, making tactical users a part of the larger ISR enterprise.

In FY16, DCGS-N Increment 1 will support development, integration and regression testing required to align with emerging national imagery standards.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: DCGS-N Increment 1	3.300	0.100	1.730	-	1.730
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Conducted Block 2 Development Testing and prepared for Afloat Follow-On Test and Evaluation efforts. Began developing corrections of deficiencies to the Block 2 baseline based on results noted during FY14 integration efforts and development test events. Completed development of appropriate schoolhouse curricula in support of DCGS-N training plans.					
FY 2015 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Complete correction of deficiencies to the Block 2 baseline based on results noted during Block 2 Development Testing and Afloat Follow-On Test and Evaluation efforts. ***FY 2016 Base Plans:*** DCGS-N Increment 1 will develop, integrate, and perform regression testing required to align with emerging national imagery standards. In addition, DCGS-N Increment 1 will complete any statutory and regulatory requirements needed to meet national imagery standards. ***FY 2016 OCO Plans:*** N/A					
Title: DCGS-N Increment 2	10.072	16.421	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Began Increment 2 Information System Capability Development Document (IS CDD) Joint Staff routing, provided input to the draft Cost Analysis Requirements Description (CARD) and other acquisition documentation in support of the Development Request for Proposal (RFP) Decision Review. Employed an agile development methodology calling for early, frequent interactions between the developer and the user community to ensure that delivered capabilities met evolving user needs through the Requirements Governance Board (RGB). Continued to conduct exploratory studies, system requirements analysis, design, technical studies and experiments designed to reduce identified risks associated with the recommended AoA solution. ***FY 2015 Plans:*** Continue risk reduction efforts, conduct engineering reviews in accordance with agile development methodologies and develop Fleet Capability Release-0 (FCR-0) in support of the Program Executive Officer, Command, Control, Communications, Computers and Intelligence (PEO C4I) prototype. In addition, finalize Information System Capability Development Document (IS CDD) in preparation for a Requirements Decision Point, participate in a Development Request for Proposal (RFP) Decision Review and finalize acquisition documentation for the MS B review. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: Intelligence Carry-On Program (ICOP)	4.346	1.625	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Built on the Unit Level Rapid Technology Transition (RTT) prototypes and began statutory and regulatory documentation in accordance with pre-Milestone C Decision with a planned Initial Operational Capability (IOC) in FY15. Developed required acquisition documents including the Acquisition Strategy, Cost Analysis Requirements Description (CARD), Acquisition Program Baseline (APB), and Engineering documents such as: Test and Evaluation Master Plan (TEMP), System Engineering Plan (SEP), Tailored-Information Support Plan (T-ISP). Developed associated training documents and conducted developmental testing. ***FY 2015 Plans:*** Complete Topside Studies for LPD-17 and Guided Missile Cruiser class platforms, system design/integration activities, operational testing fixes and patches, and completion of acquisition documentation to support Milestone C/ Full Rate Production (FRP) in FY15. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	17.718	18.146	1.730	-	1.730

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• OPN 2914: *Distributed Common Ground System-Navy (DCGS-N)*	17.350	23.649	31.809	-	31.809	28.374	22.538	7.885	12.315	285.500	722.226

Remarks

D. Acquisition Strategy

The Distributed Common Ground System - Navy (DCGS-N) program utilizes mature Commercial-Off-The-Shelf (COTS) and Governmental-Off-The-Shelf (GOTS) capabilities. The Navy adapts and integrates these capabilities and ensures interoperability with the DCGS Integration Backbone (DIB) standards and Defense

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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Intelligence Information Enterprise (DI2E) policies. Integration of DCGS-N Increment 1 components has transitioned from Government-led to Industry-led based on the award of DCGS-N's Prime Mission Product (PMP) contract. Intelligence Carry-On Program (ICOP) will focus on multi-source intelligence and analytical capabilities and unit-level Intelligence, Surveillance and Reconnaissance (ISR) processing, exploitation and dissemination for Surface operations, facilitating receipt, editing and sharing of imagery and video from aerial assets and shipboard cameras. ICOP will build on the Unit Level Rapid Technology Transition (RTT) prototypes.

E. Performance Metrics

DCGS-N Increment 1 Goal: Meet national imagery standards.

DCGS-N Increment 1 Metric: Support development, integration and regression testing required to align with emerging national imagery standards.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development (prior)	WR	SSC LANT : Charleston, SC	5.276	-		-		-		-		-	-	5.276	-
Primary Hardware Development	C/CPFF	BAE : Rancho Bernardo, CA	5.825	2.000	Dec 2013	-		-		-		-	-	7.825	-
Systems Engineering (prior)	C/CPAF	Various : Various	8.753	-		-		-		-		-	-	8.753	-
Systems Engineering (prior)	C/CPAF	JFCOMM : Norfolk, VA	5.634	-		-		-		-		-	-	5.634	-
Systems Engineering	C/CPFF	BAE : Rancho Bernardo, CA	34.897	-		-		-		-		-	-	34.897	-
Systems Engineering (prior)	C/CPAF	LMSI : Valley Forge, PA	4.432	-		-		-		-		-	-	4.432	-
Systems Engineering	WR	SSC LANT : Charleston, SC	11.442	0.500	Oct 2013	-		0.300	Oct 2015	-		0.300	-	12.242	-
Systems Engineering	C/CPFF	SETA SAIC : Columbia, MD	5.810	1.000	Dec 2013	2.400	Dec 2014	-		-		-	-	9.210	-
Systems Engineering (prior)	Various	SAIC : Columbia, MD	4.804	-		-		-		-		-	-	4.804	-
Systems Engineering	C/CPFF	L3 : Chantilly, VA	4.736	-		-		-		-		-	-	4.736	-
Licenses (prior)	C/CPAF	BAE, SSC LANT : Various	0.660	-		-		-		-		-	-	0.660	-
Systems Engineering	WR	SSC PAC : San Diego, CA	5.236	3.000	Oct 2013	2.521	Oct 2014	-		-		-	-	10.757	-
Licenses	WR	SSC LANT : Charleston, SC	0.210	0.118	Oct 2013	-		-		-		-	-	0.328	-
Primary Hardware Development (Inc 2)	C/CPFF	Unknown : Unknown	0.000	-		1.600	Mar 2015	-		-		-	-	1.600	-
Primary Hardware Development	WR	SSC PAC : San Diego, CA	0.000	0.600	Oct 2013	0.800	Oct 2014	-		-		-	-	1.400	-
Software Development	C/CPFF	BAE : Rancho Bernardo, CA	0.890	0.370	Dec 2013	0.100	Dec 2014	-		-		-	-	1.360	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	SSC PAC : San Diego, CA	0.000	2.500	Oct 2013	0.270	Oct 2014	-		-		-	-	2.770	-
Software Development (Inc 2)	C/CPFF	Unknown : Unknown	0.000	-		5.125	Mar 2015	-		-		-	-	5.125	-
Licenses	WR	SSC PAC : San Diego, CA	0.000	-		0.100	Oct 2014	-		-		-	-	0.100	-
Software Development	WR	SSC LANT : Charleston, SC	0.000	-		-		0.300	Oct 2015	-		0.300	-	0.300	-
Government Technical Oversight (Dev)	WR	SSC LANT : Charleston, SC	0.000	-		-		0.100	Oct 2015	-		0.100	-	0.100	-
		Subtotal	98.605	10.088		12.916		0.700		-		0.700	-	122.309	-

Remarks

Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contracts were Cost Plus Award Fee (CPAF) contract awards.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support (prior)	Various	Various : Various	4.136	-		-		-		-		-	-	4.136	-
Software Development (prior)	C/CPAF	BAE, NG : Various	16.733	-		-		-		-		-	-	16.733	-
Integrated Logistics Support (prior)	Various	L3, SAIC : Various	4.380	-		-		-		-		-	-	4.380	-
Configuration Management (prior)	C/CPAF	L3 : Chantilly, VA	2.353	-		-		-		-		-	-	2.353	-
Technical Data (prior)	Various	L3, SSC CHAS : Various	0.577	-		-		-		-		-	-	0.577	-
Development Support	C/CPFF	SETA SAIC : Columbia, MD	3.531	0.350	Dec 2013	0.400	Dec 2014	-		-		-	-	4.281	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	SSC LANT : Charleston, SC	1.180	0.300	Oct 2013	-		0.200	Oct 2015	-		0.200	-	1.680	-
Software Development	C/CPFF	Northrop Grumman : Los Angeles, CA	1.899	-		-		-		-		-	-	1.899	-
Integrated Logistics Support	WR	SSC LANT : Charleston, SC	2.287	0.600	Oct 2013	-		-		-		-	-	2.887	-
Configuration Management (Prior)	WR	SSC LANT : Charleston, SC	2.108	-		-		-		-		-	-	2.108	-
Development Support	WR	SSC PAC : San Diego, CA	0.100	0.500	Oct 2013	0.600	Oct 2014	-		-		-	-	1.200	-
Integrated Logistics Support	WR	SSC PAC : San Diego, CA	0.200	0.200	Oct 2013	0.200	Oct 2014	-		-		-	-	0.600	-
Integrated Logistics Support	C/CPFF	SETA SAIC : Columbia, MD	0.700	0.350	Dec 2013	0.400	Dec 2014	-		-		-	-	1.450	-
Configuration Management	WR	SSC PAC : San Diego, CA	0.500	0.500	Oct 2013	0.300	Oct 2014	-		-		-	-	1.300	-
		Subtotal	40.684	2.800		1.900		0.200		-		0.200	-	45.584	-

Remarks

Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contracts were Cost Plus Award Fee (CPAF) contract awards.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (prior)	Various	SAIC, L3, SSC LANT : Various	10.443	-		-		-		-		-	-	10.443	-
Operational Test & Evaluation (prior)	Various	SAIC, NAWC, NGES, OPTEVFOR, NSWC Corona : Various	5.056	-		-		-		-		-	-	5.056	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	C/CPFF	BAE : Rancho Bernardo, CA	1.186	0.300	Dec 2013	-		-		-		-	-	1.486	-
Developmental Test & Evaluation	WR	SSC LANT : Charleston, SC	1.747	0.500	Oct 2013	-		0.600	Oct 2015	-		0.600	-	2.847	-
Operational Test & Evaluation	WR	SSC PAC : San Diego, CA	0.238	-		-		-		-		-	-	0.238	-
Operational Test & Evaluation	C/CPFF	BAE : Rancho Bernardo, CA	1.360	0.400	Dec 2013	-		-		-		-	-	1.760	-
Operational Test & Evaluation	WR	SSC LANT : Charleston, CA	0.120	-		-		-		-		-	-	0.120	-
Operational Test & Evaluation	C/CPFF	COTF : Norfolk, VA	0.120	-		-		0.100	Jul 2016	-		0.100	-	0.220	-
Developmental Test & Evaluation	WR	SSC PAC : San Diego, CA	0.000	1.800	Oct 2013	1.700	Oct 2014	-		-		-	-	3.500	-
Developmental Test & Evaluation	C/CPFF	COTF : Norfolk, VA	0.100	0.200	Jul 2014	0.200	Apr 2015	-		-		-	-	0.500	-
		Subtotal	20.370	3.200		1.900		0.700		-		0.700	-	26.170	-

Remarks

Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contracts were Cost Plus Award Fee (CPAF) contract awards.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support (prior)	C/CPAF	SAIC : Columbia, MD	1.316	-		-		-		-		-	-	1.316	-
Travel	Allot	SPAWAR : San Diego, CA	0.779	0.030	Nov 2013	0.030	Nov 2014	0.020	Nov 2015	-		0.020	-	0.859	-
Government Engineering Support	WR	SSC LANT : Charleston, SC	1.484	-		-		0.080	Nov 2015	-		0.080	-	1.564	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	PSS BAH : San Diego, CA	2.571	1.350	Nov 2013	1.400	Nov 2014	0.030	Nov 2015	-		0.030	-	5.351	-
Program Management Support	WR	SSC LANT : Charleston, SC	1.378	0.250	Oct 2013	-		-		-		-	-	1.628	-
Program Management Support	WR	SSC PAC : San Diego, CA	0.430	-		-		-		-		-	-	0.430	-
		Subtotal	7.958	1.630		1.430		0.130		-		0.130	-	11.148	-

Remarks

Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contracts were Cost Plus Award Fee (CPAF) contract awards.

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	167.617	17.718		18.146		1.730		-		1.730	-	205.211	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
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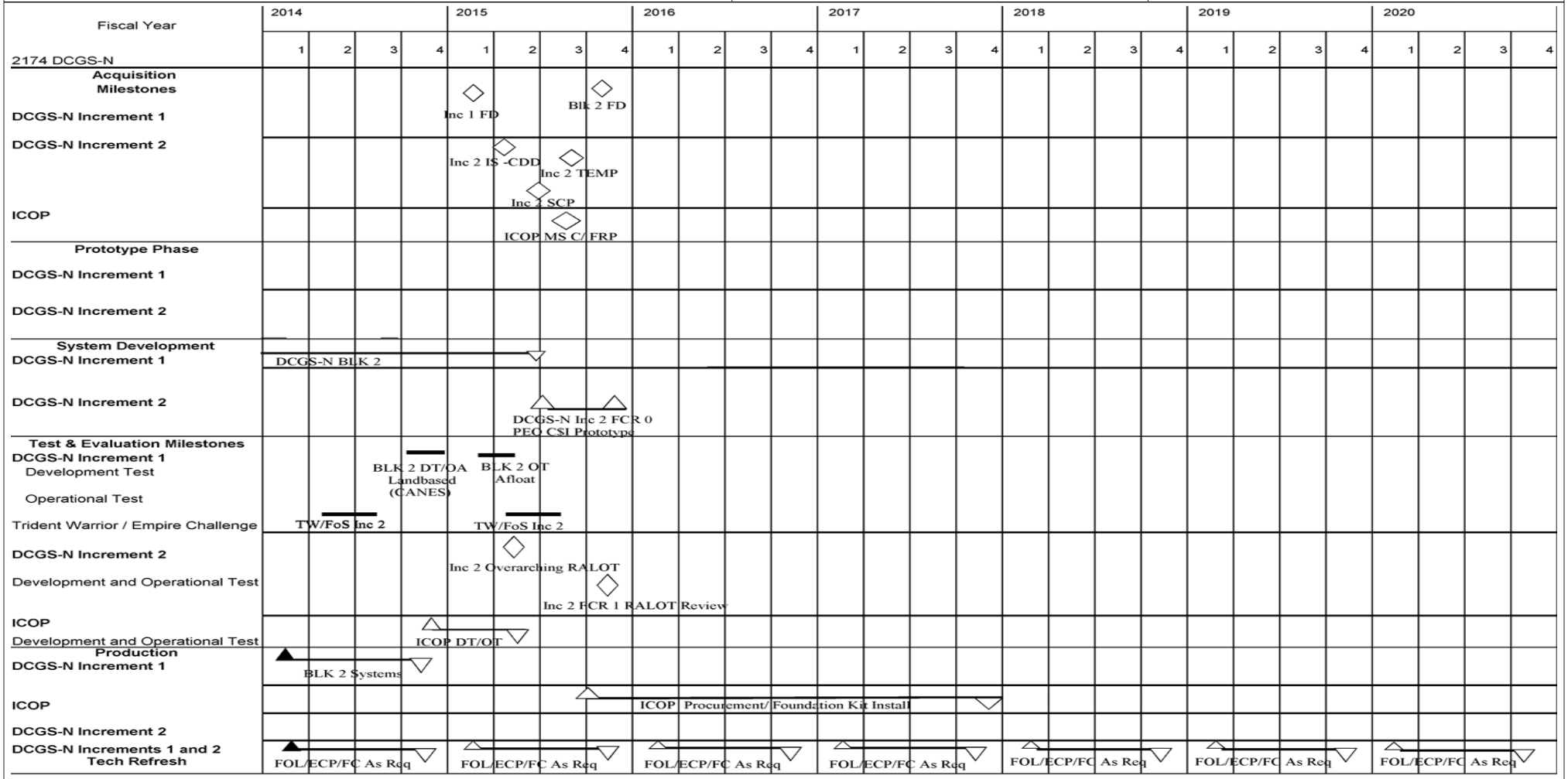

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2174				
DCGS-N Inc 2 FCR-1 RALOT Review	4	2015	4	2015
Trident Warrior / DCGS Family of Systems Inc 2 2014	2	2014	3	2014
Trident Warrior / DCGS Family of Systems Inc 2 2015	2	2015	3	2015
DCGS-N BLK 2 Development	1	2014	2	2015
DCGS-N Inc 1 FD	1	2015	1	2015
ICOP and Foundation Kit Procurement	3	2015	4	2017
DCGS-N BLK 2 DT/OA Landbased (CANES)	4	2014	4	2014
DCGS-N BLK 2 OT AFLOAT	1	2015	2	2015
DCGS-N Inc 1 Procurement	1	2014	4	2014
DCGS-N Inc 1 Tech Refresh	1	2014	4	2020
DCGS-N Inc 1 BLK 2 FD	4	2015	4	2015
ICOP MS C/FRP	3	2015	3	2015
ICOP DT/OT	4	2014	2	2015
DCGS-N Inc 2 FCR-0 PEO C4I Prototype	3	2015	4	2015

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
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COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2227: *Distributed Common Ground System (DCGS-N) Inc 2*	-	-	-	31.419	-	31.419	36.015	22.347	31.651	32.056	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	1	-	-	-		

MDAP/MAIS Code: M464

Note

Cost-To-Complete reflects DCGS-N Increment 2 only. DCGS-N Increment 2 reflects August 2014 Program Life Cycle Cost Estimate (PLCCE) and a Life Cycle Cost Estimate (LCCE) is scheduled to complete in FY16 as part of Milestone B.

A. Mission Description and Budget Item Justification

DCGS-N Increment 2 addresses a critical shortfall in Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capability and capacity to support operational, tactical planning, and execution across the full range of joint military operations. Existing TCPED shortfalls will be exacerbated by planned Navy, Joint, and Allied fielding of new Intelligence, Surveillance and Reconnaissance (ISR) platforms. Currently fielded systems provide localized processing capabilities that will be overwhelmed in future years without a significant change in the way the Navy processes, exploits and disseminates intelligence data. DCGS-N Increment 2 will deliver all source fusion and analytical capabilities; provide Maritime Domain Awareness (MDA) capabilities and integrate Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) capabilities to improve the use and analysis of sensor and platform data. Distributed Common Ground System- Navy (DCGS-N) Increment 2 will be based on an enterprise solution to share this information across commands, services, and agencies to promote shared situational awareness. DCGS-N Increment 2 consists of multiple releases. The first release provides an enhanced Navy Intelligence, Surveillance and Reconnaissance (ISR) enterprise that converges and builds on the DCGS-N Increment 1 and Maritime Domain Awareness Enterprise Nodes; leverages the Defense Intelligence Information Enterprise (DI2E); is compliant with the Common Computing Environment (CCE); federates ISR and TCPED workflow and production improving throughput through automation; exploits new and evolving unmanned systems sensor data; provides Multi-Intelligence (Multi-INT) cross-queuing and modular tools. The second release enhances afloat ISR capabilities by providing a set of software centric tools providing Multi-INT fusion and analysis, behavior prediction and intelligent knowledge management designed to operate in disconnected or denied communications environment. Follow-on releases will be developed based on Fleet requirements.

In FY16 , DCGS-N Increment 2 will deliver Fleet Capability Release-0 (FCR-0) in support of the Program Executive Officer, Command, Control, Communications, Computers and Intelligence (PEO C4I) prototype effort. Increment 2 will begin development of Fleet Capability Release (FCR) 1.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: DCGS-N Increment 2	-	-	31.419	-	31.419
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208N / *Distributed Common Ground Sys*	**Project (Number/Name)** *2227 / Distributed Common Ground System (DCGS-N) Inc 2*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Will develop, deliver, install and demonstrate Fleet Capability Release-0 (FCR-0) in support of the Program Executive Office, Command, Control, Communications, Computers and Intelligence (PEO C4I) prototype effort. Will prepare and deliver statutory and regulatory requirements/artifacts for MS-B review. MS-B preparations, and development and integration of FCR-1 will entail significant engineering design and development work. This design and development work includes statutory and regulatory requirements such as completing the program's Acquisition Strategy, System Engineering Plan, Integrated Logistics Assessment, and ensuring operational and Acquisition alignment of requirements, resources, and schedule. Will execute development and integration of Fleet Capability Release-1 (FCR-1) in preparation for fielding aboard the Initial Operational Test and Evaluation platform in FY18. In conjunction with FCR-1 development and integration, MS-B artifacts will need to be updated and aligned with on-going FY16 agile software development. Preparations for the development and integration of FCR-1 include capturing the initial lessons learned and best practices from the FCR-0 prototype effort and initial prioritization of the Requirements Development Package (RDP) in support of the DCGS-N Requirements Governance Board (DRGB) process. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	-	-	31.419	-	31.419

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 0305208N/2914: *Distributed Common Ground System-Navy*	17.350	23.649	31.809	-	31.809	28.374	22.538	7.885	12.315	285.500	722.226

Remarks

D. Acquisition Strategy

The DCGS-N Increment 2 streamlined Information Technology (IT) acquisition strategy is based on an accelerated acquisition model as defined in the Interim Department of Defense Instruction (DoDI 5000.02). DCGS-N Increment 2 capabilities will be developed through an evolutionary process that calls for multiple releases.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208N / *Distributed Common Ground Sys*	**Project (Number/Name)** *2227 / Distributed Common Ground System (DCGS-N) Inc 2*

E. Performance Metrics

DCGS-N Increment 2 Goal: Support afloat forces through a robust enterprise ISR capability, satisfying maritime needs for processing, exploitation, and dissemination.
DCGS-N Increment 2 Metric: Successful completion of Development Release for Proposal (RFP) review.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305208N / *Distributed Common Ground Sys*	Project (Number/Name) *2227 / Distributed Common Ground System (DCGS-N) Inc 2*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	SSC PAC : San Diego, CA	0.000	-		-		5.300	Oct 2015	-		5.300	-	5.300	-
Software Development	WR	SSC PAC : San Diego, CA	0.000	-		-		14.625	Oct 2015	-		14.625	-	14.625	-
Software Development (Inc 2)	C/CPFF	Unknown : Unknown	0.000	-		-		6.220	Mar 2016	-		6.220	50.672	56.892	-
Software Development	WR	SSC LANT : Charleston, SC	0.000	-		-		0.800	Oct 2015	-		0.800	-	0.800	-
Government Technical Oversite (Dev)	WR	SSC LANT : Charleston, SC	0.000	-		-		0.200	Oct 2015	-		0.200	-	0.200	-
		Subtotal	0.000	-		-		27.145		-		27.145	50.672	77.817	-

Remarks

Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contract were Cost Plus Award Fee (CPAF) contract awards.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	C/CPFF	SETA SAIC : Columbis, MD	0.000	-		-		0.600	Dec 2015	-		0.600	-	0.600	-
Development Support	WR	SSC LANT : Charleston, SC	0.000	-		-		0.150	Oct 2015	-		0.150	3.426	3.576	-
Integrated Logistics Support	WR	SSC LANT : Charleston, SC	0.000	-		-		0.250	Oct 2015	-		0.250	-	0.250	-
Integrated Logistics Support	C/CPFF	SETA SAIC : Columbis, MD	0.000	-		-		0.720	Dec 2015	-		0.720	-	0.720	-
		Subtotal	0.000	-		-		1.720		-		1.720	3.426	5.146	-

Remarks

Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contract were Cost Plus Award Fee (CPAF) contract awards.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208N / *Distributed Common Ground Sys*	**Project (Number/Name)** *2227 / Distributed Common Ground System (DCGS-N) Inc 2*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	SSC LANT : Charleston, SC	0.000	-		-		0.250	Oct 2015	-		0.250	3.877	4.127	-
Developmental Test & Evaluation	WR	SSC PAC : San Diego, CA	0.000	-		-		0.800	Oct 2015	-		0.800	-	0.800	-
Developmental Test & Evaluation	C/CPFF	COTF : Norfolk, VA	0.000	-		-		0.400	Nov 2015	-		0.400	-	0.400	-
		Subtotal	0.000	-		-		1.450		-		1.450	3.877	5.327	-

Remarks

Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contract were Cost Plus Award Fee (CPAF) contract awards.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Allot	SPAWAR : San Diego, CA	0.000	-		-		0.180	Nov 2015	-		0.180	-	0.180	-
Government Engineering Support	WR	SSC LANT : Charleston, SC	0.000	-		-		0.154	Nov 2015	-		0.154	-	0.154	-
Program Management Support	C/CPFF	PSS BAH : San Diego, CA	0.000	-		-		0.270	Nov 2015	-		0.270	-	0.270	-
Program Management Support	WR	SSC LANT : Charleston, SC	0.000	-		-		0.300	Oct 2015	-		0.300	2.225	2.525	-
Program Management Support	WR	SSC PAC : San Diego, CA	0.000	-		-		0.200	Oct 2015	-		0.200	-	0.200	-
		Subtotal	0.000	-		-		1.104		-		1.104	2.225	3.329	-

Remarks

Various represents several prior year contracts in support of product development, logistics, testing, systems engineering and program management. The majority of these contract were Cost Plus Award Fee (CPAF) contract awards.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305208N / *Distributed Common Ground Sys*	Project (Number/Name) *2227 / Distributed Common Ground System (DCGS-N) Inc 2*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		31.419		-		31.419	60.200	91.619	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208N / *Distributed Common Ground Sys*	**Project (Number/Name)** *2227 / Distributed Common Ground System (DCGS-N) Inc 2*

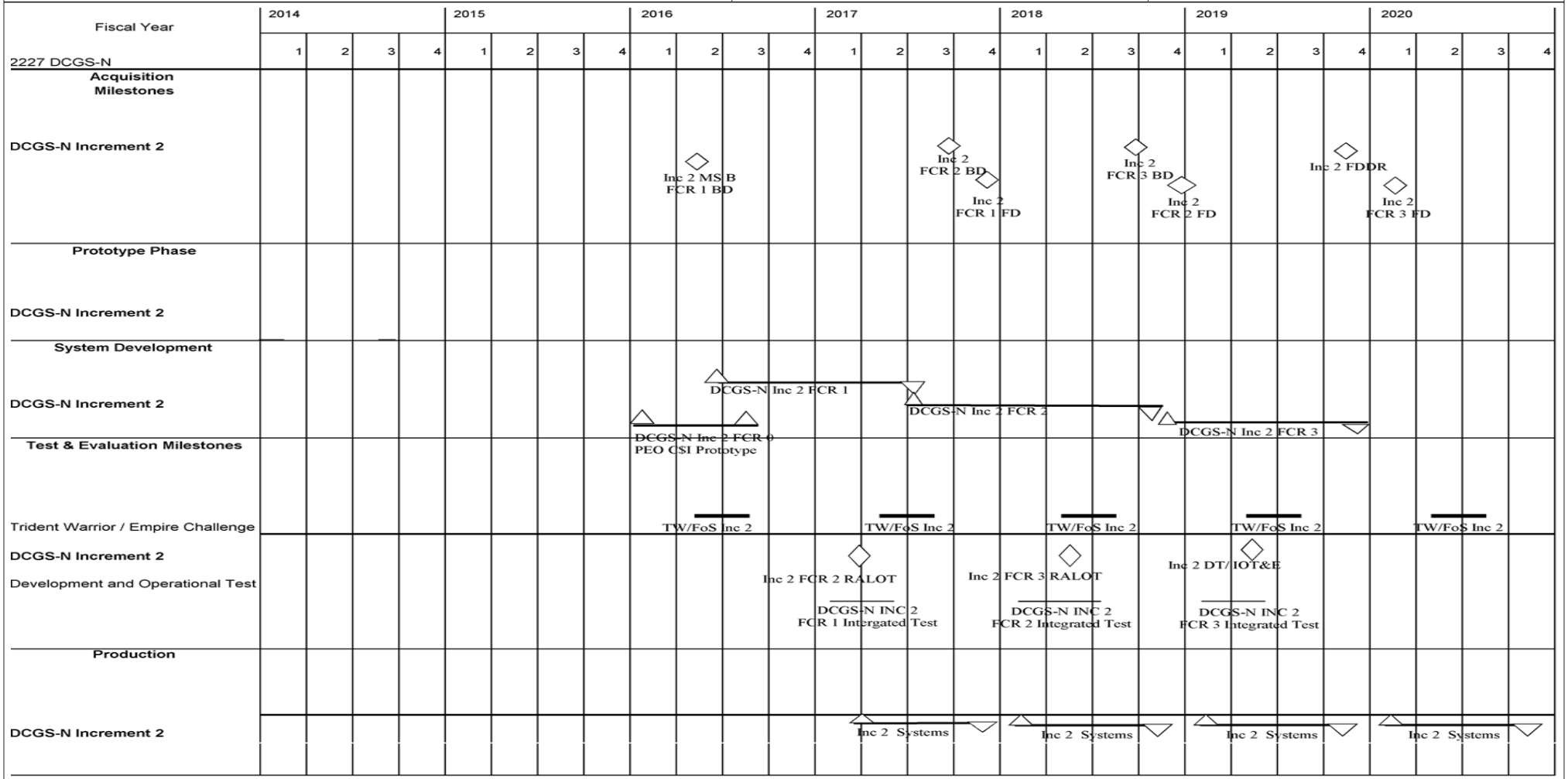


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208N / *Distributed Common Ground Sys*	**Project (Number/Name)** *2227 / Distributed Common Ground System (DCGS-N) Inc 2*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2227				
Trident Warrior/DCGS Family of Systems Inc 2 2016	2	2016	3	2016
Trident Warrior/DCGS Family of Systems Inc 2 2017	2	2017	3	2017
Trident Warrior/DCGS Family of Systems Inc 2 2018	2	2018	3	2018
Trident Warrior/DCGS Family of Systems Inc 2 2019	2	2019	3	2019
Trident Warrior/DCGS Family of Systems Inc 2 2020	2	2020	3	2020
DCGS-N Inc 2 FCR-1 Development	2	2016	3	2017
DCGS-N Inc 2 FCR-2 Development	3	2017	4	2018
DCGS-N Inc 2 FCR-3 Development	4	2018	4	2019
DCGS-N Inc 2 Release 1 Build Decision (MS B)	2	2016	2	2016
DCGS-N Inc 2 Procurement	1	2017	4	2020
DCGS-N Inc 2 FDDR	4	2019	4	2019
DCGS-N Inc 2 Fielding Decision	4	2017	4	2017
DCGS-N Inc 2 FCR-2 Build Decision	3	2017	4	2017
DCGS-N Inc 2 FCR-3 Build Decision	3	2018	4	2018
DCGS-N Inc 2 FCR-2 RALOT Review	1	2017	2	2017
DCGS-N Inc 2 DT/IOT&E	2	2019	2	2019
DCGS-N Inc 2 FCR-3 RALOT Review	2	2018	2	2018
DCGS-N Inc 2 FCR-2 Fielding Decision	4	2018	1	2019
DCGS-N Inc 2 FCR-3 Fielding Decision	1	2020	1	2020
DCGS-N Inc 2 FCR-0 PEO C4I Prototype	1	2016	3	2016
DCGS-N Inc 2 FCR-1 Integrated Test	1	2017	2	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305208N / *Distributed Common Ground Sys*	**Project (Number/Name)** *2227 / Distributed Common Ground System (DCGS-N) Inc 2*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
DCGS-N Inc 2 FCR-2 Integrated Test	1	2018	3	2018
DCGS-N Inc 2 FCR-3 Integrated Test	1	2019	2	2019

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy												Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305220N *I RQ-4 UAV*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	2,125.050	375.235	451.442	227.188	-	227.188	5.208	-	-	-	-	3,184.123
4020: *MQ-4C TRITON*	2,125.050	375.235	451.442	227.188	-	227.188	5.208	-	-	-	-	3,184.123
MDAP/MAIS Code: 373												

Note

MQ-4C Triton RDTE funding for modernization has been segregated into a new program element (from PE 0305220N to PE 0305421N) in order to satisfy Congressional direction for increased transparency. In the FY2015 Appropriations Act, Congress limited the amount of FY2015 funding in the modernization line (PE 0305421N) to $5M until a review of the capability development document is completed by the Joint Requirements Oversights Council (JROC). In concert with completion of the JROC review, the Navy will request a reprogramming from Congress to move the remaining required FY15 funding from PE 0305220N into PE 0305421N in order to maintain the Triton Multi-Intelligence phased capability upgrade schedule.

A. Mission Description and Budget Item Justification

MQ-4C Triton Unmanned Air System (UAS). The popular name Triton was approved for the MQ-4C UAS in June 2012, designating the RQ-4 Broad Area Maritime Surveillance (BAMS) UAS as the MQ-4C Triton.

The MQ-4C Triton is a high altitude-long endurance UAS designed to provide Fleet and combatant commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Teamed with its manned-capability counterpart, the P-8A, Triton will be a key component of the Navy's family of systems to achieve maritime domain awareness. MQ-4C Triton will seek to leverage Maritime Patrol and Reconnaissance Force manpower, training and maintenance efficiencies.

The MQ-4C Triton features sensors designed to provide near worldwide coverage through a network of five orbits inside and outside continental United States, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infra-red and Electronic Support Measures systems. Additionally, the MQ-4C will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCEnet strategy. Tactical-level data analysis will occur in real-time at shore-based mission control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard aircraft carriers and other ships.

