Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy											Date: February 2018	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603216N *I Aviation Survivability*							
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
Total Program Element	183.223	14.811	5.566	7.050	-	7.050	7.271	7.408	7.502	7.486	Continuing	Continuing
0584: *Acft Protective Clothing*	99.335	2.386	2.534	3.918	-	3.918	4.116	4.188	4.221	4.135	Continuing	Continuing
0591: *Acft Survivability, Vulnerability & Safety*	45.261	1.343	1.385	1.502	-	1.502	1.512	1.543	1.572	1.605	Continuing	Continuing
0592: *Acft & Ordnance Safety*	35.477	0.907	1.060	1.047	-	1.047	1.045	1.068	1.089	1.112	Continuing	Continuing
1819: *CV Acft Fire Suppress System*	3.133	0.504	0.587	0.583	-	0.583	0.598	0.609	0.620	0.634	Continuing	Continuing
9999: *Congressional Adds*	0.017	9.671	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	9.688

A. Mission Description and Budget Item Justification

Aviation Survivability addresses the issues of aircrew and platform survivability, focusing on enhancing overall opportunity for aircrew and platform protection and enhanced performance. The capabilities addressed under this program element counter emerging threats of next generation operational weapons systems and enhance combat effectiveness in future operational mission scenarios.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	5.239	5.566	5.792	-	5.792
Current President's Budget	14.811	5.566	7.050	-	7.050
Total Adjustments	9.572	0.000	1.258	-	1.258
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.007	0.000			
• SBIR/STTR Transfer	-0.420	0.000			
• Program Adjustments	0.000	0.000	1.357	-	1.357
• Rate/Misc Adjustments	-0.001	0.000	-0.099	-	-0.099
• Congressional Add Adjustments	10.000	-	-	-	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy	Date: February 2018
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603216N *I Aviation Survivability*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2017	FY 2018
Project: 9999: *Congressional Adds*		
Congressional Add: *Program Increase*	9.671	0.000
Congressional Add Subtotals for Project: 9999	9.671	0.000
Congressional Add Totals for all Projects	9.671	0.000

Change Summary Explanation

Technical: Not applicable

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603216N / *Aviation Survivability*	Project (Number/Name) 0584 / *Acft Protective Clothing*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
0584: *Acft Protective Clothing*	99.335	2.386	2.534	3.918	-	3.918	4.116	4.188	4.221	4.135	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Project 0584 develops, demonstrates, and validates technologies designed to enhance warfighter performance, protection, mission effectiveness, and survivability. The project addresses life support equipment, advanced helmet vision systems, escape systems technology, crew centered cockpit design, and control stations. Integrate and use alternative and new technologies for the Pilot Vehicle Integration, optimization of Intelligence Surveillance and Reconnaissance (ISR), and Forward Air Control-Air mission areas. Demonstrate innovative tools / approaches to improve situational awareness, new ISR technologies, and Graphical User Interfaces (new symbology and optimized logic for system employment). It responds to a number of operational requirements documents, including OR# 210-05-88 for Chemical and Biological protection, OR# 099-05-087 for Laser Eye Protection, and the joint Air Force/Navy (CAF-208-93) for an Aerospace Control Helmet Mounted Cueing System.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Advanced Technology Crew Station	1.329	1.158	1.491	0.000	1.491
Articles:	-	-	-	-	-
FY 2018 Plans: Continue to mature aviation physiologic monitoring, warning system and its integration. Begin development of next generation of high resolution (9 mega pixel) color digital near to mid infra-red sensors and micro displays. Explore alternative Organic Light-Emitting Diode micro display technologies such as Wave Guide, Quantum dot, and flexible displays; and near and short wave infra-red sensor development. Explore technologies to improve aircraft seating and bodymounted equipment to increase mission endurance and enhance crashworthiness. Complete testing, and refinement as necessary, of the seat damper system and active seat cushion.					
FY 2019 Base Plans: The government will be investigating the military utility of Magnetorheological (MR)-based damping systems. The goal is to investigate the capability of MR based damping systems to withstand harsh environments found onboard military vessels while continuing to perform as designed. Prototypes delivered under this agreement will be subjected to extremely harsh conditions that are more representative of the expected. These tasks are intended to begin the process of determining the robustness of the system under long periods of exposure to					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0584 / *Acft Protective Clothing*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
severe environments that exists onboard US Navy helicopters. Prototype goggles using new technology will begin field testing. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** FY 2018 to FY 2019 increase is due to Physiological Episode Protection efforts and Working Capitol Fund (WCF) rate increases.					
Title: Advanced Integrated Life Support System	1.057	1.376	2.427	0.000	2.427
Articles:	-	-	-	-	-
FY 2018 Plans: Investigate active measures of solarization and its effect on the ballistic properties of polycarbonate / other materials. Upgrade laser protection to withstand the impact of ultra-fast (femtosecond) high intensity pulses. Continue to mature on-shore supplier of Dielectric Coatings. Investigate the optimal integration of head borne prototype systems (Helmet Mounted Displays, Enhanced Visual Acuity, Hearing Protection with Active Noise Reduction and talk through capability, Modular Helmet, etc.) for increased functionality and reduced loading on the head and spine. Mature digital human modeling capability for crew accommodation and cockpit integration. Investigate methods to reduce spinal loading during normal and emergency operations, which may include investing in additional crash testing, such as joint H-46 crash tests. ***FY 2019 Base Plans:*** The main emphasis will be on designing and constructing a working high resolution fully digital night vision goggle to be followed fully characterizing the subcomponents. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** FY 2018 to FY 2019 increase is due to Physiological Episode Protection efforts and Working Capitol Fund (WCF)rate increases.					
Accomplishments/Planned Programs Subtotals	2.386	2.534	3.918	0.000	3.918

