Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy											Date: February 2016	
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 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	173.600	4.280	10.904	5.239	-	5.239	5.847	5.809	5.830	5.956	Continuing	Continuing
0584: *Acft Protective Clothing*	95.693	1.363	2.306	2.441	-	2.441	2.701	2.627	2.647	2.703	Continuing	Continuing
0591: *Acft Survivability, Vulnerability & Safety*	42.481	1.346	1.476	1.383	-	1.383	1.493	1.515	1.520	1.554	Continuing	Continuing
0592: *Acft & Ordnance Safety*	33.389	1.045	1.043	0.907	-	0.907	1.064	1.070	1.063	1.086	Continuing	Continuing
1819: *CV Acft Fire Suppress System*	2.037	0.526	0.579	0.508	-	0.508	0.589	0.597	0.600	0.613	Continuing	Continuing
9999: *Congressional Adds*	0.000	0.000	5.500	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.500

Note

9999 Congressional Add belongs to 0603261N.

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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	4.325	5.404	6.113	-	6.113
Current President's Budget	4.280	10.904	5.239	-	5.239
Total Adjustments	-0.045	5.500	-0.874	-	-0.874
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	5.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.045	0.000			
• Rate/Misc Adjustments	0.000	0.000	-0.874	-	-0.874

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy	Date: February 2016
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 2015	FY 2016
Project: 9999: *Congressional Adds*		
Congressional Add: *Unmanned System Integration*	0.000	5.500
Congressional Add Subtotals for Project: 9999	0.000	5.500
Congressional Add Totals for all Projects	0.000	5.500

Change Summary Explanation

Technical: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
0584: *Acft Protective Clothing*	95.693	1.363	2.306	2.441	-	2.441	2.701	2.627	2.647	2.703	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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Advanced Technology Crew Station	0.806	1.272	1.292	0.000	1.292
Articles:	-	-	-	-	-

FY 2015 Accomplishments:

Continued development and testing of 4+ megapixel cameras and displays. Began integration into fully digital night vision goggle. Integrated head/neck injury model into protection flight equipment testing.

FY 2016 Plans:

Complete integration and development of 4 megapixel sensor, display, and electronics into a new variant of a night vision goggle. Integrated units will be used for environmental and other required testing to ready the capability for transition into safety of flight testing. Begin work on ultra-high resolution displays (20/15 acuity at overcast starlight) and solid state low light sensors. Begin verification and validation of head, neck and spine model for helmet mounted displays and the model's predictive validity of head mounted systems during crash events.

FY 2017 Base Plans:

Continue development of the seat vibration attenuation and continue to mature an aviation physiologic monitoring/warning system. Develop and evaluate potential second sources for high resolution digital near infra-red sensors and micro displays. Pursue the new silicon wafer design, Next Gen Electron Bombarded Active Pixel Sensor. Explore solid state low light sensors; alternate micro display technologies such as Wave Guide, Quantum dot, and flexible displays; and short wave infra-red sensor development.

FY 2017 OCO Plans:

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A					
Title: Advanced Integrated Life Support System	0.557	1.034	1.149	0.000	1.149
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Continued integrating anthropometric software and models into modeling for design of optimized protective equipment. Continued working with the Army to document and define methodologies to mitigate head/neck injury.					
FY 2016 Plans: Integrate recently patented stacked optical filter test methodology/device and determine true optical power and limits for helmet mounted systems. Complete and validate indicator of solar degradation on protective eyewear and equipment. Continue development of in-house expertise in digital human modeling and 3D scanning capabilities.					
FY 2017 Base Plans: Investigate active visor tinting and prototype integration with advanced helmet mounted display concepts. Assess optical quality of compound multiple surfaces on the aggregate optical powers. Complete testing of solarization indicators and determine type and location on spectacle or visor systems. Upgrade laser systems to assess the impact on laser bleaching of ultra-short pulses. Continue to mature on shore supplier of Dielectric Coatings. Mature digital human modeling capability which may include investing in additional crash testing. Performance moderators to the SANTOSHUMAN suite and add an additional joint H-46 crash test.					
FY 2017 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	1.363	2.306	2.441	0.000	2.441

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPN 4268: *Aviation Support Equipment*	47.105	49.773	39.099	-	39.099	35.574	40.367	60.537	60.928	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0584 / *Acft Protective Clothing*