The MQ-4C Triton UAS will implement phased capability upgrades within the ongoing acquisition program to pace capability with rapidly evolving technologies and threats to ensure the Navy maintains persistent ISR dominance through the system's lifecycle, and to support the OPNAV N2/N6 Intelligence, Surveillance, Reconnaissance and Targeting transition plan. System upgrades will include Multi-Intelligence capabilities, Counter Electronic Attack upgrades, a more robust electronic support capability and continue improvements to baseline mission system payloads.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305220N *I RQ-4 UAV*

MQ-4C will play a significant role in the Sea Shield and FORCEnet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported combatant command or fleet commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the common operational tactical picture. The system will also serve as a Fleet response plan enabler, while acting as a trip wire for intelligence preparation of the environment. Additionally, Triton Unmanned Air System will be a FORCEnet enabler and relay platform, directly connected to both the Global Information Grid and the Distributed Common Ground System-Navy information backbone.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	375.235	498.003	363.120	-	363.120
Current President's Budget	375.235	451.442	227.188	-	227.188
Total Adjustments	-	-46.561	-135.932	-	-135.932
• Congressional General Reductions	-	-0.061			
• Congressional Directed Reductions	-	-41.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-5.000			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	-135.932	-	-135.932

Change Summary Explanation

Technical: MQ-4C Triton RDTE funding for modernization, which includes Multi-Intelligence capabilities, has been segregated into a new program element (PE 0305421N) in order to satisfy Congressional direction for increased transparency.

Schedule: System Demonstration Test Article (SDTA) deliveries shifted from 4Q FY15 through 1Q FY16 to 1Q FY17 through 2Q FY17. The SDTA aircraft deliver in time to support OPEVAL.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305220N / *RQ-4 UAV*	Project (Number/Name) 4020 / *MQ-4C TRITON*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
4020: *MQ-4C TRITON*	2,125.050	375.235	451.442	227.188	-	227.188	5.208	-	-	-	-	3,184.123
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

MQ-4C Triton Unmanned Air System (UAS). The MQ-4C Triton is a high altitude-long endurance UAS designed to provide Fleet and combatant commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Teamed with its manned-capability counterpart, the P-8A, Triton will be a key component of the Navy's family of systems to achieve maritime domain awareness. MQ-4C Triton will seek to leverage Maritime Patrol and Reconnaissance Force manpower, training and maintenance efficiencies.

The MQ-4C Triton features sensors designed to provide near worldwide coverage through a network of five orbits inside and outside continental United States, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infra-red and Electronic Support Measures systems. Additionally, the MQ-4C will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCEnet strategy. Tactical-level data analysis will occur in real-time at shore-based mission control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard aircraft carriers and other ships.

The MQ-4C Triton UAS will implement phased capability upgrades within the ongoing acquisition program to pace capability with rapidly evolving technologies and threats to ensure the Navy maintains persistent ISR dominance through the system's lifecycle, and to support the OPNAV N2/N6 Intelligence, Surveillance, Reconnaissance and Targeting transition plan. System upgrades will include Multi-Intelligence capabilities, Counter Electronic Attack upgrades, a more robust electronic support capability and continue improvements to baseline mission system payloads.

MQ-4C will play a significant role in the Sea Shield and FORCEnet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported combatant command or fleet commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the common operational tactical picture. The system will also serve as a Fleet response plan enabler, while acting as a trip wire for intelligence preparation of the environment. Additionally, Triton UAS will be a FORCEnet enabler and relay platform, directly connected to both the Global Information Grid and the Distributed Common Ground System-Navy information backbone.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	332.008	402.622	184.967	-	184.967
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305220N / *RQ-4 UAV*	**Project (Number/Name)** 4020 / *MQ-4C TRITON*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Description: Awarded contract in FY08 to initiate the MQ-4C Triton System Development and Demonstration phase effort. The Prime Contractor is responsible for overall system development and performance, as well as associated management, engineering and logistics activities. ***FY 2014 Accomplishments:*** Continue System Development and Demonstration (SDD) and build of two System Demonstration Test Article (SDTA) vehicles. ***FY 2015 Plans:*** Continue SDD and build of two SDTA vehicles. ***FY 2016 Base Plans:*** Continue SDD and build of two SDTA vehicles. Funding decreases from FY15 to reflect a ramp down in baseline MQ-4C Triton SDD development efforts in accordance with the program schedule. ***FY 2016 OCO Plans:*** N/A					
Title: ILS, Support, Studies & Analysis	11.266	11.395	9.486	-	9.486
Articles:	-	-	-	-	-
Description: Integrated Logistics Support, Studies and Analysis. ***FY 2014 Accomplishments:*** Continue integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the MQ-4C Triton Unmanned Aircraft System (UAS) capabilities. ***FY 2015 Plans:*** Continue integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the MQ-4C Triton UAS capabilities. ***FY 2016 Base Plans:*** Continue integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305220N / *RQ-4 UAV*	**Project (Number/Name)** 4020 / *MQ-4C TRITON*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
and basing assessments, and development of technical data to support fielding of the MQ-4C Triton UAS capabilities. ***FY 2016 OCO Plans:*** N/A					
Title: Test & Evaluation (T&E) ***Articles:*** ***Description:*** T&E efforts. ***FY 2014 Accomplishments:*** Continue Developmental Testing (DT) and Operational Testing (OT) support activities to allow test and fielding of the MQ-4C Triton Unmanned Air System (UAS) in accordance with the program schedule. ***FY 2015 Plans:*** Continue DT and OT support activities to allow test and fielding of the MQ-4C Triton UAS in accordance with the program schedule. ***FY 2016 Base Plans:*** Continue Developmental Testing and Operational Testing support activities to allow test and fielding of the MQ-4C Triton Unmanned Air System in accordance with the program schedule. ***FY 2016 OCO Plans:*** N/A	27.267 -	32.223 -	29.871 -	- -	29.871 -
Title: Program Management (PM) ***Articles:*** ***Description:*** Program Management (PM) support and travel. ***FY 2014 Accomplishments:*** Continue the following: PM support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and joint and international cooperation efforts. ***FY 2015 Plans:***	4.694 -	5.202 -	2.864 -	- -	2.864 -

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305220N / *RQ-4 UAV*	**Project (Number/Name)** 4020 / *MQ-4C TRITON*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue the following: PM support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and joint and international cooperation efforts. ***FY 2016 Base Plans:*** Continue the following: PM support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and joint and international cooperation efforts. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	375.235	451.442	227.188	-	227.188

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN-4/044200: *RQ-4 UAV (Triton UAV)*	-	67.670	548.836	-	548.836	582.360	635.984	704.135	718.463	7,096.336	10,353.784
• MILCON/0815976N: *Facilities New Footprint - Training*	38.031	-	-	-	-	-	-	28.118	-	-	82.707
• MILCON/0212176N: *Facilities New Footprint - Fleet Ops*	17.469	-	8.296	-	8.296	71.091	-	-	-	-	129.001
• APN-6/044200: *RQ-4 UAV (Triton UAV)*	-	-	153.954	-	153.954	110.263	105.532	6.758	6.881	283.685	667.073
• OMN/1D4D: *Weapons Maintenance*	-	-	-	-	-	5.738	30.153	32.886	35.338	Continuing	Continuing
• OMN/1A1A: *Mission and Other Flight Operations*	-	-	-	-	-	-	2.216	12.773	44.119	Continuing	Continuing
• MILCON/0712876N: *Facilities New Footprint - Main and Prod*	-	-	40.641	-	40.641	-	-	-	-	-	40.641

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305220N / *RQ-4 UAV*	**Project (Number/Name)** 4020 / *MQ-4C TRITON*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• MILCON/0203176N: *Facilities Restoration and Mod*	-	-	-	-	-	-	-	-	-	-	20.753
• MILCON/0816376N: *Facilities New Footprint - T&E*	-	-	-	-	-	-	-	-	-	-	33.034
• RDT&E/0305421N: *RQ-4 Modernization*	-	5.000	150.854	-	150.854	220.219	108.038	41.027	42.181	-	567.319
• MILCON/0805976N: *Facilities Restoration and Mod-Training*	-	-	2.974	-	2.974	-	-	-	-	-	2.974

Remarks

D. Acquisition Strategy

The MQ-4C Triton acquisition approach encompasses delivery of detection, tracking, imaging and data dissemination capabilities at Initial Operational Capability (IOC) with activities to enhance sensor and system performance via phased capability upgrades for post IOC delivery as part of the Triton acquisition program. This approach of phased capability upgrades within the acquisition program enables MQ-4C to pace capability with rapidly evolving technologies and threats to ensure the Navy maintains persistent Intelligence, Surveillance and Reconnaissance dominance through the system's lifecycle.

The MQ-4C Triton program office is pursuing joint efficiency with the Air Force on the Global Hawk Unmanned Aircraft System (UAS). However, the integration of the Triton UAS into the Maritime Patrol Reconnaissance Force and the unique maritime sensors employed dictate a Navy-led acquisition program focused on joint efficiencies, where possible.

E. Performance Metrics

Successfully achieve Milestone C, Integrated Test, Operational Evaluation and IOC.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305220N / *RQ-4 UAV*	Project (Number/Name) 4020 / *MQ-4C TRITON*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPIF	Northrop Grumman : Rancho Bernardo, CA	1,827.964	291.023	Nov 2013	360.215	Nov 2014	159.566	Nov 2015	-		159.566	-	2,638.768	2,638.768
Systems Engineering	Various	Various : Various	5.647	3.907	Nov 2013	4.536	Nov 2014	3.375	Nov 2015	-		3.375	-	17.465	-
Systems Engineering	WR	NAWC-AD : Patuxent River, MD	121.604	33.318	Nov 2013	34.408	Nov 2014	19.196	Nov 2015	-		19.196	0.500	209.026	-
Systems Engineering	WR	NAWC-WD : China Lake, CA	5.945	2.351	Nov 2013	2.040	Nov 2014	1.393	Nov 2015	-		1.393	-	11.729	-
Contractor Engineering	C/CPFF	Mitre : Mclean, VA	0.000	1.409	Nov 2013	1.423	Nov 2014	1.437	Nov 2015	-		1.437	-	4.269	4.269
Prior Year Prod Dev no longer in the FYDP	Various	Various : Various	24.553	-		-		-		-		-	-	24.553	-
		Subtotal	1,985.713	332.008		402.622		184.967		-		184.967	0.500	2,905.810	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various : Various	12.687	2.115	Nov 2013	2.268	Nov 2014	1.590	Nov 2015	-		1.590	-	18.660	-
Integrated Logistics Support	Various	Various : Various	4.134	1.600	Nov 2013	1.619	Nov 2014	1.591	Nov 2015	-		1.591	-	8.944	-
Integrated Logistics Support	WR	NAWC-AD : Patuxent River, MD	20.343	6.052	Nov 2013	5.985	Nov 2014	5.210	Nov 2015	-		5.210	-	37.590	-
Integrated Logistics Support	WR	NAWC-TSD : Orlando, FL	4.612	1.499	Nov 2013	1.523	Nov 2014	1.095	Nov 2015	-		1.095	-	8.729	-
Prior year cost no longer funded in the FYDP	Various	Various : Various	10.784	-		-		-		-		-	-	10.784	-
		Subtotal	52.560	11.266		11.395		9.486		-		9.486	-	84.707	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305220N / *RQ-4 UAV*		Project (Number/Name) 4020 / *MQ-4C TRITON*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various : Various	14.358	1.604	Nov 2013	3.710	Nov 2014	2.617	Nov 2015	-		2.617	-	22.289	-
Developmental Test & Evaluation	WR	NAWC-AD : Patuxent River, MD	43.996	20.384	Nov 2013	20.689	Nov 2014	20.206	Nov 2015	-		20.206	0.458	105.733	-
Operational Test & Evaluation	Various	Various : Various	0.222	0.679	Nov 2013	3.155	Nov 2014	3.218	Nov 2015	-		3.218	3.000	10.274	-
Developmental Test & Evaluation	MIPR	DITCO : Various	4.513	4.600	Nov 2013	4.669	Nov 2014	3.830	Nov 2015	-		3.830	1.000	18.612	-
		Subtotal	63.089	27.267		32.223		29.871		-		29.871	4.458	156.908	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Various : Various	2.930	0.350	Nov 2013	0.320	Nov 2014	0.163	Nov 2015	-		0.163	-	3.763	-
Travel	Allot	Various : Various	1.188	0.194	Nov 2013	0.146	Nov 2014	0.119	Nov 2015	-		0.119	0.050	1.697	-
Program Management Support	C/CPFF	Ausley : Lexington Park, MD	14.562	4.150	Dec 2013	4.736	Nov 2014	2.582	Nov 2015	-		2.582	0.200	26.230	26.230
Prior year cost no longer funded in the FYDP	Various	Various : Various	5.008	-		-		-		-		-	-	5.008	5.008
		Subtotal	23.688	4.694		5.202		2.864		-		2.864	0.250	36.698	-

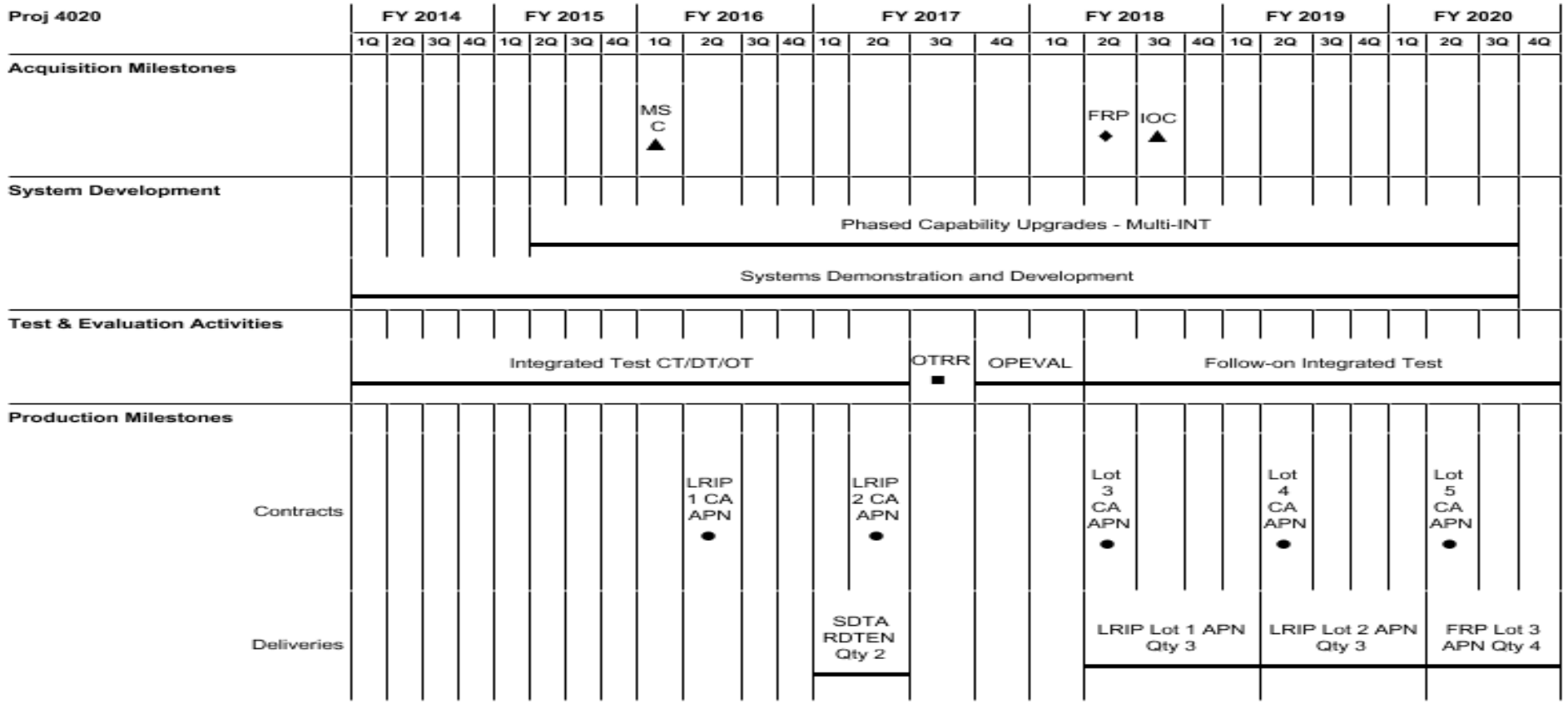
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2,125.050	375.235		451.442		227.188		-		227.188	5.208	3,184.123	-

Remarks

MQ-4C Triton RDTE funding for modernization has been segregated into a new program element (from PE 0305220N to PE 0305421N) in order to satisfy Congressional direction for increased transparency. All Triton modernization funding was previously included in PE 0305220N PU 4020 MQ-4C.

Prior to FY10, MQ-4C Triton, formerly known as RQ-4 Broad Area Maritime Surveillance (BAMS), was budgeted for in PE 0305205N: Endurance Unmanned Aer Veh.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305220N / *RQ-4 UAV*	**Project (Number/Name)** 4020 / *MQ-4C TRITON*



2016PB - 0305220N - 4020 MQ-4C Triton development activities are resourced by PE 0305220N and PE 0305421N.

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305220N / *RQ-4 UAV*	**Project (Number/Name)** 4020 / *MQ-4C TRITON*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4020				
Acquisition Milestones: Milestone C	1	2016	1	2016
Acquisition Milestones: Full Rate Production	2	2018	2	2018
Acquisition Milestones: Initial Operational Capability	3	2018	3	2018
System Development: Phased Capability Upgrades - Multi-INT	2	2015	3	2020
System Development: System Development and Demonstration	1	2014	3	2020
Test & Evaluation Activities: Integrated Test (Combined/Developmental/Operational)	1	2014	2	2017
Test & Evaluation Activities: Follow-on Integrated Test	2	2018	4	2020
Test & Evaluation Activities: Operational Test Readiness Review	3	2017	3	2017
Test & Evaluation Activities: OPEVAL	4	2017	1	2018
Production Milestones: Contracts: Low Rate Initial Production 1 Contract Award	2	2016	2	2016
Production Milestones: Contracts: Low Rate Initial Production 2 Contract Award	2	2017	2	2017
Production Milestones: Contracts: Full Rate Production Lot 3 Contract Award	2	2018	2	2018
Production Milestones: Contracts: Full Rate Production Lot 4 Contract Award	2	2019	2	2019
Production Milestones: Contracts: Full Rate Production Lot 5 Contract Award	2	2020	2	2020
Production Milestones: Deliveries: System Demonstration Test Articles Delivery	1	2017	2	2017
Production Milestones: Deliveries: Low Rate Initial Production Lot 1 Delivery	2	2018	1	2019
Production Milestones: Deliveries: Low Rate Initial Production Lot 2 Delivery	2	2019	1	2020
Production Milestones: Deliveries: Full Rate Production Lot 3 Delivery	2	2020	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305231N *I MQ-8 UAV*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	310.329	41.713	43.294	52.770	-	52.770	33.024	6.161	6.271	6.440	Continuing	Continuing
2768: *MQ-8 Fire Scout*	310.329	41.713	43.294	52.770	-	52.770	33.024	6.161	6.271	6.440	Continuing	Continuing
MDAP/MAIS Code: 253												

A. Mission Description and Budget Item Justification

MQ-8 Unmanned Air System Joint Military Intelligence Program.

The MQ-8 Unmanned Air System (popular name "Fire Scout") program went through a Title 10 Section 2433 (Nunn-McCurdy Breach) review in 2014 due to a unit cost breach. The Department certified a restructured program to Congress on 16 June 2014. The restructured program that was certified includes MQ-8B air vehicles procured under the original program of record, MQ-8C air vehicles procured under the Department of the Navy's Rapid Deployment Capability (RDC) procurement process, and an additional 21 MQ-8C air vehicles to be procured to complete the program Fleet requirements of 70 air vehicles (61 procurement and 9 RDT&E), and associated Mission Control Stations (MCS), Unmanned Aerial Vehicle Common Automatic Recovery Systems (UCARS) and support equipment. The restructured program also includes the endurance upgrade, radar, and weapons capabilities, such as those developed under the Navy's RDC authorities. All acquisition actions previously planned under the RDCs have transitioned into the restructured program of record.

The MQ-8B based system had an approved Milestone C (MS C) in May 2007. The Nunn-McCurdy certification process revoked the MS C approval. MS C for the restructured MQ-8 program is currently scheduled in the 2QFY16.

The MQ-8 Fire Scout provides real-time and non-real-time Intelligence, Surveillance and Reconnaissance (ISR) data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline MQ-8 can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting and laser designation and battle management (including voice communication relay). The MQ-8 Fire Scout launches and recovers vertically, and can operate from any suitably equipped air capable ship, as well as area land bases. Interoperability is achieved through the use of the Tactical Control System (TCS) software integrated into the Mission Control Station (MCS) (also referred to as Ground Control Station (GCS)) and through the use of the Tactical Common Data Link (TCDL). The data from the MQ-8 will be provided through standard DoD Command, Control, Communications, Computers and ISR system architectures and protocols.

A deployed MQ-8 System is comprised of: air vehicle(s), payloads (i.e. electro-optical/infra-red/laser designator-range finder, Automated Identification System, communications relay, radar, weapons, and other specialty payloads), MCS (with TCS and TCDL integrated for interoperability), a UCARS for automatic launch and recovery, and associated spares and support equipment. A limited number of land-based mission control stations supplement the shipboard systems to support shore-based operations, such as pre-deployment or acceptance functional check flights. These land-based mission control stations will also support depot-level maintenance/ post-maintenance activities.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305231N *I MQ-8 UAV*

The MQ-8C provides additional mission endurance and payload-weight-power, increased reliability, and improved maintainability to the MQ-8 Fire Scout System. The MQ-8C is a more cost efficient and capable air vehicle that meets the requirements of the updated Fire Scout Capability Production Document. The Navy plans to procure 40 MQ-8C air vehicles to support the Navy's fleet of small surface combatant suitably equipped air capable ships, including the Littoral Combat Ship (LCS). This budget transitions the MQ-8C Endurance Upgrade, Radar, and Weapons capabilities into the Program of Record.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	41.713	47.294	53.199	-	53.199
Current President's Budget	41.713	43.294	52.770	-	52.770
Total Adjustments	-	-4.000	-0.429	-	-0.429
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	-0.429	-	-0.429

Change Summary Explanation

Technical: FYDP funds support the Navy decision to transition MQ-8C Endurance Upgrade, Radar, and Weapons capabilities into the Program of Record.

Schedule:
Revised milestone terminology: Removed Rapid Deployment Capability (RDC) terminology to align with transition of RDC capabilities to the program of record.
Updated associated T&E events to remove reference to RDC.
Updated Milestone C decision, MQ-8C IOC, T&E events, and other milestones to align to the restructured MQ-8 program.
Updated Radar and Weapons capability contract awards and reviews.
Adjusted production and delivery schedules for current and out-year procurements.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305231N / *MQ-8 UAV*	Project (Number/Name) 2768 / *MQ-8 Fire Scout*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2768: *MQ-8 Fire Scout*	310.329	41.713	43.294	52.770	-	52.770	33.024	6.161	6.271	6.440	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The MQ-8 Fire Scout program went through a Title 10 Section 2433 (Nunn-McCurdy Breach) review in 2014 due to a unit cost breach. The Department certified a restructured program to Congress on 16 June 2014. The restructured program that was certified includes MQ-8B air vehicles procured under the original program of record, MQ-8C air vehicles procured under the Department of the Navy's Rapid Deployment Capability (RDC) procurement process, and an additional 21 MQ-8C air vehicles to be procured to complete the program Fleet requirements of 70 air vehicles (61 procurement and 9 RDT&E), and associated Mission Control Stations (MCS), Unmanned Aerial Vehicle Common Automatic Recovery Systems (UCARS) and support equipment. The restructured program also includes the endurance upgrade, radar, and weapons capabilities, such as those developed under the Navy's RDC authorities. All acquisition actions previously planned under the RDCs have transitioned into the restructured program of record.

The MQ-8B based system had an approved Milestone C (MS C) in May 2007. The Nunn-McCurdy certification process revoked the MS C approval. MS C for the restructured MQ-8 program is currently scheduled in the 2QFY16.

The MQ-8 Fire Scout provides real-time and non-real-time Intelligence, Surveillance and Reconnaissance (ISR) data to tactical users without the use of manned aircraft or reliance on limited joint theater or national assets. The baseline MQ-8 can accomplish missions including over-the-horizon tactical reconnaissance, classification, targeting and laser designation and battle management (including voice communications relay). The MQ-8 launches and recovers vertically, and can operate from any suitably equipped air capable ship, as well as area land bases. Interoperability is achieved through the use of the Tactical Control System (TCS) software integrated into the Mission Control Station (MCS) (also referred to as Ground Control Station (GCS)) and through the use of the Tactical Common Data Link (TCDL). The data from the MQ-8 will be provided through standard DoD Command, Control, Communications, Computers and ISR system architectures and protocols.

A deployed MQ-8 system is comprised of: air vehicle(s), payloads (i.e. electro-optical/infra-red/laser designator-range finder, Automated Identification System, communications relay, radar, weapons, and other specialty payloads), MCS (with TCS and TCDL integrated for interoperability), a UCARS for automatic launch and recovery, and associated spares and support equipment. A limited number of land-based mission control stations supplement the shipboard systems to support shore-based operations, such as pre-deployment or acceptance functional check flights. These land based mission control stations will also support depot-level maintenance/ post-maintenance activities.

The MQ-8C provides additional mission endurance and payload-weight-power, increased reliability, and improved maintainability to the MQ-8 Fire Scout System. The MQ-8C is a more cost efficient and capable air vehicle that meets the requirements of the Fire Scout Capability Production Document (CPD). This budget transitions the MQ-8C Endurance Upgrade, Radar, and Weapons capabilities into the Program of Record.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305231N / *MQ-8 UAV*	**Project (Number/Name)** 2768 / *MQ-8 Fire Scout*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Hardware and System Development	21.891	17.900	31.355	-	31.355
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued MQ-8C hardware, software modifications, and other payload integration. Continued Littoral Combat Ship (LCS) and other air capable ship class integration. Continued MQ-8B radar development and integration. ***FY 2015 Plans:*** Continue MQ-8C Rapid Deployment Capability hardware, software modifications, Coastal Battlefield Reconnaissance and Analysis (COBRA), and other payload integration. Continue MQ-8 integration and testing on LCS. Correct deficiencies from MQ-8C and MQ-8B. Initiate MQ-8C Endurance Upgrade, Radar, and Weapons capabilities into the Program of Record. ***FY 2016 Base Plans:*** Continue MQ-8C hardware, software modifications, COBRA, and other payload integration. Continue MQ-8 integration and testing on LCS. Continue transition of MQ-8C Endurance Upgrade, Radar and Weapons capabilities into the Program of Record. ***FY 2016 OCO Plans:*** N/A					
Title: Development/Operational Testing	6.100	7.500	5.500	-	5.500
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued MQ-8C air vehicle and MQ-8B Radar testing. Completed MQ-8B based LCS dynamic interface testing for LCS-3 and LCS-4. Completed MQ-8B weapons Quick Reaction Assessment. Continued LCS and other Class Ship integration and testing. ***FY 2015 Plans:*** Continue MQ-8C testing and initiate LCS integration. Complete MQ-8B radar testing. Continue other payload integration and testing. Initiate development testing for MQ-8C radar, weapons, and other payload capabilities. Initiate Initial Operational Test and Evaluation (IOT&E) for MQ-8C air vehicle. ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305231N / *MQ-8 UAV*	**Project (Number/Name)** 2768 / *MQ-8 Fire Scout*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Complete Dynamic Interface testing of MQ-8C on both classes of LCS. Complete MQ-8C Endurance Upgrade developmental testing. Complete IOT&E testing of MQ-8C on LCS. Continue other payload integration and testing. ***FY 2016 OCO Plans:*** N/A					
Title: Engineering and Technical Services	13.722	17.894	15.915	-	15.915
Articles:	-	-	-	-	-
FY 2014 Accomplishments: Continued engineering, program technical management, logistics support for the MQ-8 Fire Scout system. Initiated MQ-8 system upgrade with the MQ-8C air vehicle subsystem. Continued payload and system studies and design. ***FY 2015 Plans:*** Continue engineering, program technical management, logistics support. Continue acquisition planning to transition the MQ-8C, Radar, and Weapons capabilities into the Program of Record. Continue Radar, Weapons, other payloads, Littoral Combat Ship (LCS) capabilities payloads, and system studies and design. ***FY 2016 Base Plans:*** Continue engineering, program technical management, logistics support. Continue acquisition planning and execution to transition the MQ-8C, Radar, and Weapons capabilities into the MQ-8 Program of Record. Continue Radar, Weapons, other payloads, LCS capabilities payloads, and system studies and design. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	41.713	43.294	52.770	-	52.770

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN, 044300: *MQ-8 UAV*	74.080	109.663	120.020	-	120.020	98.501	88.670	97.363	84.345	342.226	1,635.416
• APN, 060510: *MQ-8 UAV Spares*	12.261	12.573	-	-	-	-	-	-	-	-	112.953
• APN, 058800: *MQ-8 Series*	-	8.741	22.464	-	22.464	19.956	9.583	5.477	5.583	24.472	96.276

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305231N / *MQ-8 UAV*	**Project (Number/Name)** 2768 / *MQ-8 Fire Scout*

D. Acquisition Strategy

The Navy is updating our acquisition strategy to restructure the MQ-8 Fire Scout program and capitalize on prior Rapid Deployment Capability efforts, while leveraging existing program investments. The updated acquisition strategy will maintain commonality of MQ-8B and MQ-8C systems, payloads, avionics, software, and ancillary equipment where possible. It will continue integration and test of MQ-8C, Radar, and Weapons capabilities to support the Capability Production Document. Initial Operational Capability (IOC) of an MQ-8B based system was achieved in 2QFY14 while IOC of an MQ-8C based system is anticipated in 4QFY16. A Milestone C with a production decision will follow completion of Operational Test.

E. Performance Metrics

Successfully provide an MQ-8C air vehicle that supports operational deployments. Successfully provide a Radar capability for operational deployments. Successfully achieve LCS Ship Integration.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305231N / *MQ-8 UAV*	**Project (Number/Name)** 2768 / *MQ-8 Fire Scout*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development (MQ-8)	C/CPIF	Northrop Grumman Corp : San Diego, CA	224.273	21.891	Nov 2013	13.745	Nov 2014	24.355	Nov 2015	-		24.355	78.200	362.464	362.464
Primary Hardware Development (MQ-8)	C/CPIF	Raytheon Corp : Falls Church, VA	16.251	-		4.155	Nov 2014	7.000	Nov 2015	-		7.000	5.900	33.306	33.308
		Subtotal	240.524	21.891		17.900		31.355		-		31.355	84.100	395.770	395.772

Remarks

The FY16 increase supports integration of MQ-8C, radar and weapons capabilities into the program of record.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	Various	Various : Various	3.977	2.100	Nov 2013	4.420	Nov 2014	3.000	Nov 2015	-		3.000	11.900	25.397	-
		Subtotal	3.977	2.100		4.420		3.000		-		3.000	11.900	25.397	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD : PAXRV, MD	9.971	4.500	Nov 2013	5.100	Nov 2014	3.500	Nov 2015	-		3.500	10.900	33.971	-
Operational Test & Evaluation/QRA	WR	NAWCAD : PAXRV, MD	2.331	1.600	Nov 2013	2.400	Nov 2014	2.000	Nov 2015	-		2.000	4.200	12.531	-
Prior Years T&E no longer funded in the FYDP	Various	Various : Various	0.342	-		-		-		-		-	-	0.342	-
		Subtotal	12.644	6.100		7.500		5.500		-		5.500	15.100	46.844	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305231N / *MQ-8 UAV*	**Project (Number/Name)** 2768 / *MQ-8 Fire Scout*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD : PAXRV, MD	43.579	6.222	Nov 2013	7.380	Nov 2014	7.716	Nov 2015	-		7.716	19.200	84.097	-
Program Management Support	Various	Various : Various	6.471	5.100	Nov 2013	5.624	Nov 2014	4.700	Nov 2015	-		4.700	12.800	34.695	-
Travel	WR	NAVAIR : PAXRV, MD	0.833	0.300	Nov 2013	0.470	Nov 2014	0.499	Nov 2015	-		0.499	Continuing	Continuing	Continuing
Prior years Mgmt Svcs no longer funded in the FYDP	Various	Various : Various	2.301	-		-		-		-		-	-	2.301	-
		Subtotal	53.184	11.622		13.474		12.915		-		12.915	-	-	-

Remarks

Travel contract type is TO.

