Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy										DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*							
COST ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	143.560	147.091	188.299	-	188.299	148.861	140.461	118.386	39.213	Continuing	Continuing
1662: *F/A-18 Improvement*	130.558	94.977	124.223	-	124.223	112.654	84.646	59.587	39.213	Continuing	Continuing
2065: *F/A-18 Radar Upgrade*	13.002	52.114	64.076	-	64.076	36.207	55.815	58.799	-	0.000	280.013

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. 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.

B. Program Change Summary ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**
Previous President's Budget	148.438	151.030	121.201	-	121.201
Current President's Budget	143.560	147.091	188.299	-	188.299
Total Adjustments	-4.878	-3.939	67.098	-	67.098
• Congressional General Reductions	-	-0.070			
• Congressional Directed Reductions	-	-5.869			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.514	-			
• SBIR/STTR Transfer	-2.580	-			
• Program Adjustments	-	2.000	67.041	-	67.041
• Rate/Misc Adjustments	-	-	0.057	-	0.057
• Congressional General Reductions Adjustments	-0.784	-	-	-	-

Change Summary Explanation

Technical:

1662: Not Applicable

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*

2065: Not Applicable

Schedule:
1662: Automatic Ground Collision Avoidance System/Automated Terrain Avoidance and Warning System will be a new start development effort in FY 2012. Multi-Sensor Integration Phase III focuses on software and sensor upgrades and Counter-Electronic Attack (CEA) sensor integration with funded efforts beginning in FY2013.

2065: Schedule adjustments to this program are a result of production enhancement related to the Anti-Tamper configuration of APG-79 Radar System. The monopulse study is an effort to determine the root cause and resolution alternatives for APG-79 tracking errors. Instrumentation development is an effort to redesign/replace obsolete APG-79 test instrumentation. CEA #1 is a development, integration, and test effort to correct APG-79 deficiencies in countering Electronic Attack threats. Target Location Error (TLE) development is an effort to determine and characterize APG-73 TLEs. Aircraft Combat Maneuvering mode development is an effort that will determine the root causes and potential solutions for APG-79 short-range tracking issues.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
1662: *F/A-18 Improvement*	130.558	94.977	124.223	-	124.223	112.654	84.646	59.587	39.213	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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 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 (MSI) Phase I/II/III capability. 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, 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, and enhanced software modifications based on reported fleet deficiencies. 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. Currently employed Controlled Flight into Terrain Avoidance System technologies within the Department of Defense Fighter/Attack aircraft communities are advisory only (aural and visual cues/warnings to aircrew), thus requiring manually implemented corrective measures by the aicrew to preclude incident (greater lag time to initiation of recovery and not feasible in the event of pilot G-induced loss of consciousness). This funding line continues F/A-18E/F "Flight Plan" spiral capability development, which includes Sensor Integration - MSI Phase II capability. This budget also continues funding for F/A-18A-F Test Wing Maintenance support and funding development efforts needed for integration of air launched laser guided rockets on F/A-18 A+/C/D.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Distributed Targeting System	38.601	5.698	1.916	-	1.916
Articles:	0	0	0		0
Description: Funds are supporting development of a distributed targeting precision strike capability through a hardware and software solution. Hardware - Distributed Targeting Processor (DTP), Mass Storage Unit (MSU), and Mission Planning Transit Case. Software - DTP/MSU Operational Flight Program (OFP), Mission Computer OFP, and Mission Planning OFP.					
FY 2011 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Entered Developmental Testing Flight testing, entered Milestone (MS) C, and awarded Engineering Change Proposal for Low-Rate Initial Production. ***FY 2012 Plans:*** Continue Integrated Test and Evaluation and begin Initial Operational Test and Evaluation (IOT&E). Complete Operational Test, conduct Physical Configuration Audit and Full Rate Production review (FRP). ***FY 2013 Base Plans:*** Complete IOT&E and award FRP contract.					
Title: Electro-Optical Infra-Red - Infra-red Search and Track (IRST) Phase I ***Articles:*** ***Description:*** Technology development and engineering and manufacturing development of an IRST sensor for the F/A-18 E/F. ***FY 2011 Accomplishments:*** Achieved MS B 17 June 2011, entered Engineering and Development Phase. ***FY 2012 Plans:*** Continue Engineering and Development Phase and complete Critical Design Review and Design Readiness Review. ***FY 2013 Base Plans:*** Continue Engineering and Development Phase and start Integration Testing-B1 Flight Test.	46.643 0	49.283 0	84.262 0	-	84.262 0
Title: Sensor Integration - Single Ship Geolocation (SSG) and Specific Emitter Identification (SEI), High Gain Electronic Attack/High Gain Electronic Support Measures, Integrated Defensive Countermeasures ***Articles:*** ***Description:*** In order to respond effectively to emerging future threats, F/A-18 aircraft capabilities are being upgraded to incorporate new/enhanced weapons systems and avionics. This funding line includes F/A-18E/F "Flight Plan" spiral capability development, SSG and SEI. ***FY 2011 Accomplishments:*** Continue software algorithm development to enhance target identification and location (SSG and SEI). ***FY 2012 Plans:***	14.782 0	11.320 0	2.629 0	-	2.629 0