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0584 / *Acft Protective Clothing*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• OPN 4268: *Aviation Support Equipment*	29.528	63.277	39.374	-	39.374	51.957	55.434	70.046	71.314	Continuing	Continuing

Remarks

D. Acquisition Strategy

Primary Hardware Development for the Navy Advanced Technology Crew Station efforts will be performed under a Cost Plus Fixed Fee Indefinite Delivery Indefinite Quantity contract.

E. Performance Metrics

Develop advanced crashworthy system level models, investigate improved visual search methodologies, and improve the ability to assess cockpit compatibility through new analytic approaches to anthropometry.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603216N / *Aviation Survivability*	Project (Number/Name) 0584 / *Acft Protective Clothing*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCAD : Pax River MD	34.037	0.945	Dec 2016	0.550	Dec 2017	0.637	Dec 2018	-		0.637	Continuing	Continuing	Continuing
Primary Hardware Development	C/CPFF	Intevac : San Jose CA	5.118	0.000	Jun 2017	0.489	Jun 2018	1.500	Jun 2019	-		1.500	0.000	7.107	7.107
Primary Hardware Development	MIPR	US Army CERDEC : Ft. Belvoir VA	3.495	0.020	Jun 2017	0.000		0.000		-		0.000	0.000	3.515	3.515
Primary Hardware Development	C/CPFF	Innovital : Calverton MD	0.000	0.145	Dec 2016	0.488	Dec 2017	0.450	Dec 2018	-		0.450	0.000	1.083	1.083
Prior Year Prod Dev no Longer Funded in Budget Year or Outyears	Various	Various : Various	23.340	0.000		0.000		0.000		-		0.000	0.000	23.340	23.340
Systems Engineering	WR	NAWCWD : China Lake CA	0.000	0.040	Aug 2017	0.000		0.000		-		0.000	0.000	0.040	-
		Subtotal	65.990	1.150		1.527		2.587		-		2.587	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Configuration Management	WR	NAWCAD : Pax River MD	2.594	0.413	Dec 2016	0.330	Dec 2017	0.490	Dec 2018	-		0.490	Continuing	Continuing	Continuing
Prior Year Support no Longer Funded in Budget Year or Outyears	Various	Various : Various	3.232	0.000		0.000		0.000		-		0.000	0.000	3.232	3.232
		Subtotal	5.826	0.413		0.330		0.490		-		0.490	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD : Pax River MD	5.018	0.498	Dec 2016	0.320	Dec 2017	0.551	Dec 2018	-		0.551	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603216N / *Aviation Survivability*	Project (Number/Name) 0584 / *Acft Protective Clothing*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year T&E no Longer Funded in Budget Year or Outyears	Various	Various : Various	18.240	0.000		0.000		0.000		-		0.000	0.000	18.240	18.240
		Subtotal	23.258	0.498		0.320		0.551		-		0.551	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Pax River MD	3.780	0.315	Dec 2016	0.342	Dec 2017	0.275	Dec 2018	-		0.275	Continuing	Continuing	Continuing
Travel	PO	NAVAIR : Pax River MD	0.471	0.010	Oct 2016	0.015	Oct 2017	0.015	Oct 2018	-		0.015	Continuing	Continuing	Continuing
Prior Year Mgmt Svcs no Longer Funded in Budget Year or Outyears	Various	Various : Various	0.010	0.000		0.000		0.000		-		0.000	0.000	0.010	0.010
		Subtotal	4.261	0.325		0.357		0.290		-		0.290	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	99.335	2.386		2.534		3.918		-		3.918	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0584 / *Acft Protective Clothing*