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	310.329	41.713		43.294		52.770		-		52.770	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305231N / *MQ-8 UAV*	**Project (Number/Name)** 2768 / *MQ-8 Fire Scout*

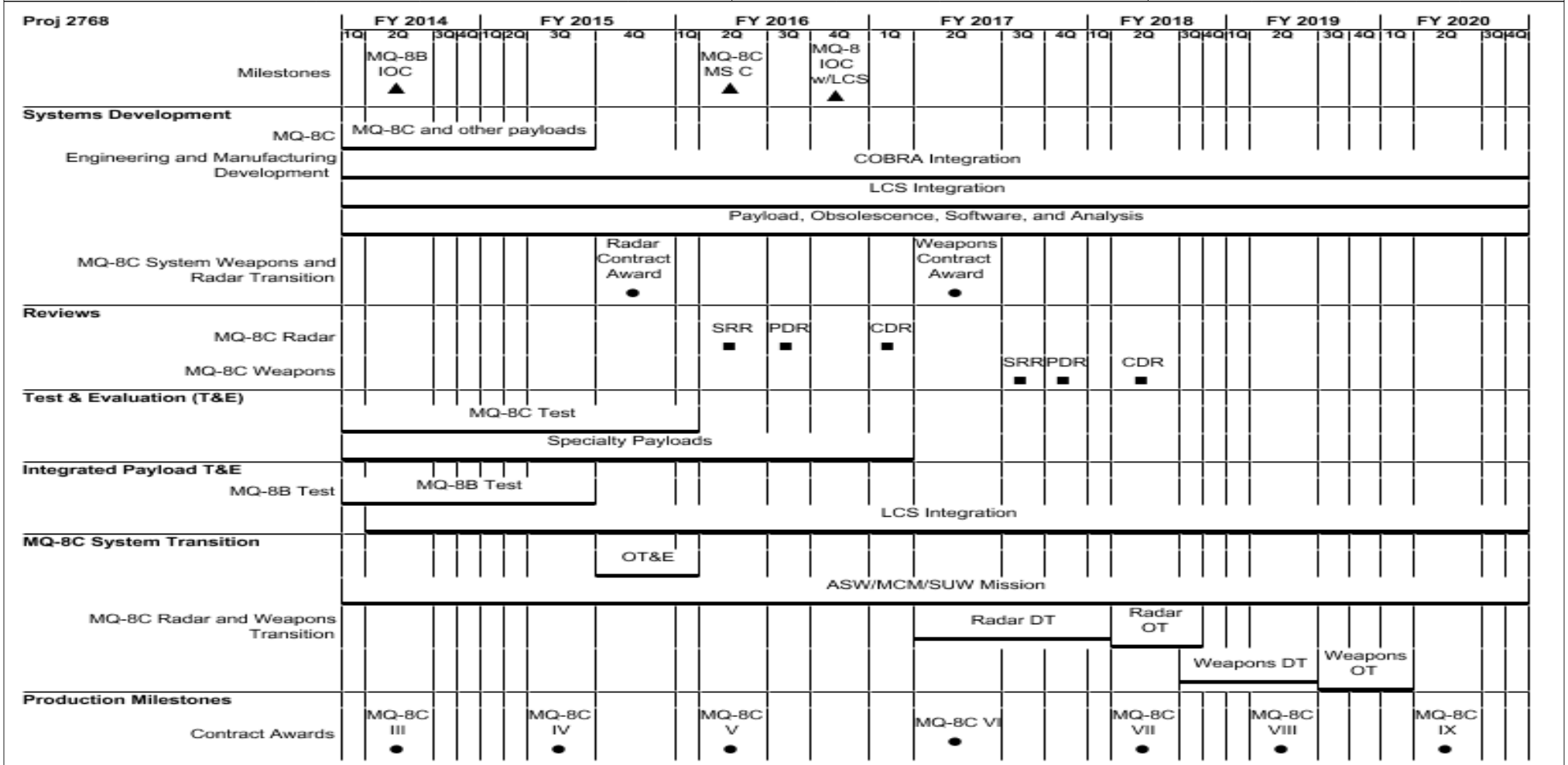

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305231N / *MQ-8 UAV*	**Project (Number/Name)** 2768 / *MQ-8 Fire Scout*

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305231N / *MQ-8 UAV*	**Project (Number/Name)** 2768 / *MQ-8 Fire Scout*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2768				
Milestones: MQ-8 Initial Operational Capability (IOC)	2	2014	2	2014
Milestones: MQ-8 Initial Operational Capability (IOC) - MQ-8C Littoral Combat Ship (LCS)	4	2016	4	2016
Milestones: MQ-8C Milestone C Decision	2	2016	2	2016
Systems Development: MQ-8C: MQ-8C and other payloads	1	2014	3	2015
Systems Development: Engineering and Manufacturing Development: Coastal Battlefield Reconnaissance and Analysis Integration (COBRA), BLK 1/2/3	1	2014	4	2020
Systems Development: Engineering and Manufacturing Development: Littoral Combat Ship (LCS) Integration	1	2014	4	2020
Systems Development: Engineering and Manufacturing Development: Payload, Obsolescence, Software, and Analysis	1	2014	4	2020
Systems Development: MQ-8C System Weapons and Radar Transition: Radar Contract Award	4	2015	4	2015
Systems Development: MQ-8C System Weapons and Radar Transition: Weapons Contract Award	2	2017	2	2017
Reviews: MQ-8C Radar: System Requirements Review (SRR)	2	2016	2	2016
Reviews: MQ-8C Radar: Preliminary Design Review (PDR)	3	2016	3	2016
Reviews: MQ-8C Radar: Critical Design Review (CDR)	1	2017	1	2017
Reviews: MQ-8C Weapons: System Requirements Review	3	2017	3	2017
Reviews: MQ-8C Weapons: Preliminary Design Review	4	2017	4	2017
Reviews: MQ-8C Weapons: Critical Design Review	2	2018	2	2018
Test & Evaluation (T&E): MQ-8C Development Test	1	2014	1	2016
Test & Evaluation (T&E): Specialty Payloads	1	2014	1	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305231N / *MQ-8 UAV*	**Project (Number/Name)** 2768 / *MQ-8 Fire Scout*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Integrated Payload T&E: MQ-8B Test: MQ-8B	1	2014	3	2015
Integrated Payload T&E: MQ-8B Test: Littoral Combat Ship (LCS) Integration	2	2014	4	2020
MQ-8C System Transition: Operational Test and Evaluation (OT&E)	4	2015	1	2016
MQ-8C System Transition: ASW/MCM/SUM Mission	1	2014	4	2020
MQ-8C System Transition: MQ-8C Radar and Weapons Transition: Radar Developmental Test (DT)	2	2017	1	2018
MQ-8C System Transition: MQ-8C Radar and Weapons Transition: Radar Operational Test (OT)	2	2018	3	2018
MQ-8C System Transition: MQ-8C Radar and Weapons Transition: Weapons Developmental Test (DT)	3	2018	2	2019
MQ-8C System Transition: MQ-8C Radar and Weapons Transition: Weapons Operational Test (OT)	3	2019	1	2020
Production Milestones: Contract Awards: Air Vehicles MQ-8C III	2	2014	2	2014
Production Milestones: Contract Awards: Air Vehicles MQ-8C IV	3	2015	3	2015
Production Milestones: Contract Awards: Air Vehicles MQ-8C V	2	2016	2	2016
Production Milestones: Contract Awards: Air Vehicles MQ-8C VI	2	2017	2	2017
Production Milestones: Contract Awards: Air Vehicles MQ-8C VII	2	2018	2	2018
Production Milestones: Contract Awards: Air Vehicles MQ-8C VIII	2	2019	2	2019
Production Milestones: Contract Awards: Air Vehicles MQ-8C IX	2	2020	2	2020

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305232M / *RQ-11 UAV*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	2.125	-	0.718	0.635	-	0.635	0.484	0.489	0.498	0.508	Continuing	Continuing
2292: *RQ-11 UAV*	2.125	-	0.718	0.635	-	0.635	0.484	0.489	0.498	0.508	Continuing	Continuing

Note

Prior to FY2010 RQ-11 Unmanned Aerial Vehicle (UAV) was funded in PE 0206313M, project C2273.

A. Mission Description and Budget Item Justification

The Small Unit Remote Scouting System (SURSS) acquisition program procures multiple unmanned aircraft systems (UAS) to provide the company/detachment level with scalable airborne reconnaissance and surveillance to aid in detecting, identifying, engaging, or avoiding enemy units. SURSS consists of three UAS platforms the RQ-12A Wasp, RQ-11B Raven, and the RQ-20A Puma.

SURSS is transitioning from 8 channel to a Digital Data Link (DDL), while pursuing Tactical Sensor Network Suite (TSN2) technology. TSN2 technology provides enhanced opportunities to detect irregular and asymmetric threats in a variety of domains, to include urban domains, providing the warfighter with enhanced situational awareness and understanding. In concert with TSN2 technology development, efforts to research and test technologies that improve UAV range, endurance, reliability, and maintainability will be pursued.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	-	0.718	0.638	-	0.638
Current President's Budget	-	0.718	0.635	-	0.635
Total Adjustments	-	-	-0.003	-	-0.003
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.003	-	-0.003

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305232M / *RQ-11 UAV*	Project (Number/Name) 2292 / *RQ-11 UAV*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2292: *RQ-11 UAV*	2.125	-	0.718	0.635	-	0.635	0.484	0.489	0.498	0.508	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Small Unit Remote Scouting System (SURSS) acquisition program procures multiple unmanned aircraft systems (UAS) to provide the company/detachment level with scalable airborne reconnaissance and surveillance to aid in detecting, identifying, engaging, or avoiding enemy units. SURSS currently consists of three UAS platforms the RQ-12A Wasp, RQ-11B Raven, and the RQ-20A Puma.

SURSS is transitioning from 8 channel to a Digital Data Link (DDL), while pursuing Tactical Sensor Network Suite (TSN2) technology. TSN2 technology provides enhanced opportunities to detect irregular and asymmetric threats in a variety of domains, to include urban domains, providing the warfighter with enhanced situational awareness and understanding. In concert with TSN2 technology development, efforts to research and test technologies that improve UAV range, endurance, reliability, and maintainability will be pursued.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development and Support	-	0.718	0.635	-	0.635
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: -Continue TSN2 effort, conduct Reliability, Maintainability, and Availability Analysis on Electric Optical/Infrared gimbal payloads. -Initiate field user evaluation of universal tactical controller dual screen configuration. -Initiate integration of advanced payloads and technologies to include; laser marker, tactical compact communication relay, high endurance batteries, tactical launchers, directional antennas, and sigint payloads					
FY 2016 Base Plans: -Continue field user evaluation of universal tactical controller dual screen configuration. -Continue integration of advanced payloads and technologies to include; laser marker, tactical compact communication relay, high endurance batteries, tactical launchers, directional antennas, and sigint payloads.					
FY 2016 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	-	0.718	0.635	-	0.635

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305232M / *RQ-11 UAV*	**Project (Number/Name)** 2292 / *RQ-11 UAV*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• PMC/4757: *RQ-11 UAV*	4.483	4.477	-	3.430	3.430	-	-	-	-	-	86.623

Remarks

D. Acquisition Strategy

The program office is pursuing a rapid acquisition approach to quickly field new technology and capabilities to the warfighter. The strategy is to use evolutionary acquisition with incremental developments to meet the final desired Small Unit Remote Scouting System (SURSS) requirements (Joint USMC/USA/SOCOM capabilities). The next increment will involve an evolution to a Group 1 (Family of System) individually capable of executing requirements for long, medium and short range missions in fulfillment of the SURSS requirement.

E. Performance Metrics

Fielded joint material solution.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305232M / *RQ-11 UAV*	Project (Number/Name) 2292 / *RQ-11 UAV*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Group 1	WR	NSWC : Dahlgren	1.342	-		0.350	Dec 2014	0.635	Dec 2015	-		0.635	Continuing	Continuing	Continuing
		Subtotal	1.342	-		0.350		0.635		-		0.635	-	-	-

Remarks

FY14: N/A
FY15: Continue TSN2 development and testing.
FY16: Continue TSN2 development and testing. Begin integration of advanced payloads to include laser marker, tactical compact communications relay, high endurance batteries, tactical launchers, directional antennas, and SIGINT payloads.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Group 1	Various	NAWCAD : Pax River	0.783	-		0.368	Dec 2014	-		-		-	Continuing	Continuing	Continuing
		Subtotal	0.783	-		0.368		-		-		-	-	-	-

Remarks

FY14: N/A
FY15: Conduct RMA analysis. Continue TNS2 effort on EO/IR gimbal payloads.
FY16: N/A

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.125	-		0.718		0.635		-		0.635	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305232M / *RQ-11 UAV*	**Project (Number/Name)** 2292 / *RQ-11 UAV*

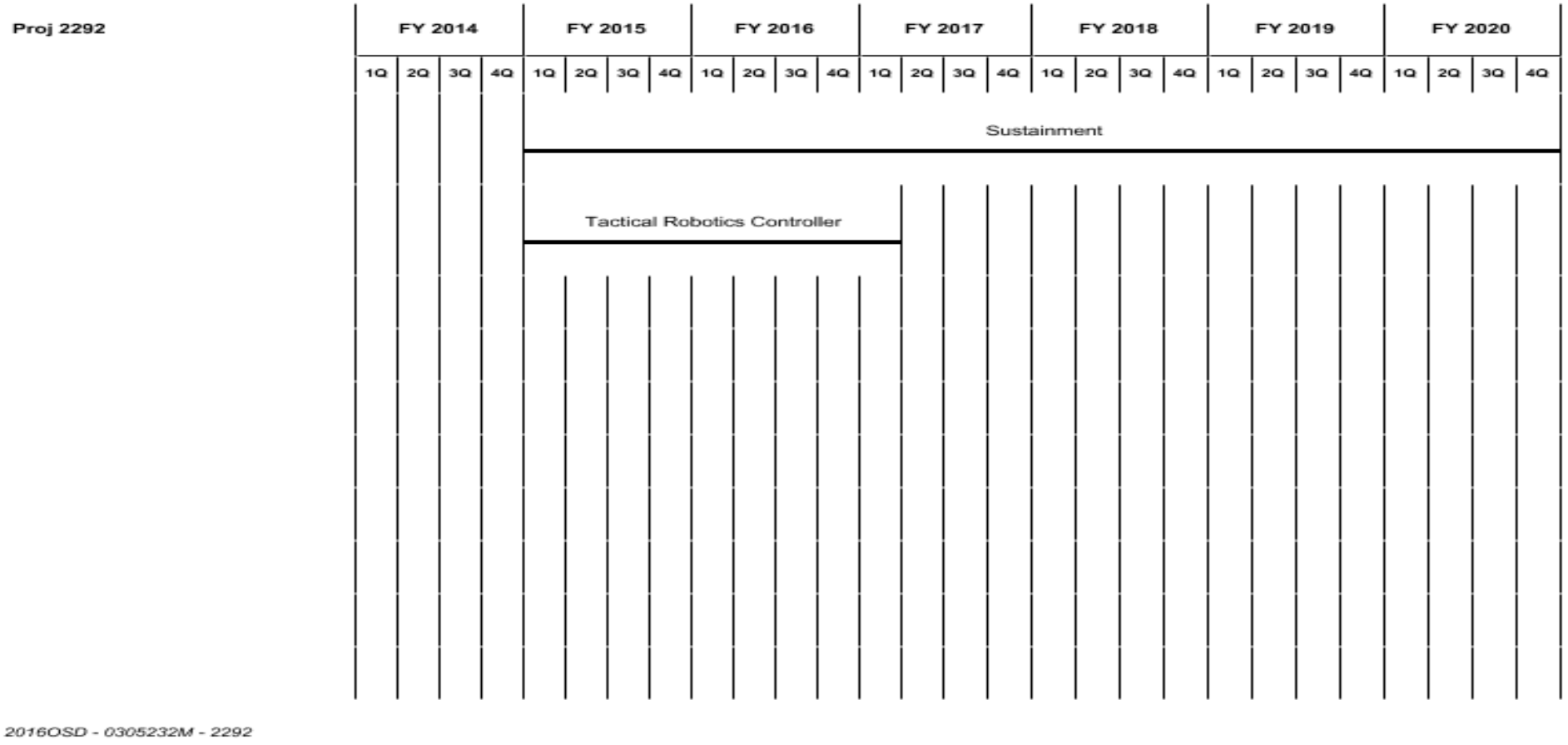

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305232M / *RQ-11 UAV*	**Project (Number/Name)** 2292 / *RQ-11 UAV*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2292				
Sustainment Efforts	1	2015	4	2020
TNS2 Efforts	1	2015	1	2017

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305233N *I RQ-7 UAV*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	20.979	0.710	0.851	0.688	-	0.688	0.858	0.849	0.812	0.830	Continuing	Continuing
9C84: *MCTUAS*	20.979	0.710	0.851	0.688	-	0.688	0.858	0.849	0.812	0.830	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element supports additional capability development, at both service specific and joint service levels, for the RQ-7 Shadow non-lethal joint tactical Unmanned Aerial Vehicle system for the Department of Defense to provide the warfighter with the capability for day/night aerial Reconnaissance, Surveillance, Target Acquisition, Intelligence, Battle Damage Assessment, and Force Protection.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full-rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	0.710	0.851	0.834	-	0.834
Current President's Budget	0.710	0.851	0.688	-	0.688
Total Adjustments	-	-	-0.146	-	-0.146
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	-0.146	-	-0.146

Change Summary Explanation

The FY 2016 funding request was reduced by $139 thousand to account for the availability of prior year execution balances."

Schedule: Not applicable.
Technical: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305233N / *RQ-7 UAV*	Project (Number/Name) 9C84 / *MCTUAS*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
9C84: *MCTUAS*	20.979	0.710	0.851	0.688	-	0.688	0.858	0.849	0.812	0.830	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Marine Corps Tactical Unmanned Aircraft System (MCTUAS) project supports the fielded RQ-7B Shadow Unmanned Aerial Vehicle (UAV) system by conducting research, development, test and evaluation for improvement of the RQ-7 UAV capabilities in Reconnaissance, Surveillance and Target Acquisition, Intelligence, Battle Damage Assessment, Laser Designation and Force Protection. The RQ-7B Shadow UAV system provides critical battlefield intelligence and targeting information in the rapid cycle time required for success at the tactical level.

RQ-7B Shadow UAV systems are acquired through the United States Army (US Army) Unmanned Aerial System (UAS) Program Office to fulfill United States Marine Corps (USMC) UAS requirements. In order to optimize interoperability, maintainability, and capability with minimal cost, the USMC and US Army plan to develop additional capabilities for the common RQ-7 system to include the fuselage, flight and mission electrical and electronic systems, propulsion system, communications system, and capability payloads. These funds represent the USMC share of the combined joint development cost through Program Management Office UAS and the RQ-7 USMC specific development efforts of the NAVAIR 5.1 UAV Test Directorate.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: MCTUAS Development Support	0.710	0.851	0.688	-	0.688
Articles:	-	-	-	-	-
Description: Joint development efforts with US Army RQ-7 Shadow Program, for common RQ-7 block upgrades, United States Marine Corps specific development efforts at the joint and Navy unique levels required for continued improvement and interoperability.					
FY 2014 Accomplishments: Block II upgrades (Common Operating Environment, Blue Force Tracker, and Problem/change report Correction), external payloads and Intelligence Surveillance Reconnaissance systems development.					
FY 2015 Plans: Funding continues development for ongoing initiatives and will initiate development efforts for improvements to Intelligence Surveillance Reconnaissance systems, external payloads and communications systems.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305233N / *RQ-7 UAV*	**Project (Number/Name)** 9C84 / *MCTUAS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Funding continues development for ongoing initiatives and will initiate development efforts for improvements to Intelligence Surveillance Reconnaissance systems, external payloads, communications systems, digital interoperability initiative, and propulsion systems. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.710	0.851	0.688	-	0.688

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN/058900: *RQ-7 UAV*	20.417	2.542	3.815	-	3.815	3.828	-	-	-	-	103.721

Remarks

D. Acquisition Strategy

Sole source engineering development services contract with Textron Systems Unmanned System (formerly Aircraft Armament Incorporated) through United States Army Program Management Unmanned Aerial Systems and United States Marine Corps (USMC) unique capability development efforts of the Navy Unmanned Aerial Vehicle (UAV) Test Squadron.

E. Performance Metrics

Attainment of targeted development effort upgrades improving operational capability of the RQ-7 UAV USMC Tactical Unmanned Aircraft System.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305233N / *RQ-7 UAV*	Project (Number/Name) 9C84 / *MCTUAS*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year cost no longer funded in the FYDP	Various	Various : Various	14.650	-		-		-		-		-	-	14.650	-
		Subtotal	14.650	-		-		-		-		-	-	14.650	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Development Efforts	Various	Various : Various	3.579	0.710	Jun 2014	0.851	Jun 2015	0.688	Jun 2016	-		0.688	Continuing	Continuing	Continuing
Prior year cost no longer funded in the FYDP	Various	Various : Various	0.715	-		-		-		-		-	-	0.715	-
		Subtotal	4.294	0.710		0.851		0.688		-		0.688	-	-	-

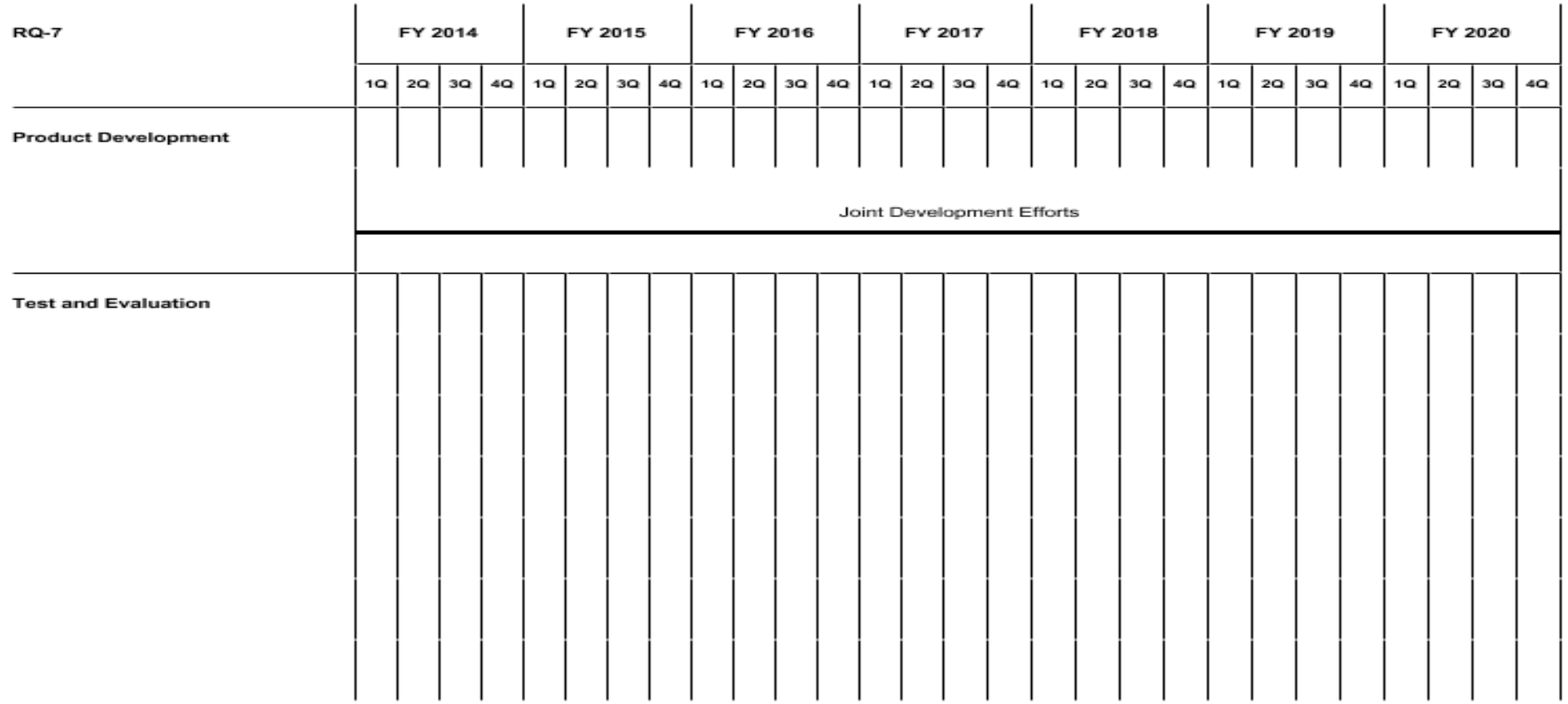
Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year cost no longer funded in the FYDP	Various	Various : Various	2.035	-		-		-		-		-	-	2.035	-
		Subtotal	2.035	-		-		-		-		-	-	2.035	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	20.979	0.710		0.851		0.688		-		0.688	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305233N / *RQ-7 UAV*	**Project (Number/Name)** 9C84 / *MCTUAS*



2016PB - 0305233N - 9C84

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305233N / *RQ-7 UAV*	**Project (Number/Name)** 9C84 / *MCTUAS*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
RQ-7				
Product Development: Joint and USMC Unique Development Efforts	1	2014	4	2020

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305234N *I (U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	59.476	5.033	4.813	4.647	-	4.647	5.276	5.266	5.258	5.365	Continuing	Continuing
3192: *RQ-21 BLACKJACK*	59.476	5.033	4.813	4.647	-	4.647	5.276	5.266	5.258	5.365	Continuing	Continuing

A. Mission Description and Budget Item Justification

The RQ-21A BLACKJACK (formerly known as The Small Tactical Unmanned Aircraft System (STUAS)) is a combined United States Navy (USN) and United States Marine Corps (USMC) program that provides persistent maritime and land-based tactical Intelligence, Surveillance, and Reconnaissance/Target Acquisition support for tactical level maneuver decisions and unit level force defense/force protection for Naval amphibious assault ships (multi-ship classes) and Navy and Marine land forces. This system will support Naval Missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and provide support for Naval Units operating from sea/shore in Overseas Contingency Operations. This submission is the USNs portion of the program and has been coordinated with the USMC budget submission PE 0305239M (RQ-21A).

The RQ-21A BLACKJACK system will continue to evolve and upgrade capabilities to satisfy capabilities shortfalls, new requirements, and reliability, maintainability and safety issues. Upgraded capabilities may include Navy Command and Control integration, Weapons Integration, Heavy Fuel Engine, Laser Designator, Frequency Agile Communications Relay, Digital Common Data Link, and cyclic refresh of the Electro-Optical/Infrared camera. RQ-21A BLACKJACK will also continue to expand its shipboard capability across new ship classes.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full-rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	5.013	4.813	4.992	-	4.992
Current President's Budget	5.033	4.813	4.647	-	4.647
Total Adjustments	0.020	-	-0.345	-	-0.345
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.020	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.345	-	-0.345

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305234N *I (U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)*

Change Summary Explanation

The FY 2016 funding request was reduced by $308 thousand to account for the availability of prior year execution balances.

Schedule: Due to ship availability, Initial Operational Test and Evaluation (IOT&E) has been extended through 4QFY14; thereby extending correction of deficiencies and shifting the IOT&E final report into 1QFY15. Decrease in funding from FY15 to FY16 reflect rephasing of development funds to better align with revised program development schedule.
Technical: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305234N / *(U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)*	Project (Number/Name) 3192 / *RQ-21 BLACKJACK*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3192: *RQ-21 BLACKJACK*	59.476	5.033	4.813	4.647	-	4.647	5.276	5.266	5.258	5.365	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The RQ-21A BLACKJACK (formerly known as The Small Tactical Unmanned Aircraft System (STUAS)) is a combined United States Navy (USN) and United States Marine Corps (USMC) program that provides persistent maritime and land-based tactical Intelligence, Surveillance, and Reconnaissance/Target Acquisition support for tactical level maneuver decisions and unit level force defense/force protection for Naval amphibious assault ships (multi-ship classes) and Navy and Marine land forces. This system will support Naval Missions such as building the Recognized Maritime Picture, Maritime Security Operations, Maritime Interdiction Operations, and provide support for Naval Units operating from sea/shore in Overseas Contingency Operations. This submission is the USNs portion of the program and has been coordinated with the USMC budget submission PE 0305239M (RQ-21A).

The RQ-21A BLACKJACK system will continue to evolve and upgrade capabilities to satisfy capabilities shortfalls, new requirements, and reliability, maintainability and safety issues. Upgraded capabilities may include Navy Command and Control integration, Weapons Integration, Heavy Fuel Engine, Laser Designator, Frequency Agile Communications Relay, Digital Common Data Link, and cyclic refresh of the Electro-Optical/Infrared camera. RQ-21A BLACKJACK will also continue to expand its shipboard capability across new ship classes.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Upgrade Efforts	1.520	1.700	1.673	-	1.673
Articles:	-	-	-	-	-
Description: Provide Upgrade Efforts					
FY 2014 Accomplishments: Corrected deficiencies found during Initial Operational Test and Evaluation (IOT&E) testing. Performed beyond line of sight demonstration. Completed documentation for United States Marine Corps (USMC) Initial Operating Capability. Successfully completed Operational Test Readiness Review. Delivered USMC Low Rate Initial Production 1 System.					
FY 2015 Plans: RQ-21A Blackjack will complete ship based IOT&E and continue correction of deficiencies. The program will continue software engineering and development for block software updates and begin development and					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *(U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
integration of an advanced heavy fuel engine and fuselage upgrades to extend the maximum gross takeoff weight. ***FY 2016 Base Plans:*** RQ-21A Blackjack will continue correction of deficiencies based on the final FY15 Initial Operational Test and Evaluation (IOT&E) Report. The program will continue advanced heavy fuel engine integration and testing. Other upgrades include the cyclic refresh of the Electro-Optical/Infrared camera, associated turret system, communications relay package, and automated identification system. ***FY 2016 OCO Plans:*** N/A					
Title: Engineering and Technical Services	3.513	3.113	2.974	-	2.974
Articles:	-	-	-	-	-
Description: Provides for the Government Engineering Technical Support, Logistics Support, Test and Evaluation, other Government Support, Contractor Support Services, Program Management Support, Program related travel in support of the upgrade/payload efforts. ***FY 2014 Accomplishments:*** Provided for the Government Engineering Technical Support, Logistics Support, Test and Evaluation, Other Government Support, Contractor Support Services, Program Management Support, Program related travel in support of IOT&E and the upgrade/payload efforts. ***FY 2015 Plans:*** Will provide support for Government Engineering Technical Support, Logistics Support, Test and Evaluation, other Government support, Contractor Support Services, Program Management Support, and program related travel in support of upgrades and correction of deficiencies. ***FY 2016 Base Plans:*** FY16 will continue FY15 support for Government Engineering Technical Support, Logistics Support, Test and Evaluation, Other Government Support, Contract Support Services, Program Management Support, and program related travel in support of correction of deficiencies and upgrade efforts. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	5.033	4.813	4.647	-	4.647

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *(U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTEN/0305239M: *STUAS/RQ-21A*	11.122	8.192	6.435	-	6.435	9.608	9.393	8.853	9.035	Continuing	Continuing
• PMC/473700: *STUAS/RQ-21A*	66.007	69.315	84.916	-	84.916	84.034	78.779	76.675	83.332	Continuing	Continuing
• PMC/7000: *STUAS/RQ-21A Spares and Repair Parts*	4.950	5.093	4.111	-	4.111	5.869	5.760	5.454	5.567	Continuing	Continuing
• APN/0444: *STUAS/RQ-21A.*	-	55.000	3.450	55.000	58.450	-	1.950	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

The program office has utilized a competitive acquisition approach for award of the Engineering and Manufacturing Development effort to field a capability that meets threshold requirements. Low Rate Initial Production test article was utilized to successfully complete Initial Operational Test and Evaluation (IOT&E) and achieve Initial Operational Capability. Future upgrades and development shall be competitively sourced or procured via Government Laboratories with Insitu, the prime contractor, performing integration efforts as required.