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 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCAD : Pax River MD	32.650	0.577	Dec 2014	0.539	Dec 2015	0.267	Dec 2016	-		0.267	Continuing	Continuing	Continuing
Primary Hardware Development	C/CPFF	Intevac : San Jose CA	4.618	0.000		0.729	Jun 2016	0.720	Jun 2017	-		0.720	0.000	6.067	6.067
Primary Hardware Development	MIPR	US Army CERDEC : Ft. Belvoir VA	3.495	0.000		0.221	Jun 2016	0.400	Jun 2017	-		0.400	0.000	4.116	4.116
Primary Hardware Development	C/CPFF	TBD : TBD	0.000	0.000		0.000		0.530	Dec 2016	-		0.530	0.000	0.530	0.530
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	-
		Subtotal	64.103	0.577		1.489		1.917		-		1.917	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Configuration Management	WR	NAWCAD : Pax River MD	2.044	0.220	Dec 2014	0.130	Dec 2015	0.068	Dec 2016	-		0.068	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	-
		Subtotal	5.276	0.220		0.130		0.068		-		0.068	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD : Pax River MD	4.217	0.345	Dec 2014	0.400	Dec 2015	0.277	Dec 2016	-		0.277	Continuing	Continuing	Continuing
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	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	22.457	0.345		0.400		0.277		-		0.277	-	-	-

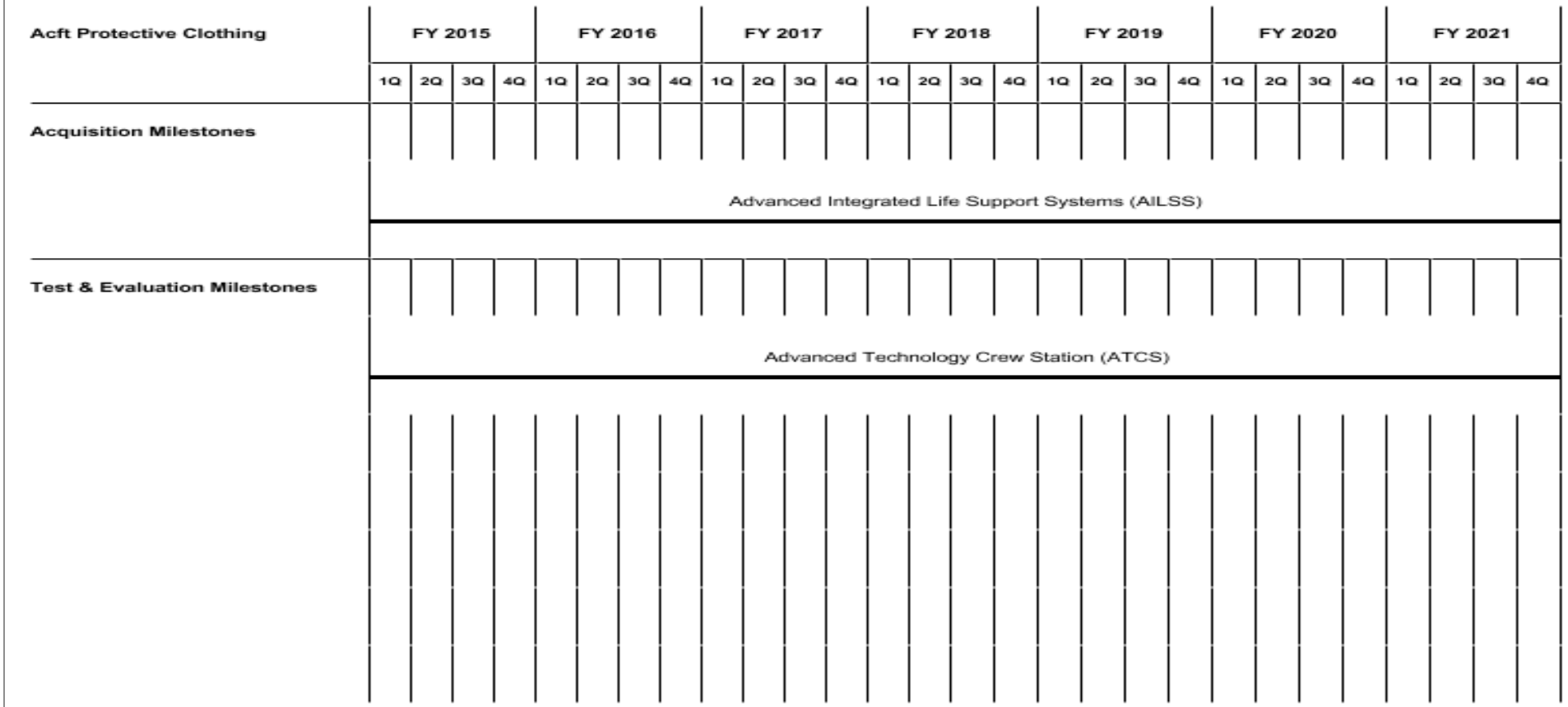
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Pax River MD	3.411	0.201	Dec 2014	0.272	Dec 2015	0.164	Dec 2016	-		0.164	Continuing	Continuing	Continuing
Travel	PO	NAVAIR : Pax River MD	0.436	0.020	Oct 2014	0.015	Oct 2015	0.015	Oct 2016	-		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	-
		Subtotal	3.857	0.221		0.287		0.179		-		0.179	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	95.693	1.363		2.306		2.441		-		2.441	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0584 / *Acft Protective Clothing*