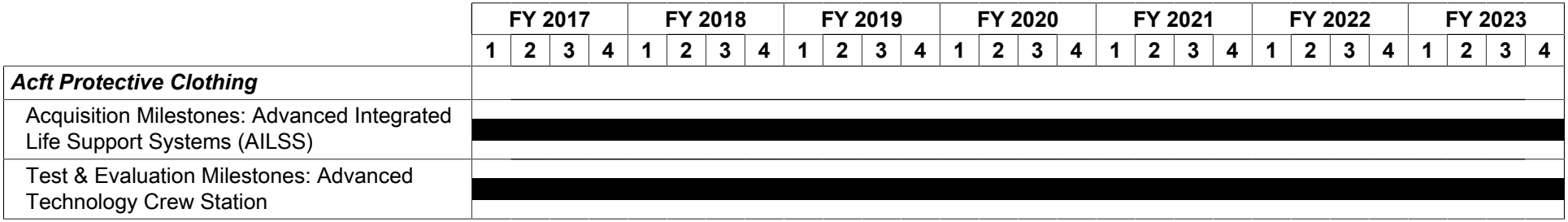

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0584 / *Acft Protective Clothing*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acft Protective Clothing				
Acquisition Milestones: Advanced Integrated Life Support Systems (AILSS)	1	2017	4	2023
Test & Evaluation Milestones: Advanced Technology Crew Station	1	2017	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603216N / *Aviation Survivability*	Project (Number/Name) 0591 / *Acft Survivability, Vulnerability & Safety*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
0591: *Acft Survivability, Vulnerability & Safety*	45.261	1.343	1.385	1.502	-	1.502	1.512	1.543	1.572	1.605	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Aircraft Survivability, Vulnerability and Safety. This project develops prototype hardware to improve the survivability of Navy and Marine Corps aircraft. This project addresses the likelihood of an aircraft being hit (susceptibility) and the probability of a kill if the aircraft is hit (vulnerability). Types of programs funded under this project include signature reduction efforts, subsystem and component hardening and development of fire and explosion suppression techniques for fuel systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Technology Requirements	0.181	0.035	0.045	0.000	0.045
Articles:	-	-	-	-	-
FY 2018 Plans: Maintain a comprehensive Survivability Master Plan; assess technologies to identify survivability gaps as part of the OPNAV Aircraft Survivability Investment Strategy (OASIS); mature survivability assessment processes; support rotary wing and fixed wing programmatic requirements for survivability studies, assessments, and analyses. ***FY 2019 Base Plans:*** Planned trade studies include threats assessments, vulnerability assessments of both rotary wing and fixed wing aircraft, and updates to the Survivability Master Plan. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Budget increase from FY 2018 to FY 2019 supports additional iASE technical evaluations.					
Title: Technology Design & Development	0.944	1.298	1.437	0.000	1.437
Articles:	-	-	-	-	-
FY 2018 Plans: Develop recommended courses of action to resolve survivability deficiencies; develop and support Integrated Aircraft Survivability Equipment (iASE) initiatives; manage, coordinate, or develop iASE capabilities and					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0591 / *Acft Survivability, Vulnerability & Safety*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
transition to programs of record. Begin investigating Virtual Electronic Combat Training System (VECTS) CH-53K integration concept; support MH-60R Tactical Demonstration to include Electric-Optical/Infrared and Radio Frequency threats; and provide coordinated support to update VECTS as needed for radar warning receiver APR-39 C(V2). ***FY 2019 Base Plans:*** Integrate results from technology evaluation efforts to address program office survivability shortfalls with specific emphasis on iASE capability. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Budget increase from FY 2018 to FY 2019 supports additional iASE technical evaluations.					
Title: Technology Test & Evaluation	0.218	0.052	0.020	0.000	0.020
Articles:	-	-	-	-	-
FY 2018 Plans: Determine performance values for technologies to support survivability requirements; assess optimal cueing and informational displays to enhance aircrew situational awareness and facilitate susceptibility reduction techniques; support flight testing of prototype hardware and software solutions for Integrated Aircraft Survivability Equipment; develop, manage or support survivability technology demonstrations. ***FY 2019 Base Plans:*** Implement test planning simulation solutions in a laboratory environment. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Accomplishments/Planned Programs Subtotals	1.343	1.385	1.502	0.000	1.502

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0591 / *Acft Survivability, Vulnerability & Safety*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

Primary Hardware Development will be performed under either a Cost Plus Fixed Fee or a Firm Fixed Price contract.