E. Performance Metrics

Attainment of Full Rate Production (FRP), correction of deficiencies from the IOT&E report, and attainment of USMC and USN Full Operational Capability (FOC) in accordance with the approved schedule.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *(U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Upgrade Efforts/Correction of Deficiencies	C/BOA	Insitu, Inc : Bingen, WA	0.000	1.520	Jan 2014	1.200	Jan 2015	1.093	Jan 2016	-		1.093	Continuing	Continuing	Continuing
Mission Training Device	MIPR	JTC/SIL : Redstone Arsenal, AL	2.136	-		0.500	Mar 2015	0.580	Mar 2016	-		0.580	-	3.216	3.216
Prior year cost no longer funded in the FYDP	Various	Various : Various	26.989	-		-		-		-		-	-	26.989	26.989
		Subtotal	29.125	1.520		1.700		1.673		-		1.673	-	-	-

Remarks

Product development corresponds to R-2A Upgrade Efforts.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	WR	NAWC-AD : Patuxent River, MD	4.034	0.487	Dec 2013	0.315	Dec 2014	-		-		-	Continuing	Continuing	Continuing
Training Support	WR	NAWC-TSD : Orlando, FL	2.886	0.420	Dec 2013	0.440	Dec 2014	0.440	Dec 2015	-		0.440	Continuing	Continuing	Continuing
Software Engineering Support	WR	NAWC-WD : China Lake, CA	5.970	1.200	Dec 2013	1.200	Dec 2014	1.200	Dec 2015	-		1.200	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWC-AD : Patuxent River, MD	10.529	0.610	Dec 2013	0.451	Dec 2014	0.392	Dec 2015	-		0.392	Continuing	Continuing	Continuing
		Subtotal	23.419	2.717		2.406		2.032		-		2.032	-	-	-

Remarks

Support is included within R-2A Engineering and Technical Services.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *(U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	C/CPFF	OPTEVFOR : Norfolk, VA	2.353	0.175	Jul 2014	0.296	Jan 2015	0.385	Jan 2016	-		0.385	Continuing	Continuing	Continuing
Operational Test & Evaluation	WR	OPTEVFOR : Norfolk, VA	0.000	0.135	Mar 2014	-		0.135	Dec 2015	-		0.135	Continuing	Continuing	Continuing
		Subtotal	2.353	0.310		0.296		0.520		-		0.520	-	-	-

Remarks

Test and Evaluation is included within R-2A Engineering and Technical Services.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	MIPR	DTIC : FT. Belvoir, VA	2.120	0.236	Jan 2014	0.225	Mar 2015	0.225	Mar 2016	-		0.225	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Ausley : Patuxent River, MD	2.299	0.050	Dec 2013	-		-		-		-	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Bowhead : Patuxent River, MD	0.000	0.150	Feb 2014	0.138	Dec 2014	0.149	Feb 2016	-		0.149	Continuing	Continuing	Continuing
Travel	WR	Various : Various	0.160	0.050	Nov 2013	0.048	Nov 2014	0.048	Nov 2015	-		0.048	Continuing	Continuing	Continuing
		Subtotal	4.579	0.486		0.411		0.422		-		0.422	-	-	-

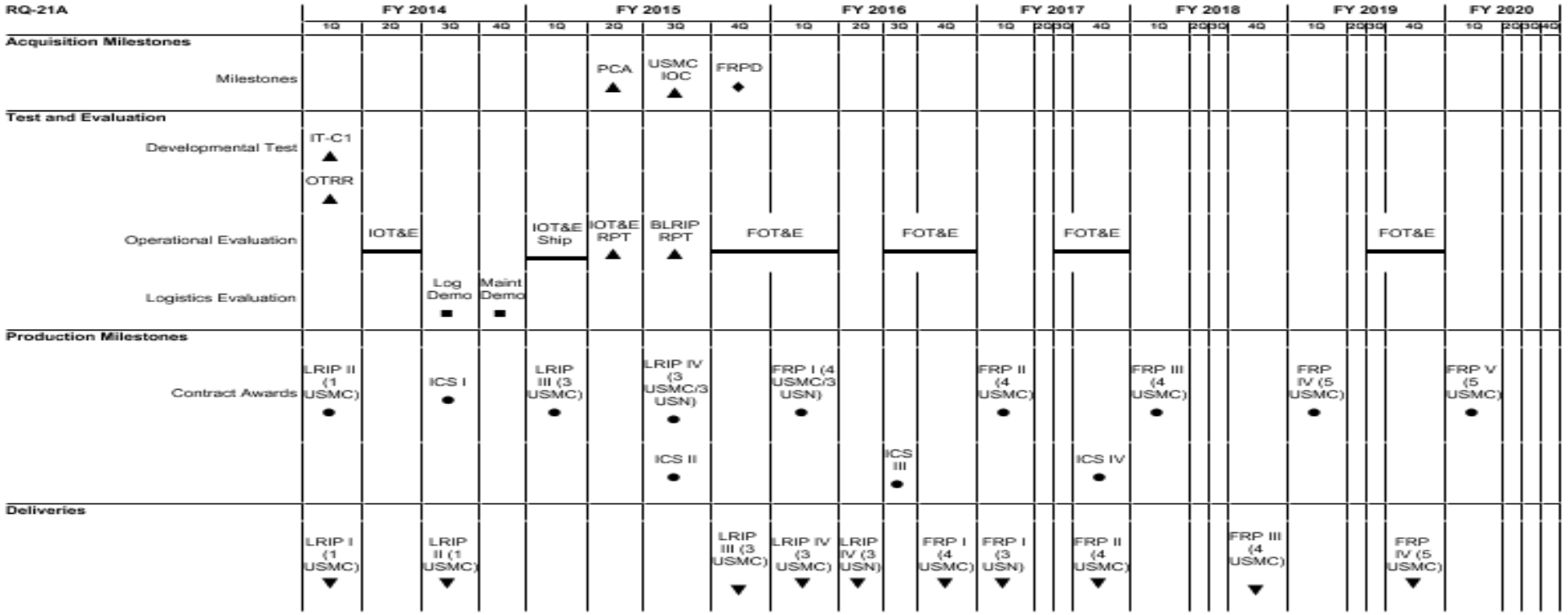
Remarks

Management Services is included within R-2A Engineering and Technical Services.

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	59.476	5.033		4.813		4.647		-		4.647	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *(U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*



2016PB - 0305234N - 3192

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *(U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
RQ-21A				
Acquisition Milestones: Milestones: USMC Initial Operational Capability (IOC)	3	2015	3	2015
Acquisition Milestones: Milestones: Physical Configuration Audit	2	2015	2	2015
Acquisition Milestones: Milestones: Full-Rate Production Decision	4	2015	4	2015
Test and Evaluation: Developmental Test: Initial Testing - C1	1	2014	1	2014
Test and Evaluation: Developmental Test: Operational Test Readiness Review	1	2014	1	2014
Test and Evaluation: Operational Evaluation: Initial Operational Test & Evaluation (IOT&E)	2	2014	2	2014
Test and Evaluation: Operational Evaluation: IOT&E Report	2	2015	2	2015
Test and Evaluation: Operational Evaluation: Initial Operational Test & Evaluation (IOT&E) Ship	1	2015	1	2015
Test and Evaluation: Operational Evaluation: Beyond LRIP Report (BLRIP)	3	2015	3	2015
Test and Evaluation: Operational Evaluation: Follow-on Test and Evaluation 1	4	2015	1	2016
Test and Evaluation: Operational Evaluation: Follow-on Test and Evaluation 2	3	2016	4	2016
Test and Evaluation: Operational Evaluation: Follow-on Test and Evaluation 3	3	2017	4	2017
Test and Evaluation: Operational Evaluation: Follow-on Test and Evaluation 4	3	2019	4	2019
Test and Evaluation: Logistics Evaluation: Logistics Demonstration	3	2014	3	2014
Test and Evaluation: Logistics Evaluation: Maintenance Demonstration	4	2014	4	2014
Production Milestones: Contract Awards: LRIP Lot 2	1	2014	1	2014
Production Milestones: Contract Awards: LRIP Lot 3	1	2015	1	2015
Production Milestones: Contract Awards: LRIP Lot 4	3	2015	3	2015
Production Milestones: Contract Awards: Full-Rate Production Contract Award 1	1	2016	1	2016
Production Milestones: Contract Awards: Full-Rate Production Contract Award 2	1	2017	1	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305234N / *(U)SMALL (LEVEL 0) TACTICAL UAS (STUASL0)*	**Project (Number/Name)** 3192 / *RQ-21 BLACKJACK*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: Contract Awards: Full-Rate Production Contract Award 3	1	2018	1	2018
Production Milestones: Contract Awards: Full-Rate Production Contract Award 4	1	2019	1	2019
Production Milestones: Contract Awards: Full-Rate Production Contract Award 5	1	2020	1	2020
Production Milestones: Contract Awards: ICS Contract Award 1	3	2014	3	2014
Production Milestones: Contract Awards: ICS Contract Award 2	3	2015	3	2015
Production Milestones: Contract Awards: ICS Option Award 1	3	2016	3	2016
Production Milestones: Contract Awards: ICS Option Award 2	4	2017	4	2017
Deliveries: LRIP Lot 1	1	2014	1	2014
Deliveries: LRIP Lot 2	3	2014	3	2014
Deliveries: LRIP Lot 3	4	2015	4	2015
Deliveries: LRIP Lot 4 USMC	1	2016	1	2016
Deliveries: LRIP Lot 4 USN	2	2016	2	2016
Deliveries: FRP Lot 1 USMC	4	2016	4	2016
Deliveries: FRP Lot 1 USN	1	2017	1	2017
Deliveries: FRP Lot 2	4	2017	4	2017
Deliveries: FRP Lot 3	4	2018	4	2018
Deliveries: FRP Lot 4	4	2019	4	2019

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305239M *I (U)RQ-21A*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	47.125	11.122	8.192	6.435	-	6.435	9.608	9.393	8.853	9.035	Continuing	Continuing
2298: *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*	47.125	11.122	8.192	6.435	-	6.435	9.608	9.393	8.853	9.035	Continuing	Continuing

A. Mission Description and Budget Item Justification

The RQ-21A program will provide persistent maritime and land-based tactical Reconnaissance, Surveillance and Target Acquisition (RSTA) data collection and dissemination capability to the war fighter. For the United States Marine Corps (USMC), RQ-21A will provide the Marine Expeditionary Force and subordinate commands (divisions and regiments) with a dedicated, organic Intelligence, Surveillance, and Reconnaissance (ISR) capability delivering intelligence products directly to the tactical commander in real time. For the United States Navy (USN) RQ-21A will provide persistent RSTA support for tactical maneuver decisions and unit-level force defense/force protection for Navy Ships, Marine Corps land forces, Navy Expeditionary Combat Command forces, and Navy Special Warfare Units. This is a combined development program between Navy and Marine Corps. This submission is the Marine Corps portion of the program and has been coordinated with the Navy budget submission PE 0305234N RQ-21A BLACKJACK (formerly known as (STUAS)).

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	11.122	8.192	8.376	-	8.376
Current President's Budget	11.122	8.192	6.435	-	6.435
Total Adjustments	-	-	-1.941	-	-1.941
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	-1.941	-	-1.941

Change Summary Explanation

The FY 2016 funding request was reduced by $1.848M to account for the availability of prior year execution balances. Schedule: Due to ship availability, IOT&E extends through 4QFY14 thereby extending the correction of deficiencies and shifting the IOT&E final report into 1QFY15.
The decrease in funding from FY14 to FY15 is due to completion of major test periods. The decrease in funding from FY15 to FY16 reflects the re-phasing of funding to better align with revised program development schedule.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305239M / *(U)RQ-21A*	Project (Number/Name) 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2298: *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*	47.125	11.122	8.192	6.435	-	6.435	9.608	9.393	8.853	9.035	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The RQ-21A program will provide persistent maritime and land-based tactical Reconnaissance, Surveillance and Target Acquisition (RSTA) data collection and dissemination capability to the Warfighter. For the United States Marine Corps (USMC), RQ-21A will provide the Marine Expeditionary Force and subordinate commands (divisions and regiments) with a dedicated, organic Intelligence, Surveillance, and Reconnaissance (ISR) capability delivering intelligence products directly to the tactical commander in real time. For the United States Navy (USN) RQ-21A will provide persistent RSTA support for tactical maneuver decisions and unit-level force defense/force protection for Navy Ships, Marine Corps land forces, Navy Expeditionary Combat Command forces, and Navy Special Warfare Units. This is a combined development program between Navy and Marine Corps. This submission is the Marine Corps portion of the program and has been coordinated with the Navy budget submission PE 0305234N RQ-21A BLACKJACK (formerly known as (Small Tactical Unmanned Aircraft System (STUAS)).

The RQ-21A system will continue to evolve addressing capability shortfalls, new requirements, obsolescence equipment, reliability, maintainability, and safety issues. Additional capabilities and/or system upgrades may include Navy Command and Control integration, Weapons Integration, Heavy Fuel Engine, Laser Designator, Frequency Agile Communications Relay, Digital Common Data link, and cyclic refresh of the Electro-optical/Infrared (EO/IR) camera. The decrease in funding from FY14 to FY15 is due to completion of major test periods. The decrease in funding from FY15 to FY16 reflects the re-phasing of funding to better align with ongoing program development.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	6.200	4.640	2.699	-	2.699
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Completed developmental land and sea based testing. -Completed land based IOT&E. -Initiated correction of deficiencies from IOT&E. -Continued software engineering and development for software block updates.					
FY 2015 Plans: -Complete ship based IOT&E. -Continue correction of deficiencies from IOT&E. -Continue software engineering and development for software block updates.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305239M / *(U)RQ-21A*	**Project (Number/Name)** 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
-Initiate advanced heavy fuel engine development. ***FY 2016 Base Plans:*** -Continue correction of deficiencies from IOT&E. -Continue software engineering and development for software block updates. -Continue advanced heavy fuel engine development. -Initiate cyclic technology refresh for EO/IR camera, Communications Relay Package, and Automated Identification System. ***FY 2016 OCO Plans:*** N/A					
Title: Engineering and Technical Services	4.922	3.552	3.736	-	3.736
Articles:	-	-	-	-	-
FY 2014 Accomplishments: -Continued Government Engineering Technical Support, Logistics Support, Test and Evaluation, other Government Support, Contractor Support Services, Program Management Support efforts, and program related travel via NAWCAD Pax River in support of IOT&E. ***FY 2015 Plans:*** -Continue Government Engineering Technical Support, Logistics Support, Test and Evaluation, other Government Support, Contractor Support Services, Program Management Support efforts, and program related travel via NAWC Pax River in support of IOT&E, upgrades, correction of deficiencies, and advanced engine development efforts. ***FY 2016 Base Plans:*** -Continue Government Engineering Technical Support, Test and Evaluation, other Government Support, Contractor Support Services, Program Management Support efforts, and program related travel via NAWCAD Pax River in support of upgrades and technology refresh. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	11.122	8.192	6.435	-	6.435

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305239M / *(U)RQ-21A*	**Project (Number/Name)** 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDTEN/0305234N: *USN RQ-21A Blackjack*	5.033	4.813	4.647	-	4.647	5.276	5.266	5.258	5.365	Continuing	Continuing
• PMC/4737: *STUAS/RQ-21A*	66.007	69.315	84.916	-	84.916	84.034	78.779	76.675	83.332	Continuing	Continuing
• PMC/7000: *STUAS/RQ-21A Spares and Repair Parts*	4.950	5.093	4.111	-	4.111	5.869	5.760	5.454	5.567	Continuing	Continuing
• APN/0444: *USN RQ-21A Blackjack*	-	55.000	3.450	55.000	58.450	-	-	-	-	Continuing	Continuing

Remarks

D. Acquisition Strategy

The program office utilized a competitive acquisition approach to award the Engineering and Manufacturing Development effort to field a capability that meets threshold requirements. The Low Rate Initial Production test article was utilized to successfully complete Initial Operational Test and Evaluation and achieve Initial Operational Capability (IOC) in the fourth quarter of FY2014. Future upgrades and development shall be competitively sourced or procured via Government Laboratories with Insitu, the prime contractor, performing integration efforts as required.

E. Performance Metrics

Attainment of Full Rate Production (FRP), correction of Deficiencies from the IOT&E Report, and attainment of USMC Full Operational Capability (FOC) in accordance with the approved schedule.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305239M / *(U)RQ-21A*	**Project (Number/Name)** 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development/ Upgrades	C/BOA	Insitu, Inc : Bingen, WA	0.000	6.200	Jan 2014	4.640	Dec 2014	2.699	Jan 2016	-		2.699	Continuing	Continuing	Continuing
Prior Years Cumulative Total	C/FPIF	Insitu, Inc : Bingen, WA	28.492	-		-		-		-		-	-	28.492	28.492
		Subtotal	28.492	6.200		4.640		2.699		-		2.699	-	-	-

Remarks

Product development corresponds to R-2A Product Development.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Engineering Support	WR	NAWCWD : China Lake, CA	0.000	-		1.118	Dec 2014	1.118	Dec 2015	-		1.118	Continuing	Continuing	Continuing
Government Engineering Support	WR	NAWCAD : Patuxent River, MD	0.000	-		1.312	Dec 2014	1.496	Dec 2015	-		1.496	Continuing	Continuing	Continuing
		Subtotal	0.000	-		2.430		2.614		-		2.614	-	-	-

Remarks

Support corresponds to R-2A Engineering and Technical Services.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	MIPR	NAWCAD : Patuxent River, MD	0.000	-		0.650	Dec 2014	0.650	Dec 2015	-		0.650	Continuing	Continuing	Continuing
		Subtotal	0.000	-		0.650		0.650		-		0.650	-	-	-

Remarks

Test and Evaluation corresponds to R-2A Engineering and Technical Services.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305239M / *(U)RQ-21A*	Project (Number/Name) 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
FOT&E planned in FY16 and out to provide test periods for product updates and cyclic technology refresh.															

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
STUAS	Various	NAWCAD : Patuxent River, MD	18.633	4.922	Dec 2013	-		-		-		-	Continuing	Continuing	Continuing
Contractor Engineering Support	MIPR	DTIC : Ft. Belvoir, VA	0.000	-		0.236	Mar 2015	0.236	Mar 2016	-		0.236	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Bowhead : Patuxent River, MD	0.000	-		0.236	Jan 2015	0.236	Jan 2016	-		0.236	Continuing	Continuing	Continuing
		Subtotal	18.633	4.922		0.472		0.472		-		0.472	-	-	-

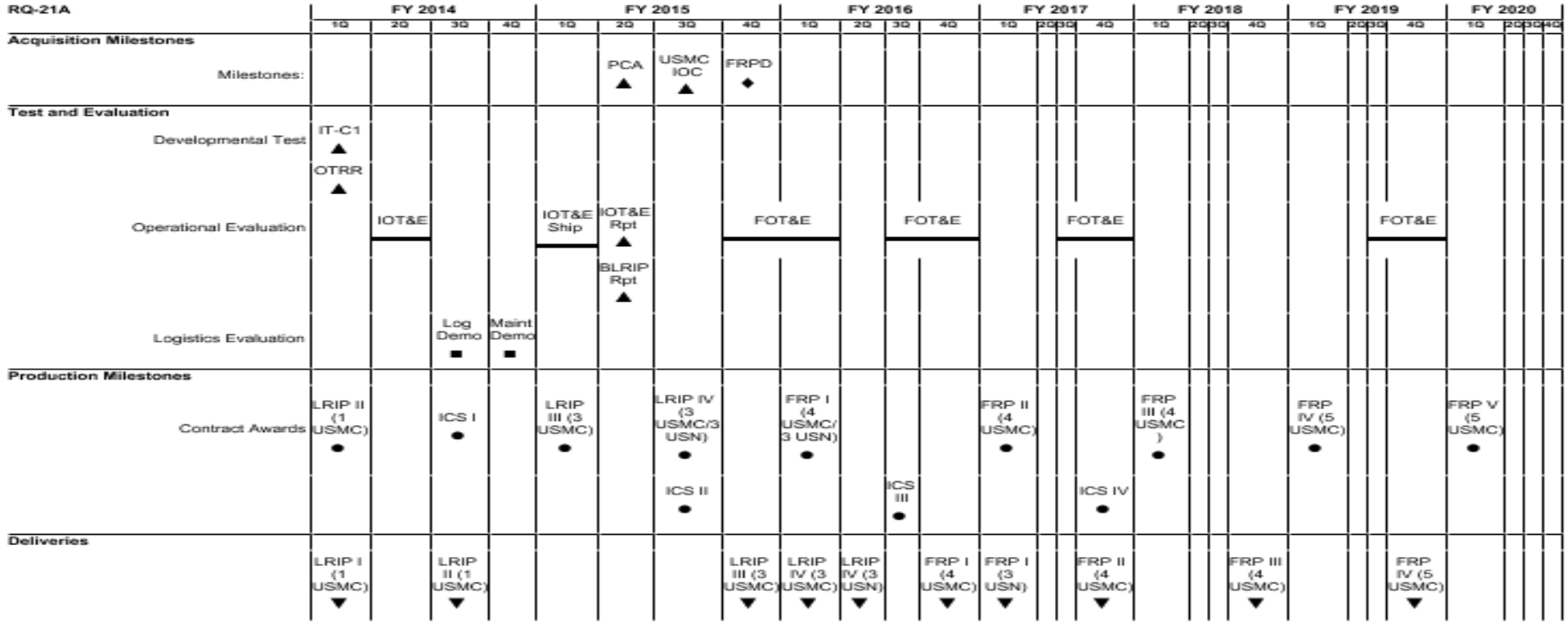
Remarks

Management Services corresponds to R-2A Engineering and Technical Services.

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	47.125	11.122		8.192		6.435		-		6.435	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305239M / *(U)RQ-21A*	**Project (Number/Name)** 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*



2016PB - 0305239M - 2298

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305239M / *(U)RQ-21A*	**Project (Number/Name)** 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
RQ-21A				
Acquisition Milestones: Milestones:: USMC Initial Operational Capability (IOC)	3	2015	3	2015
Acquisition Milestones: Milestones:: Full Rate Production Decision	4	2015	4	2015
Acquisition Milestones: Milestones:: Physical Configuration Audit	2	2015	2	2015
Test and Evaluation: Developmental Test: Initial Testing - C1	1	2014	1	2014
Test and Evaluation: Developmental Test: Operational Test Readiness Review (OTRR)	1	2014	1	2014
Test and Evaluation: Operational Evaluation: Initial Operational Test & Evaluation (IOT&E)	2	2014	2	2014
Test and Evaluation: Operational Evaluation: Initial Operational Test & Evaluation (IOT&E) Ship	1	2015	1	2015
Test and Evaluation: Operational Evaluation: Follow-On Test and Evaluation 1	4	2015	1	2016
Test and Evaluation: Operational Evaluation: Follow-On Test and Evaluation 2	3	2016	4	2016
Test and Evaluation: Operational Evaluation: Follow-On Test and Evaluation 3	3	2017	4	2017
Test and Evaluation: Operational Evaluation: Follow-On Test and Evaluation 4	3	2019	4	2019
Test and Evaluation: Operational Evaluation: IOT&E Report	2	2015	2	2015
Test and Evaluation: Operational Evaluation: Beyond LRIP Report (BLRIP)	2	2015	2	2015
Test and Evaluation: Logistics Evaluation: Logistics Demo LRIP 1	3	2014	3	2014
Test and Evaluation: Logistics Evaluation: Maintenance Demo	4	2014	4	2014
Production Milestones: Contract Awards: LRIP Lot 2	1	2014	1	2014
Production Milestones: Contract Awards: LRIP Lot 3	1	2015	1	2015
Production Milestones: Contract Awards: LRIP Lot 4	3	2015	3	2015
Production Milestones: Contract Awards: Full-Rate Production Contract Award 1	1	2016	1	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305239M / *(U)RQ-21A*	**Project (Number/Name)** 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: Contract Awards: Full-Rate Production Contract Award 2	1	2017	1	2017
Production Milestones: Contract Awards: Full-Rate Production Contract Award 3	1	2018	1	2018
Production Milestones: Contract Awards: Full-Rated Production Contract Award 4	1	2019	1	2019
Production Milestones: Contract Awards: Full-Rate Production Contract Award 5	1	2020	1	2020
Production Milestones: Contract Awards: ICS Contract Award 1	3	2014	3	2014
Production Milestones: Contract Awards: ICS Contract Award 2	3	2015	3	2015
Production Milestones: Contract Awards: ICS Contract Award 3	3	2016	3	2016
Production Milestones: Contract Awards: ICS Contract Award 4	4	2017	4	2017
Deliveries: LRIP Lot 1	1	2014	1	2014
Deliveries: LRIP Lot 2	3	2014	3	2014
Deliveries: LRIP Lot 3	4	2015	4	2015
Deliveries: LRIP Lot 4 USMC	1	2016	1	2016
Deliveries: LRIP Lot 4 USN	2	2016	2	2016
Deliveries: FRP Lot 1 USMC	4	2016	4	2016
Deliveries: FRP Lot 1 USN	1	2017	1	2017
Deliveries: FRP Lot 2	4	2017	4	2017
Deliveries: FRP Lot 3	4	2018	4	2018
Deliveries: FRP Lot 4	4	2019	4	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305241N *I (U) MULTI-INTELLIGENCE SENSOR DEVELOPMENT*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	0.000	28.851	17.751	49.145	-	49.145	61.746	48.841	48.769	44.241	Continuing	Continuing
3329: *Multi Intelligence Sensor Development*	0.000	28.851	17.751	31.577	-	31.577	37.978	26.361	26.573	26.336	Continuing	Continuing
3383: *P-8 Quick Reaction Capability (QRC)*	0.000	-	-	17.568	-	17.568	23.768	22.480	22.196	17.905	Continuing	Continuing

A. Mission Description and Budget Item Justification

The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	28.851	22.559	30.011	-	30.011
Current President's Budget	28.851	17.751	49.145	-	49.145
Total Adjustments	-	-4.808	19.134	-	19.134
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.808			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	19.500	-	19.500
• Rate/Misc Adjustments	-	-	-0.366	-	-0.366

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305241N / *(U) MULTI-INTELLIGENCE SENSOR DEVELOPMENT*	Project (Number/Name) 3329 / *Multi Intelligence Sensor Development*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3329: *Multi Intelligence Sensor Development*	-	28.851	17.751	31.577	-	31.577	37.978	26.361	26.573	26.336	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0305241N / *(U) MULTI-INTELLIGENCE SENSOR DEVELOPMENT*				Project (Number/Name) 3383 / *P-8 Quick Reaction Capability (QRC)*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
3383: *P-8 Quick Reaction Capability (QRC)*	-	-	-	17.568	-	17.568	23.768	22.480	22.196	17.905	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The details of this program element are classified SECRET and are submitted annually to Congress in the classified budget justification books.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305242M *I Unmanned Aerial Systems (UAS) Payloads*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	0.000	-	2.000	9.246	-	9.246	11.942	11.654	6.864	3.810	Continuing	Continuing
2298: *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*	0.000	-	2.000	-	-	-	-	-	-	-	-	2.000
5501: *Signals Intelligence (SIGINT)*	0.000	-	-	5.564	-	5.564	6.763	5.269	3.676	2.780	Continuing	Continuing
5502: *Synthetic Aperture Radar/ Motion Target Indicator (SAR/ MTI)*	0.000	-	-	3.682	-	3.682	5.179	6.385	3.188	1.030	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Unmanned Aerial Systems (UAS) Payloads integration program will alleviate Marine Corps Intelligence, Surveillance and Reconnaissance (ISR) capability gaps caused by rapidly changing missions, threats and technologies. It will provide responsive capability to integrate and support rapid fielding of ISR payloads for all UAS within the Marine Corps. Sensor payloads will increase the effectiveness and versatility of the Marine Corps UAS currently planned to have the Electro-Optic(EO) / Infrared (IR) collection, communications relay, and automatic identification capabilities. Upgrades include, but are not limited to Signals Intelligence (SIGINT) and Synthetic Aperture Radar (SAR) / Motion Target Indicator (MTI).

The increase of $7.2M from FY15 to FY16 supports development and integration of payloads such as Signals Intelligence (SIGINT), and Synthetic Aperture Radar (SAR)/Motion Target Indicator (MTI) in support of the Marine Corps UAS. These payloads provide the Marine Expeditionary Unit (MEU) organic capabilities and support force protection, airborne ISR, and counter-IED missions.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	-	2.000	2.000	-	2.000
Current President's Budget	-	2.000	9.246	-	9.246
Total Adjustments	-	-	7.246	-	7.246
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	-	-	18.100	-	18.100

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305242M *I Unmanned Aerial Systems (UAS) Payloads*	

• Rate/Misc Adjustments	-	-	-10.854	-	-10.854

Change Summary Explanation

The increase of $7.2M from FY15 to FY16 supports development and integration of payloads such as Signals Intelligence (SIGINT), and Synthetic Aperture Radar (SAR)/Motion Target Indicator (MTI) in support of the Marine Corps UAS. The increase in FY16 reflects re-phasing of development funds to better align with revised program development schedule.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	Project (Number/Name) 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2298: *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*	-	-	2.000	-	-	-	-	-	-	-	-	2.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

UAS Payloads was initially established in FY15 under Program Element 0305242M, Project 2298. Project 2298 was also used for Program Element 0305239M, RQ-21A Small Tactical UAS. In order to provide greater detail on payload development, each payload was assigned an individual project number starting in FY16.

In FY15, the UAS Payloads program will continue development of a Signals Intelligence (SIGINT) and Synthetic Aperture Radar (SAR)/Motion Target Indicator (MTI) payload leveraging existing payloads developed by the U.S. Air Force and U.S. Army, ultimately creating a payload that fits within form and fit limitations of Marine Corps small tactical unmanned aerial systems. FY15 efforts include technology maturation primarily of SIGINT and secondarily of SAR/MTI technologies including efforts to reduce size, weight, and power requirements in preparation for full scale development efforts commencing in FY16.

SIGINT and SAR/MTI capabilities are vital to the Marine Expeditionary Unit (MEU) and support force protection, airborne ISR, and counter-IED missions. Funding for these efforts are represented in Projects 5501 and 5502 for FY16 and beyond.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	-	0.980	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: - Initiate SIGINT and SAR/MTI technology development and perform maturation of payload components, including reducing size, weight, and power requirements. - Initiate development of components for SIGINT prototype preparation.					
FY 2016 Base Plans: N/A					
FY 2016 OCO Plans: N/A					
Title: Support	-	0.500	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** - Initiate payload development and integration efforts. - Initiate mapping of payload requirements to specifications. - Initiate engineering analysis of alternatives for available payload components. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Title: Management Services	-	0.520	-	-	-
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** - Initiate development of integrated master schedule. - Initiate refinement and documentation of program acquisition strategy. ***FY 2016 Base Plans:*** N/A ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	-	2.000	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*

D. Acquisition Strategy

The UAS Payload program leverages existing payloads, Government facilities, ranges, and UAS assets to conduct testing, integration, certification and demonstration activities.