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Continue software algorithm development to enhance target identification and location Sensor Integration - Single Ship Geolocation(SSG) and Specific Emitter Identification (SEI). ***FY 2013 Base Plans:*** Continue software algorithm development to enhance target identification and location - SSG and SEI.					
Title: Sensor Integration - MSI Phase I ***Articles:*** ***Description:*** In order to respond effectively to emerging future threats, F/A-18 aircraft capabilities are being upgraded to incorporate new/enhanced weapons systems and avionics including, Multi-Sensor Integration Phase I capability. Advanced development engineering and analysis of hardware/software is required to optimize fleet F/A-18 weapon systems for interoperability in a network centric tactical environment. ***FY 2011 Accomplishments:*** Continue software algorithm development to correlate multiple ground and surface tracks from on-ship to off-ship sensor sources and to begin integration with the Common Tactical Picture and Blue Force Track information.	4.622 0	-	-	-	-
Title: Sensor Integration - Air to Air (A/A), Air to Ground and Maritime Multi-Sensor Integration (MSI) Phase II ***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 2011 Accomplishments:*** System change review board held to formalize MSI Phase II into System Configuration Set H10. ***FY 2012 Plans:*** Requirements decomposition, functional allocation of subsystem requirements. System functional review and critical design review will be held. ***FY 2013 Base Plans:*** Integration and testing will be conducted.	15.566 0	11.927 0	3.031 0	-	3.031 0
Title: Sensor Integration - Counter Electronic Attack (CEA) /MSI Phase III ***Articles:***	-	-	10.500 0	-	10.500 0

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Description: MSI Phase III utilizes previous MSI upgrades and combines them in H12 System Configuration Set with display improvements to enhance A/A & CEA sensor integration. MSI Phase III capability focuses are: Display firmware upgrade (allows existing processors to be fully utilized) coupled with display symbology/Crew Vehicle Interface improvements, and A/A Mission Tactical Picture improvements. MSI Phase III capability is common to the F/A-18E/F and EA-18G. ***FY 2013 Base Plans:*** Requirements decomposition, functional allocation of subsystem requirements. System Functional Review/ Critical Design Review to be held.					
Title: Automatic Ground Collision Avoidance System (AGCAS)/Automated Terrain Avoidance and Warning System (ATAWS) ***Articles:*** ***Description:*** AGCAS/ATAWS 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, AGCAS/ATAWS 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. ***FY 2012 Plans:*** Conduct study and analysis and develop functional requirements. ***FY 2013 Base Plans:*** Continue to develop functional requirements document and develop related software.	-	5.707 0	11.402 0	-	11.402 0
Title: Test Wing Maintenance Conversion ***Articles:*** ***Description:*** Funding supports maintenance of aircraft at NAVAIR Test Wing used to support Program Office objectives. ***FY 2011 Accomplishments:***	10.344 0	9.042 0	10.483 0	-	10.483 0

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Perform aircraft maintenance on Test Wing Aircraft. ***FY 2012 Plans:*** Perform aircraft maintenance on Test Wing Aircraft. ***FY 2013 Base Plans:*** Perform aircraft maintenance on Test Wing Aircraft.					
Title: Advanced Precision Kill Weapons System II ***Articles:*** ***Description:*** Development efforts needed for integration of air launched laser guided rockets on F/A-18 A+/C/D at stations 2, 3, 7, and 8. ***FY 2012 Plans:*** OCO:Perform and complete developmental testing needed to integrate air launched laser guided rockets on F/A-18 A+/C/D.	-	2.000 0	-	-	-
Accomplishments/Planned Programs Subtotals	130.558	94.977	124.223	-	124.223

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• APN/0145: *F/A-18E/F*	2,169.483	2,240.184	2,035.131	0.000	2,035.131	1,140.153	0.000	0.000	0.000	0.000	42,574.873
• APN/0145C: *F/A-18EF AP*	2.282	63.262	30.296	0.000	30.296	0.000	0.000	0.000	0.000	0.000	1,650.192
• APN/0143: *EA-18G*	955.262	994.596	1,027.443	0.000	1,027.443	21.970	8.111	0.000	0.000	0.000	8,651.090
• APN/0143C: *EA-18G AP*	43.866	28.119	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	263.668
• APN/05250: *F-18 SERIES MOD*	482.020	472.159	647.306	41.243	688.549	966.458	1,246.249	1,495.489	1,495.104	3,817.552	15,119.916
• RDTEN/3063: *EA-18G DEVELOPMENT*	20.246	17.100	13.009	0.000	13.009	15.311	16.002	16.106	16.393	Continuing	Continuing

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 (A/G) and Maritime, Distributed Targeting Air to Air (A/A), Net Centric Operations/Battle Space Management, Sensor Integration, A/G and Maritime Attack, and A/A Attack. The major