2017DON - 0603216N - 0584

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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	2015	4	2021
Test & Evaluation Milestones: Advanced Technology Crew Station	1	2015	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
0591: *Acft Survivability, Vulnerability & Safety*	42.481	1.346	1.476	1.383	-	1.383	1.493	1.515	1.520	1.554	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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Technology Requirements	0.181	0.090	0.181	0.000	0.181
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Planned trade studies include acoustic and infrared signature reduction, rotary wing survivability requirements, threat systems analysis, and updates to the Survivability Master Plan.					
FY 2016 Plans: Planned trade studies include threats assessments, rotary wing survivability requirements, and vulnerability assessment of both fixed wing and rotary wing aircraft platforms.					
FY 2017 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 2017 OCO Plans: N/A					
Title: Technology Design & Development	1.165	0.990	0.944	0.000	0.944
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Assessed technologies to address shortfalls identified as part of the OPNAV Aircraft Survivability Investment Strategy project, with emphasis on acoustic and infrared signature reduction of operational platforms. Developed polymer applications for self-sealing fuel and lubricant systems to meet stated operational					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
requirements. Conduct asymmetric threats modeling and analyses based on accumulated combat field assessments. ***FY 2016 Plans:*** Assess technologies to address shortfalls identified as part of the OPNAV Aircraft Survivability Investment Strategy (OASIS) project. Establish an architecture to integrate Aviation Survivability Equipment (iASE) between USN/USMC aircraft platforms. ***FY 2017 Base Plans:*** Assess technologies to address shortfalls identified as part of the OASIS project. Establish an architecture to iASE between USN/USMC aircraft platforms. ***FY 2017 OCO Plans:*** N/A					
Title: Technology Test & Evaluation	0.000	0.396	0.258	0.000	0.258
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Performed testing on candidate signature reduction materials/hardware. Performed testing to validate asymmetric threats modeling results. ***FY 2016 Plans:*** Integration, laboratory and flight testing of prototype hardware in support of the iASE architecture development. Ballistic testing representative sample material against identified threats for incorporation into OASIS models. ***FY 2017 Base Plans:*** Integration, laboratory, and flight testing of prototype hardware in support of the iASE architecture development and in support of countermeasures simulation hardware. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.346	1.476	1.383	0.000	1.383

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2017 Navy		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCAD : Pax River, MD	12.558	0.186	Oct 2014	0.150	Oct 2015	0.120	Oct 2016	-		0.120	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCWD : China Lake, CA	0.196	0.082	Oct 2014	0.083	Oct 2015	0.066	Oct 2016	-		0.066	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	John Hopkins University : Laurel, MD	0.225	0.225	Apr 2015	0.225	Apr 2016	0.225	Apr 2017	-		0.225	0.000	0.900	0.900
Systems Engineering	MIPR	DTIC : Ft. Belvoir, VA	0.151	0.116	Jan 2015	0.257	Jan 2016	0.275	Jan 2017	-		0.275	0.000	0.799	-
System Engineering	C/CPFF	Engility : Chantilly, VA	0.000	0.520	Dec 2014	0.675	Dec 2015	0.554	Dec 2016	-		0.554	0.000	1.749	1.749
Prior Year Prod Dev cost no longer funded in FYDP	Various	Various : Various	17.242	0.000		0.000		0.000		-		0.000	0.000	17.242	-
		Subtotal	30.372	1.129		1.390		1.240		-		1.240	-	-	-

Remarks

Funding increases from FY16 to FY17 support the assessment of technologies to address shortfalls identified as part of the OASIS project.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 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	-
		Subtotal	4.569	0.000		0.000		0.000		-		0.000	0.000	4.569	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD : Patuxent River, MD	2.414	0.000		0.000		0.021	Oct 2016	-		0.021	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
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	-
		Subtotal	5.409	0.000		0.000		0.021		-		0.021	-	-	-

Remarks

Funding increase from FY16 to FY17 supports the integration, laboratory, and flight testing of prototype hardware in support of the iASE architecture development.