E. Performance Metrics

Successful integration of SIGINT and SAR/MTI payloads into Marine Corps small tactical UAS.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	Project (Number/Name) 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	MIPR	Air Force Research Lab : Dayton, OH	0.000	-		0.230	Feb 2015	-		-		-	-	0.230	-
Systems Engineering	MIPR	NRL : Washington, DC	0.000	-		0.500	Feb 2015	-		-		-	-	0.500	-
Government Engineering	WR	NAWCAD : Patuxent River, MD	0.000	-		0.250	Feb 2015	-		-		-	-	0.250	-
		Subtotal	0.000	-		0.980		-		-		-	-	0.980	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various : Patuxent River, MD	0.000	-		0.500	Feb 2015	-		-		-	-	0.500	-
		Subtotal	0.000	-		0.500		-		-		-	-	0.500	-

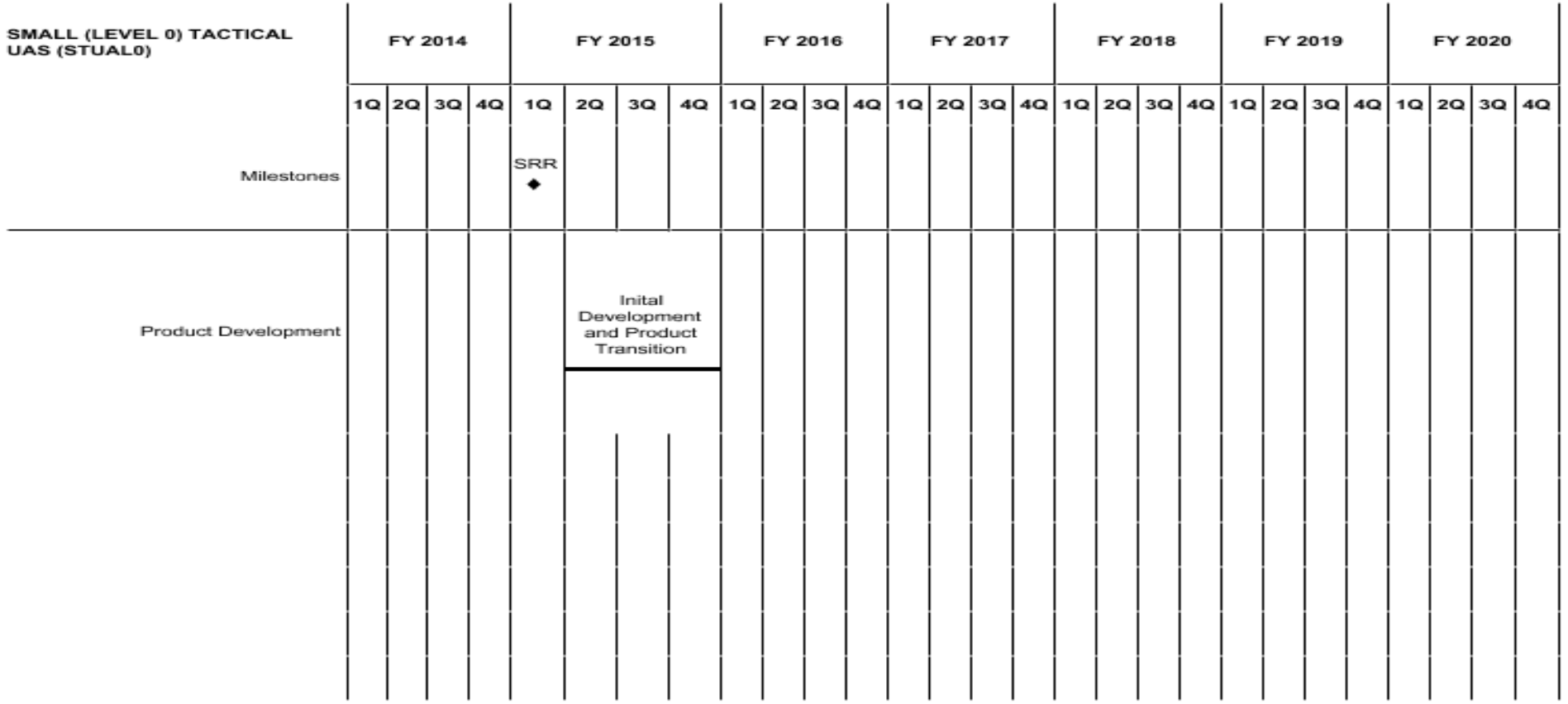
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	Various : Patuxent River, MD	0.000	-		0.500	Feb 2015	-		-		-	-	0.500	-
Travel	WR	Various : Various	0.000	-		0.020	Feb 2015	-		-		-	-	0.020	-
		Subtotal	0.000	-		0.520		-		-		-	-	0.520	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		2.000		-		-		-	-	2.000	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*



2016OSD - 0305242M - 2298

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 2298 / *SMALL (LEVEL 0) TACTICAL UAS (STUAL0)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
SMALL (LEVEL 0) TACTICAL UAS (STUAL0)				
Milestones: System Requirements Review	1	2015	1	2015
Product Development: Component Development and Transition to Specific Payloads	2	2015	4	2015

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	Project (Number/Name) 5501 / *Signals Intelligence (SIGINT)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
5501: *Signals Intelligence (SIGINT)*	-	-	-	5.564	-	5.564	6.763	5.269	3.676	2.780	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The UAS Payloads program will develop and integrate a Signals Intelligence (SIGINT) payload for Marine Corps small tactical UASs. The SIGINT payload will fill current capability gaps for the Marine Corps Intelligence, Surveillance and Reconnaissance (ISR) mission and is required as part of the Marine Corps mission to locate and target adversary Signals of Interest (SOI). The SIGINT payload will leverage payloads previously developed by other Services and/or DoD laboratories to reduce cost and minimize schedule. This project continues efforts started in project 2298.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	-	-	3.750	-	3.750
Articles:	-	-	1	-	1
FY 2014 Accomplishments: N/A					
FY 2015 Plans: N/A					
FY 2016 Base Plans: - Complete SIGINT payload component development. - Initiate SIGINT payload development. - Initiate construction of a prototype SIGINT system that can receive and process a minimum of three signals of interest (SOI). - Complete engineering and experimental tests in preparation for FY17 testing.					
FY 2016 OCO Plans: N/A					
Title: Support	-	-	1.544	-	1.544
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 5501 / *Signals Intelligence (SIGINT)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** - Initiate development of SIGINT payload software to include frequency agile airborne receiver software. ***FY 2016 OCO Plans:*** N/A					
Title: Management Services	-	-	0.270	-	0.270
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** - Complete refinement and documentation of acquisition strategy. - Initiate engineering required for flight clearances. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	-	-	5.564	-	5.564

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 4737: *RQ-21 UAS Payloads*	-	-	-	-	-	3.000	3.210	-	-	-	6.210

Remarks

D. Acquisition Strategy

The UAS Payload program leverages existing payloads, Government facilities, ranges, and UAS assets to conduct testing, integration, certification and demonstration activities.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 5501 / *Signals Intelligence (SIGINT)*

E. Performance Metrics

Successful development of a SIGINT payload, completion of DT/OT, and integration onboard Marine Corps small tactical UAVs.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	Project (Number/Name) 5501 / *Signals Intelligence (SIGINT)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	MIPR	AFRL : Dayton, OH	0.000	-		-		0.500	Feb 2016	-		0.500	Continuing	Continuing	Continuing
Systems Engineering	MIPR	NRL : Washington, DC	0.000	-		-		3.000	Feb 2016	-		3.000	Continuing	Continuing	Continuing
Government Engineering	WR	NAWCAD : Patuxent River, MD	0.000	-		-		0.250	Feb 2016	-		0.250	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		3.750		-		3.750	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Engineering Support	MIPR	NRL : Washington, DC	0.000	-		-		1.294	Feb 2016	-		1.294	Continuing	Continuing	Continuing
Contractor Engineering Support	Various	Various : Patuxent River, MD	0.000	-		-		0.250	Feb 2016	-		0.250	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		1.544		-		1.544	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	0.000	-		-		0.250	Feb 2016	-		0.250	Continuing	Continuing	Continuing
Travel	Various	Various : Various	0.000	-		-		0.020	Feb 2016	-		0.020	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.270		-		0.270	-	-	-

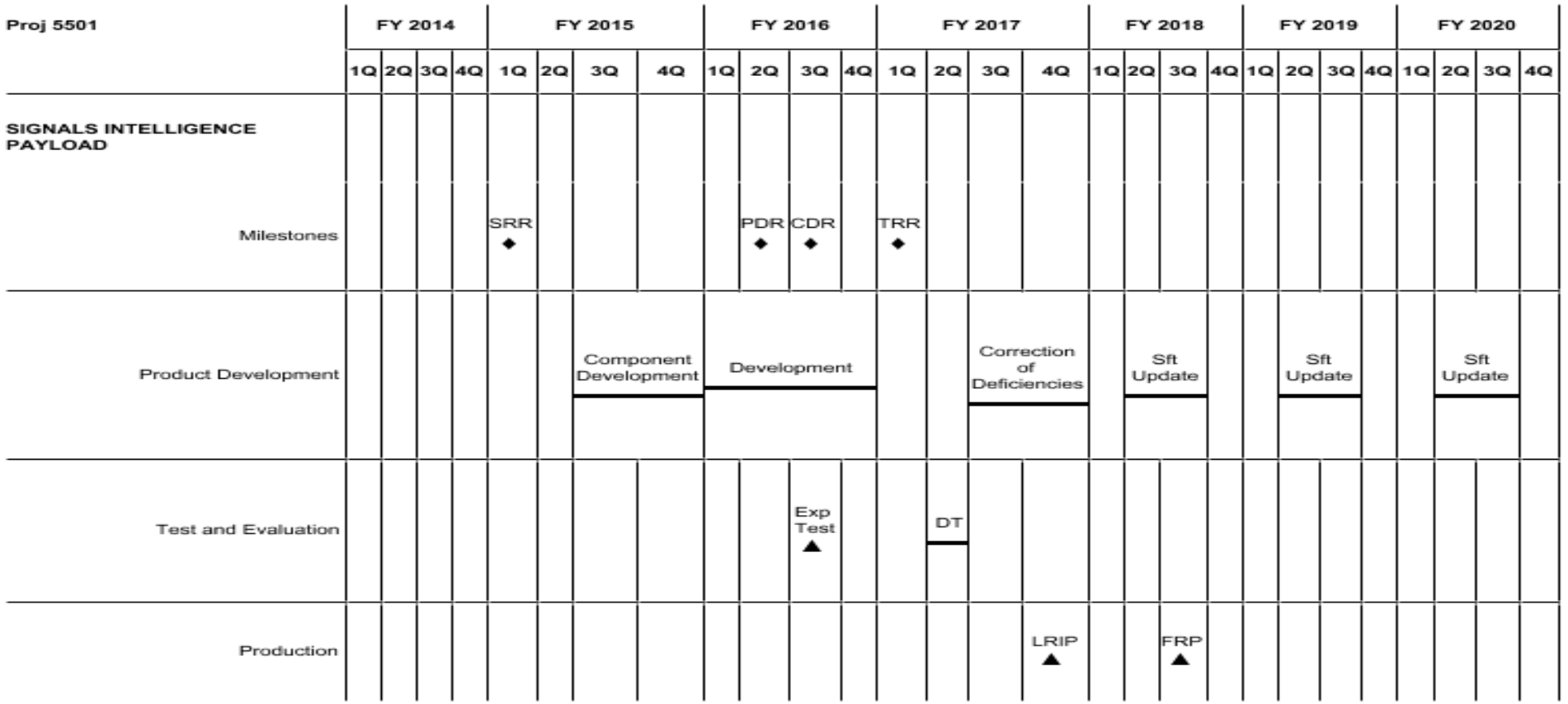
	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		5.564		-		5.564	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	Project (Number/Name) 5501 / *Signals Intelligence (SIGINT)*	

	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 5501 / *Signals Intelligence (SIGINT)*



2016OSD - 0305242M - 5501

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 5501 / *Signals Intelligence (SIGINT)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 5501				
SIGNALS INTELLIGENCE PAYLOAD: Milestones: System Requirements Review	1	2015	1	2015
SIGNALS INTELLIGENCE PAYLOAD: Milestones: Test Readiness Review	1	2017	1	2017
SIGNALS INTELLIGENCE PAYLOAD: Milestones: Product Design Review	2	2016	2	2016
SIGNALS INTELLIGENCE PAYLOAD: Milestones: Critical Design Review	3	2016	3	2016
Product Development: Component Development	3	2015	4	2015
Product Development: Prototype Design and Development	1	2016	4	2016
Product Development: Correction of Deficiencies	3	2017	4	2017
Product Development: Software Development and Updates 1	2	2018	3	2018
Product Development: Software Development and Updates 2	2	2019	3	2019
Product Development: Software Development and Updates 3	2	2020	3	2020
Test and Evaluation: Experimental Test	3	2016	3	2016
Test and Evaluation: Developmental Test	2	2017	2	2017
Production: Low Rate Initial Production	4	2017	4	2017
Production: Full Rate Production	3	2018	3	2018

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	Project (Number/Name) 5502 / *Synthetic Aperture Radar/Motion Target Indicator (SAR/MTI)*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
5502: *Synthetic Aperture Radar/ Motion Target Indicator (SAR/ MTI)*	-	-	-	3.682	-	3.682	5.179	6.385	3.188	1.030	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The UAS Payloads program will develop and integrate a Synthetic Aperture Radar (SAR) with Motion Target Indicator (MTI) for Marine Corps small tactical UASs. This capability fills current capability gaps for the Marine Corps Intelligence, Surveillance and Reconnaissance (ISR) mission and will allow Marine Corps ISR assets to locate and track ground targets that cannot effectively be located or tracked with the current ground based sensor technology.

The ability to locate and track moving ground targets from small tactical UAVs is an essential capability for force protection and counter-IED missions. The SAR/MTI payload will leverage payloads previously developed by other Services and/or DoD laboratories to reduce cost and minimize schedule. This project continues efforts started in project 2298

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	-	-	2.250	-	2.250
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A					
FY 2015 Plans: N/A					
FY 2016 Base Plans: - Continue SAR/MTI payload component development, in preparation for integrated payload development in FY17.					
FY 2016 OCO Plans: N/A					
Title: Management Services	-	-	0.270	-	0.270
Articles:	-	-	-	-	-
FY 2014 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 5502 / *Synthetic Aperture Radar/Motion Target Indicator (SAR/MTI)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** - Initiate mapping of payload requirements to specifications. - Initiate development of an integrated master schedule. - Complete refinement and documentation of acquisition strategy. ***FY 2016 OCO Plans:*** N/A					
Title: Support	-	-	1.162	-	1.162
Articles:	-	-	-	-	-
FY 2014 Accomplishments: N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** - Initiate development of SAR/MTI payload software. - Initiate engineering analysis of alternatives for SAR/MTI payload components. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	-	-	3.682	-	3.682

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• 4737: *RQ-21 UAS*	-	-	-	-	-	-	3.900	4.100	-	-	8.000

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 5502 / *Synthetic Aperture Radar/Motion Target Indicator (SAR/MTI)*

D. Acquisition Strategy

The UAS Payload program leverages existing payloads, Government facilities, ranges, and UAS assets to conduct testing, integration, certification and demonstration activities.

E. Performance Metrics

Successful development of a SAR/MTI payload, completion of DT/OT, and integration onboard Marine Corps small tactical UAS.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	Project (Number/Name) 5502 / *Synthetic Aperture Radar/Motion Target Indicator (SAR/MTI)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	MIPR	AFRL : Dayton, OH	0.000	-		-		2.000	Feb 2016	-		2.000	Continuing	Continuing	Continuing
Government Engineering	WR	NAWCAD : Patuxent River, MD	0.000	-		-		0.250	Feb 2016	-		0.250	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		2.250		-		2.250	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Engineering Support	MIPR	AFRL : Dayton, OH	0.000	-		-		0.912	Feb 2016	-		0.912	Continuing	Continuing	Continuing
Contractor Engineering Support	Various	Various : Various	0.000	-		-		0.250	Feb 2016	-		0.250	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		1.162		-		1.162	-	-	-

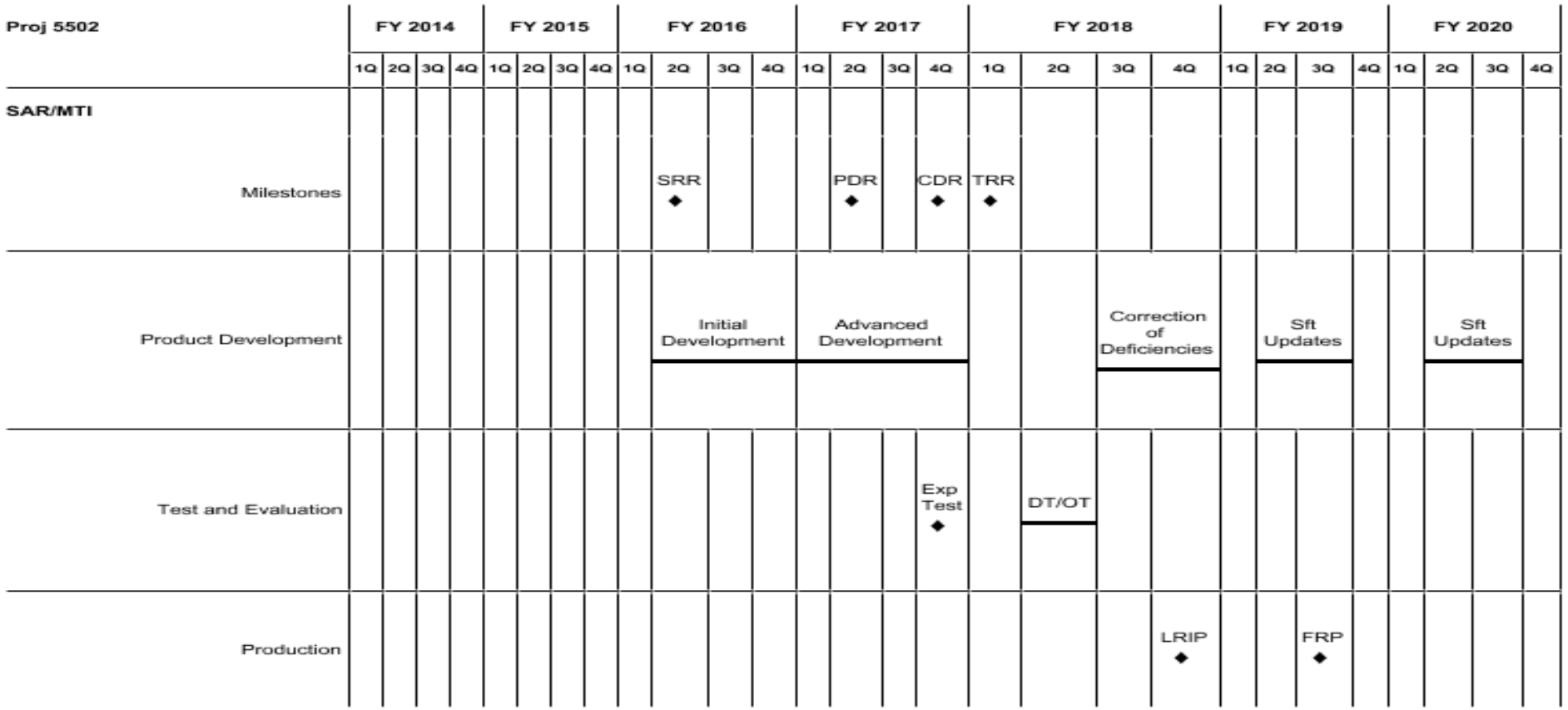
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	0.000	-		-		0.250	Feb 2016	-		0.250	Continuing	Continuing	Continuing
Travel	Various	Various : Various	0.000	-		-		0.020	Feb 2016	-		0.020	Continuing	Continuing	Continuing
		Subtotal	0.000	-		-		0.270		-		0.270	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		-		3.682		-		3.682	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 5502 / *Synthetic Aperture Radar/Motion Target Indicator (SAR/MTI)*



2016OSD - 0305242M - 5502

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305242M / *Unmanned Aerial Systems (UAS) Payloads*	**Project (Number/Name)** 5502 / *Synthetic Aperture Radar/Motion Target Indicator (SAR/MTI)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 5502				
SAR/MTI: Milestones: System Requirements Review	2	2016	2	2016
SAR/MTI: Milestones: Test Readiness Review	1	2018	1	2018
SAR/MTI: Milestones: Product Design Review	2	2017	2	2017
SAR/MTI: Milestones: Critical Design Review	4	2017	4	2017
Product Development: Component Development	2	2016	4	2016
Product Development: Design/Prototype	1	2017	4	2017
Product Development: Correction of Deficiencies	3	2018	4	2018
Product Development: Software Update	2	2019	3	2019
Product Development: Software Update 2	2	2020	3	2020
Test and Evaluation: Experimental Test	4	2017	4	2017
Test and Evaluation: Developmental and Operational Test	2	2018	2	2018
Production: Low Rate Initial Production	4	2018	4	2018
Production: Full Rate Production	3	2019	3	2019

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305421N *I RQ-4 Modernization*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	-	5.000	150.854	-	150.854	220.219	108.038	41.027	42.181	Continuing	Continuing
2939: *RQ-4 Modernization*	0.000	-	5.000	150.854	-	150.854	220.219	108.038	41.027	42.181	Continuing	Continuing
MDAP/MAIS Code: 373												

Note

MQ-4C Triton RDTE funding for modernization has been segregated into a new program element (from PE 0305220N to PE 0305421N) in order to satisfy Congressional direction for increased transparency. In the FY2015 Appropriations Act, Congress limited the amount of FY2015 funding in the modernization line (PE 0305421N) to $5M until a review of the capability development document is completed by the Joint Requirements Oversights Council (JROC). In concert with completion of the JROC review, the Navy will request a reprogramming from Congress to move the remaining required FY15 funding from PE 0305220N into PE 0305421N in order to maintain the Triton Multi-Intelligence phased capability upgrade schedule.

A. Mission Description and Budget Item Justification

MQ-4C Triton Unmanned Air System (UAS). The popular name Triton was approved for the MQ-4C UAS in June 2012, designating the RQ-4 Broad Area Maritime Surveillance (BAMS) UAS as the MQ-4C Triton.

The MQ-4C Triton is a high altitude-long endurance UAS designed to provide Fleet and combatant commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Teamed with its manned-capability counterpart, the P-8A, Triton will be a key component of the Navy's family of systems to achieve maritime domain awareness. MQ-4C Triton will seek to leverage Maritime Patrol and Reconnaissance Force manpower, training and maintenance efficiencies.

The MQ-4C Triton features sensors designed to provide near worldwide coverage through a network of five orbits inside and outside continental United States, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infra-red and Electronic Support Measures systems. Additionally, the MQ-4C will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCEnet strategy. Tactical-level data analysis will occur in real-time at shore-based mission control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard aircraft carriers and other ships.

The MQ-4C Triton UAS will implement phased capability upgrades within the ongoing acquisition program to pace capability with rapidly evolving technologies and threats to ensure the Navy maintains persistent ISR dominance through the system's lifecycle, and to support the OPNAV N2/N6 Intelligence, Surveillance, Reconnaissance and Targeting transition plan. System upgrades will include Multi-Intelligence capabilities, Counter Electronic Attack upgrades, a more robust electronic support capability and continue improvements to baseline mission system payloads.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0305421N *I RQ-4 Modernization*

MQ-4C will play a significant role in the Sea Shield and FORCEnet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported combatant command or fleet commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the common operational tactical picture. The system will also serve as a Fleet response plan enabler, while acting as a trip wire for intelligence preparation of the environment. Additionally, Triton Unmanned Air System will be a FORCEnet enabler and relay platform, directly connected to both the Global Information Grid and the Distributed Common Ground System-Navy information backbone.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	5.000	150.854	-	150.854
Total Adjustments	-	5.000	150.854	-	150.854
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	5.000			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	150.854	-	150.854

Change Summary Explanation

Technical: MQ-4C Triton RDTE funding for modernization, which includes Multi-Intelligence capabilities, has been segregated into a new program element (PE 0305421N) in order to satisfy Congressional direction for increased transparency.
Schedule: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305421N / *RQ-4 Modernization*	Project (Number/Name) 2939 / *RQ-4 Modernization*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2939: *RQ-4 Modernization*	-	-	5.000	150.854	-	150.854	220.219	108.038	41.027	42.181	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

MQ-4C Triton Unmanned Air System (UAS). The MQ-4C Triton is a high altitude-long endurance UAS designed to provide Fleet and combatant commanders with persistent maritime Intelligence, Surveillance and Reconnaissance (ISR) of nearly all the world's high-density sea-lanes, littorals, and areas of national interest. Teamed with its manned-capability counterpart, the P-8A, Triton will be a key component of the Navy's family of systems to achieve maritime domain awareness. MQ-4C Triton will seek to leverage Maritime Patrol and Reconnaissance Force manpower, training and maintenance efficiencies.

The MQ-4C Triton features sensors designed to provide near worldwide coverage through a network of five orbits inside and outside continental United States, with sufficient air vehicles to remain airborne for 24 hours a day, 7 days a week, out to ranges of 2000 nautical miles. Onboard sensors will provide detection, classification, tracking and identification of maritime targets and include maritime radar, electro-optical/infra-red and Electronic Support Measures systems. Additionally, the MQ-4C will have a communications relay capability designed to link dispersed forces in the theater of operations and serve as a node in the Navy's FORCEnet strategy. Tactical-level data analysis will occur in real-time at shore-based mission control sites connected to the air vehicle via satellite communications. Further intelligence exploitation can be conducted at Fleet shore-based sites or aboard aircraft carriers and other ships.

The MQ-4C Triton UAS will implement phased capability upgrades within the ongoing acquisition program to pace capability with rapidly evolving technologies and threats to ensure the Navy maintains persistent ISR dominance through the system's lifecycle, and to support the OPNAV N2/N6 Intelligence, Surveillance, Reconnaissance and Targeting transition plan. System upgrades will include Multi-Intelligence capabilities, Counter Electronic Attack upgrades, a more robust electronic support capability and continue improvements to baseline mission system payloads.

MQ-4C will play a significant role in the Sea Shield and FORCEnet pillars of Sea Power 21. In its Sea Shield role, the system will rely on its key attribute of persistence to provide the supported combatant command or fleet commander with unparalleled situational awareness of the maritime battle space as it develops and sustains the common operational tactical picture. The system will also serve as a Fleet response plan enabler, while acting as a trip wire for intelligence preparation of the environment. Additionally, Triton UAS will be a FORCEnet enabler and relay platform, directly connected to both the Global Information Grid and the Distributed Common Ground System-Navy information backbone.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: Product Development	-	4.279	144.433	-	144.433
Articles:	-	-	-	-	-
Description: MQ-4C Triton UAS modernization effort for incorporation of phased capability upgrades. The prime contractor is responsible for integration of upgrades into the Triton UAS including associated					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305421N / *RQ-4 Modernization*	**Project (Number/Name)** 2939 / *RQ-4 Modernization*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
management, engineering and logistics activities. Capability upgrades will also include development of system payloads directly with original equipment manufacturers. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** Initiate development of phased capability upgrades, including Multi-Intelligence capabilities in support of the OPNAV N2/N6 Intelligence, Surveillance, Reconnaissance and Targeting transition plan. ***FY 2016 Base Plans:*** Funding increases from FY15 to FY16 to continue development of phased capability upgrades, including Multi-Intelligence capabilities in support of the OPNAV N2/N6 Intelligence, Surveillance, Reconnaissance and Targeting transition plan. Funding includes acquisition of development assets for capability upgrades including electro-optical/infra-red, Signals Intelligence (SIGINT) High Band and SIGINT Low Band systems. ***FY 2016 OCO Plans:*** N/A					
Title: ILS, Support, Studies & Analysis	-	0.400	1.608	-	1.608
Articles:	-	-	-	-	-
Description: Integrated Logistics Support, Studies and Analysis. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** Integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the MQ-4C Triton Unmanned Aircraft System (UAS) capabilities. ***FY 2016 Base Plans:*** Integrated logistics support, technical engineering services, sensor risk reduction, logistics supportability analyses and environmental planning, modeling and simulation, development of manpower and basing assessments, and development of technical data to support fielding of the MQ-4C Triton UAS capabilities. ***FY 2016 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305421N / *RQ-4 Modernization*	**Project (Number/Name)** 2939 / *RQ-4 Modernization*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
N/A					
Title: Test & Evaluation (T&E)	-	-	3.800	-	3.800
Articles:	-	-	-	-	-
Description: T&E efforts. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** N/A ***FY 2016 Base Plans:*** Begin Developmental Testing and Operational Testing support activities to allow test and fielding of the MQ-4C Triton Unmanned Air System phased capability upgrades in accordance with the program schedule. ***FY 2016 OCO Plans:*** N/A					
Title: Program Management (PM)	-	0.321	1.013	-	1.013
Articles:	-	-	-	-	-
Description: PM support and travel. ***FY 2014 Accomplishments:*** N/A ***FY 2015 Plans:*** PM support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability planning, technology maturity reviews, program protection planning, corrosion prevention planning, and joint and international cooperation efforts. ***FY 2016 Base Plans:*** Continue the following: PM support and travel, development of milestone and acquisition-related documentation, capability refinement and open systems architecture development, resource justification, affordability assessments and cost analyses, risk reduction and risk management, system integration and interoperability					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305421N / *RQ-4 Modernization*	**Project (Number/Name)** 2939 / *RQ-4 Modernization*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
planning, technology maturity reviews, program protection planning, corrosion prevention planning, and joint and international cooperation efforts. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	-	5.000	150.854	-	150.854

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• RDT&E/0305220N: *RQ-4 UAV (MQ-4C Triton)*	375.235	451.442	227.188	-	227.188	5.208	-	-	-	-	3,184.123
• APN-4/044200: *RQ-4 UAV (Triton UAV)*	-	67.670	548.836	-	548.836	582.360	635.984	704.135	718.463	7,096.336	10,353.784
• APN-6/044200: *RQ-4 UAV (Triton UAV)*	-	-	153.954	-	153.954	110.263	105.532	6.758	6.881	283.685	667.073
• OMN/1D4D: *Weapons Maintenance*	-	-	-	-	-	5.738	30.153	32.886	35.338	Continuing	Continuing
• OMN/1A1A: *Mission and Other Flight Operations*	-	-	-	-	-	-	2.216	12.773	44.119	Continuing	Continuing
• MILCON/0212176N: *Facilities New Footprint - Fleet Ops*	17.469	-	8.296	-	8.296	71.091	-	-	-	-	129.001
• MILCON/0712876N: *Facilities New Footprint - Main and Prod*	-	-	40.641	-	40.641	-	-	-	-	-	40.641
• MILCON/0815976N: *Facilities New Footprint - Training*	38.031	-	-	-	-	-	-	28.118	-	-	82.707
• MILCON/0203176N: *Facilities Restoration and Mod*	-	-	-	-	-	-	-	-	-	-	20.753
• MILCON/0816376N: *Facilities New Footprint - T&E*	-	-	-	-	-	-	-	-	-	-	33.034
• MILCON/0805976N: *Facilities Restoration and Mod-Training*	-	-	2.974	-	2.974	-	-	-	-	-	2.974

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305421N / *RQ-4 Modernization*	**Project (Number/Name)** 2939 / *RQ-4 Modernization*

D. Acquisition Strategy

The MQ-4C Triton acquisition approach encompasses delivery of detection, tracking, imaging and data dissemination capabilities at Initial Operational Capability (IOC) with activities to enhance sensor and system performance via phased capability upgrades for post IOC delivery as part of the Triton acquisition program. This approach of phased capability upgrades within the acquisition program enables MQ-4C to pace capability with rapidly evolving technologies and threats to ensure the Navy maintains persistent Intelligence, Surveillance and Reconnaissance dominance through the system's lifecycle.

The MQ-4C Triton program office is pursuing joint efficiency with the Air Force on the Global Hawk Unmanned Aircraft System (UAS). However, the integration of the Triton UAS into the Maritime Patrol Reconnaissance Force and the unique maritime sensors employed dictate a Navy-led acquisition program focused on joint efficiencies, where possible.

E. Performance Metrics

Successfully achieve Milestone C, Integrated Test, Operational Evaluation and IOC.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305421N / *RQ-4 Modernization*	Project (Number/Name) 2939 / *RQ-4 Modernization*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	Northrop Grumman : Rancho Bernardo, CA	0.000	-		3.379	Apr 2015	105.694	Nov 2015	-		105.694	302.994	412.067	412.067
Systems Engineering	Various	Various : Various	0.000	-		-		2.000	Nov 2015	-		2.000	7.555	9.555	-
Systems Engineering	WR	NAWC-AD : Patuxent River, MD	0.000	-		0.900	Jan 2015	9.739	Nov 2015	-		9.739	31.473	42.112	-
Primary Hardware Development	SS/FFP	Raytheon : McKinney, TX	0.000	-		-		10.000	Feb 2016	-		10.000	-	10.000	10.000
Primary Hardware Development	C/CPFF	Sierra Nevada Corporation : Beaver Creek, OH	0.000	-		-		9.500	Jan 2016	-		9.500	-	9.500	9.500
Primary Hardware Development	C/CPFF	Boeing Argon ST : Fairfax, VA	0.000	-		-		7.500	Nov 2015	-		7.500	-	7.500	7.500
		Subtotal	0.000	-		4.279		144.433		-		144.433	342.022	490.734	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various : Various	0.000	-		-		0.508	Nov 2015	-		0.508	1.300	1.808	-
Integrated Logistics Support	Various	Various : Various	0.000	-		-		-		-		-	3.710	3.710	-
Integrated Logistics Support	WR	NAWC-AD : Patuxent River, MD	0.000	-		0.400	Jan 2015	1.100	Nov 2015	-		1.100	4.807	6.307	-
		Subtotal	0.000	-		0.400		1.608		-		1.608	9.817	11.825	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various : Various	0.000	-		-		1.150	Nov 2015	-		1.150	5.428	6.578	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0305421N / *RQ-4 Modernization*	Project (Number/Name) 2939 / *RQ-4 Modernization*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC-AD : Patuxent River, MD	0.000	-		-		1.400	Nov 2015	-		1.400	35.589	36.989	-
Operational Test & Evaluation	Various	Various : Various	0.000	-		-		0.250	Nov 2015	-		0.250	7.900	8.150	-
Developmental Test & Evaluation	MIPR	DITCO : Various	0.000	-		-		1.000	Nov 2015	-		1.000	5.398	6.398	-
		Subtotal	0.000	-		-		3.800		-		3.800	54.315	58.115	-

Management Services ($ in Millions)

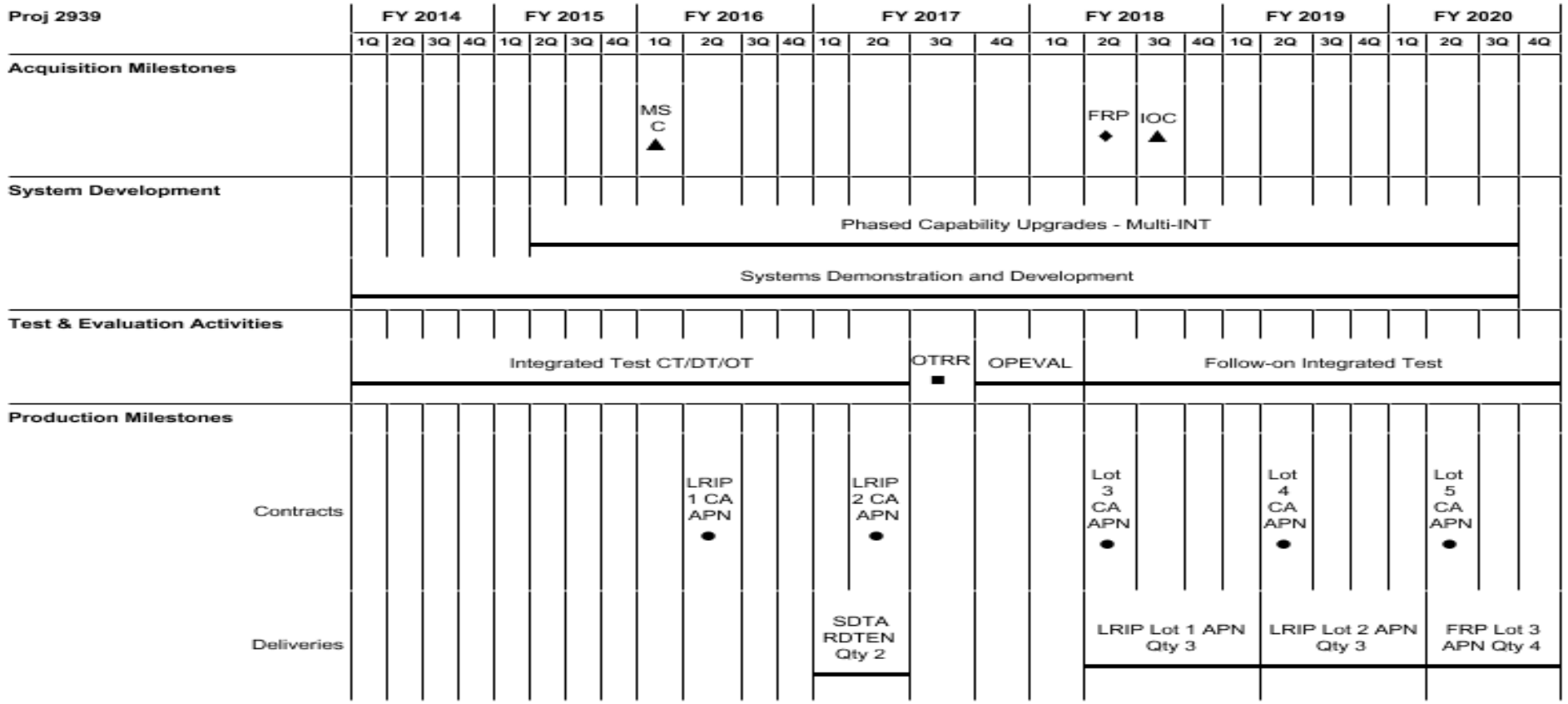
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	Various	Various : Various	0.000	-		0.100	Jan 2015	0.163	Nov 2015	-		0.163	2.285	2.548	-
Travel	Allot	Various : Various	0.000	-		0.025	Jan 2015	0.050	Nov 2015	-		0.050	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Ausley : Lexington Park, MD	0.000	-		0.196	Jan 2015	0.800	Nov 2015	-		0.800	2.851	3.847	3.847
		Subtotal	0.000	-		0.321		1.013		-		1.013	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		5.000		150.854		-		150.854	-	-	-

Remarks

MQ-4C Triton RDTE funding for modernization has been segregated into a new program element (from PE 0305220N to PE 0305421N) in order to satisfy Congressional direction for increased transparency. All Triton modernization funding was previously included in PE 0305220N PU 4020 MQ-4C Triton.