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

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; 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 entering the Engineering Manufacturing and Development (EMD) phase at Milestone (MS) B in FY 2011. 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 2016.
- Distributed Targeting System (DTS). DTS development is provided on a sole source cost plus incentive fee contract for EMD activities to Boeing. The program is a new start ACAT III FY 2009 effort, with a post MS B entry and an IOC in FY 2012. The program is leveraging previous Engineering Change Proposal efforts and is designated for all domestic Super Hornets. Updated acquisition plan is in accordance with Dr. Carter memorandum.
- 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 Auto Ground Collision Avoidance System/Automated Terrain Avoidance and Warning System (AGCAS/ATAWS) is envisioned to only require changes to the software (S/W) System Configuration Set (SCS). Studies and analyses are needed to identify the appropriate implementation method.

E. Performance Metrics

The DTS Program will achieve IOC in FY2012. IRST Program achieved MS B on 17 June 2011, scheduled for MS C in 3rd Quarter of FY2014, and IOC in 4th Quarter of FY2016.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Development Electronic Warfare (EW) Sensor	Various	Various:Various	1.813	1.500	Jan 2012	-		-		-	2.405	5.718	
Primary Development EW Sensor	Various	Boeing:St. Louis, MO	6.330	0.750	Apr 2012	-		-		-	0.175	7.255	
Primary Development EW Sensor	WR	NAWCWD:China Lake, CA	1.985	1.500	Dec 2011	-		-		-	0.313	3.798	
Develop Sensor Integration Single Ship Geolocation/ Specific Emitter Identification (SSG/SEI)	WR	NAWCWD:Pt. Mugu, CA	0.659	1.220	Dec 2011	-		-		-	1.443	3.322	
Develop Sensor Integration SSG/SEI	Various	Boeing:St. Louis, MO	4.530	1.161	Mar 2012	1.944	Mar 2013	-		1.944	3.000	10.635	
Develop Sensor Integration SSG/SEI	Various	Various:Various	-	0.486	Dec 2011	0.048	Dec 2012	-		0.048	0.164	0.698	
Software (S/W) Development Integrated Defensive Electronic Countermeasures (IDECM) - High Gain Electronic Support Measures (HGESM)	Various	Boeing:St. Louis, MO	2.396	0.551	Mar 2012	-		-		-	0.203	3.150	
S/W Development IDECM - HGESM	WR	NAWCWD:China Lake, CA	1.912	1.260	Dec 2011	-		-		-	0.244	3.416	
S/W Development IDECM - HGESM	Various	Raytheon:Goleta, CA	2.542	1.421	Jan 2012	-		-		-	3.161	7.124	
Automatic Ground Collision Avoidance System/Automated Terrain Avoidance and Warning System (AGCAS/ ATAWS) Systems Engineering	Various	Various:Various	-	0.203	Dec 2011	0.234	Dec 2012	-		0.234	9.400	9.837	
AGCAS/ATAWS Training Development	Various	Various:Various	-	-		-		-		-	2.560	2.560	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development Infra-Red Search and Track 2	C/CPIF	Boeing:St. Louis, MO	20.900	37.604	Nov 2011	63.566	Nov 2012	-		63.566	61.195	183.265	183.265
Primary Hardware (H/W) Development Multi-Sensor Integration Phase II	Various	Various:Various	-	1.000	Dec 2011	-		-		-	0.000	1.000	
Develop Sensor Integration Single Ship Geolocation/ Specific Emitter Identification	WR	NAWCWD:China Lake, CA	0.523	-		0.637	Dec 2012	-		0.637	1.443	2.603	
Prior Year cost no longer funded in FYDP	Various	Various:Various	544.265	-		-		-		-	0.000	544.265	
		Subtotal	587.855	48.656		66.429		-		66.429	85.706	788.646	