E. Performance Metrics

Evaluate 100% of deployed/developmental United States Navy/United States Marine Corp aircraft platforms for survivability deficiencies using Navy gap analysis as baseline. Identify prototype hardware solutions to address 25% to 50% of deficiencies, and initiate a minimum of two new demonstration projects per year.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0591 / *Acft Survivability, Vulnerability & Safety*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCAD : Pax River, MD	12.856	0.144	Oct 2016	0.130	Oct 2017	0.207	Oct 2018	-		0.207	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCWD : China Lake, CA	0.328	0.025	Oct 2016	0.000		0.030	Oct 2018	-		0.030	0.000	0.383	0.383
Systems Engineering	MIPR	DTIC : Ft. Belvoir, VA	0.520	0.000	Jan 2017	0.193	Jan 2018	0.600	Jan 2019	-		0.600	0.000	1.313	1.313
System Engineering	C/CPFF	Engility : Chantilly, VA	1.472	1.136	Oct 2016	0.975	Oct 2017	0.600	Oct 2018	-		0.600	0.000	4.183	4.183
Prior Year Prod Dev cost no longer funded in FYDP	Various	Various : Various	17.692	0.000		0.000		0.000		-		0.000	0.000	17.692	17.692
		Subtotal	32.868	1.305		1.298		1.437		-		1.437	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Support cost no longer funded in FYDP	Various	Various : Various	4.569	0.000		0.000		0.000		-		0.000	0.000	4.569	4.569
		Subtotal	4.569	0.000		0.000		0.000		-		0.000	0.000	4.569	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD : Patuxent River, MD	2.434	0.000	Oct 2016	0.050	Oct 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		0.020	Feb 2019	-		0.020	0.000	0.020	0.020
Prior Year T&E cost no longer funded in FYDP	Various	Various : Various	2.995	0.000		0.000		0.000		-		0.000	0.000	2.995	2.995
		Subtotal	5.429	0.000		0.050		0.020		-		0.020	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0591 / *Acft Survivability, Vulnerability & Safety*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Pax River, MD	1.680	0.033	Oct 2016	0.032	Oct 2017	0.045	Oct 2018	-		0.045	Continuing	Continuing	Continuing
Travel	PO	NAVAIR : Patuxent River, MD	0.375	0.005	Oct 2016	0.005	Oct 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Mgmt cost no longer funded in FYDP	Various	Various : Various	0.340	0.000		0.000		0.000		-		0.000	0.000	0.340	0.340
		Subtotal	2.395	0.038		0.037		0.045		-		0.045	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	45.261	1.343		1.385		1.502		-		1.502	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0591 / *Acft Survivability, Vulnerability & Safety*