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305421N / *RQ-4 Modernization*	**Project (Number/Name)** 2939 / *RQ-4 Modernization*



2016PB - 0305421N - 2939 MQ-4C Triton development activities are resourced by PE 0305220N and PE 0305421N.

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0305421N / *RQ-4 Modernization*	**Project (Number/Name)** 2939 / *RQ-4 Modernization*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2939				
Acquisition Milestones: Milestone C	1	2016	1	2016
Acquisition Milestones: Full Rate Production	2	2018	2	2018
Acquisition Milestones: Initial Operational Capability	3	2018	3	2018
System Development: Phased Capability Upgrades - Multi-INT	2	2015	3	2020
System Development: System Development and Demonstration	1	2014	3	2020
Test & Evaluation Activities: Integrated Test (Combined/Developmental/Operational)	1	2014	2	2017
Test & Evaluation Activities: Follow-on Integrated Test	2	2018	4	2020
Test & Evaluation Activities: Operational Test Readiness Review	3	2017	3	2017
Test & Evaluation Activities: OPEVAL	4	2017	1	2018
Production Milestones: Contracts: Low Rate Initial Production 1 Contract Award	2	2016	2	2016
Production Milestones: Contracts: Low Rate Initial Production 2 Contract Award	2	2017	2	2017
Production Milestones: Contracts: Full Rate Production Lot 3 Contract Award	2	2018	2	2018
Production Milestones: Contracts: Full Rate Production Lot 4 Contract Award	2	2019	2	2019
Production Milestones: Contracts: Full Rate Production Lot 5 Contract Award	2	2020	2	2020
Production Milestones: Deliveries: System Demonstration Test Articles Delivery	1	2017	2	2017
Production Milestones: Deliveries: Low Rate Initial Production Lot 1 Delivery	2	2018	1	2019
Production Milestones: Deliveries: Low Rate Initial Production Lot 2 Delivery	2	2019	1	2020
Production Milestones: Deliveries: Full Rate Production Lot 3 Delivery	2	2020	4	2020

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0308601N *I Modeling & Simulation Support*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	21.252	4.932	4.719	4.757	-	4.757	4.979	5.076	5.172	5.280	Continuing	Continuing
2222: *Modeling & Simulation*	21.252	4.932	4.719	4.757	-	4.757	4.979	5.076	5.172	5.280	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element addresses projects under the Navy Modeling and Simulation (M&S) Office. It supports technical and management initiatives directed by Congress, Department of Defense (DoD), Secretary of the Navy (SECNAV), and Chief of Naval Operations (CNO) with the aim of bringing organization, focus, and efficiency to the development and use of M&S throughout the Navy and DoD. It provides a central agency for the formulation and implementation of policy and guidance in M&S, and represents Navy interests in Joint and other Agency initiatives. It funds efforts to define and coordinate the corporate Navy M&S policy and guidance to evolve an interoperable and reusable core M&S capability consistent with the M&S technical framework prescribed by DoD. Efforts are organized around three product areas: (1) Core Services: This activity provides essential planning and coordination of M&S efforts with other Services, the Office of Secretary of Defense (OSD), the Joint Staff, and other agencies to develop policies and procedures necessary for M&S standards, visibility, and potential reuse across DoD. (2) Community Services: This activity provides M&S subject matter expert support embedded in the DON M&S Communities to recommend implementations for M&S policies, standards, VV&A, and reuse within their Community and to ensure that the wider DON and DoD are aware (visibility) of the M&S products and services, initiatives, processes, and standards. (3) Community Experiments and Prototypes: This activity conducts experiments and prototypes aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy M&S and investigates Service-unique requirements for standards or guidance to achieve M&S efficiencies.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	5.116	4.719	4.795	-	4.795
Current President's Budget	4.932	4.719	4.757	-	4.757
Total Adjustments	-0.184	-	-0.038	-	-0.038
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.184	-			
• Rate/Misc Adjustments	-	-	-0.038	-	-0.038

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0308601N / *Modeling & Simulation Support*	Project (Number/Name) 2222 / *Modeling & Simulation*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
2222: *Modeling & Simulation*	21.252	4.932	4.719	4.757	-	4.757	4.979	5.076	5.172	5.280	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Program Element addresses projects under the Navy Modeling and Simulation (M&S) Office. It supports technical and management initiatives directed by Congress, Department of Defense (DoD), Secretary of the Navy (SECNAV), and Chief of Naval Operations (CNO) with the aim of bringing organization, focus, and efficiency to the development and use of M&S throughout the Navy and DoD. It provides a central agency for the formulation and implementation of policy and guidance in M&S, and represents Navy interests in Joint and other Agency initiatives. It funds efforts to define and coordinate the corporate Navy M&S policy and guidance to evolve an interoperable and reusable core M&S capability consistent with the M&S technical framework prescribed by DoD. Efforts are organized around three product areas: (1) Core Services: This activity provides essential planning and coordination of M&S efforts with other Services, the Office of Secretary of Defense (OSD), the Joint Staff, and other agencies to develop policies and procedures necessary for M&S standards, visibility, and potential reuse across DoD. (2) Community Services: This activity provides M&S subject matter expert support embedded in the DON M&S Communities to recommend implementations for M&S policies, standards, VV&A, and reuse within their Community and to ensure that the wider DON and DoD are aware (visibility) of the M&S products and services, initiatives, processes, and standards. (3) Community Experiments and Prototypes: This activity conducts experiments and prototypes aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy M&S and investigates Service-unique requirements for standards or guidance to achieve M&S efficiencies.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: CORE SERVICES	1.153	1.465	1.657	-	1.657
Articles:	-	-	-	-	-
Description: This activity provides essential planning and coordination of M&S efforts with other Services, the Office of Secretary of Defense (OSD), the Joint Staff, and other agencies to develop policies and procedures necessary for M&S visibility and potential reuse across DoD. It provides updates to the DoD Enterprise Catalog, M&S Master Plan, and M&S Investment Strategy. This activity supports development of common services, tools, and databases to ensure the integration and connectivity of M&S products employed in Naval assessments, training, acquisition, and among operational communities. It manages and maintains the Navy M&S Information Service (NMSIS), the central Naval M&S information resource to support informed M&S investment decision making across DON. It implements and manages the Modeling and Simulation (M&S) Quality Assurance (VV&A) process and guidelines for implementing for modeling, simulation, and data. It reviews both new and legacy M&S VV&A plans and reports and develops and maintains the Naval M&S VV&A repository. It establishes and implements a VV&A training curriculum for developers and Accreditation Agents.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*	**Project (Number/Name)** 2222 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
FY 2014 Accomplishments: Title: CORE SERVICES This activity provides essential planning and coordination of Modeling and Simulation (M&S) efforts with other Services, the Office of Secretary of Defense (OSD), the Joint Staff, other agencies, and International organizations to develop policies, procedures, and guidance necessary for M&S visibility and potential reuse across DoD. It provides updates to the DoD Enterprise Catalog, DoD M&S Master Plan, and DoD M&S Investment Strategy. This activity supports development of common services, tools, and data to ensure the integration and connectivity of M&S products employed in Naval assessments, training, acquisition, and among operational communities. It manages and maintains the Navy M&S Information Service (NMSIS), which is the central Naval M&S information resource to support informed M&S investment decision making across DON. This activity leads the standardization of M&S capabilities to enable interoperability for reuse across DON and DoD. Verification, Validation, and Accreditation (VV&A) and Standards Support - Provided near real-time direct responses to specific questions about M&S Standards and VV&A implementation, policy, and guidance from various organizations to include the USN Operational Test and Evaluation Force, Naval Air Systems Command, OPNAV N81 Assessment Division, and the Office of Naval Intelligence, Institute for Defense Analyses, and U.S. Army Modeling and Simulation Office. - Collected USN and USMC VV&A documents, published the listing via the Navy M&S Information Service (NMSIS), and made VV&A resources visible and discoverable for sharing and reuse in the DoD Enterprise Catalog, and DoD M&S Catalog. - As the USN Technical Deputy for DoD M&S SC Priority Objective 2.g (PO2G), coordinated all DoD M&S SC PO2G efforts and initiated proposed actions to address member feedback. Completed the review, comment adjudication, and revision of DoD Instruction 5000.61 and provided to the DoD M&S Coordination Office to formally reissue through the DoD Directives Systems. Navy Modeling and Simulation Information Service (NMSIS) & Data Team - International Technical Activity: Chaired the NATO Modeling and Simulation Group -100 technical activity on Resource Discovery and Access to develop processes for generation and maintenance of NATO metadata; led the United States writing team that authored draft Technical Report and submitted it for participating country					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*	**Project (Number/Name)** 2222 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
review. Adjudicated and incorporated international comments and submitted final technical report to NATO Research and Technology Office. - National Technical Activity: Joined the National Information Exchange Model (NIEM), Military Operations (MilOps) Domain working groups on content development and implementation. Organized MilOps status briefings to the DoD M&S Community of Interest (M&S COI) Data Management Working Group (DMWG). - Navy Net-Centric Discovery: Collaborated with Naval Infrastructure and Capability (NICAP) management and development team members to develop DoD Discovery Metadata Specification (DDMS) data from the NICAP database schema; developed procedures to federate NICAP data records with the DoD Enterprise Catalog. Worked with the NAVAIR Portable Source Initiative (NPSI) and Enterprise Catalog points of contact resulting in 159,303 geospatial DDMS metadata records uploaded to the DoD Enterprise Catalog. Plans and Policies - Provided substantive inputs to DoD plans, strategies, guidance, and definitions including revisions and a refined draft of M&S VV&A (5200.40) and M&S Management (5200.38A). Revisions are in response to significant advances and changes in both subject areas and to comply with SECNAVINST 5215.1D and DoD Instruction 5025.01 regulations. ***FY 2015 Plans:*** - Full NATO country review of NMSG-100 technical report on Resource Discovery and Access required prior to publishing final report. - Assist Navy M&S Communities in their efforts to make M&S resources discoverable for reuse to the Global Information Grid Enterprise Service ensuring compliance with DoD Net Centric Data Strategy (dated May 9, 2003) and Directive 8320.02 (Data Sharing in a Net Centric Department of Defense). - Revisions to documents are required in response to significant advances and changes in both subject areas and to comply with DON (SECNAVINST 5215.1D) and DoD (DoD Instruction 5025.01) regulation. Plans are to promulgate M&S VV&A Instruction (5200.40) and M&S Management (5200.38A), review Navy M&S Policy for coverage gaps new requirements, and assist in the development of an: "A Review of RDT&E M&S Factors in Policy" Current Policy Status Snapshot - Continue development of the Navy M&S Strategic Plan and articulate a Comprehensive M&S Vision (Echelon 1), and begin Implementing Goals (Echelon 2) ***FY 2016 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*	**Project (Number/Name)** 2222 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Continue FY15 efforts ***FY 2016 OCO Plans:*** N/A					
Title: COMMUNITY SERVICES	2.562	2.303	2.416	-	2.416
Articles:	-	-	-	-	-
Description: This activity provides M&S subject matter expert support embedded in the DON M&S Communities to recommend implementations for M&S policies and standards within their Community and to ensure that the wider Navy is aware of the M&S products and services, initiatives, processes, and standards (visibility). It promotes M&S reuse through cooperative Community M&S activities which identify and prioritize M&S capability requirements between and across Communities. It also provides an M&S degree program through the Naval Postgraduate School (NPS), Modeling Virtual Environments and Simulation (MOVES) curriculum which qualifies officers to fill 6202-P coded billets. Financial support for thesis and dissertation efforts done by the students is covered by this funding. Topics are broad M&S topics of concern which are prioritized based on how they meet the requirements across, between and within the M&S Communities.					
FY 2014 Accomplishments: Training Integrated Direct Support (TNG IDS) - Training IDS team is an integral member of the U.S. Fleet Forces Command (USFF) N73-led Readiness Kill Chain Cross-Functional Team. Provided insights and assisted with analysis of possible actions the USFF Commander can take now to initiate improvements for training readiness kill chain. - Supported US Fleet Forces Command Training Directorate in development of Navy wide training policies and programs that facilitate effective force generation at lower costs through the effective use of M&S in the continued development of the Navy Continuous Training Environment and Fleet Synthetic Training Program. - Developed a Fleet Live-Virtual-Constructive Training Roadmap based on the Fleet Live-Virtual-Constructive Training Capability Requirement document developed in 2013. This document provides further detail, scope, and specificity to the necessary system-of-systems capabilities required to best enable Fleet readiness and force generation in the most efficient and effective manner. - Conducted the Fleet Training Integration Panel (FTIP). The FTIP provides a venue for the Fleet Training stakeholders (Fleet Command, Numbered Fleet Commander, Naval Education and Training Command, OPNAV Resource Sponsors, SYSCOMs, etc.) to come together and discuss strategy, plans, and programs for the Navy Training Enterprise.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*	**Project (Number/Name)** 2222 / *Modeling & Simulation*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Facilitated a 3-day workshop for the Fleet Training Integration Panel (FTIP) Executive Steering Committee (ESC) - Advisory Group. The ESC recommended forwarding the following issues to the Flag FTIP: Fleet training recommendations to fulfill the CUSFF,CPF Commanders' Intent; Budget Estimate Submission impact to Fleet training; Carrier Tactical Operations Center, Tactical Support Center training way ahead; Fleet Integrated Synthetic Training Roadmaps; Readiness Kill Chain analysis of Ballistic Missile Defense Fleet Synthetic Training at Sea; and the Fleet Battle Experiment plan for the future. During the subsequent brief to COMSEVENTHFLT N7, RDML Grady added the Cruiser Destroyer requirements for Visit, Board, Seizure, and Search (VBSS), and the COMSEVENTHFLT brief on "Silent Banshee" as topics for the Flag FTIP. - Developed the Fleet Training Investment Priorities Working Group briefings. The Numbered Fleet Command brief is designed to solicit their respective theater warfare area priorities. The Training Provider brief is designed to solicit the Type Commanders and Centers of Excellence assessment of their respective training capability in academic, synthetic and live training. Inputs will be used to develop recommended training prioritization for POM16. Research, Development, and Acquisition Integrated Direct Support (RDA IDS) - Provide innovative M&S enterprise solutions to emulate the Battlespaces of the future for Integrated and Interoperable SoS War-fighting Capability Assessment, Analysis, RDT&E, and Training. Improve the way we do business using M&S as a key enabler to improve support of our programs, identify critical gaps, shortfalls, and make "every last dollar count". - Conducted multiple M&S Forums across the Navy System Commands to coordinate, advise, inform, advocate, and implement M&S plans, strategies, goals, objectives and activities across the M&S acquisition, testing and experimentation communities. USMC Integrated Direct Support (USMC IDS) - Re-scoped the Marine Corps Modeling & Simulation Management Office (MCMSMO) with input from Integrated Process Teams and M&S authorities in the Marine Corps. Update to the Marine Corps Order 5200.28A that will ultimately sharpen MCMSMO's relevance to future M&S issues. - Increased the number of billets for Marine M&S officers to nearly 20 (8825 MOS) - Supported Marine Corps University in its use of commercial game technology for the education of lieutenant colonels and colonels at the War College. Naval Postgraduate School Modeling, Virtual Environments, and Simulation Institute (NPS MOVES)					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Ensures NMSO research priorities, faculty core competencies, and student's subject matter expertise, interests and abilities are aligned to provide the military relevant M&S research. It helps ensure thesis research extends and leverages the appropriate science and technology to address DoD-relevant problems producing the highest quality research and practical cost-effective solutions. Additionally, this project aligns MOVES faculty research themes to these same DoD requirements. - Provides Officers with postgraduate M&S education to fill billet requirements throughout DoD. ***FY 2015 Plans:*** - Continue FY14 efforts. - Coordinate with Naval Systems Commands and other solution providers to ensure the required system-of-systems training capability is delivered across the system life-cycle to enable effective Fleet training in an integrated live and synthetic training venue. Examples of mission areas, capabilities that require an integrated venue to effectively train are Navy Integrated Fire Control - Counter Air (NIFC-CA) and Anti-Access, Area Denial (A2AD). - Continue to research expanded use of commercial game technology as a cost saving measure and to speed development in M&S education and training ***FY 2016 Base Plans:*** - Continue FY15 efforts ***FY 2016 OCO Plans:*** N/A					
Title: COMMUNITY EXPERIMENTS and PROTOTYPES	1.217	0.951	0.684	-	0.684
Articles:	-	-	-	-	-
Description: This activity conducts experiments and prototypes aimed at determining the feasibility and applicability of proposed standards or technical approaches to Navy M&S, and investigate Service-unique requirements for standards or guidance. Individual efforts focus on developing or evaluating approaches to optimize training, assessments and acquisition functional,mission objectives through more efficient development and use of M&S. This activity develops methodologies and standards that will result in model and data reusability and interoperability through the formulation of a technical framework. These standards support the full range of architecture and engineering design requirements across the Navy. This activity also supports Fleet exercises and experiments through the application of distributed simulations across a wide variety of warfighting and supporting communities. Specifically, it develops and integrates appropriate M&S into Fleet Synthetic Training (FST), and develops simulation efforts to test and evolve the standards for models, interfaces, and data.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
It supports development of tools necessary to enable the seamless access and use of operationally relevant M&S products to support Navy training, warfare assessments and acquisition requirements. ***FY 2014 Accomplishments:*** Architecture Management Integration Environment (AMIE), Virtual World Standard Interfaces (VWSI) - Establish broad-based application of Enabling Architecture Interoperability Initiative (EAII), Architecture Management Integration Environment (AMIE), and Virtual World Standard Interfaces (VWSI) as Enterprise "Best Business Practices" for rapid support of the warfighter through: Unprecedented collaboration between systems at this stage of acquisition for early assurance of interoperability and identification of integration risks. True reuse of models, simulations, and hardware-in-loop in their native environments. Showcase how these RDA M&S Enterprise Solutions support a rapid and efficient response to warfighter needs through a collaborative and immersive Live, Virtual, and Constructive (LVC) architecture that supports the full life cycle through reuse of cross-SYSCOM,cross-Community labs and facilities over Secure Defense Research and Engineering Network (SDREN). Assess integration of best of breed components such as Dalhgren's Orchestrated Simulation for Modeling, USMC Framework for Assessing Cost and Technology (FACT), NWDC M&S Framework, OSD Engineered Resilient Systems (ERS), Open Unified Technical Framework - OpenUTF, Tactical Operational Software Engineering Environment (TOSEE), Battle Force Tactical Training (BFFT) for potential integration and demonstration. Tactical Operational Software Engineering Environment (TOSEE) - Deliver an initial release of the Tactical Operational Software Engineering Environment (TOSEE) which enables helicopter tactical software to execute on commercial-off-the-shelf (COTS) hardware, increasing the rate, ease at which low cost training devices and simulators can integrate new tactical software capabilities after the software is released to the Fleet. VV&A of Real Time Propagation Loss Model / WAVEQ3D - Completed initial review and assessment of the VV&A of Real Time Propagation Loss Model / WAVEQ3D sonar propagation loss model in order to ascertain its effectiveness, efficiency, and determine its capability to be implemented in low cost commercial off the shelf (COTS) hardware to run in real-time. WAVEQ3D has the potential to significantly improve the representation of underwater sound propagation for simulations that require a lightweight implementation.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
VCE for CPD&T - The Virtual Collaborative Environment for Conducting Project Design & Test (VCE for CPD&T) research effort will provide enhanced systems engineering toolsets and provide design data to improve the productivity of system test and evaluation. - VCE for CPD&T is designed to complement and be integrated with the Framework for Assessing Cost and Technology (FACT) and Architecture Management Integration Environment (AMIE). ***FY 2015 Plans:*** - VV&A of Real Time Propagation Loss Model / WaveQ3d will progress to prototype / demonstration implementation model in order to validate its effectiveness and efficiency in a simulation infrastructure. ***FY 2016 Base Plans:*** Continue FY15 efforts. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	4.932	4.719	4.757	-	4.757

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This is a non-ACAT program. The focus of the Navy Modeling and Simulation (M&S) Office is to facilitate and enable the efficient use of M&S by minimizing duplication of M&S efforts and maximize the reuse of M&S and data.

E. Performance Metrics

This program supports efforts to define, develop, and utilize M&S technologies, standards and techniques in DON and joint programs across a wide range of disciplines and technical arenas. As such, performance metrics are specific to individual projects initiated under this program element. Representative examples of performance criteria for M&S support include the following: VV&A of deployed M&S systems to support Fleet and Force missions and assessments; degree of composability and adaptability of system architectures employed M&S systems; ability of M&S systems to replicate and permit recreation of force or system interactions that otherwise would be performed by more labor-intensive or expensive personnel, forces, or elements; degree to which M&S frameworks would permit rapid integration and

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
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employment of analytic capabilities for the analysis and documentationof warfighter missions, weapons systems or Tactics, Techniques and Procedures (TT&P); and ability od a specific M&S technology or technique to meet the requirements specified in an individual project supported by this program.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DoD Support	WR	SPAWAR : Charleston, SC	0.303	0.080	Jul 2014	-		-		-		-	Continuing	Continuing	Continuing
NMSO Director	WR	SPAWAR : Charleston, SC	0.780	0.258	Jan 2014	0.258	Jan 2015	0.263	Jan 2016	-		0.263	-	1.559	-
NMSO Data Archiving Effort	WR	NAVAIR : Pax River, MD	0.295	0.069	Mar 2014	0.069	Mar 2015	0.070	Mar 2016	-		0.070	-	0.503	-
DREN Connectivity	WR	SPAWAR : Charleston, SC	0.022	0.007	Mar 2014	0.007	Mar 2015	0.007	Mar 2016	-		0.007	-	0.043	-
M & S Data Lead	WR	SPAWAR : Charleston, SC	0.350	0.042	Jan 2014	0.105	Jan 2015	0.243	Jan 2016	-		0.243	-	0.740	-
NMSIS Web Presence	WR	SPAWAR : Charleston, SC	0.401	0.165	Jul 2014	0.165	Jan 2015	0.165	Jan 2016	-		0.165	-	0.896	-
VV&A Standards & Support	WR	SPAWAR : Charleston, SC	0.744	0.250	May 2014	0.062	Mar 2015	0.106	Mar 2016	-		0.106	-	1.162	-
Plans & Policies	WR	SPAWAR : Charleston, SC	0.928	0.200	Jul 2014	0.400	Jan 2015	0.400	Jan 2016	-		0.400	-	1.928	-
DON Mission Level Gap Analysis	WR	NAVAIR : Pax River, MD	1.100	-		-		-		-		-	-	1.100	-
M&S Interopeperability Initiative	WR	NAVAIR : Pax River, MD	0.950	-		-		-		-		-	-	0.950	-
M&S Interopeperability Initiative	WR	SPAWAR : Charleston, SC	0.649	-		-		-		-		-	-	0.649	-
Navy Training Test Harness	WR	NAWC TSD : Orlando, FL	0.375	-		-		-		-		-	-	0.375	-
CSP for NTI	WR	NAWC TSD : Olando, FL	0.247	-		-		-		-		-	-	0.247	-
Navy STORM	WR	NAWC : Pax River, MD	0.500	-		-		-		-		-	-	0.500	-
USMC STORM	WR	MCCDC : Qunatico, VA	0.250	-		-		-		-		-	-	0.250	-
M&S Services	WR	SPAWAR : Charleston, SC	0.000	-		-		-		-		-	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Data Assistant	WR	SPAWAR : Charleston, SC	0.462	0.082	Jan 2014	0.185	Jan 2015	0.189	Jan 2016	-		0.189	-	0.918	-
Navy VV&A Lead	WR	NAVAIR : Pax River, MD	0.000	-		0.214	Oct 2014	0.214	Oct 2015	-		0.214	-	0.428	-
		Subtotal	8.356	1.153		1.465		1.657		-		1.657	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
RDA POC	WR	NAVAIR : Pax River, MD	0.333	0.329	Jan 2014	0.349	Jan 2015	0.349	Jan 2016	-		0.349	-	1.360	-
RDA IDS (#1&3)	WR	SPAWAR : Charleston, SC	1.086	0.255	Jan 2014	0.215	Jan 2015	0.215	Jan 2016	-		0.215	-	1.771	-
Training IDS (#1)	WR	SPAWAR : Charleston, SC	0.704	0.280	Mar 2014	0.214	Mar 2015	0.214	Mar 2016	-		0.214	-	1.412	-
Training IDS (#2)	WR	SPAWAR : Charleston, SC	0.247	0.251	Jul 2014	0.232	Jan 2015	0.232	Jan 2016	-		0.232	-	0.962	-
Analysis IDS (#1)	WR	SPAWAR : Charleston, SC	0.000	-		-		-		-		-	-	-	-
Analysis IDS (#2)	WR	SPAWAR : Charleston, SC	0.058	-		-		-		-		-	-	0.058	-
IDS Training and Coordination	WR	SPAWAR : Charleston, SC	0.044	-		-		-		-		-	-	0.044	-
USMC IDS	WR	MCCDC : Quantico, VA	0.282	0.138	Jul 2014	0.110	Mar 2015	0.151	Jan 2016	-		0.151	-	0.681	-
MOVES	WR	NPS : Monterrey, CA	2.541	0.704	Jan 2014	0.643	Jan 2015	0.630	Jan 2016	-		0.630	-	4.518	-
RDA M&S Forum	WR	NAVAIR : Pax River, MD	1.125	0.375	Jan 2014	0.375	Jan 2015	0.337	Jan 2016	-		0.337	-	2.212	-
NMSO Technical Support	WR	SPAWAR : Charleston, SC	0.483	-		-		-		-		-	-	0.483	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Simulated Shipboard FMVS	WR	NWDC : Norfolk, VA	0.365	-		-		-		-		-	-	0.365	-
M&S Officer Postgraduate Ed	WR	SPAWAR : SSC-LANT	0.130	0.230	Jan 2014	0.165	Jan 2015	0.288	Jan 2016	-		0.288	-	0.813	-
		Subtotal	7.398	2.562		2.303		2.416		-		2.416	-	14.679	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Need Item Text	C/BA	Not Specified : Not Specified	0.000	-		-		-		-		-	-	-	-
		Subtotal	0.000	-		-		-		-		-	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Standard Interfaces for Virtual World	WR	NAVAIR : Pax River, MD	1.967	0.175	Feb 2014	0.100	Feb 2015	0.100	Feb 2016	-		0.100	-	2.342	-
Architecture Management Integration Environment	WR	NAVAIR : Pax River, MD	1.180	0.448	Feb 2014	0.350	Feb 2015	0.200	Feb 2016	-		0.200	-	2.178	-
Semantic and Structural Metedata Schema	WR	NAVAIR : Pax River, MD	0.562	-		-		-		-		-	-	0.562	-
Semantic and Structural Metedata Schema	WR	SPAWAR : Charleston, SC	0.289	-		-		-		-		-	-	0.289	-
Tactical Operational Software Environment (TOSEE)	WR	NAVAIR : TSD, Orlando	0.650	-		-		-		-		-	-	0.650	-
Cross Cultural Competence in OPS Environment	WR	NAVAIR : TSD, Orlando	0.350	-		-		-		-		-	-	0.350	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Framework for Assessing Cost and Technology (FACT)	WR	MCCDC : Quantico, VA	0.500	-		-		-		-		-	-	0.500	-
Intergrated Air/Missle Defense IAMD	WR	NAVAIR : Pax River, MD	0.000	-		-		-		-		-	-	-	-
Measuring Immersion Training	WR	MCCDC : Quantico, VA	0.000	-		-		-		-		-	-	-	-
VVA of Real Time Propagation Loss Model	WR	ONR : Arlington, VA	0.000	0.294	Feb 2014	0.216	Feb 2015	-		-		-	-	0.510	-
Navy M&S Education Program	WR	NAVAIR : Pax River, MD	0.000	-		-		-		-		-	-	-	-
Sensor Federate	WR	ONR : Pax River, MD	0.000	-		-		-		-		-	-	-	-
Contracting Language for M&S	WR	NAVAIR : Pax River, MD	0.000	-		-		-		-		-	-	-	-
VCE for CPD&T	MIPR	WHS : Arlington, VA	0.000	0.300	Mar 2014	-		-		-		-	-	0.300	-
Navy VV&A Lead	WR	NAVAIR : Pax River, MD	0.000	-		-		-		-		-	-	-	-
LVC Training Enviroment Tech Advisor	WR	NAVSEA JHU : Wash. DC	0.000	-		0.285	Jan 2015	0.288	Jan 2016	-		0.288	-	0.573	-
Human Anatomy Motion Tracking & Display	WR	MARCORSYSCOM : Arlington, VA	0.000	-		-		0.096	Jan 2016	-		0.096	-	0.096	-
		Subtotal	5.498	1.217		0.951		0.684		-		0.684	-	8.350	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	21.252	4.932		4.719		4.757		-		4.757	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0308601N / *Modeling & Simulation Support*	**Project (Number/Name)** 2222 / *Modeling & Simulation*

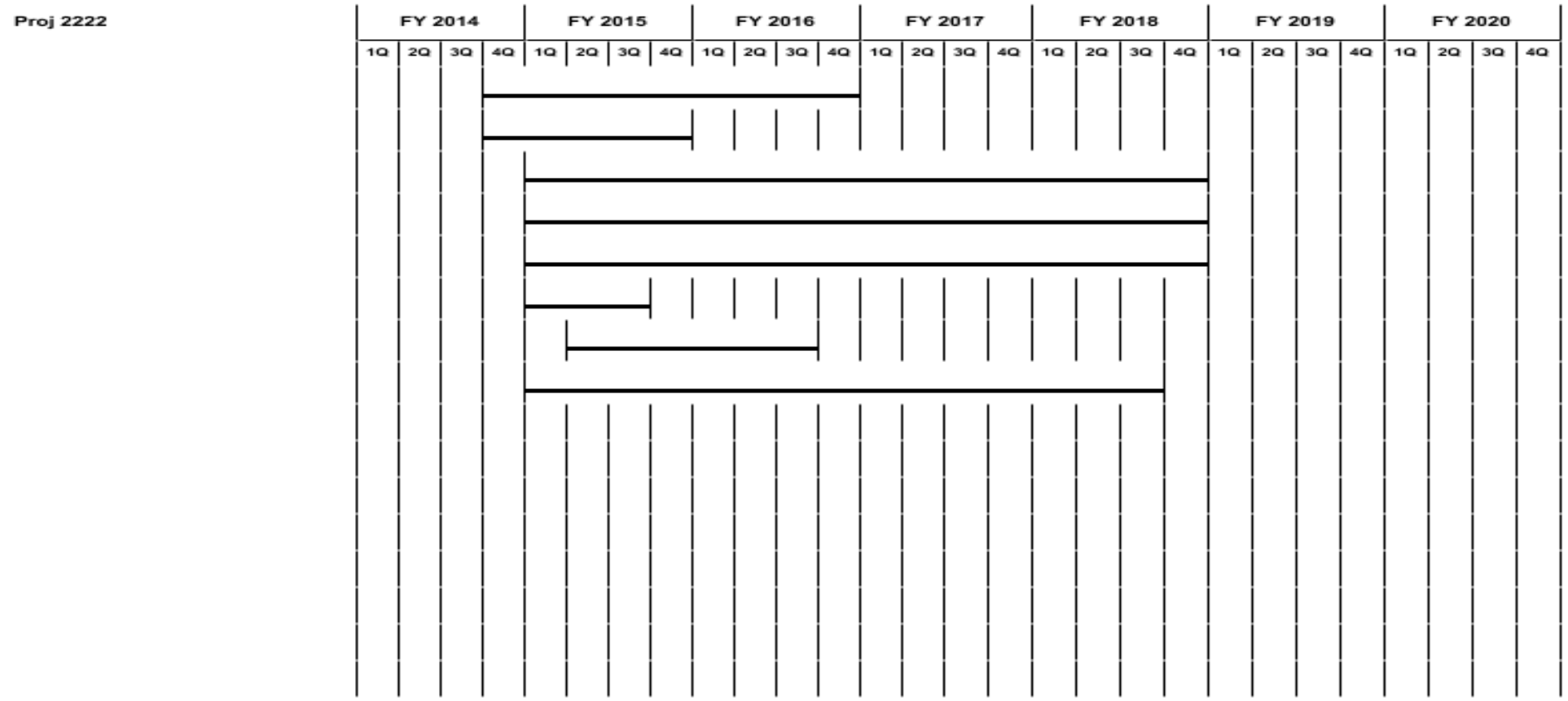

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2222				
Incorporate Best Practices in Contracting in DON	4	2014	4	2016
Publish Contracting Best Practices Guide	4	2014	4	2015
Change Culture through Education, Outreach and Training	1	2015	4	2018
Host Summit for Face to Face Workshop on Issues and Reuse	1	2015	4	2018
Incorporate Learning courses in SYSCOM Workforce Education	1	2015	4	2018
Coordinate across DON& other Services/DoD to develop a Support Plan	1	2015	3	2015
Establish draft MSSP Policy among the Services/DoD	2	2015	3	2016
Draft a Common Digital Environment for (and other) social efforts	1	2015	3	2018
Coordinate quarterly Fleet Training Integration Panels	1	2015	1	2018
Plan Quarterly Fleet Training Requirements Management Group	1	2015	3	2018
Develop Forums across all the Communities	1	2015	1	2015
JBUS AIME Integration to fix future LVC training integration issues	1	2015	1	2016
Aegis, Development Environment_AIME integration	1	2015	2	2016
Integrate NICAP and PEO IWS Portal, knowledge retention and discovery	3	2015	4	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0702207N / *Depot Maintenance (NON-IF)*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	128.051	25.630	21.168	24.185	-	24.185	19.386	19.643	15.066	15.388	Continuing	Continuing
3030: *FA-18 SLAP*	118.040	21.184	13.853	19.685	-	19.685	19.386	19.643	15.066	15.388	Continuing	Continuing
3182: *T-45 SLAP*	10.011	4.446	7.315	4.500	-	4.500	-	-	-	-	-	26.272

A. Mission Description and Budget Item Justification

3030: A significant portion of the F/A-18 airframe is believed to have additional inherent capability and a life extension may be possible for many portions of the airframe. The F/A-18 Service Life Assessment Program (SLAP) is assessing the structural and subsystem conditions of the F/A-18 fleet in order to determine what modifications are necessary to extend the aircraft designed life limits to allow it to achieve Chief of Naval Operations inventory requirements. Without SLAP and follow on Service Life Extension Program aircraft are retired from the USN inventory when a design service life metric is reached.