Remarks

"Primary H/W Development Infra-Red Search and Track (IRST)" (C/CPFF) in FY11 was reduced from 30.650 to 11.250 with the remaining 19.400 put on "Primary H/W Development IRST" C/CPIF. The reason for the change was to show the two different contracting actions now required for the IRST effort.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software (S/W) Development IRST	WR	NAWCWD:China Lake, CA	-	2.860	Dec 2011	4.170	Dec 2012	-		4.170	1.916	8.946	
S/W Development Integrated Defensive Electronic Countermeasures - High Gain Electronic Support Measures	WR	NAWCWD:China Lake, CA	10.579	0.148	Dec 2011	-		-		-	0.000	10.727	
Development Support IRST	WR	NAWCWD:China Lake, CA	5.222	0.500	Dec 2011	0.421	Dec 2012	-		0.421	7.011	13.154	
Development Support IRST	WR	NAWCAD:Pax River, MD	6.037	1.960	Dec 2011	3.472	Dec 2012	-		3.472	8.662	20.131	
Development Support IRST	WR	NAWCAD:Lakehurst, NJ	0.564	0.800	Dec 2011	0.603	Dec 2012	-		0.603	0.000	1.967	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support IRST	WR	FRC Southeast:Jacksonville, FL	2.056	1.350	Dec 2011	1.694	Dec 2012	-		1.694	3.768	8.868	
Development Support IRST	WR	FRC Southwest:North Island, CA	0.157	0.325	Dec 2011	0.430	Dec 2012	-		0.430	0.137	1.049	
Software (S/W) Development System Configuration Set Distributed Targeting System	Various	Boeing:St. Louis, MO	28.503	0.224	Feb 2012	0.216	Mar 2013	-		0.216	30.545	59.488	59.488
Development Support - Sensor Integration Single Ship Geolocation/Specific Emitter Identification	WR	NAWCWD:China Lake, CA	1.638	0.148	Dec 2011	-		-		-	0.000	1.786	
Development Support - Sensor Integration Multi-Sensor Integration (MSI) Phase II	Various	NAWCWD:China Lake, CA	4.310	-		2.231	Dec 2012	-		2.231	0.000	6.541	
Automatic Ground Collision Avoidance System/Automated Terrain Avoidance and Warning System (AGCAS/ ATAWS) Development Support	Various	Various:Various	-	-		-		-		-	12.194	12.194	
AGCAS/ATAWS S/W Development	C/CPFF	Boeing:St. Louis, MO	-	4.995	Jan 2012	7.224	Jan 2013	-		7.224	13.335	25.554	25.554
AGCAS/ATAWS Configuration Management	Various	Various:Various	-	0.037	Dec 2011	0.052	Dec 2012	-		0.052	1.234	1.323	
AGCAS/ATAWS Technical Data	Various	Various:Various	-	-		-		-		-	0.150	0.150	
AGCAS/ATAWS Integrated Logistics Support	Various	Various:Various	-	-		-		-		-	1.809	1.809	
Development Support - Sensor Integration MSI Phase II	WR	FRC Southwest:North Island, CA	-	0.060	Jan 2012	-		-		-	0.000	0.060	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support - Sensor Integration MSI Phase II	WR	PMA205:Pax River, MD	0.774	0.638	Jan 2012	0.638	Jan 2013	-		0.638	0.000	2.050	
Development Support - Sensor Integration Counter-Digital Radio Frequency Memory - MSI Phase III	WR	NAWCWD:China Lake, CA	-	-		6.917	Dec 2012	-		6.917	30.720	37.637	
Development Support - Sensor Integration Counter-Digital Radio Frequency Memory - Multi-Sensor Integration (MSI) Phase III	Various	Boeing:St. Louis, MO	-	-		2.645	Dec 2012	-		2.645	20.480	23.125	
Prior Year costs no longer funded in FYDP	Various	Various:Various	2,919.391	-		-		-		-	0.000	2,919.391	
		Subtotal	2,979.231	14.045		30.713		-		30.713	131.961	3,155.950	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E) Infra-Red Search and Track (IRST)	WR	NAWCAD:Pax River, MD	3.598	0.700	Dec 2011	4.188	Dec 2012	-		4.188	6.575	15.061	
DT&E IRST	WR	NAWCWD:China Lake, CA	0.959	2.500	Dec 2011	1.344	Dec 2012	-		1.344	29.796	34.599	
Operational Test & Evaluation (OT&E) IRST	WR	OPTEVFOR:VX-9	0.018	1.052	Dec 2011	0.560	Dec 2012	-		0.560	5.372	7.002	
DT&E Distributed Targeting System (DTS) 1	WR	NAWCWD:China Lake, CA	16.221	0.093	Dec 2011	-		-		-	1.808	18.122	
DT&E DTS 2	WR	NAWCWD:China Lake, CA	7.053	0.461	Dec 2011	0.300	Dec 2012	-		0.300	0.045	7.859	
DT&E DTS 2	WR	NAWCAD:Pax River, MD	0.900	0.105	Nov 2011	0.300	Dec 2012	-		0.300	0.000	1.305	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
OT&E DTS	WR	OPTEVFOR:Norfolk, VA	0.747	0.742	Dec 2011	0.200	Dec 2012	-		0.200	3.000	4.689	
OT&E Sensor Integration - Single Ship Geolocation/ Specific Emitter Identification MSI Phase I	WR	OPTEVFOR:Norfolk, VA	1.057	-		-		-		-	0.032	1.089	
Developmental Test & Evaluation (DT&E) Sensor Integration - Multi-Sensor Integration (MSI) Phase II-3	WR	NAWCAD:Pax River, MD	4.567	-		-		-		-	3.670	8.237	
DT&E Sensor Integration - MSI Phase II-4	WR	FRC Southwest:North Island, CA	-	-		-		-		-	0.390	0.390	
Weapons Integration - Advanced Precision Kill Weapon System II	WR	NAWCAD:Pax River, MD	-	2.000	Mar 2012	-		-		-	0.000	2.000	
DT&E Sensor Integration - MSI Phase II	WR	NAWCWD:China Lake, CA	-	6.648	Feb 2012	-		-		-	0.000	6.648	
DT&E Sensor Integration - MSI Phase II	WR	Various:Various	-	2.005	Jan 2012	-		-		-	0.000	2.005	
DT&E Automatic Ground Collision Avoidance System/ Automated Terrain Avoidance and Warning System (AGCAS/ATAWS)	Various	Various:Various	-	-		-		-		-	11.806	11.806	
Operational Test & Evaluation AGCAS/ATAWS	Various	OPTEVFOR:Norfolk, VA	-	-		-		-		-	6.586	6.586	
Prior Year costs no longer funded in FYDP	Various	Various:Various	80.542	-		-		-		-	0.000	80.542	
		Subtotal	115.662	16.306		6.892		-		6.892	69.080	207.940	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mgmt Support Distributed Targeting System (DTS)	WR	NAVAIR:Pax River, MD	3.867	0.522	Dec 2011	-		-		-	0.448	4.837	
Government Engineering Support DTS	WR	NAWCAD:Pax River, MD	7.838	0.550	Dec 2011	0.514	Dec 2012	-		0.514	0.050	8.952	
Program Management Support (MISC)	Various	NAWCAD:Pax River, MD	5.532	0.658	Dec 2011	-		-		-	16.843	23.033	
Program Management Support (Seaport-CSS)	C/CPFF	Wyle Lab:Pax River, MD	9.354	-		3.620	Nov 2012	-		3.620	9.629	22.603	22.603
Travel	Various	NAVAIR:Pax River, MD	3.550	1.000	Oct 2011	0.675	Dec 2012	-		0.675	3.200	8.425	
Flight Plan Engineering	Various	NAWCAD:Pax River, MD	4.160	1.075	Dec 2011	1.158	Dec 2012	-		1.158	3.515	9.908	
Flight Plan Engineering	Various	NAWCWD:China Lake, CA	9.340	1.650	Jan 2012	1.810	Jan 2013	-		1.810	8.203	21.003	
Government Engineering Support Multi-Sensor Integration (MSI) Phase II	Various	Various:Various	0.886	1.567	Dec 2011	-		-		-	0.510	2.963	
Test Wing Maintenance Conversion	WR	NAWCAD:Pax River, MD	16.662	4.183	Jan 2012	5.367	Jan 2013	-		5.367	27.407	53.619	
Test Wing Maintenance Conversion	WR	NAWCWD:China Lake, CA	16.662	4.182	Jan 2012	5.368	Jan 2013	-		5.368	27.408	53.620	
Automatic Ground Collision Avoidance System/Automated Terrain Avoidance and Warning System (AGCAS/ ATAWS) Contractor Engineering Support	Various	Various:Various	-	0.149	Nov 2011	0.172	Nov 2012	-		0.172	3.069	3.390	
AGCAS/ATAWS Government Engineering Support	Various	Various:Various	-	0.363	Nov 2011	0.350	Nov 2012	-		0.350	3.213	3.926	
AGCAS/ATAWS Program Management Support	Various	Various:Various	-	0.071	Dec 2011	1.155	Dec 2012	-		1.155	2.073	3.299	
Prior Year costs no longer funded in FYDP	Various	Various:Various	23.906	-		-		-		-	0.000	23.906	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	101.757	15.970		20.189		-		20.189	105.568	243.484	