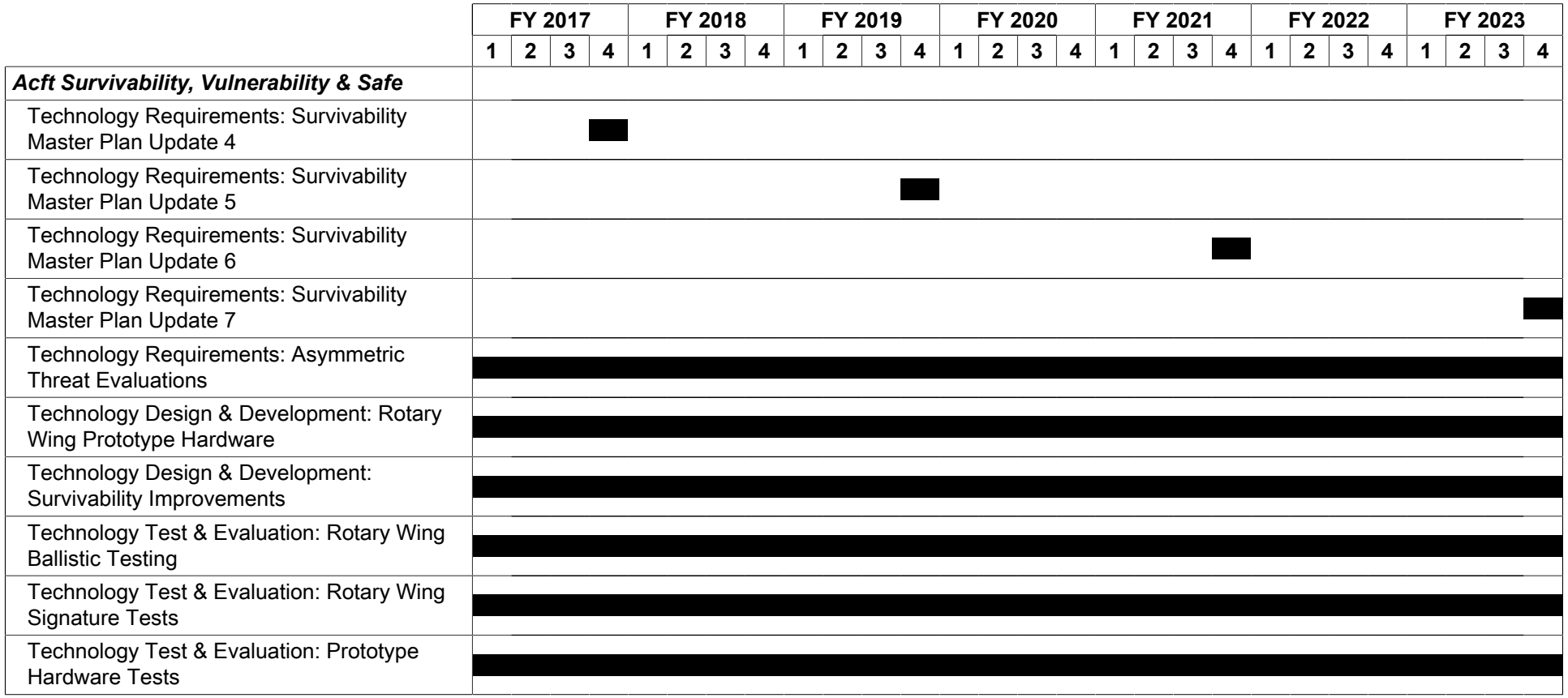


Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0591 / *Acft Survivability, Vulnerability & Safety*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acft Survivability, Vulnerability & Safe				
Technology Requirements: Survivability Master Plan Update 4	4	2017	4	2017
Technology Requirements: Survivability Master Plan Update 5	4	2019	4	2019
Technology Requirements: Survivability Master Plan Update 6	4	2021	4	2021
Technology Requirements: Survivability Master Plan Update 7	4	2023	4	2023
Technology Requirements: Asymmetric Threat Evaluations	1	2017	4	2023
Technology Design & Development: Rotary Wing Prototype Hardware	1	2017	4	2023
Technology Design & Development: Survivability Improvements	1	2017	4	2023
Technology Test & Evaluation: Rotary Wing Ballistic Testing	1	2017	4	2023
Technology Test & Evaluation: Rotary Wing Signature Tests	1	2017	4	2023
Technology Test & Evaluation: Prototype Hardware Tests	1	2017	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603216N / *Aviation Survivability*	Project (Number/Name) 0592 / *Acft & Ordnance Safety*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
0592: *Acft & Ordnance Safety*	35.477	0.907	1.060	1.047	-	1.047	1.045	1.068	1.089	1.112	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Aircraft and Ordnance Safety Program transitions innovative munitions safety technology to Navy and Marine Corps air weapons, to comply with the Chief of Naval Operations direction that all munitions carried aboard Navy ships be insensitive to unplanned stimuli (thermal, impact, and shock events). The Aircraft and Ordnance Safety Program also ensures the safety and protection of personnel, aircraft, ships, and operational facilities, through improved precision targeting, fail-safe ordnance, selective effects munitions and shock/blast force protection technologies.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Insensitive Munitions (IM)	0.907	1.060	1.047	0.000	1.047
Articles:	-	-	-	-	-

FY 2018 Plans:

Improve Air-to-Air Demonstration: Continue Sidewinder warhead technology risk reduction evaluation in support of PMA-259 planned block II+ or III transition with digital detonation initiator, improved multi-layered case warhead design. Continue Sidewinder rocket motor technology risk reduction evaluation in support of PMA-259 planned block III transition with highly-loaded-grain, high-performance motor, and radio frequency cook-off sensor. Evaluation of Metal Matrix Composite structures was completed in FY 17.

Improve Air-Launched Weapons: Continue Insensitive Munitions (IM) and performance evaluation of a cast/cure minimum smoke composite propellant that will meet -65 degree requirement for fixed-wing platforms. Testing will be done in a Hellfire configuration to demonstrate transition ability to a system with equivalent requirements in support of PMA 242 tier III requirements. Continue evaluation of Highly-loaded-grain high performance rocket motor and application of Slow-cook-off-sensor technology in Advanced Anti-Radiation Guided Missile (AARGM) configuration for transition to PMA 242 AARGM BLKII upgrade.

Advanced Containment/Case/Warhead Materials: Demonstrate IM performance of the Joint Multiple Effects Warhead System in the new revised configuration for transition to PMA 280 FY 19 planned warhead upgrade. Initiate IM and Operational performance evaluation of Eutectic Metal Composite (EMC) for Rocket Motor and Warhead components. EMC technology provides improved material strength properties and the ability to produce structures with advanced configurations that would potentially enhance both IM and operational performance.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0592 / *Acft & Ordnance Safety*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Shock/Blast Barrier Protection Modeling, Demonstration, and Testing: Continue tech-watch investigation for effective, affordable blast barrier and impact mitigation for application to Tomahawk weapon. Advanced Energetic Materials: Initiate evaluation of a JIMTP transition new explosive fill for BLU 111 to address Navy unique issues (i.e., irreversible growth, explosive train reliability for a very insensitive main fill, and thermal environments and ullage requirements for the fill to ensure improved IM demonstrated in JIMTP. ***FY 2019 Base Plans:*** Air-to-Air Demonstration: Continue Sidewinder warhead technology risk reduction evaluation in support of PMA-259 planned block II+ or III transition with digital detonation initiator, improved multi-layered case warhead design. Continue Sidewinder rocket motor technology risk reduction evaluation in support of PMA-259 planned block III transition with highly-loaded-grain, high-performance motor, and radio frequency cook-off sensor. Evaluation of Metal Matrix Composite structures for use with Min-Smoke propellants for use in HELLFIRE. Improve Air-Launched Weapons: Continue Insensitive Munitions (IM) and performance evaluation of a cast/cure minimum smoke composite propellant that will meet -65 degree requirement for fixed-wing platforms. Testing will be done in a Hellfire configuration to demonstrate transition ability to a system with equivalent requirements in support of PMA 242 tier III requirements. Continue evaluation of Highly-loaded-grain high performance rocket motor and application of Slow-cook-off-sensor technology in Advanced Anti-Radiation Guided Missile (AARGM) configuration for transition to PMA 242 AARGM BLK II upgrade. Advanced Containment/Case/Warhead Materials: Demonstrate IM performance of the Joint Multiple Effects Warhead System in the new revised configuration for transition to PMA 280 FY 19 planned warhead upgrade. Initiate IM and Operational performance evaluation of Eutectic Metal Composite (EMC) for Rocket Motor and Warhead components. EMC technology provides improved material strength properties and the ability to produce structures with advanced configurations that would potentially enhance both IM and operational performance. Shock/Blast Barrier Protection Modeling, Demonstration, and Testing: Continue tech-watch investigation for effective, affordable blast barrier and impact mitigation for application to Tomahawk weapon. Advanced Energetic Materials: Continue evaluation of a Joint Service Insensitive Munitions Technology Program (JIMTP) transition new explosive fill for Bomb Live Unit 111 to address Navy unique issues (i.e.,					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0592 / *Acft & Ordnance Safety*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
irreversible growth, explosive train reliability for a very insensitive main fill, and thermal environments and ullage requirements for the fill to ensure improved IM demonstrated in JIMTP). ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Accomplishments/Planned Programs Subtotals	0.907	1.060	1.047	0.000	1.047