3182: The T-45 SLAP is assessing the subsystem condition of the T-45 fleet in order to determine what modifications are necessary to extend the aircraft subsystem design life limits to allow it to meet Chief of Naval Air Training (CNATRA) Pilot and Naval Flight Officer (NFO) training requirements through 2035.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	28.042	21.168	19.846	-	19.846
Current President's Budget	25.630	21.168	24.185	-	24.185
Total Adjustments	-2.412	-	4.339	-	4.339
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.532	-			
• SBIR/STTR Transfer	-0.880	-			
• Program Adjustments	-	-	4.500	-	4.500
• Rate/Misc Adjustments	-	-	-0.161	-	-0.161

Change Summary Explanation

Technical: Not applicable.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0702207N *I Depot Maintenance (NON-IF)*

Schedule: Project 3030 FA-18 Service Life Assessment Program schedule updated to reflect ongoing Subsystems and Structures Phase C efforts. Phase C will continue analysis of the Phase B results. Subsystems Phase C and Structures Phase C will be executed under the same contract.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0702207N / *Depot Maintenance (NON-IF)*	Project (Number/Name) 3030 / *FA-18 SLAP*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3030: *FA-18 SLAP*	118.040	21.184	13.853	19.685	-	19.685	19.386	19.643	15.066	15.388	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The F/A-18 Service Life Assessment Program (SLAP) is assessing the structural and subsystem conditions of the F/A-18 fleet in order to determine what modifications are necessary to extend the aircraft designed life limits to allow it to achieve Chief of Naval Operations (CNO) inventory requirements. The goal of the F/A-18 SLAP program is to identify critical structures and components that can achieve the extended service life limit goals. SLAP consists of structural analyses of the main landing gear, arresting hook and catapult back-up structures, vertical tails, wings and fuselage. A second effort is to assess the subsystem components (hydraulics, wiring, actuators, etc) to identify over and above inspections, overhaul intervals or replacement schedules to fly past design of 6,000 hours. The current life limits for the F/A-18 E/F are 6,000 Flight Hours (FH), 2,250 catapults/arrestments (Cat/Traps) and 15,750 total landings. The F/A-18 SLAP program of record states the SLAP goals as 12,000 FH, 3,500 Cat/Traps and 22,500 total landings. The primary objective of F/A-18 SLAP is to determine if the stated SLAP goals are feasible. An increase in total landings and flight hours would allow the F/A-18 to meet CNO inventory requirements. The requirements are integrated with the Joint Strike Fighter planned introduction. This effort is required to be conducted for these airframes and subsystems to ascertain what actions and modifications must be taken to safely operate each system beyond its designed life until the targeted end of service life.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: F/A-18 SLAP	21.184	13.853	19.685	-	19.685
Articles:	-	-	-	-	-
Description: The current design life limits do not support USN inventory requirements. Funding supports assessing the structural condition of the F/A-18 fleet in order to determine what modifications are necessary to extend the aircraft designed life limits to allow it to achieve CNO inventory requirements.					
FY 2014 Accomplishments: Continued stress analysis of numerous data points to provide exploitation of complete structural fatigue testing with the expectation of extending the current service life of F/A-18E/F from the design limits to the SLAP goals. Locations encompass the forward, center and aft fuselage, inner and outer wings, as well as landing gear.					
FY 2015 Plans: Continue stress analysis of numerous data points to provide exploitation of complete structural fatigue testing with the expectation of extending the current service life of F/A-18E/F from the design limits to the SLAP goals. Locations encompass the forward, center and aft fuselage, inner and outer wings, as well as landing gear.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0702207N / *Depot Maintenance (NON-IF)*	**Project (Number/Name)** 3030 / *FA-18 SLAP*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Continue stress analysis of numerous data points to provide exploitation of complete structural fatigue testing with the expectation of extending the current service life of F/A-18E/F from the design limits to the SLAP goals. Locations encompass the forward, center and aft fuselage, inner and outer wings, as well as landing gear. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	21.184	13.853	19.685	-	19.685

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN/0525: *F-18 Series (OSIP 020-14)*	9.901	11.051	11.057	-	11.057	11.344	56.750	89.240	83.977	1,133.442	1,406.762

Remarks

D. Acquisition Strategy

The Service Life Assessment Program (SLAP) program employs sole source contracts with Boeing, the aircraft prime manufacturer. SLAP further decomposes program of record goals into smaller discrete steps, analyzing requirements to extend FH from 6,000 to 9,000 first. These analyses will provide the raw engineering data to develop aircraft modifications to extend total aircraft landings, Cat/Traps, and FH. The F/A-18 SLAP Program consists of two major engineering efforts: the aircraft structural assessment and the aircraft subsystems assessment. Both efforts are broken into multiple phases which develop tools and models, assess current aircraft usage, and develop concepts to extend aircraft life to meet CNO objectives. The program will combine exploitation of complete structural fatigue testing and actual fleet usage with the expectation of extending the service life of the F/A-18 aircraft. Conducting F/A-18 SLAP to study the aircraft lifetime will provide a better estimate of aircraft service life and a follow on Service Life Extension Program (SLEP).

E. Performance Metrics

The F/A-18 SLAP provides an assessment of aircraft structure fatigue life as affected by flight maneuver, Cat/Traps and landings, based on actual usage and identifies the efforts required to extend the aircraft life to SLAP goals. During SLAP Structures Phase A (FY08-FY13) tools and modeling necessary to assess usage and fatigue life are developed. During SLAP Structures Phase B (FY11-FY19) specific structural locations which do not meet SLAP goals are identified and analyzed. Subsystem SLAP is also initiated concurrently with Structures Phase (B). A Flight Control Surface SLAP, SLEP retrofit concepts and repairs for deficient locations are developed during SLAP Structures and Sub-Systems Phase C (FY14-FY20). SLAP is followed by the SLEP during which the actual retrofit and repairs are performed under OSIP 020-14 established in FY14.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0702207N / *Depot Maintenance (NON-IF)*	**Project (Number/Name)** 3030 / *FA-18 SLAP*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development SLAP F/A-18E-F	SS/CPFF	Boeing : St. Louis, MO	68.525	16.703	Dec 2013	9.635	Dec 2014	15.630	Dec 2015	-		15.630	Continuing	Continuing	Continuing
Prior Year Prod Dev cost no longer funded in FYDP	SS/CPFF	Boeing : St. Louis, MO	28.775	-		-		-		-		-	-	28.775	28.775
		Subtotal	97.300	16.703		9.635		15.630		-		15.630	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SLAP Inventory Model	WR	ONR : Arlington, VA	6.525	-		-		-		-		-	-	6.525	-
SLAP F/A-18 E/F	WR	NAWCAD : Patuxent River, MD	6.161	0.854	Dec 2013	0.795	Dec 2014	0.795	Dec 2015	-		0.795	Continuing	Continuing	Continuing
SLAP F/A-18 E/F	WR	FRC Southwest : San Diego, CA	4.533	0.654	Dec 2013	0.693	Dec 2014	0.693	Dec 2015	-		0.693	Continuing	Continuing	Continuing
		Subtotal	17.219	1.508		1.488		1.488		-		1.488	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation - SLAP E/F	WR	NAWCAD : Pax River, MD	0.500	0.157	Dec 2013	0.157	Dec 2014	0.157	Dec 2015	-		0.157	Continuing	Continuing	Continuing
		Subtotal	0.500	0.157		0.157		0.157		-		0.157	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0702207N / *Depot Maintenance (NON-IF)*	Project (Number/Name) 3030 / *FA-18 SLAP*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering and Technical Support SLAP F/A-18 E/F	WR	NAWCAD : Pax River, MD	1.404	1.177	Dec 2013	1.177	Dec 2014	1.177	Dec 2015	-		1.177	Continuing	Continuing	Continuing
Travel	Various	NAVAIR : Pax River, MD	0.000	0.100	Dec 2013	0.050	Dec 2014	0.050	Dec 2015	-		0.050	Continuing	Continuing	Continuing
Program Management Support (Seaport-CSS)	C/CPFF	WYLE LAB : Pax River, MD	0.950	0.701	Dec 2013	0.508	Dec 2014	0.508	Dec 2015	-		0.508	Continuing	Continuing	Continuing
Program Management Support	Various	NAWCAD : Pax River, MD	0.406	0.838	Dec 2013	0.838	Dec 2014	0.675	Dec 2015	-		0.675	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Engility : Pax River, MD	0.261	-		-		-		-		-	-	0.261	0.261
		Subtotal	3.021	2.816		2.573		2.410		-		2.410	-	-	-

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	118.040	21.184		13.853		19.685		-		19.685	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0702207N / *Depot Maintenance (NON-IF)*	**Project (Number/Name)** 3030 / *FA-18 SLAP*

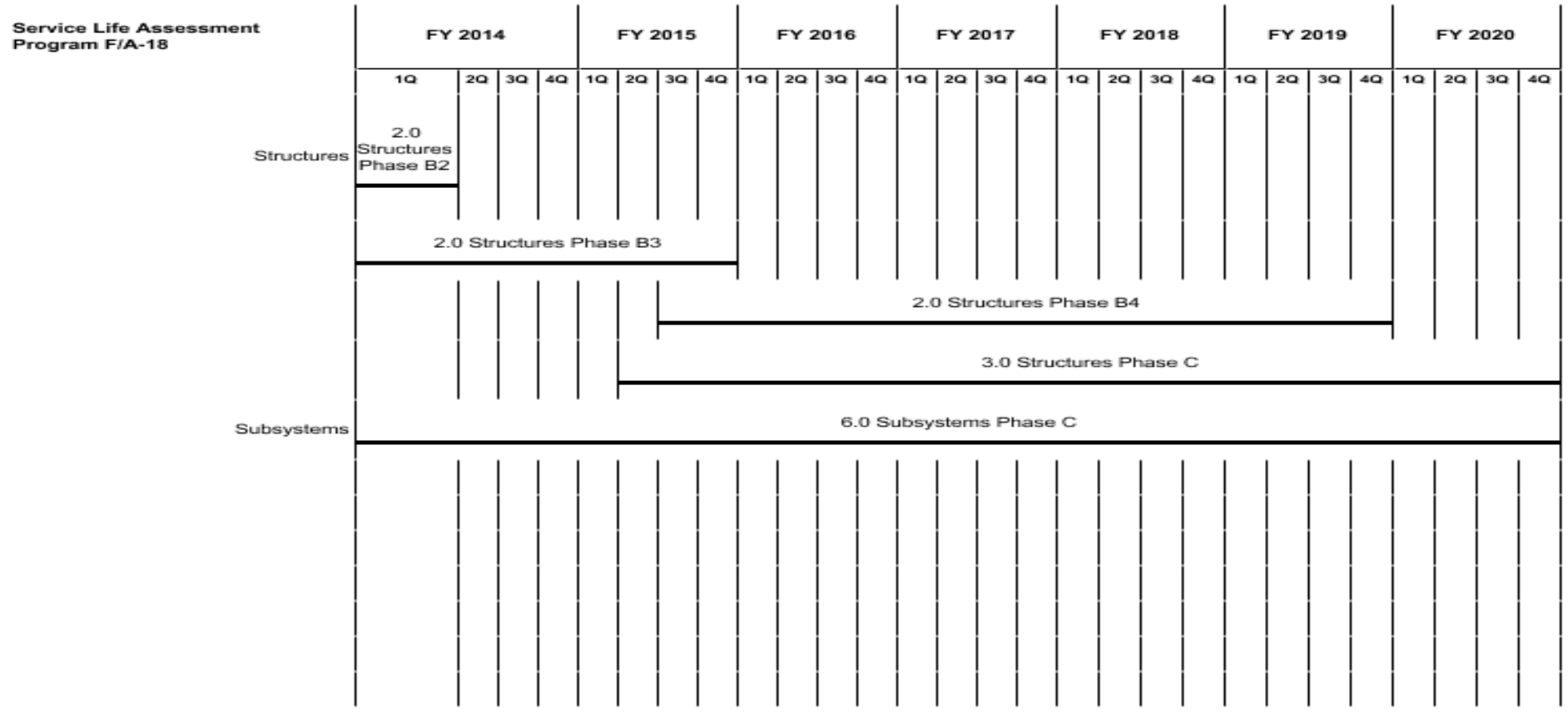

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0702207N / *Depot Maintenance (NON-IF)*	**Project (Number/Name)** 3030 / *FA-18 SLAP*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Service Life Assessment Program F/A-18				
Structures: 2.0 Structures Phase B2	1	2014	1	2014
Structures: 2.0 Structures Phase B3	1	2014	4	2015
Structures: 2.0 Structures Phase B4	3	2015	4	2019
Structures: 3.0 Structures Phase C	2	2015	4	2020
Subsystems: 6.0 Subsystems Phase C	1	2014	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0702207N / *Depot Maintenance (NON-IF)*	Project (Number/Name) 3182 / *T-45 SLAP*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
3182: *T-45 SLAP*	10.011	4.446	7.315	4.500	-	4.500	-	-	-	-	-	26.272
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

3182: The T-45 aircraft structure is currently fatigue limited to 14,400 flight hours based on initial full-scale fatigue tests conducted from 1992-1996. This service life limit prevents the T-45 fleet from meeting Integrated Production Plan (IPP), previously Pilot Training Requirements, past 2025. Recent studies have determined that the fleet squadrons have not been flying the T-45 aircraft as aggressively as the initial fatigue studies predicted. These studies demonstrate that the 14,400 flight hour service life can likely be extended, with a Service Life Extension Program (SLEP), to 21,600 flight hours, which will support meeting IPP until 2035. A T-45 Structural Service Life Assessment Program (SLAP) was completed in February 2012. The results are being used to provide guidance on what structural areas to SLEP. In order for the T-45 to meet IPP until 2035, it is also necessary to assess the sub-systems of the T-45 in their ability to remain viable. Beginning in FY13, the T-45 sub-systems SLAP effort will assess the sub-system condition of the T-45 fleet in order to determine sub-system modifications and/or redesign necessary to extend the aircraft designed service life to support IPP and Naval Flight Officer Training Requirements (NTR) until 2035. This sub-system assessment will be based on the updated fleet aircraft usage spectrum and future predicted training missions of the T-45 aircraft. The assessment will address all critical sub-systems required and their ability to maintain IPP/NTR until 2035, analysis and studies will be conducted to outline improvements, assess manufacturing capabilities, prototype redesign and test of sub-systems for trainer aircraft. The original funding within the T-45 SLAP budget programmed for T-45 tail hook has been absorbed into the overarching SLAP effort due to the success of T-45 additional tail hook life extension efforts.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: T-45 SLAP	4.446	7.315	4.500	-	4.500
Articles:	-	-	-	-	-
Description: Funding supports conducting a Subsystem SLAP to determine modifications necessary to extend service life through 2035.					
FY 2014 Accomplishments: Continue Subsystem SLAP activities and engineering studies with the expectation of extending the T-45 service life to 2035.					
FY 2015 Plans: Continue Subsystem SLAP activities and engineering studies with the expectation of extending the T-45 service life to 2035.					
FY 2016 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0702207N / *Depot Maintenance (NON-IF)*	**Project (Number/Name)** 3182 / *T-45 SLAP*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Complete the Subsystem Service Life Assessment Program activities and engineering studies with the expectation of extending the T-45 service life to 2035. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	4.446	7.315	4.500	-	4.500

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
• APN/05690: *T-45 Series OSIP 008-95/022-14*	18.709	26.249	30.606	-	30.606	27.930	42.358	38.560	53.411	358.139	817.016

Remarks

Prior years were budgeted under OSIP 008-95. Fiscal years 2014 and out are funded under OSIP 022-14

D. Acquisition Strategy

The Subsystem SLAP is a sole source contract effort with Boeing, the aircraft prime contractor. SLAP consists of an analysis of the aircraft subsystems (e.g., Global Positioning System Inertial Navigation Assembly or Mission Data Processor). The analysis will facilitate the future development of subsystem modifications and/or redesigns necessary to extend their life until 2035. The original funding within the T-45 SLAP budget programmed for T-45 tail hook has been absorbed into the overarching SLAP effort due to the alternate path success of T-45 tail hook life extension efforts.

E. Performance Metrics

SLAP provides an assessment of aircraft component life as affected by flight maneuver, catapults, arrestments, landings, and obsolescence based on actual usage and identifies the efforts required to extend the aircraft life to SLAP goals (2035). Effort delineates tasking incrementally to include; Tools and modeling necessary to assess usage and life are developed, specific designs which do not meet SLAP goals are identified and analyzed. Retrofit concepts and redesigns for problem areas are developed, followed by the Service Life Extension Program during which the actual retrofits are undertaken.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0702207N / *Depot Maintenance (NON-IF)*	**Project (Number/Name)** 3182 / *T-45 SLAP*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prod Dev SLAP T-45A/C	SS/CPFF	Boeing : St. Louis, MO	4.000	2.929	Jan 2014	3.601	Jan 2015	3.500	Nov 2015	-		3.500	-	14.030	14.650
		Subtotal	4.000	2.929		3.601		3.500		-		3.500	-	14.030	14.650

Remarks

The original funding within the T-45 SLAP budget programmed for T-45 tail hook has been absorbed into the overarching SLAP effort.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Technical Support	WR	NAWCAD : Patuxent River, MD	2.611	0.405	Jan 2014	2.854	Jan 2015	0.500	Nov 2015	-		0.500	-	6.370	-
Engineering Technical Support	WR	NADEP : Jacksonville, FL	1.700	0.220	Jan 2014	0.220	Jan 2015	0.180	Nov 2015	-		0.180	-	2.320	-
Engineering Technical Support	WR	NAWCAD : Various	0.681	0.280	Jan 2014	0.180	Jan 2015	0.180	Nov 2015	-		0.180	-	1.321	-
SLAP Engineering Study	SS/BOA	JHU/APL : Laurel, MD	0.839	0.450	Jan 2014	0.331	Jan 2015	0.120	Nov 2015	-		0.120	-	1.740	1.740
		Subtotal	5.831	1.355		3.585		0.980		-		0.980	-	11.751	-

Remarks

400K in FY-15 moved from JHU/APL to NADEP/NAWCAD to align organic resources in support of Sub-systems SLAP execution.

Management Services ($ in Millions)

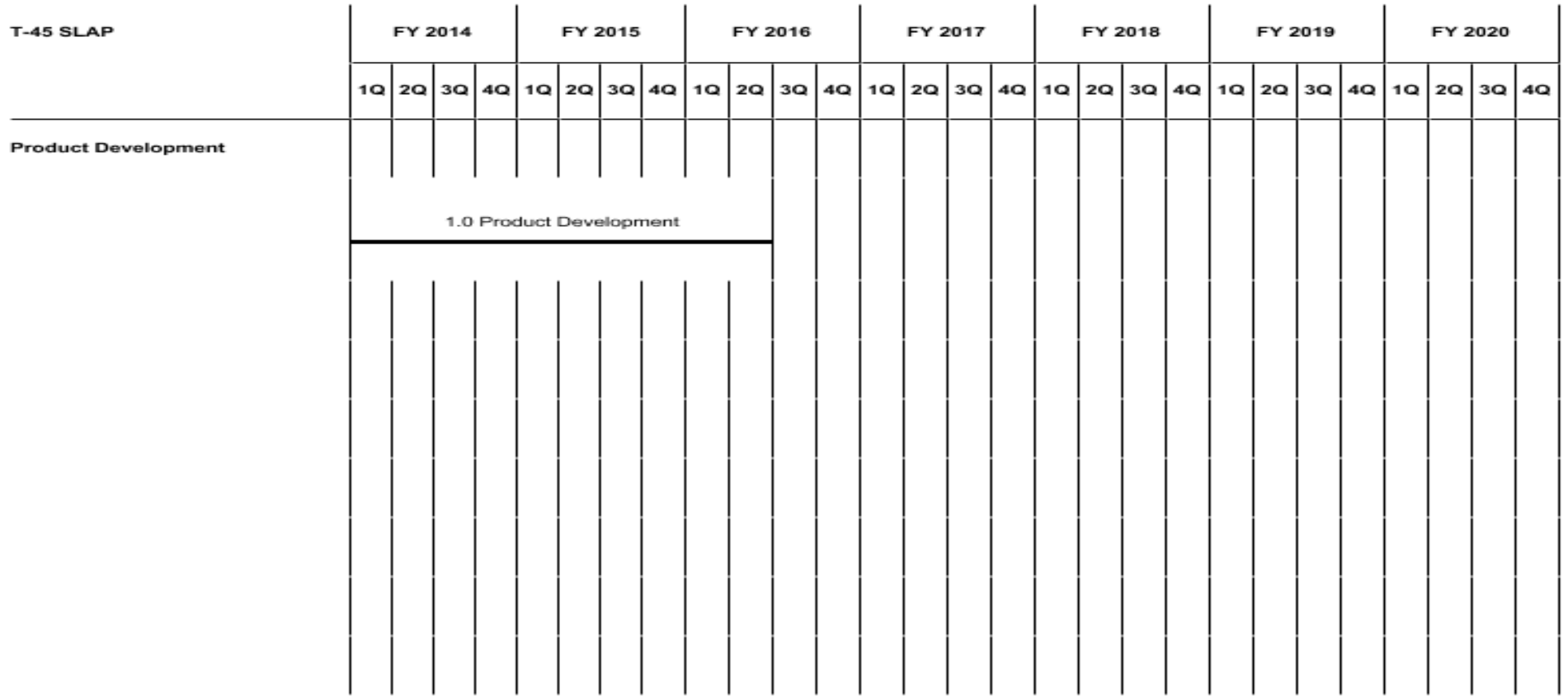
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	NAVAIR : Patuxent River, MD	0.180	0.162	Oct 2013	0.129	Oct 2014	0.020	Oct 2015	-		0.020	-	0.491	-
		Subtotal	0.180	0.162		0.129		0.020		-		0.020	-	0.491	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0702207N / *Depot Maintenance (NON-IF)*	Project (Number/Name) 3182 / *T-45 SLAP*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.011	4.446		7.315		4.500		-		4.500	-	26.272	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0702207N / *Depot Maintenance (NON-IF)*	**Project (Number/Name)** 3182 / *T-45 SLAP*



2016OSD - 0702207N - 3182

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0702207N / *Depot Maintenance (NON-IF)*	**Project (Number/Name)** 3182 / *T-45 SLAP*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
T-45 SLAP				
Product Development: SLAP T-45C	1	2014	2	2016

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy												Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0708011N *I Industrial Preparedness*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	256.968	48.795	37.169	-	-	-	-	-	-	-	-	342.932
1050: *Manufacturing Tech*	256.968	48.795	37.169	-	-	-	-	-	-	-	-	342.932

A. Mission Description and Budget Item Justification

The Manufacturing Technology (ManTech) program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development and transition of leading edge manufacturing technologies. The ManTech program is executed through a Center of Excellence (COE) strategy. A majority of the COEs are consortium based with only a small group of technical and management personnel at the center. ManTech projects are primarily performed by industry participants that bill the COE which, in turn, bills the Navy which causes a non-traditional financial execution profile for the program. The program therefore does not meet traditional execution benchmarks. The ManTech program, by providing seed funding for the development of moderate to high risk process and equipment technology, permits contractors to upgrade their manufacturing capabilities. Ultimately, the program aims to produce high-quality weapon systems with shorter lead times and reduced acquisition costs.

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

For FY 2016 funding has been re-aligned to new PE 0603680N Manufacturing Technology Program.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	50.933	37.169	54.987	-	54.987
Current President's Budget	48.795	37.169	-	-	-
Total Adjustments	-2.138	-	-54.987	-	-54.987
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.138	-			
• Program Adjustments	-	-	-5.408	-	-5.408
• Rate/Misc Adjustments	-	-	-49.579	-	-49.579

Change Summary Explanation

Technical: Not applicable.

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0708011N *I Industrial Preparedness*

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0708011N / *Industrial Preparedness*	Project (Number/Name) 1050 / *Manufacturing Tech*	

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
1050: *Manufacturing Tech*	256.968	48.795	37.169	-	-	-	-	-	-	-	-	342.932
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The ManTech Program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development of manufacturing technologies. Major areas of endeavor both underway and planned include: advanced manufacturing technology for metalworking, joining, electronics and electro-optics, composites, shipbuilding, and above-the-factory-floor business operations technology. The ManTech Program is aimed at assisting acquisition programs in meeting performance and affordability goals by inserting manufacturing process solutions early into the design phase.

For FY 2016 funds have been re-aligned to new PE 0603680N Manufacturing Technology Program.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Title: COMPOSITES PROCESSING AND FABRICATION	5.669	3.750	-	-	-
Articles:	-	-	-	-	-

Description: The primary technical goal of the Composites Processing and Fabrication activity is improving weapon systems affordability, enhancing weapon system effectiveness and improving reliability / war-fighter readiness through the increased utilization of composite materials and structures. This is being achieved through the development and maturation of affordable, robust manufacturing and assembly processes that fully exploit the benefits of composite materials. Concentration is on affordability for the following platforms: DDG-51, CVN-78 Class Carrier, VIRGINIA Class Submarine (VCS) / OHIO Replacement Program (ORP), Littoral Combat Ship (LCS), Joint Strike Fighter (JSF), and, starting in FY16, CH-53-K.

Funding for FY 2016 and beyond has been re-aligned to new PE 0603680N. At this R2A level, FY 2016 Funding of $4.800M from Composites Processing and Fabrication in this PE has been re-aligned to PE 0603680N Composites Processing and Fabrication.

FY 2014 Accomplishments:
- Continued Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of
efforts to develop / optimize composite materials fabrication technology for reduced cost VCS construction.
- Continued Composite Materials and Process Improvement Thrust for DDG-51 Shipbuilding Affordability Initiative.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708011N / *Industrial Preparedness*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Continued Composite Materials and Process Improvement Thrust for CVN-78 Shipbuilding Affordability Initiative. - Continued Composite Materials and Process Improvement Thrust for Air Platforms, including the Joint Strike Fighter (JSF). - Continued Composite Materials and Process Improvement Thrust for LCS Shipbuilding Affordability Initiative ***FY 2015 Plans:*** - Continue all FY 2014 efforts unless otherwise noted as complete. - Complete Composite Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Includes continuation of efforts to develop / optimize composite materials fabrication technology for reduced cost VCS construction. - Initiate Composite Materials and Process Improvement Thrust for VCS/ORP Shipbuilding Affordability Initiative. ***FY 2016 Base Plans:*** Funds have been re-aligned to new PE 0603680N Manufacturing Technology Program. At this R2A level, FY 2016 Funding of $4.800M from Composites Processing and Fabrication in this PE has been re-aligned to PE 0603680N Composites Processing and Fabrication. ***FY 2016 OCO Plans:*** N/A					
Title: CORPORATE INVESTMENTS	6.626	4.319	-	-	-
Articles:	-	-	-	-	-
Description: The Corporate Investments activity is focused on accelerating defense industrial enterprise progress toward implementation of world-class industrial practices as well as advanced design and information systems that support weapon system development, production, and sustainment. Key emphasis areas include: 1) Benchmarking and accelerating the implementation of world-class industrial practices throughout the contractor base; 2) Demonstrating and validating advanced business practices and information technologies capable of streamlining management functions in all industrial base tiers; and 3) Leveraging information technologies in pursuit of tighter coupling of all defense industrial enterprise elements. Corporate Investment efforts create improvements to cost and cycle time for weapon system development, production, and repair. Additionally, Corporate Investments include the funding of recently identified near-term high priority affordability efforts for the following affordability platforms: DDG-51, CVN-78 Class Carrier, VIRGINIA Class Submarine (VCS), Littoral Combat Ship (LCS), Joint Strike Fighter (JSF), and, starting in FY16, CH-53-K.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708011N / *Industrial Preparedness*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Funding for FY 2016 and beyond has been re-aligned to new PE 0603680N. At this R2A level, FY 2016 Funding of $3.581M from Corporate Investments in this PE has been re-aligned to PE 0603680N Manufacturing Enterprise/Other. ***FY 2014 Accomplishments:*** - Continued Near-Term High Priority Shipbuilding Affordability Thrust for CVN-78. - Continued Near-Term High Priority Shipbuilding Affordability Thrust for LCS. - Continued efforts to improve the Navy industrial base through above-the-factory-floor enhancements and supply chain processes/technology improvements for Navy weapon system acquisition programs such as the DDG-51, CVN-78, LCS, VCS, and others. - Continued Near-Term, High Priority Shipbuilding Affordability Thrust for DDG-51. - Continued Near-Term High Priority Shipbuilding Affordability Thrust for VCS. - Initiated Near-Term High Priority Affordability Thrust for JSF. ***FY 2015 Plans:*** -Continue all FY 2014 efforts unless otherwise noted as complete. -Complete Near-Term High Priority Shipbuilding Affordability Thrust for VCS. -Initiate Near-Term High Priority Shipbuilding Affordability Thrust for VCS/ORP. ***FY 2016 Base Plans:*** Funds have been re-aligned to new PE 0603680N Manufacturing Technology Program. At this R2A level, FY 2016 Funding of $3.581M from Corporate Investments in this PE has been re-aligned to PE 0603680N Manufacturing Enterprise/Other. ***FY 2016 OCO Plans:*** N/A					
Title: ELECTRONICS PROCESSING AND FABRICATION	10.000	8.050	-	-	-
Articles:	-	-	-	-	-
Description: Electronics Processing and Fabrication efforts develop and deploy affordable, robust manufacturing processes and capabilities for electronics critical to defense applications over their full life cycle. Efforts create new and improved manufacturing processes on the shop floor, as well as repair and maintain facilities such as depots and logistics centers, with a strong emphasis on process maturation. Emphasis is on affordability for the following shipbuilding platforms: DDG-51, CVN-78 Class Carrier, VIRGINIA Class Submarine (VCS) / OHIO Replacement Program (ORP), and Littoral Combat Ship (LCS), Joint Strike Fighter (JSF), and, starting in FY16, CH-53-K.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708011N / *Industrial Preparedness*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Funding for FY 2016 and beyond has been re-aligned to new PE 0603680N. At this R2A level, FY 2016 Funding of $10.543M from Electronic Processing and Fabrication in this PE has been re-aligned to PE 0603680N Electronics Processing and Fabrication. ***FY 2014 Accomplishments:*** - Continued Electronics/Electro-Optics Thrust for VCS Affordability Initiative. Includes continuation of improved affordable electronics/ electro-optics efforts. - Continued Electronics/Electro-Optics Thrust for LCS Shipbuilding Affordability Initiative. - Continued Electronics/Electro-Optics Thrust for Air Platforms, including the Joint Strike Fighter (JSF). Includes continuation of electronics/ electro-optics efforts to improve affordability for Air Platforms. - Continued Electronics/Electro-Optics Thrust for DDG-51 Shipbuilding Affordability Initiative. Includes radar/communications efforts to impact DDG-51 affordability. - Continued Electronics/Electro-Optic Thrust for CVN-78 Shipbuilding Affordability Initiative. Includes continuation of electronics/electrooptics efforts to improve affordability for CVN-78 Class Carrier. ***FY 2015 Plans:*** - Continue all FY 2014 efforts unless otherwise noted as complete. - Complete Electronics/Electro-Optics Thrust for VCS Affordability Initiative. Includes continuation of improved affordable electronics/electro-optics efforts. - Initiate Electronics/Electro-Optics Thrust for VCS/ORP Affordability Initiative. Includes electronics/electro-optics efforts to improve affordability for VCS/ORP. ***FY 2016 Base Plans:*** Funds have been re-aligned to new PE 0603680N Manufacturing Technology Program. At this R2A level, FY 2016 Funding of $10.543M from Electronic Processing and Fabrication in this PE has been re-aligned to PE 0603680N Electronics Processing and Fabrication. ***FY 2016 OCO Plans:*** N/A					
Title: METALS PROCESSING AND FABRICATION	16.100	10.950	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708011N / *Industrial Preparedness*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Articles:	-	-	-	-	-

Description: The objective of the Metals Processing and Fabrication activity is to develop affordable, robust manufacturing processes and capabilities for metals and special materials critical to defense weapon system applications. Major areas that support this objective include: processing methods, special materials, joining, and inspection and compliance. These efforts directly impact the cost and performance of future aircraft, rotorcraft, land combat vehicles, surface and subsurface naval platforms, space systems, artillery and ammunition, and defense industry manufacturing equipment. Emphasis is on affordability for the following platforms: DDG-51, CVN-78 Class Carrier, VIRGINIA Class Submarine (VCS) / OHIO Replacement Program (ORP), Littoral Combat Ship (LCS), Joint Strike Fighter (JSF), and, starting in FY16, CH-53-K.