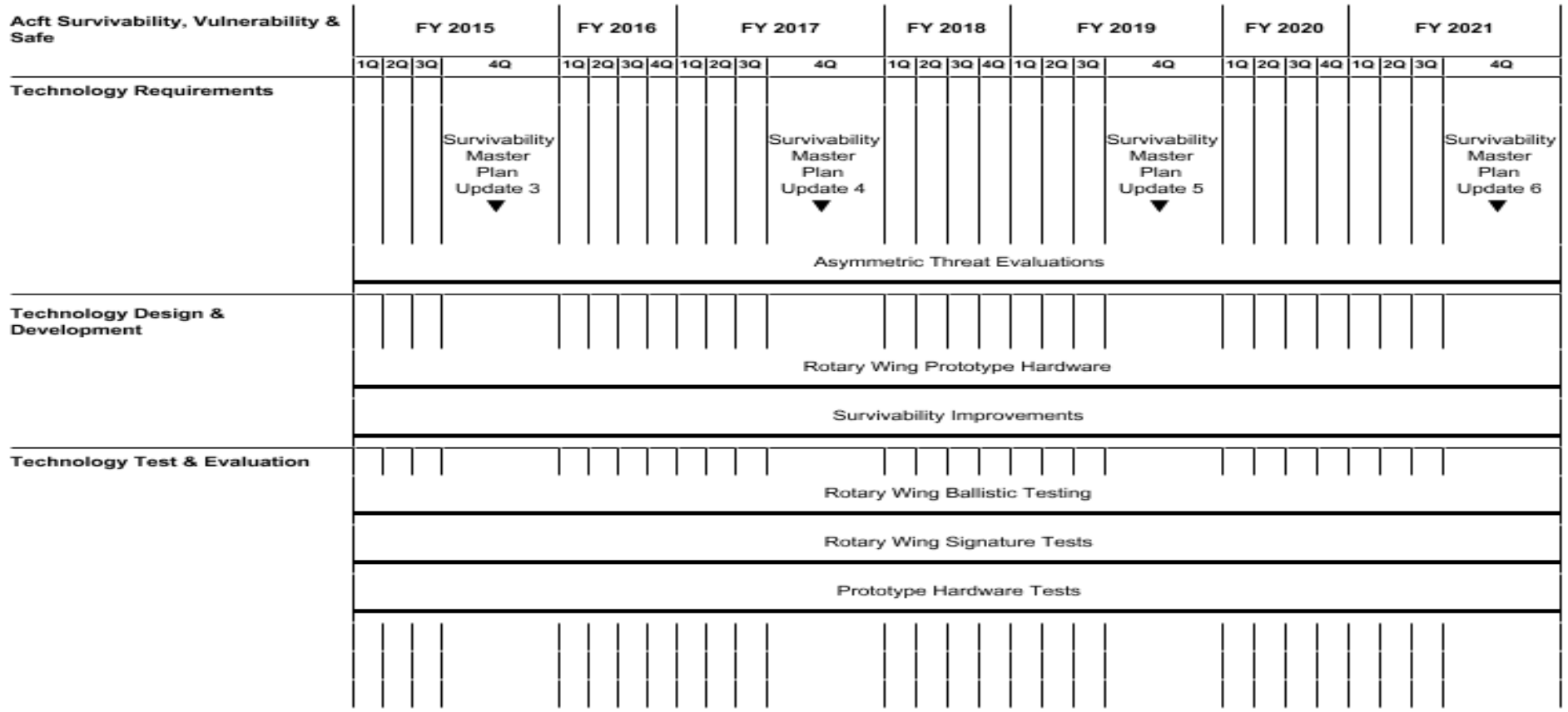
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Pax River, MD	1.426	0.212	Oct 2014	0.081	Oct 2015	0.117	Oct 2016	-		0.117	Continuing	Continuing	Continuing
Travel	PO	NAVAIR : Patuxent River, MD	0.365	0.005	Oct 2014	0.005	Oct 2015	0.005	Oct 2016	-		0.005	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	-
		Subtotal	2.131	0.217		0.086		0.122		-		0.122	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	42.481	1.346		1.476		1.383		-		1.383	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0591 / *Acft Survivability, Vulnerability & Safety*