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

All planned programs are accomplished via civilian labor and use of government testing facilities.

E. Performance Metrics

The Aircraft and Ordnance Safety program will initiate six to nine technology development/maturation efforts to improve IM signature and will work to transition those technologies to weapons programs. The weapons programs will be chosen based on PEO(U&W) weapons portfolio and will focus on the priority weapons as defined in the IM strategic plan.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603216N / *Aviation Survivability*	Project (Number/Name) 0592 / *Acft & Ordnance Safety*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCWD : China Lake, CA	35.469	0.907	Oct 2016	1.060	Oct 2017	1.047	Oct 2018	-		1.047	Continuing	Continuing	Continuing
		Subtotal	35.469	0.907		1.060		1.047		-		1.047	Continuing	Continuing	N/A

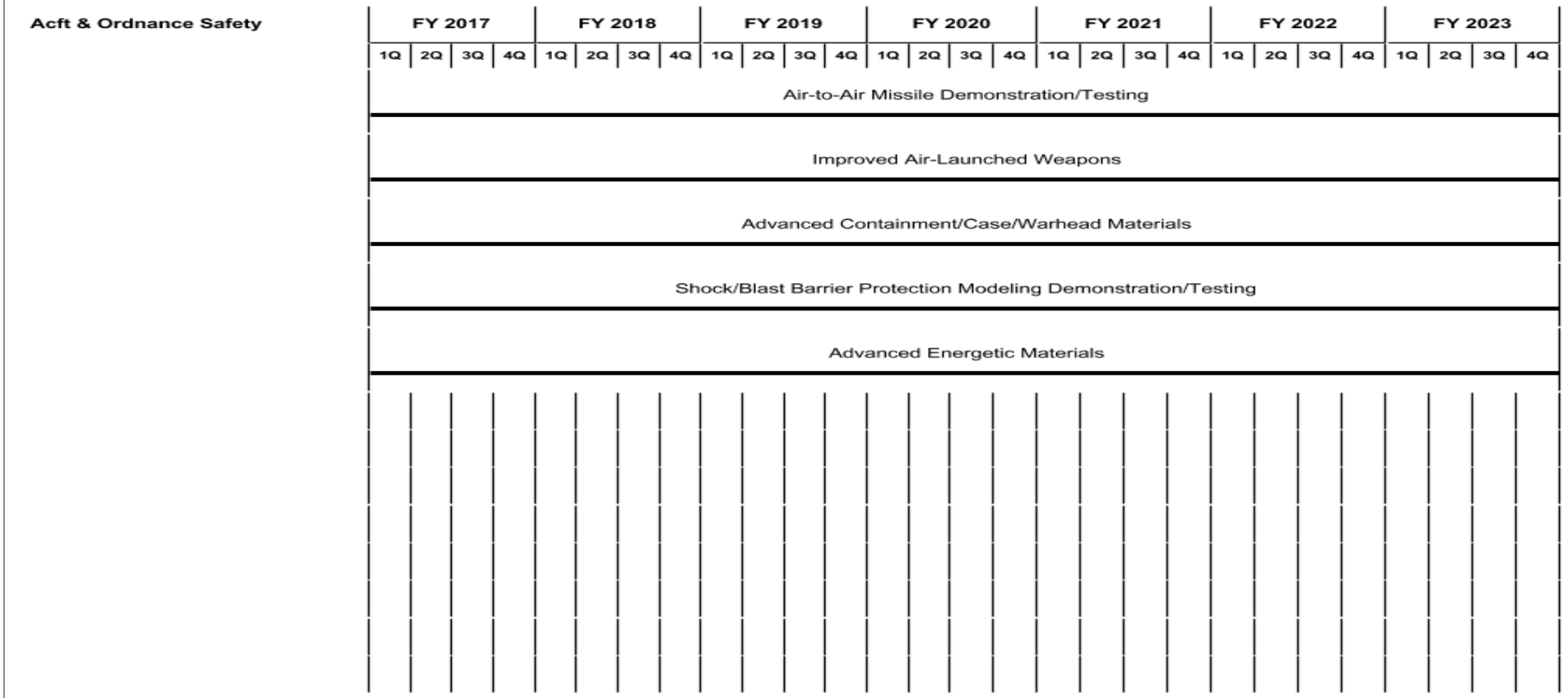
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Mgmt no longer funded in FYDP	Various	Various : Various	0.008	0.000		0.000		0.000		-		0.000	0.000	0.008	0.008
		Subtotal	0.008	0.000		0.000		0.000		-		0.000	0.000	0.008	N/A