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3,784.505	94.977		124.223		-		124.223	392.315	4,396.020	

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0204136N: *F/A-18 Squadrons*	**PROJECT** 1662: *F/A-18 Improvement*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0204136N: *F/A-18 Squadrons*	**PROJECT** 1662: *F/A-18 Improvement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Distributed Targeting System (DTS)				
Acquisition Milestones: Milestones: Milestone C	2	2011	2	2011
Acquisition Milestones: Milestones: Initial Operational Capability	4	2012	4	2012
Test and Evaluation: Geo-reg Integration Testing	1	2011	2	2011
Test and Evaluation: Developmental Testing: DT Flight Testing	1	2011	1	2012
Test and Evaluation: Operational Testing: OT Flight Testing	2	2012	4	2012
Production Milestone: Engineering Change Proposal (ECP) Level III Maintenance	1	2011	4	2011
Production Milestone: Contract Awards: Low Rate Initial Production (LRIP 1) RDTEN	4	2011	4	2011
Production Milestone: Contract Awards: LRIP 2 RDTEN	2	2012	2	2012
Production Milestone: Contract Awards: Full Rate Prodution (FRP)	1	2013	1	2013
Production Milestone: Deliveries: LRIP 1 (Lot 1 - Qty 30)	3	2012	1	2013
Production Milestone: Deliveries: LRIP 2 (Lot 2 - Qty 64)	2	2013	2	2014
Production Milestone: Deliveries: FRP (Lot 3 - Qty 86) (Lot 4 - Qty 80) (Lot 5 - Qty 73)	4	2014	4	2016
Infra-Red Search and Track				
Acquisition Milestones: Milestones: Milestone B (MS B)	3	2011	3	2011
Acquisition Milestones: Milestones: Milestone C (MS C)	3	2014	3	2014
Acquisition Milestones: Milestones: Initial Operational Capability (IOC)	4	2016	4	2016
System Development: Engineering and Manufacturing Development: Engineering and Manufacturing Development	3	2011	4	2015
System Development: Engineering and Manufacturing Development: Eng Dev Model (EDM) IRST Delivery - Lab/IT&E (Unit 1)	1	2014	1	2014
System Development: Engineering and Manufacturing Development: Eng Dev Model (EDM) IRST Delivery - Lab/IT&E (Unit 2)	2	2014	2	2014