2017OSD - 0603216N - 0591

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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 3	4	2015	4	2015
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: Asymmetric Threat Evaluations	1	2015	4	2021
Technology Design & Development: Rotary Wing Prototype Hardware	1	2015	4	2021
Technology Design & Development: Survivability Improvements	1	2015	4	2021
Technology Test & Evaluation: Rotary Wing Ballistic Testing	1	2015	4	2021
Technology Test & Evaluation: Rotary Wing Signature Tests	1	2015	4	2021
Technology Test & Evaluation: Prototype Hardware Tests	1	2015	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
0592: *Acft & Ordnance Safety*	33.389	1.045	1.043	0.907	-	0.907	1.064	1.070	1.063	1.086	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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Insensitive Munitions (IM)	1.045	1.043	0.907	0.000	0.907
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Improve Air-to-Air Demonstration: Continue Sidewinder warhead/rocket motor technology risk reduction evaluation in support of PMA 259 FY16 planned block II+/III transition. Continue IM technology evaluation for metal matrix composite rocket motor IM demonstration in support of future Navy rocket transitions. Improve Air-Launched Weapons: Continue minimum smoke (MS) propellant demonstration of a cast/cure MS composite propellant that will meet -65 degree requirement for fixed-wing platforms in the current Hellfire configuration. Conduct booster/explosive transition testing and system demonstrations for Joint Service Insensitive Munitions Technology Program transition explosive for the PMA-201 planned Bomb Live Unit 110 upgrade. Advanced Containment/Case/Warhead Materials: Initiate a Mk 135 rocket motor nozzle design/demonstration to improve operational performance in the hybrid Mk 135, enabling both improved IM and operational performance of the Tomahawk missile. Shock/Blast Barrier Protection Modeling, Demonstration, and Testing: Continue shape charge jet (SCJ) barrier evaluation/demonstration for SCJ mitigation in air-launched systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Advanced Energetic Materials: Finalize evaluation of coated explosive material premix for safe production scale manufacture of C-139 explosive (affordable, high-performance Insensitive Munitions (IM) explosive) and testing for new production research department explosive (elimination of browning effect). ***FY 2016 Plans:*** Improve Air-to-Air Demonstration: Continue Sidewinder warhead/rocket motor technology risk reduction evaluation in support of PMA-259 planned block II+/III transition with high-level group high-performance motor, digital detection initiator, improved multi-layered case warhead design, and radio frequency cook-off sensor. Continue IM technology evaluation for metal matrix composite rocket motor IM demonstration in support of future Navy rocket transitions. Improve Air-Launched Weapons: Continue final IM testing/static fire of minimum smoke (MS) propellant demonstration of a cast/cure MS composite propellant that will meet -65 degree requirement for fixed-wing platforms in the current Hellfire configuration. Conduct IM evaluation of the Bomb Live Unit (BLU) 110 vented base plug redesign that failed during previous qualification testing. Advanced Containment/Case/Warhead Materials: Demonstrate IM performance of the Joint Multiple Effects Warhead System warhead with the redesigned fuze well on the follow-through bomb to enhance survivability during penetration. Initiate an IM evaluation of Mk 135 rocket motor with venting on Mk 14 container used in both shipping and storage of Tomahawk. Shock/Blast Barrier Protection Modeling, Demonstration, and Testing: Continue shape charge jet (SCJ) barrier evaluation/demonstration for SCJ mitigation in air-launched systems. Advanced Energetic Materials: Evaluate a Joint Service Insensitive Munitions Technology Program (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 2017 Base Plans:*** Improve Air-to-Air Demonstration: Continue Sidewinder warhead/rocket motor technology risk reduction evaluation in support of PMA-259 planned block III transition with highly-loaded-grain, high-performance motor, digital detonation initiator, improved multi-layered case warhead design, and radio frequency cook-off sensor. Evaluate metal matrix composite rocket motor for application into air to air/ground weapon systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Improve Air-Launched Weapons: Continue Insensitive Munitions (IM) testing/static fire of minimum smoke propellant demonstration 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. Finalize IM evaluation of the Bomb Live Unit (BLU) 110 vented base plug redesign that failed during previous qualification testing and transition to PMA 201 for final qualification. Finalize evaluation of Highly-loaded-grain high performance rocket motor and application of Slow-cook-off-sensor technology in Advanced Anti-Radiation Guided Missile configuration for transition to PMA 242 Engineering, Manufacturing and Development (EMD). 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 EMD program. 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: Evaluate a Joint Service Insensitive Munitions Technology Program (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 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.045	1.043	0.907	0.000	0.907

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.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0592 / *Acft & Ordnance Safety*

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 2017 Navy		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCWD : China Lake, CA	33.381	1.045	Nov 2014	1.043	Oct 2015	0.907	Oct 2016	-		0.907	Continuing	Continuing	Continuing
		Subtotal	33.381	1.045		1.043		0.907		-		0.907	-	-	-