	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	35.477	0.907		1.060		1.047		-		1.047	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0592 / *Acft & Ordnance Safety*



2019DON - 0603216N - 0592

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0592 / *Acft & Ordnance Safety*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acft & Ordnance Safety				
Air-to-Air Missile Demonstration/Testing	1	2017	4	2023
Improved Air-Launched Weapons	1	2017	4	2023
Advanced Containment/Case/Warhead Materials	1	2017	4	2023
Shock/Blast Barrier Protection Modeling Demonstration/Testing	1	2017	4	2023
Advanced Energetic Materials	1	2017	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603216N / *Aviation Survivability*	Project (Number/Name) 1819 / *CV Acft Fire Suppress System*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
1819: *CV Acft Fire Suppress System*	3.133	0.504	0.587	0.583	-	0.583	0.598	0.609	0.620	0.634	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops improved fire-fighting systems and fire protective measures for aircraft-related fires on aircraft carriers, including assessment of fire properties, definition of fire threats, improvements to fire-fighting agents and delivery systems, fire detection and suppression system performance evaluations, and fire-fighter training improvements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Fire-Fighting	0.504	0.587	0.583	0.000	0.583
Articles:	-	-	-	-	-

FY 2018 Plans:

Continue support for Naval Air Training and Operating Procedures Standardization improvements, and modeling and simulation for fire prediction. Continue monitoring aqueous film forming foam developments and other clean agents. Continue project looking at firefighter issues related to unmanned air vehicle systems including composites, weapons and fuels. Evaluate training and certification requirements and equipment to bring the ship up to aviation boatswains mate capabilities and readiness for Auxiliary Crane Support ships that rely on the ships damage control team and limited resources. Continue to evaluate equipment improvements for saws, spreaders, and other improvements to reduce or discontinue the use of Motor Gasoline on ships. Finalize evaluations for flash-hood, crash-fire-rescue face shield and firefighter personnel floatation device improvements. Continue to monitor and recommend Electromagnetic Aircraft Launch Systems fire doctrine, Carrier Fixed Wing Aircraft Nuclear hangar bay conflagration management system operations, and unmanned carrier launched airborne surveillance and strike firefighting operations impacts. Develop procedures to be used aboard ship to rapidly and safely extinguished deep seated smoldering fires with composite materials.

FY 2019 Base Plans:

Continue support for Naval Air Training and Operating Procedures Standardization improvements, and modeling and simulation for fire prediction. Continue monitoring aqueous film forming foam developments and other clean agents. Continue to monitor new equipment improvements for saws, spreaders, and other improvements to reduce or discontinue the use of Motor Gasoline on ships. Finalize evaluations for flash-hood, crash-fire-rescue face shield and firefighter personnel floatation device improvements. Continue to monitor and recommend Electromagnetic Aircraft Launch Systems fire doctrine, Carrier Fixed Wing Aircraft Nuclear

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 1819 / *CV Acft Fire Suppress System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
hangar bay conflagration management system operations, and unmanned carrier launched airborne surveillance and strike firefighting operations impacts. Finalize project looking at firefighter issues related to composites, weapons and fuels and develop procedures to be used aboard ship to rapidly and safely extinguished deep seated smoldering fires with composite materials. Continue to evaluate training and certification requirements and equipment to bring the ship up to aviation boatswains mate capabilities and readiness for Air Capable Ships, ships that rely on the ships damage control team and limited resources. Continue improved weapons cooling scenario testing. Begin project looking at options for firefighter equipment storage on CVN's and LHA/D ships. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** No significant change from FY 2018 to FY 2019.					
Accomplishments/Planned Programs Subtotals	0.504	0.587	0.583	0.000	0.583