Funding for FY 2016 and beyond has been re-aligned to new PE 0603680N. At this R2A level, FY 2016 Funding of $16.700M from Metals Processing and Fabrication in this PE has been re-aligned to two activities within PE 0603680N: $15.500M Metals Processing and Fabrication, $1.200M Manufacturing Enterprise/Other.

FY 2014 Accomplishments:
- Continued schedule Compression/Production Engineering Thrust for VCS Shipbuilding Affordability Initiative.
- Continued outfitting Thrust for VCS Shipbuilding Affordability Initiative.
- Continued rapid response efforts.
- Continued Metals Materials and Process Improvement Thrust for DDG-51 Shipbuilding Affordability Initiative. Metallic materials and process efforts for DDG-51 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for DDG-51 components.
- Continued Metals Materials and Process Improvement Thrust for CVN-78 Shipbuilding Affordability Initiative. Metallic materials and process efforts for CVN 78 include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, etc.) resulting in reduced cost of fabrication for CVN 78 components.
- Continued Metals Thrust for Littoral Combat Ship (LCS) Shipbuilding Affordability Initiative.
- Continued Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. Metallic materials and process efforts for VCS include material characterization for optimum processing and fabrication as well as process optimization (welding, bonding, machining, coating/cladding, etc.) resulting in reduced cost of fabrication for VCS components.
- Continued Metal Materials and Process Improvements Thrust for Other Ship/NAVSEA Platforms.
- Continued Metals Materials and Process Improvement Thrust for Air Platforms.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708011N / *Industrial Preparedness*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Continued Metal Materials and Process Improvements Thrust for Marine Corps Systems. ***FY 2015 Plans:*** - Continue all FY 2014 efforts unless otherwise noted as complete. - Complete Metals Materials and Process Improvement Thrust for VCS Shipbuilding Affordability Initiative. - Initiate Metals Materials and Process Improvement Thrust for VCS/ORP initiative. ***FY 2016 Base Plans:*** Funds have been re-aligned to new PE 0603680N Manufacturing Technology Program. At this R2A level, FY 2016 Funding of $16.700M from Metals Processing and Fabrication in this PE has been re-aligned to two activities within PE 0603680N: $15.500M Metals Processing and Fabrication, $1.200M Manufacturing Enterprise/Other. ***FY 2016 OCO Plans:*** N/A					
Title: OTHER (SHIPBUILDING, REPAIR TECH, ENERGETICS, AND TECHNICAL ENGINEERING SUPPORT)	10.400	10.100	-	-	-
Articles:	-	-	-	-	-
Description: The "Other" activity includes shipbuilding technology, repair technology, energetics, and technical engineering support. Shipbuilding technology primarily addresses the development of manufacturing process improvements for shipyards and is geared towards affordability efforts for the following shipbuilding platforms: DDG-51, CVN-78 Class Carrier, VIRGINIA Class Submarine (VCS) / OHIO Replacement Program (ORP), and Littoral Combat Ship (LCS). Repair technology addresses repair, overhaul, and sustainment functions that emphasize remanufacturing processes and advancing technology. Energetics efforts concentrate on developing energetics solutions to ensure the availability of safe, affordable, and quality energetics products largely in support of Program Executive Office (PEO) Integrated Warfare Systems (IWS). Funding for FY 2016 and beyond has been re-aligned to new PE 0603680N. At this R2A level, FY 2016 Funding of $13.955M from Other (Shipbuilding, Repair Tech, Energetics, and technical engineering support) have been re-aligned to PE 0603680N Manufacturing Enterprise/Other. ***FY 2014 Accomplishments:*** - Continued Shipbuilding Affordability Thrust for CVN-78. - Continued Shipbuilding Affordability Thrust for VCS. - Continued Shipbuilding Affordability Thrust for LCS. - Continued Shipbuilding Affordability Thrust for DDG-51.					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708011N / *Industrial Preparedness*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Continued Shipbuilding Thrust for Other Ship/NAVSEA Platforms. - Continued Repair Technology Thrust for repair and sustainment of Navy weapons systems. Includes continuation of Repair Technology projects based on high priority depot needs. - Continued Energetics Thrust for PEO IWS and Other Acquisition Programs. Includes continuation of energetics efforts to support PEO IWS and other acquisition programs. - Continued to provide technical engineering support for the ManTech Program. ***FY 2015 Plans:*** -Continue all FY 2014 efforts unless otherwise noted as complete. -Complete Shipbuilding Affordability Thrust for VCS. -Initiate Shipbuilding Affordability Thrust for VCS/ORP. ***FY 2016 Base Plans:*** Funds have been re-aligned to new PE 0603680N Manufacturing Technology Program. At this R2A level, FY 2016 Funding of $13.955M from Other (Shipbuilding, Repair Tech, Energetics, and technical engineering support) has been re-aligned to PE 0603680N Manufacturing Enterprise/Other. ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	48.795	37.169	-	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Efforts are focused on affordability reduction for the following: DDG Family, CVN-78 Class Carrier, Littoral Combat Ship (LCS), the VIRGINIA Class Submarine (VCS) / OHIO Replacement Program (ORP), Joint Strike Fighter (JSF), and, starting in FY16, CH-53-K.

E. Performance Metrics

The ManTech program's overall goal is to transition production technology to reduce the cost of Navy weapons systems. Metrics are currently collected on the cost savings per hull or per aircraft for each of the five primary affordability platforms: DDG-51, CVN-78 Class Carrier, VIRGINIA Class Submarine/OHIO Replacement Program (VCS/ORP), Littoral Combat Ship (LCS), and Joint Strike Fighter (JSF), and, starting in FY16, CH-53-K.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0708011N / *Industrial Preparedness*	Project (Number/Name) 1050 / *Manufacturing Tech*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mfg Development (B2P)	C/CPFF	American Competitiveness Institute (ACI) : Philadelphia, PA (B2P)	6.300	-		-		-		-		-	-	6.300	-
Mfg Development (CMTC)	C/CPAF	SCRA : Anderson, SC	33.591	6.080	Oct 2013	3.525	Oct 2014	-		-		-	-	43.196	-
Award Fee (CMTC)	C/CPAF	SCRA : Anderson, SC	1.512	0.420	Oct 2013	0.225	Oct 2014	-		-		-	-	2.157	-
Mfg Development (CNST)1	C/CPFF	Advanced Technology Institute (ATI) : Charleston, SC	4.697	-		-		-		-		-	-	4.697	-
Mfg Development (CNST)2	C/CPAF	Advanced Technology Institute (ATI) : Charleston, SC	21.396	5.422	Oct 2013	6.322	Oct 2014	-		-		-	-	33.140	-
Award Fee (CNST)	C/CPAF	Advanced Technology Institute (ATI) : Charleston, SC	1.496	0.378	Oct 2013	0.378	Oct 2014	-		-		-	-	2.252	-
Mfg Development (EMPF)	C/CPAF	American Competitiveness Institute (ACI) : Philadelphia, PA	34.340	6.388	Oct 2013	5.264	Oct 2014	-		-		-	-	45.992	-
Award Fee (EMPF)	C/CPAF	American Competitiveness Institute (ACI) : Philadelphia, PA	2.224	0.408	Oct 2013	0.336	Oct 2014	-		-		-	-	2.968	-
Mfg Development (EMTC)	WR	Naval Surface Warfare Center - Indian Head : Indian Head, MD	9.705	2.000	Oct 2013	1.300	Oct 2014	-		-		-	-	13.005	-
Mfg Development (EOC)	C/CPAF	Penn State University : State College, PA (EOC)	16.596	4.230	Oct 2013	2.303	Oct 2014	-		-		-	-	23.129	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0708011N / *Industrial Preparedness*	Project (Number/Name) 1050 / *Manufacturing Tech*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Award Fee (EOC)	C/CPAF	Penn State University : State College, PA (EOC)	0.802	0.270	Oct 2013	0.147	Oct 2014	-		-		-	-	1.219	-
Mfg Development (iMAST)	C/CPFF	Penn State University : State College, PA (iMAST)	18.304	3.575	Oct 2013	2.700	Oct 2014	-		-		-	-	24.579	-
Mfg Development (NJC)	C/CPAF	Edison Welding Institute : Columbus, OH	11.479	-		-		-		-		-	-	11.479	-
Award Fee (NJC)	C/CPAF	Edison Welding Institute : Columbus, OH	0.793	-		-		-		-		-	-	0.793	-
Mfg Development (NMC)	C/CPAF	Concurrent Technologies Corp. : Johnstown, PA	55.940	11.022	Oct 2013	7.663	Oct 2014	-		-		-	-	74.625	-
Award Fee (NMC)	C/CPAF	Concurrent Technologies Corp. : Johnstown, PA	3.034	0.776	Oct 2013	0.480	Oct 2014	-		-		-	-	4.290	-
Mfg Development	WR	Naval Air Systems Command (NAVAIR) : Patuxent River, MD	1.753	0.375	Oct 2013	0.090	Oct 2014	-		-		-	-	2.218	-
Mfg Development	WR	Naval Research Laboratory (NRL) : Washington, DC	0.900	0.380	Oct 2013	0.080	Oct 2014	-		-		-	-	1.360	-
Mfg Development	WR	Naval Surface Warfare Center - Carderock Division : Carderock, MD	7.092	1.424	Oct 2013	0.858	Oct 2014	-		-		-	-	9.374	-
Mfg Development	WR	Naval Undersea Warfare Center - Newport : Newport, RI	0.380	-		-		-		-		-	-	0.380	-
Mfg Development	WR	SPAWAR : San Diego, CA	0.010	-		-		-		-		-	-	0.010	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0708011N / *Industrial Preparedness*	Project (Number/Name) 1050 / *Manufacturing Tech*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mfg Development	WR	Naval Surface Warfare Center Dahlgren : Dahlgren, VA	0.030	0.025	Oct 2013	0.025	Oct 2014	-		-		-	-	0.080	-
Mfg Development	WR	Puget Sound Naval Shipyard : Bremerton, WA	0.006	-		-		-		-		-	-	0.006	-
		Subtotal	232.380	43.173		31.696		-		-		-	-	307.249	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support (GTEC)	C/CPFF	DRC : Andover, MA	9.257	1.800	Oct 2013	1.700	Oct 2014	-		-		-	-	12.757	-
Contractor Support (GMST)	C/CPFF	DRC : Andover, MA	0.213	0.025	Oct 2013	0.025	Oct 2014	-		-		-	-	0.263	-
ManTech Registrations (GMPC)	Various	Various : Various	0.039	0.010	Oct 2013	0.005	Oct 2014	-		-		-	-	0.054	-
ManTech Travel (GMTT)	Various	Various : Various	0.400	0.060	Oct 2013	0.045	Oct 2014	-		-		-	-	0.505	-
Contractor Support (GMST)	C/CPFF	Various : Various	0.740	0.126	Oct 2013	0.015	Oct 2014	-		-		-	-	0.881	-
Miscellaneous (ONR Support Bills)	C/CPFF	Various : Various	5.792	1.429	Oct 2013	1.335	Oct 2014	-		-		-	-	8.556	-
Miscellaneous (Stat Reserve)	Various	Various : Various	7.937	2.172	Oct 2013	2.138	Oct 2014	-		-		-	-	12.247	-
Detailee staff	WR	Army Research Lab : Aberdeen, MD	0.150	-		0.150	Oct 2014	-		-		-	-	0.300	-
JDMTP Support	WR	Air Force Research Lab : Dayton, OH	0.060	-		0.060	Oct 2014	-		-		-	-	0.120	-
		Subtotal	24.588	5.622		5.473		-		-		-	-	35.683	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0708011N / *Industrial Preparedness*	Project (Number/Name) 1050 / *Manufacturing Tech*	

	Prior Years	FY 2014		FY 2015		FY 2016 Base		FY 2016 OCO		FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	256.968	48.795		37.169		-		-		-	-	342.932	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708011N / *Industrial Preparedness*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

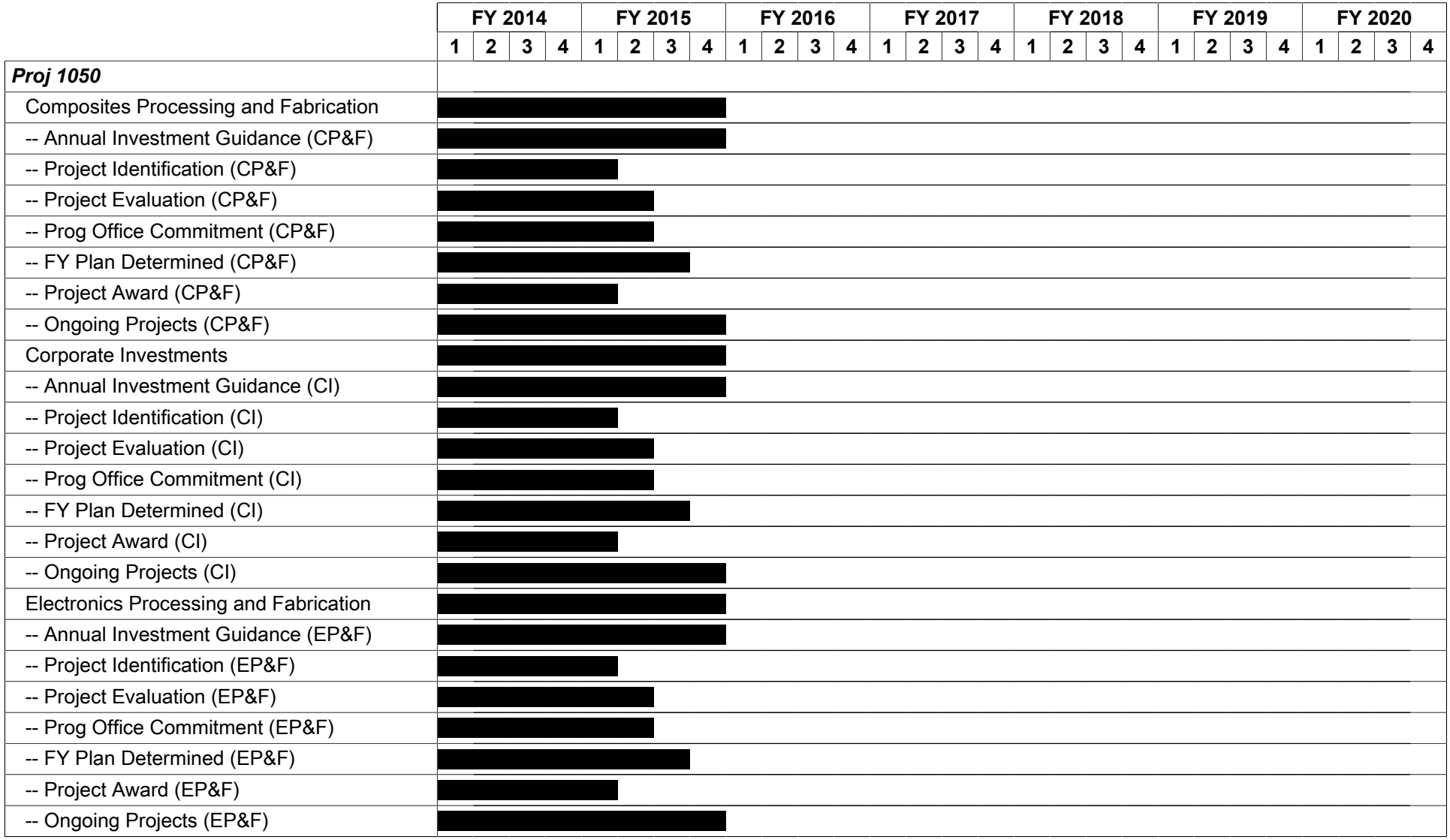


Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708011N / *Industrial Preparedness*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

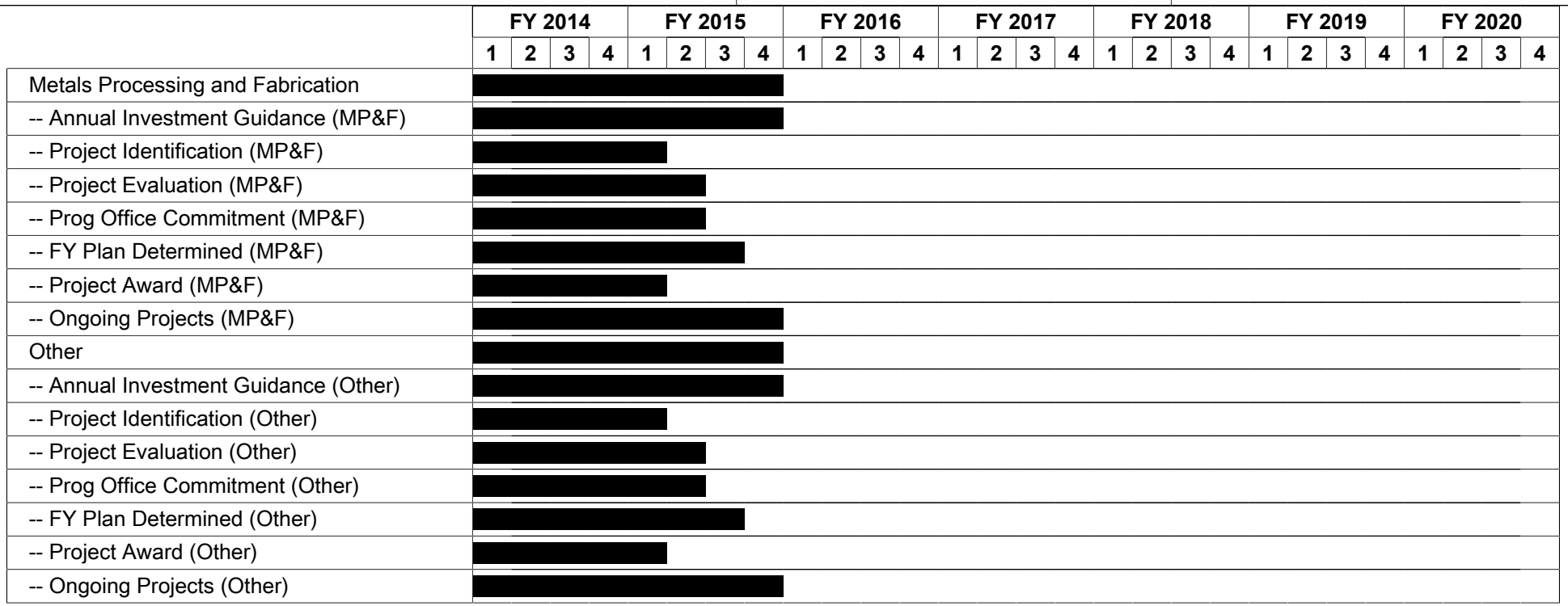


Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708011N / *Industrial Preparedness*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1050				
Composites Processing and Fabrication	1	2014	4	2015
-- Annual Investment Guidance (CP&F)	1	2014	4	2015
-- Project Identification (CP&F)	1	2014	1	2015
-- Project Evaluation (CP&F)	1	2014	2	2015
-- Prog Office Commitment (CP&F)	1	2014	2	2015
-- FY Plan Determined (CP&F)	1	2014	3	2015
-- Project Award (CP&F)	1	2014	1	2015
-- Ongoing Projects (CP&F)	1	2014	4	2015
Corporate Investments	1	2014	4	2015
-- Annual Investment Guidance (CI)	1	2014	4	2015
-- Project Identification (CI)	1	2014	1	2015
-- Project Evaluation (CI)	1	2014	2	2015
-- Prog Office Commitment (CI)	1	2014	2	2015
-- FY Plan Determined (CI)	1	2014	3	2015
-- Project Award (CI)	1	2014	1	2015
-- Ongoing Projects (CI)	1	2014	4	2015
Electronics Processing and Fabrication	1	2014	4	2015
-- Annual Investment Guidance (EP&F)	1	2014	4	2015
-- Project Identification (EP&F)	1	2014	1	2015
-- Project Evaluation (EP&F)	1	2014	2	2015
-- Prog Office Commitment (EP&F)	1	2014	2	2015
-- FY Plan Determined (EP&F)	1	2014	3	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708011N / *Industrial Preparedness*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
-- Project Award (EP&F)	1	2014	1	2015
-- Ongoing Projects (EP&F)	1	2014	4	2015
Metals Processing and Fabrication	1	2014	4	2015
-- Annual Investment Guidance (MP&F)	1	2014	4	2015
-- Project Identification (MP&F)	1	2014	1	2015
-- Project Evaluation (MP&F)	1	2014	2	2015
-- Prog Office Commitment (MP&F)	1	2014	2	2015
-- FY Plan Determined (MP&F)	1	2014	3	2015
-- Project Award (MP&F)	1	2014	1	2015
-- Ongoing Projects (MP&F)	1	2014	4	2015
Other	1	2014	4	2015
-- Annual Investment Guidance (Other)	1	2014	4	2015
-- Project Identification (Other)	1	2014	1	2015
-- Project Evaluation (Other)	1	2014	2	2015
-- Prog Office Commitment (Other)	1	2014	2	2015
-- FY Plan Determined (Other)	1	2014	3	2015
-- Project Award (Other)	1	2014	1	2015
-- Ongoing Projects (Other)	1	2014	4	2015

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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Navy	Date: February 2015
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0708730N *I Maritime Tech (MARITECH)*

COST ($ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	8.347	4.815	4.347	4.321	-	4.321	4.361	4.385	4.503	4.597	Continuing	Continuing
2466: *NSRP ASE*	8.347	4.815	4.347	4.321	-	4.321	4.361	4.385	4.503	4.597	Continuing	Continuing

A. Mission Description and Budget Item Justification

The National Shipbuilding Research Program (NSRP) is an industry and enterprise wide research collaboration that seeks to reduce the Navy's shipbuilding and repair cost. The resulting technologies implemented in NSRP-ASE member shipyards, benefit both the shipyard and the US Navy.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	4.998	4.347	4.362	-	4.362
Current President's Budget	4.815	4.347	4.321	-	4.321
Total Adjustments	-0.183	-	-0.041	-	-0.041
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.183	-			
• Rate/Misc Adjustments	-	-	-0.041	-	-0.041

Change Summary Explanation

The FY 2016 funding request was reduced by $0.006 million to account for the availability of prior year execution balances and $0.035 million to account for other rate/misc adjustments.

The FY 2014 funding request include reductions of $0.183 million for SBIR transfer.

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy											Date: February 2015	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0708730N / *Maritime Tech (MARITECH)*				Project (Number/Name) 2466 / *NSRP ASE*			
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
2466: *NSRP ASE*	8.347	4.815	4.347	4.321	-	4.321	4.361	4.385	4.503	4.597	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

NSRP ASE is a collaboration of U.S. shipyards working with the Navy customer to reduce the cost of building and repairing naval ships and improving shipbuilding industry productivity through advanced technology and processes. NSRP ASE is an innovative and proven approach to public/private cooperation to manage cost-shared R&D based on a national consensus Strategic Investment Plan. The Plan targets potential industry-wide technology and process solutions which are vetted by industry experts and builds upon the progress made over the previous years. The collaboration's organizational structure promotes teaming of industry, government and academia to achieve the continuous product and process improvements necessary for improved Navy ship affordability. Solutions include both leverage of best commercial practices and creation of industry-wide initiatives with aggressive technology transfer to, and buy-in by, multiple U.S. shipyards. Navy PEOs (Ships, Subs and Carriers) and NAVSEA are directly involved in NSRP. The Plan calls for matching government and industry investments over several years.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**
Title: Technology Development Projects	4.815	4.347	4.321	-	4.321
Articles:	-	-	-	-	-
Description: The NSRP is an ongoing Research and Development program. This program awards small research projects and large research projects to (1) Improve Quality; (2) Reduce Total Ownership Costs; and, (3) Increase Energy Efficiency. These research projects have been known to produce technological advances in shipbuilding that once implemented have resulted in savings for the Navy.					
FY 2014 Accomplishments: (1) Completed technology development projects in the four major initiative areas (Ship Design and Material Technologies, Ship Production Technologies, Business Process and Information Systems, and Infrastructure and Support (Regulatory Compliance, Technology Transfer and Workforce Development) that were competitively selected by industry subject matter experts and Navy stakeholders during GFY13 and GFY14. The projects targeted the following priorities in Naval shipbuilding and repair: (1)Improving Quality; (2) Reduction of Total Ownership Costs; and, (3) Increasing Energy Efficiency. It is anticipated that projects currently in process will continue to be focused in the following areas: - Promotion of Modular Construction - Reduction of Re-work - Improving Production Engineering - Improving Specifications and Standards					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 2466 / *NSRP ASE*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
- Improving Manufacturing Processes Improving Production Planning - Data Exchange - Improving Safety & Health / Reducing Environmental Impacts - Education and Training - Total Ownership Cost (2) Continued technology transfer among the Navy, shipbuilding industry, academia, equipment and material suppliers and the R&D community.					
FY 2015 Plans: (1) Complete technology development projects in the four major initiative areas (Ship Design and Material Technologies, Ship Production Technologies, Business Process and Information Systems, and Infrastructure and Support (Regulatory Compliance, Technology Transfer and Workforce Development)) that were awarded in GFY14 and those that will be competitively selected by industry subject matter experts and Navy stakeholders during GFY15, targeting the following priorities in Naval shipbuilding and repair: (1) Improving Quality; (2) Reduction of Total Ownership Costs; and, (3) Increasing Energy Efficiency. It is anticipated that projects selected will continue to be focused in the following areas: - Promotion of Modular Construction - Reduction of Re-work - Improving Production Engineering - Improving Specifications and Standards - Improving Manufacturing Processes - Improving Production Planning - Data Exchange - Improving Safety & Health / Reducing Environmental Impacts - Education and Training - Total Ownership Cost (2) Continue technology transfer among the Navy, shipbuilding industry, academia, equipment and material suppliers and the R&D community					
FY 2016 Base Plans: (1) Complete technology development projects in the four major initiative areas (Ship Design and Material Technologies, Ship Production Technologies, Business Process and Information Systems, and Infrastructure and Support (Regulatory Compliance, Technology Transfer and Workforce Development)) that will be					

Exhibit R-2A, RDT&E Project Justification: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 2466 / *NSRP ASE*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
competitively selected by industry subject matter experts and Navy stakeholders during GFY14 and GFY15, targeting the following priorities in Naval shipbuilding and repair: (1) Improving Quality; (2) Reduction of Total Ownership Costs; and, (3) Increasing Energy Efficiency. It is anticipated that projects selected will continue to be focused in the following areas: - Promotion of Modular Construction - Reduction of Re-work - Improving Production Engineering - Improving Specifications and Standards - Improving Manufacturing Processes - Improving Production Planning - Data Exchange - Improving Safety & Health / Reducing Environmental Impacts - Education and Training - Total Ownership Cost (2) Continue technology transfer among the Navy, shipbuilding industry, academia, equipment and material suppliers and the R&D community ***FY 2016 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	4.815	4.347	4.321	-	4.321

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

R&D projects have been solicited and awarded by an industry collaboration represented by the Executive Control Board (ECB) of the National Shipbuilding Research Program (NSRP). The Navy has entered into an agreement with the industry collaboration using "other transaction" authority pursuant to 10 U.S.C. 2371.

E. Performance Metrics

Quarterly reports and reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Navy			Date: February 2015
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0708730N / *Maritime Tech (MARITECH)*	Project (Number/Name) 2466 / *NSRP ASE*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Development	Various	ECB NSRP : Not Specified	7.776	4.515	Dec 2013	4.047	Dec 2014	4.021	Dec 2015	-		4.021	Continuing	Continuing	Continuing
		Subtotal	7.776	4.515		4.047		4.021		-		4.021	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Gov't Support Services	WR	NSWCCD : Not Specified	0.425	0.225	Mar 2014	0.225	Mar 2015	0.225	Mar 2016	-		0.225	Continuing	Continuing	Continuing
Contractor Support Services	Various	Various : Not Specified	0.146	0.075	Mar 2014	0.075	Mar 2015	0.075	Mar 2016	-		0.075	Continuing	Continuing	Continuing
		Subtotal	0.571	0.300		0.300		0.300		-		0.300	-	-	-

	Prior Years	FY 2014 Cost	FY 2014 Award Date	FY 2015 Cost	FY 2015 Award Date	FY 2016 Base Cost	FY 2016 Base Award Date	FY 2016 OCO Cost	FY 2016 OCO Award Date	FY 2016 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.347	4.815		4.347		4.321		-		4.321	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2016 Navy		Date: February 2015
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0708730N / *Maritime Tech (MARITECH)*	**Project (Number/Name)** 2466 / *NSRP ASE*

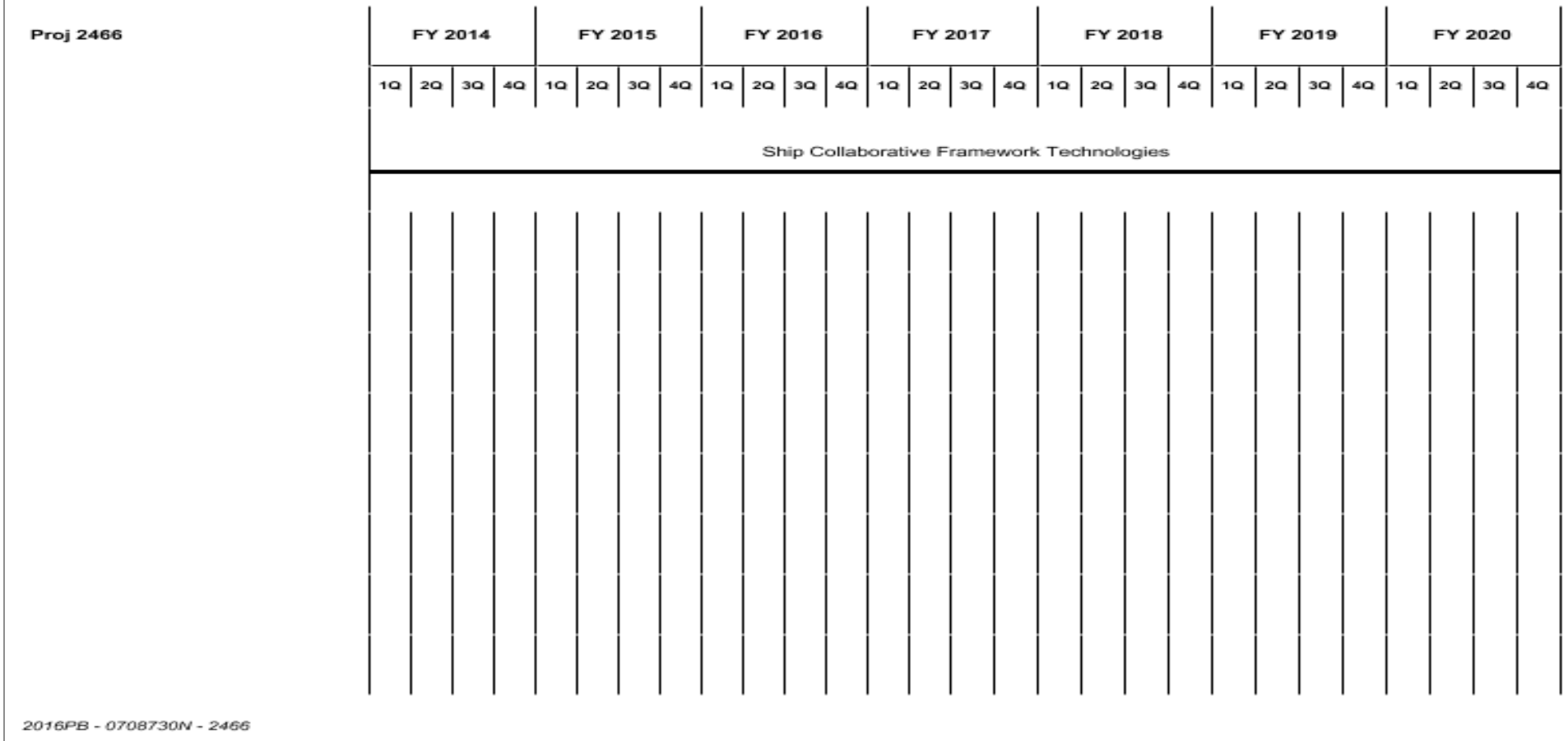

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Exhibit R-4A, RDT&E Schedule Details: PB 2016 Navy		Date: February 2015
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2466				
Ship Collaborative Framework Technologies	1	2014	4	2020

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