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0204136N: *F/A-18 Squadrons*	**PROJECT** 1662: *F/A-18 Improvement*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
System Development: Engineering and Manufacturing Development: Eng Dev Model (EDM) IRST Delivery - (Environmental Evaluation Unit-EEU)	1	2014	1	2014
System Development: Engineering and Manufacturing Development: EDM Conversion	2	2015	3	2015
System Development: Software Development: H10 Fleet Release	4	2014	4	2014
System Development: Software Development: H12 Fleet Release	4	2016	4	2016
System Development: Software Development: IRST Software Build	4	2011	1	2016
System Development: Reviews: Preliminary Design Review (PDR)	1	2011	1	2011
System Development: Reviews: Integrated Baseline Review (IBR) 1	1	2012	1	2012
System Development: Reviews: Critical Design Review (CDR)	3	2012	3	2012
System Development: Reviews: Fleet Readiness Review (FRR)	4	2012	4	2012
System Development: Reviews: Test Readiness Review (TRR) 1	1	2013	1	2013
System Development: Reviews: Test Readiness Review (TRR) 2	3	2014	3	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: Integrated Baseline Review (IBR) 2	2	2015	2	2015
System Development: Reviews: Operational Testing Readiness Review (OTRR)	4	2015	4	2015
System Development: Reviews: Physical Configuration Audit (PCA)	3	2016	3	2016
Test and Evaluation: Integration Testing: Integration Testing (IT-B1)	2	2013	3	2014
Test and Evaluation: Integration Testing: Integration Testing (IT-C1)	3	2014	4	2015
Test and Evaluation: Operational Testing: Operational Assessment (OA)	1	2014	1	2014
Test and Evaluation: Operational Testing: Integrated Operational Test & Evaluation (IOT&E)	1	2016	2	2016
Test and Evaluation: Operational Testing: OPEVAL Report	3	2016	3	2016
Production Milestones: LRIP 1 APN	4	2014	4	2014
Production Milestones: LRIP 2 APN	2	2015	2	2015
Production Milestones: FRP I Start	1	2017	1	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: Deliveries: Low Rate Initial Production I (Lot 1 - Qty 6)	2	2016	4	2016
SSG/SEI, HGESM				
System Development: Software Development: Software Development	1	2011	2	2011
System Development: Software Development: Software Integration	1	2011	2	2011
System Development: Reviews: Operational Testing Readiness Review (OTRR)	1	2012	1	2012
Test and Evaluation: Validation/Verification, IT&E	3	2011	4	2011
Test and Evaluation: Operational Evaluation (OPEVAL)	1	2012	3	2012
Production Milestones: Deliveries: Fleet Release	4	2012	4	2012
MSI Phase I				
System Development: Software Development: Software Development MSI	1	2011	2	2011
System Development: Software Development: Software Integration MSI	1	2011	2	2011
System Development: Reviews: Operational Testing Readiness Review (OTRR) MSI	1	2012	1	2012
Test and Evaluation: Validation/Verification, IT&E MSI	3	2011	4	2011
Test and Evaluation: Operational Evaluation (OPEVAL) MSI	1	2012	3	2012
Production Milestones: Deliveries: Fleet Release MSI Ph I	4	2012	4	2012
MSI Phase II				
System Development: Requirements Definition	1	2011	1	2011
System Development: Design & Development	1	2011	1	2012
Test and Evaluation: Integration Testing MSI	2	2012	2	2013
Test and Evaluation: Operational Testing H10	1	2014	3	2014
Production Milestones: Deliveries: Fleet Release MSI Ph II	4	2014	4	2014
MSI Phase III				
System Development: Concept Development	1	2011	4	2011
System Development: Requirements Definition MSI Ph III/H12	1	2012	3	2013
System Development: Design & Development MSI Ph III/H12	3	2013	1	2014