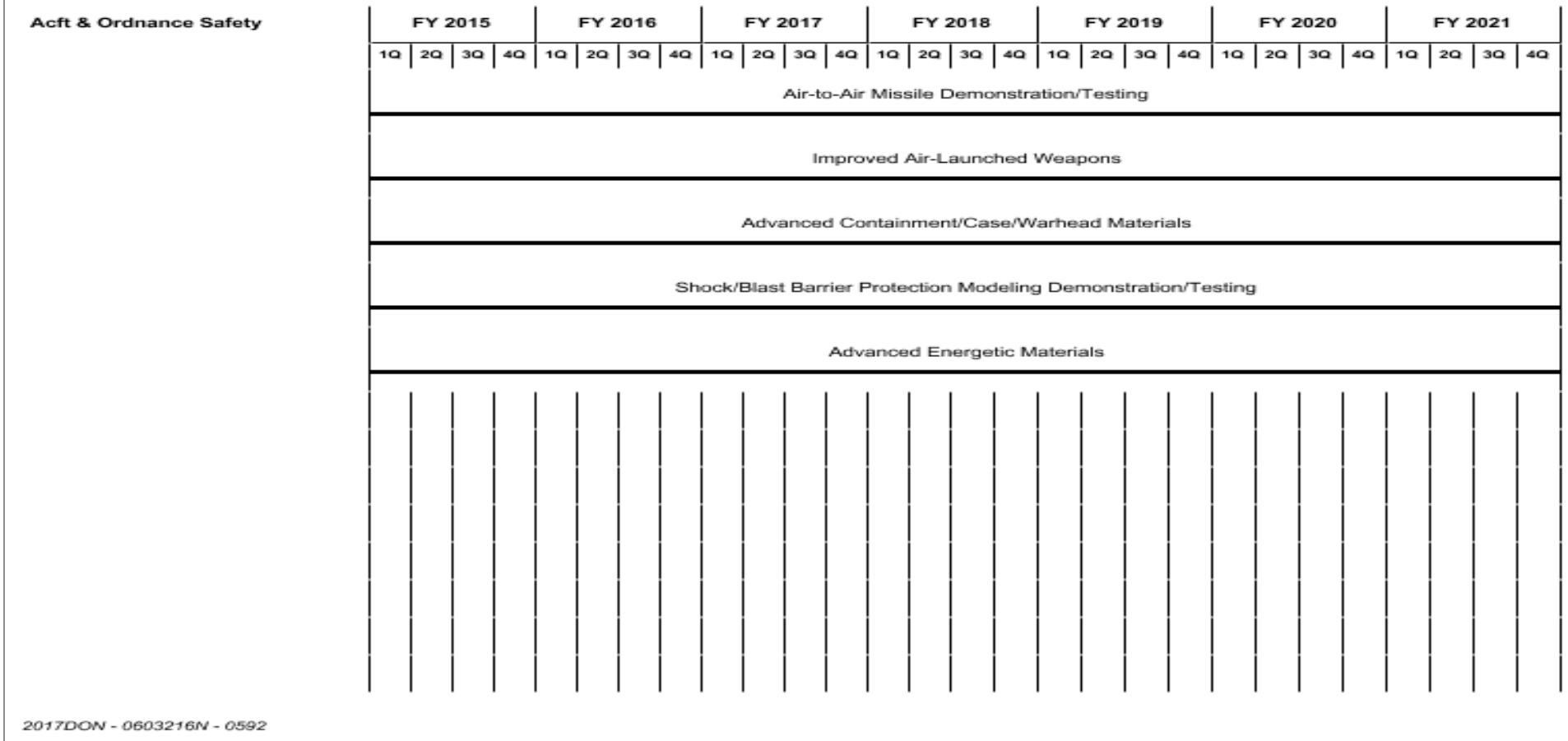
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 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	-
		Subtotal	0.008	0.000		0.000		0.000		-		0.000	0.000	0.008	-

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	33.389	1.045		1.043		0.907		-		0.907	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 0592 / *Acft & Ordnance Safety*



2017DON - 0603216N - 0592

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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	2015	4	2021
Improved Air-Launched Weapons	1	2015	4	2021
Advanced Containment/Case/Warhead Materials	1	2015	4	2021
Shock/Blast Barrier Protection Modeling Demonstration/Testing	1	2015	4	2021
Advanced Energetic Materials	1	2015	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
1819: *CV Acft Fire Suppress System*	2.037	0.526	0.579	0.508	-	0.508	0.589	0.597	0.600	0.613	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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Fire-Fighting	0.526	0.579	0.508	0.000	0.508
Articles:	-	-	-	-	-

FY 2015 Accomplishments:

Continue research to prevent aircraft loss and ship storage concerns due to Li-ion battery runaway casualty. Conclude research into thermal imaging camera usage in weapons cooling analysis and provide guidance for flight deck usage and training. Conduct research and testing of lightweight aircraft tiedown chains. Continue work on Electromagnetic Aircraft Launch Systems (EMALS) fire suppression procedures and equipment. Conduct research into commercial product or development to replace the existing flight deck crash-fire-rescue boot. Continue research into finding battery-operated rescue saw. Continue research and testing for development of procedures and training for helicopter rollover rescue aboard air-capable ships.