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 Carrier Aircraft Fire Suppression (CAFS) program will, at a minimum, fund six to ten projects per year that investigate and evaluate tactical capability gaps and potential capability improvements regarding shipboard aircraft fire suppression doctrine and equipment. CAFS projects will have a greater than 90% success rate of insertion into Department of the Navy shipboard aircraft fire-fighting procedures and documentation.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603216N / *Aviation Survivability*	Project (Number/Name) 1819 / *CV Acft Fire Suppress System*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPFF	ICI : Virginia Beach, VA	0.020	0.000		0.000		0.000		-		0.000	0.000	0.020	0.020
Systems Engineering	WR	NAWCWD : China Lake, CA	0.027	0.087	Oct 2016	0.085	Oct 2017	0.042	Oct 2018	-		0.042	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	Hughes Associates : Baltimore, MD	0.027	0.005	Nov 2016	0.025	Nov 2017	0.000		-		0.000	0.000	0.057	0.057
Systems Engineering	C/CPFF	AVW : Chesapeake, VA	0.013	0.000		0.000		0.015	Nov 2018	-		0.015	0.000	0.028	0.028
Prior Yr Prod Dev no longer funded in the FYDP	Various	Various : Various	0.220	0.000		0.000		0.000		-		0.000	0.000	0.220	0.220
Systems Engineering	WR	NRL : Washington, DC	0.006	0.001	May 2017	0.018	May 2018	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	0.313	0.093		0.128		0.057		-		0.057	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	C/CPFF	ICI : Virginia Beach, VA	0.105	0.000		0.000		0.027	Nov 2018	-		0.027	0.000	0.132	0.132
Engineering Support	WR	NAWCWD : China Lake, CA	0.223	0.134	Oct 2016	0.100	Oct 2017	0.150	Oct 2018	-		0.150	Continuing	Continuing	Continuing
Engineering Support	C/CPFF	Hughes Associates : Baltimore, MD	0.027	0.020	Nov 2016	0.050	Nov 2017	0.035	Nov 2018	-		0.035	0.000	0.132	0.132
Engineering Support	C/CPFF	AVW : Chesapeake, VA	0.074	0.040	Nov 2016	0.035	Nov 2017	0.035	Nov 2018	-		0.035	0.000	0.184	0.184
Engineering Support	WR	NRL : Washington, DC	0.000	0.001	May 2017	0.018	May 2018	0.005	May 2019	-		0.005	Continuing	Continuing	Continuing
		Subtotal	0.429	0.195		0.203		0.252		-		0.252	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 1819 / *CV Acft Fire Suppress System*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Test & Evaluation	WR	NAWCWD : China Lake, CA	1.392	0.044	Oct 2016	0.150	Oct 2017	0.167	Oct 2018	-		0.167	Continuing	Continuing	Continuing
Technology Test & Evaluation	C/FFP	Hughes Associates : Baltimore, MD	0.538	0.015	Nov 2016	0.025	Nov 2017	0.050	Nov 2018	-		0.050	0.000	0.628	0.628
Technology Test & Evaluation	C/CPFF	AVW : Chesapeake, VA	0.012	0.010	Nov 2016	0.015	Nov 2017	0.000		-		0.000	0.000	0.037	0.037
Prior yr T&E no longer funded in the FYDP	Various	Various : Various	0.292	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	2.234	0.069		0.190		0.217		-		0.217	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	WR	NAWCWD : China Lake, CA	0.157	0.147	Oct 2016	0.066	Oct 2017	0.057	Oct 2018	-		0.057	Continuing	Continuing	Continuing
		Subtotal	0.157	0.147		0.066		0.057		-		0.057	Continuing	Continuing	N/A

	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	3.133	0.504		0.587		0.583		-		0.583	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 1819 / *CV Acft Fire Suppress System*

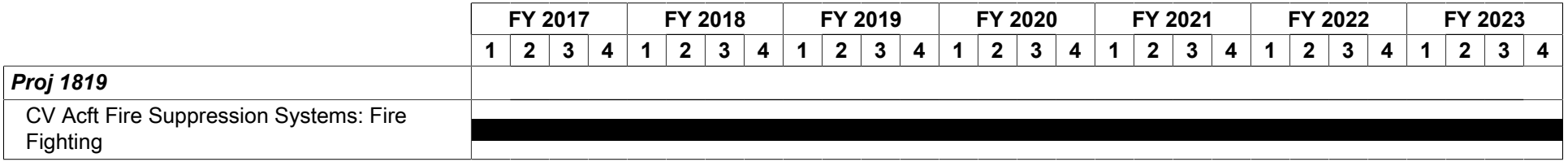


Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 1819 / *CV Acft Fire Suppress System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1819				
CV Acft Fire Suppression Systems: Fire Fighting	1	2017	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603216N / *Aviation Survivability*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.017	9.671	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	9.688
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Internal realignment being done to move this funding to the correct PE 0603261N.

A. Mission Description and Budget Item Justification

Congressional add. Funds are aligned to the Tactical Airborne Reconnaissance for enhanced mission intelligence, surveillance, and reconnaissance performance.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018
Congressional Add: Program Increase	9.671	0.000
FY 2017 Accomplishments: Congressional add. Funds are aligned to the Tactical Airborne Reconnaissance for enhanced mission intelligence, surveillance, and reconnaissance performance.		
FY 2018 Plans: N/A		
Congressional Adds Subtotals	9.671	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Congressional add to be determined.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603216N / *Aviation Survivability*	Project (Number/Name) 9999 / *Congressional Adds*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	Various	TBD : TBD	0.017	9.671	Sep 2017	0.000		0.000		-		0.000	0.000	9.688	-
		Subtotal	0.017	9.671		0.000		0.000		-		0.000	0.000	9.688	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
		Subtotal	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
		Subtotal	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.017	9.671		0.000		0.000		-		0.000	0.000	9.688	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 9999 / *Congressional Adds*

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	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 9999																												
Unmanned Systems Integration to National Airspace System: Congressional Add				[redacted]																								

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9999				
Unmanned Systems Integration to National Airspace System: Congressional Add	4	2017	2	2018