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 1662: *F/A-18 Improvement*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluation: Integration Testing MSI Ph III/H12	2	2014	3	2015
Test and Evaluation: OT MSI Ph III/H12	4	2015	2	2016
Production Milestones: Fleet Release MSI Ph III/H12	4	2016	4	2016
Automatic Ground Collision Avoidance System (AGCAS)/Automated Terrain Avoidance and Warning System (ATAWS)				
System Development: Hardware Development: Statement of Work Development	1	2012	4	2012
System Development: Software Development: System Performance Specification	1	2012	1	2012
System Development: Software Development: H12 Software Development & Delivery	1	2012	3	2016
System Development: Software Development: H14 Software Development & Delivery	4	2013	4	2016
System Development: Software Development: Integrated Readiness Review	4	2011	4	2011
System Development: Reviews: System Software Review (SSR)	2	2012	2	2012
System Development: Reviews: Critical Design Review (CDR)	1	2013	1	2013
System Development: Reviews: Test Readiness Review (TRR)	4	2015	4	2015
Test and Evaluation: Developmental Testing	1	2016	4	2016
Test and Evaluation: TEMP Development	2	2013	1	2014

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 2065: *F/A-18 Radar Upgrade*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
2065: *F/A-18 Radar Upgrade*	13.002	52.114	64.076	-	64.076	36.207	55.815	58.799	-	0.000	280.013
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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 for multi-target tracking, Synthetic Aperture RADAR (SAR) imagery, SAR Target Location Error (TLE), and improved spotlight map resolution. In addition, it provides for greater lethality than previous F/A-18 RADARs by allowing for 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 by increased efforts to address Phase II Operational Requirements Document requirements such as Counter-Electronic Attack against multiple Radio Frequency Emitters (AESA Multi-Jammer Electronic Protection (EP) and Monopulse Solution Development), Precision TLE improvement, improved RADAR targeting capability within visual range (Aircraft Combat Maneuvering Mode Development), and upgraded test and evaluation equipment (AESA Instrumentation upgrade). Higher Order Language Software development and integration is also required for expanded A/A and A/G capabilities while in a tactical A/A and A/G threat Electronic Attack environment.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Title: Distributed Targeting - AESA EP Engineering and Manufacturing Development (EMD)	2.750	2.457	-	-	-
Articles:	0	0			
Description: The AESA system provides greater survivability through self-protection and standoff jamming capabilities. This budget continues spiral capability development of AESA by increased efforts to address Phase II Operational Requirements Document requirements.					
FY 2011 Accomplishments: Continued EMD efforts. Continued hardware developmental and refinement to the inherent EP.					
FY 2012 Plans: Continue EMD efforts. Continue hardware developmental and refinement to the inherent EP.					
Title: Distributed Targeting - AESA EP Software Development, Developmental Testing, Operational Testing, & Integration	10.252	49.657	64.076	-	64.076
Articles:	0	0	0		0

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 2065: *F/A-18 Radar Upgrade*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Description: Funding being utilized to support software capabilities development and associated testing. ***FY 2011 Accomplishments:*** Continued software (S/W) development, Development Testing, systems integration efforts, and Active Electronically Scanned Array (AESA) Operational Test and Evaluation (OT&E) inclusive of some Follow-On Test and Evaluation (FOT&E) for minimal hardware (H/W) and S/W change efforts. ***FY 2012 Plans:*** Continue S/W development, Development Testing, systems integration efforts, and AESA OT&E inclusive of some FOT&E for H/W and S/W change efforts. Begin AESA Counter-Electronic Attack (CEA) #1 efforts. ***FY 2013 Base Plans:*** Continue S/W development, Development Testing, systems integration efforts, and AESA OT&E inclusive of some FOT&E for H/W and S/W change efforts. Continue AESA CEA #1 efforts.					
Accomplishments/Planned Programs Subtotals	13.002	52.114	64.076	-	64.076

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• APN/0145: *F/A-18E/F*	2,169.483	2,240.184	2,035.131	0.000	2,035.131	1,140.153	0.000	0.000	0.000	0.000	42,574.873
• APN/0145C: *F/A-18E/F AP*	2.282	63.262	30.296	0.000	30.296	0.000	0.000	0.000	0.000	0.000	1,650.192
• APN/0143: *EA-18G*	955.262	994.596	1,027.443	0.000	1,027.443	21.970	8.111	0.000	0.000	0.000	8,651.090
• APN/1043C: *EA-18G AP*	43.866	28.119	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	263.668
• APN/05250: *F-18 Series Mod (OSIP 002-07)*	122.729	67.548	119.586	0.000	119.586	192.359	217.080	295.183	197.038	432.291	1,897.192

D. Acquisition Strategy

The AESA 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.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 2065: *F/A-18 Radar Upgrade*