FY 2016 Plans:

Continue support for Naval Air Training and Operating Procedures Standardization improvements, and modeling and simulation for fire prediction. Complete the purple K efficiency based on particle size testing and industry assessment. Continue monitoring aqueous film forming foam developments and other clean agents. Continue to develop improved protocols for helicopter roll-over crashes, and evaluate equipment improvements for saws, spreaders, and other improvements. Evaluate flash-hood and crash-fire-rescue face shield improvements. Determine final requirements and business case for eye protection for metal and ordnance fires. Continue to monitor and recommend EMALS fire doctrine, Carrier Fixed Wing Aircraft Nuclear hangar bay conflagration management system operations, and unmanned carrier-launched airborne surveillance and strike firefighting operations impacts. Evaluate and develop the protocols to mitigate the risks of mixed fuels on-board carriers.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Prioritize highest payoff areas on carriers and other vessels that will lead to the development of automation systems to reduce manning. ***FY 2017 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 develop improved protocols for helicopter roll-over crashes, and evaluate equipment improvements for saws, spreaders, and other improvements. 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. Start new project looking at firefighter issues related to unmanned air vehicle systems including composites, weapons and fuels. Conduct testing on new sensor and automation systems to improve firefighter response to weapons fires. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.526	0.579	0.508	0.000	0.508

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 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPFF	ICI : Virginia Beach, VA	0.000	0.020	Dec 2014	0.000		0.000		-		0.000	0.000	0.020	0.020
Systems Engineering	WR	NAWCWD : China Lake, CA	0.000	0.000		0.083	Oct 2015	0.082	Oct 2016	-		0.082	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	Hughes Associates : Baltimore, MD	0.000	0.000		0.046	Nov 2015	0.005	Nov 2016	-		0.005	0.000	0.051	0.051
Systems Engineering	WR	NSWC : Philadelphia, PA	0.000	0.000		0.025	Oct 2015	0.018	Oct 2016	-		0.018	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	AVW : Chesapeake, VA	0.000	0.000		0.051	Nov 2015	0.000		-		0.000	0.000	0.051	0.051
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
		Subtotal	0.220	0.020		0.205		0.105		-		0.105	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	C/CPFF	ICI : Virginia Beach, VA	0.105	0.000		0.045	Nov 2015	0.015	Nov 2016	-		0.015	0.000	0.165	0.165
Engineering Support	WR	NAWCWD : China Lake, CA	0.000	0.000		0.098	Oct 2015	0.100	Oct 2016	-		0.100	Continuing	Continuing	Continuing
Engineering Support	C/CPFF	Hughes Associates : Baltimore, MD	0.000	0.000		0.051	Nov 2015	0.020	Nov 2016	-		0.020	0.000	0.071	0.071
Engineering Support	WR	NSWC : Philadelphia, PA	0.000	0.000		0.035	Oct 2015	0.018	Oct 2016	-		0.018	Continuing	Continuing	Continuing
Engineering Support	C/CPFF	AVW : Chesapeake, VA	0.000	0.062	Jan 2015	0.020	Nov 2015	0.040	Nov 2016	-		0.040	0.000	0.122	0.122
		Subtotal	0.105	0.062		0.249		0.193		-		0.193	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Test & Evaluation	WR	NAWCWD : China Lake, CA	0.868	0.326	Oct 2014	0.080	Oct 2015	0.130	Oct 2016	-		0.130	Continuing	Continuing	Continuing
Technology Test & Evaluation	C/FFP	Hughes Associates : Baltimore, MD	0.415	0.103	Dec 2014	0.020	Nov 2015	0.015	Nov 2016	-		0.015	0.000	0.553	0.553
Technology Test & Evaluation	C/CPFF	AVW : Chesapeake, VA	0.000	0.000		0.020	Nov 2015	0.000		-		0.000	0.000	0.020	0.020
Technology Test & Evaluation	C/CPFF	ICI : Virginia Beach, VA	0.000	0.000		0.000		0.010	Nov 2016	-		0.010	0.000	0.010	0.010
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	1.575	0.429		0.120		0.155		-		0.155	-	-	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management	WR	NAWCWD : China Lake, CA	0.137	0.015	Oct 2014	0.005	Oct 2015	0.055	Oct 2016	-		0.055	Continuing	Continuing	Continuing
		Subtotal	0.137	0.015		0.005		0.055		-		0.055	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.037	0.526		0.579		0.508		-		0.508	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 1819 / *CV Acft Fire Suppress System*