E. Performance Metrics

Execute the system engineering process for S/W 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 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 2065: *F/A-18 Radar Upgrade*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware (H/W) Development 1	SS/CPFF	Boeing:St. Louis, MO	453.849	-		-		-		-	0.000	453.849	453.849
Government Furnished Equipment	SS/CPFF	Boeing:St. Louis, MO	3.517	-		-		-		-	0.000	3.517	3.517
Primary H/W Development	WR	NSMA:Arlington, VA	4.910	0.100	Feb 2012	-		-		-	0.649	5.659	
Primary H/W Development 2 (Monopulse)	SS/CPFF	Boeing:St. Louis, MO	1.750	0.497	May 2012	-		-		-	1.426	3.673	3.673
Systems Engineering	WR	NAWCWD:China Lake, CA	1.095	0.474	Nov 2011	0.488	Nov 2012	-		0.488	0.465	2.522	
Systems Engineering	WR	NAWCAD:Pax River, MD	1.046	0.245	Nov 2011	0.561	Nov 2012	-		0.561	0.527	2.379	
Software Development 2 Counter Electronic Attack #1	WR	NSMA:Arlington, VA	-	45.200	Jun 2012	55.000	Jun 2013	-		55.000	141.375	241.575	
		Subtotal	466.167	46.516		56.049		-		56.049	144.442	713.174	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development (Instrumentation)	WR	NAWCWD:China Lake, CA	32.991	4.018	Aug 2012	7.246	May 2013	-		7.246	3.640	47.895	
Integrated Logistics Support	WR	Various:Various	1.511	0.267	Nov 2011	-		-		-	0.558	2.336	
		Subtotal	34.502	4.285		7.246		-		7.246	4.198	50.231	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	Various:Various	78.958	-		-		-		-	0.000	78.958	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 2065: *F/A-18 Radar Upgrade*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	WR	OPTEVFOR:Norfolk, VA	16.482	0.274	Mar 2012	-		-		-	0.817	17.573	
Developmental Test & Evaluation (DT&E)	WR	NSMA:Arlington, VA	0.950	0.100	Feb 2012	-		-		-	0.000	1.050	
DT&E	MIPR	USAF Test Wing:Eglin AFB, FL	1.440	-		-		-		-	0.000	1.440	
DT&E	WR	NAWCAD:Pax River, MD	0.382	-		-		-		-	0.000	0.382	
DT&E	C/FFP	Raytheon:El Segundo, CA	5.792	-		-		-		-	0.000	5.792	5.792
DT&E Target Location Error	WR	NAWCWD:China Lake, CA	5.397	0.100	Aug 2012	-		-		-	0.817	6.314	
		Subtotal	109.401	0.474		-		-		-	1.634	111.509	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	Various	NAWCAD:Pax River, MD	4.187	0.267	Nov 2011	0.178	Nov 2012	-		0.178	0.428	5.060	
Travel	Various	NAVAIR:Pax River, MD	1.168	0.051	Nov 2011	0.045	Nov 2012	-		0.045	0.079	1.343	
Contractor Engineering Support	Various	Various:Various	1.119	0.521	Nov 2011	0.558	Nov 2012	-		0.558	1.245	3.443	
		Subtotal	6.474	0.839		0.781		-		0.781	1.752	9.846	

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	616.544	52.114		64.076		-		64.076	152.026	884.760	

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 2065: *F/A-18 Radar Upgrade*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0204136N: *F/A-18 Squadrons*	PROJECT 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: Monopulse Study	3	2012	4	2013
Systems Development: Hardware/Software Development: Instrumentation Development	4	2011	1	2015
Systems Development: Hardware/Software Development: CEA #1	3	2012	2	2015
Systems Development: Hardware/Software Development: TLE Development	4	2012	2	2015
Systems Development: Hardware/Software Development: ACM Mode Development	1	2012	2	2015
Test & Evaluation: Integrated Test & Evaluation: H6 IT&E FOT&E2	1	2011	2	2011
Test & Evaluation: Integrated Test & Evaluation: H8 IT&E FOT&E2	1	2011	3	2012
Test & Evaluation: Integrated Test & Evaluation: H10 IT&E FOT&E2	2	2012	3	2014
Test & Evaluation: Integrated Test & Evaluation: H12 IT&E FOT&E2	3	2014	3	2016
Test & Evaluation: Anti-Tamper Development: IT&E PHASE 2	1	2011	1	2012
Production Milestones: Radar Deliveries: Retrofit Radar Deliveries	1	2011	4	2014
Production Milestones: Radar Deliveries: FRP Deliveries - 70 (Lot 32)	1	2011	2	2011
Production Milestones: Radar Deliveries: FRP Deliveries - 57 (Lot 33)	2	2011	1	2012
Production Milestones: Radar Deliveries: FRP Deliveries - 40 (Lot 34)	1	2012	4	2012
Production Milestones: Radar Deliveries: FRP Deliveries A - 46 (Lot 35)	1	2013	4	2013
Production Milestones: Radar Deliveries: FRP Deliveries B - 40 (Lot 36)	1	2014	4	2014
Production Milestones: Software Deliveries: H6+ FLEET RELEASE	2	2011	2	2011
Production Milestones: Software Deliveries: H8 FLEET RELEASE	4	2012	4	2012
Production Milestones: Software Deliveries: H10 FLEET RELEASE	3	2014	3	2014
Production Milestones: Software Deliveries: H12 FLEET RELEASE	3	2016	3	2016