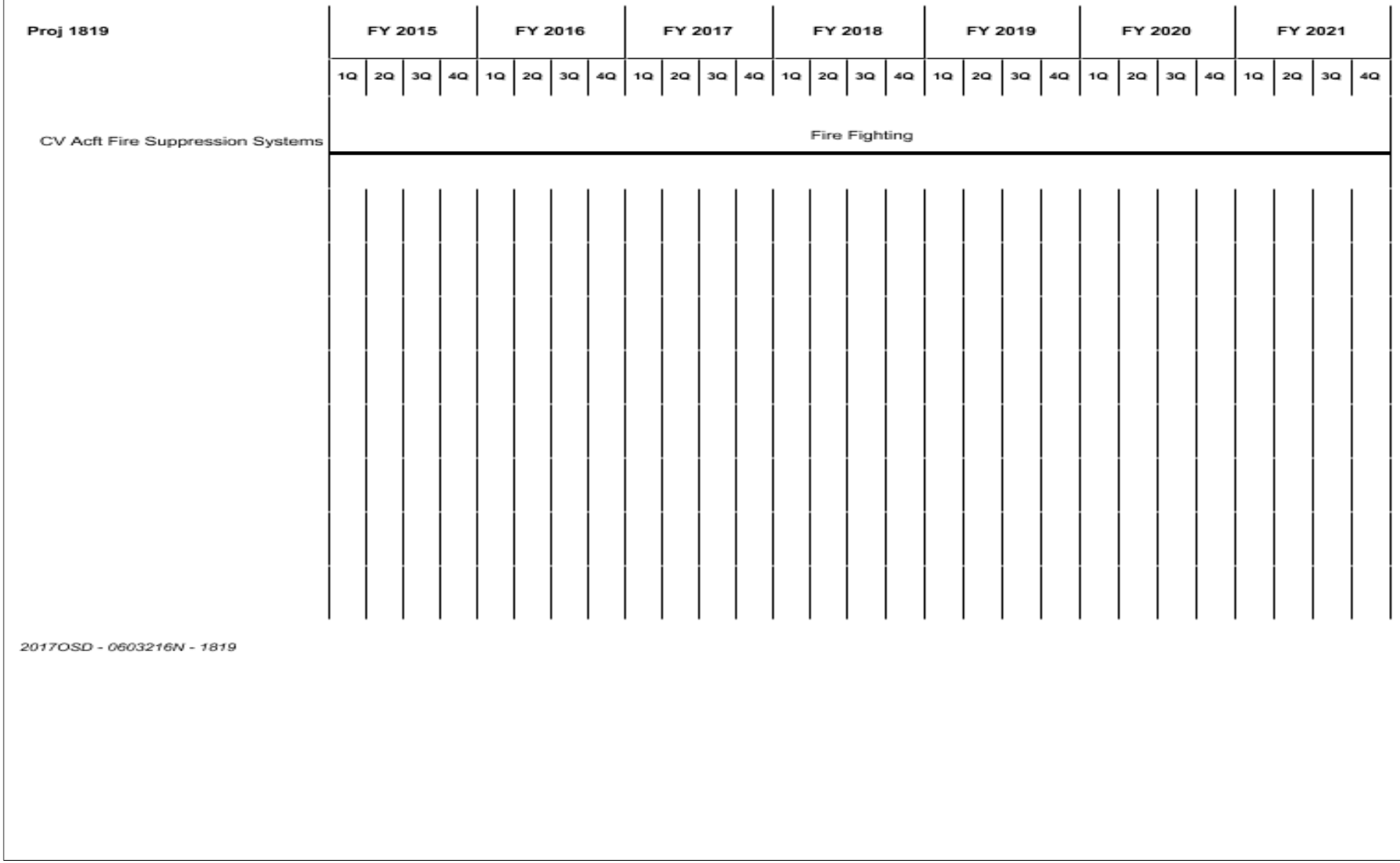


Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 1819 / *CV Acft Fire Suppress System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1819				
CV Acft Fire Suppression Systems: Fire Fighting	1	2015	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	0.000	5.500	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.500
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In order for Navy UAS to meet mission needs, both national and international policies relating to airspace access and use by UAS need to continue to evolve. Navy efforts will focus on advancing future policies that will permit unfettered access to airspace for UAS. Additionally, advancements are needed in Detect and Avoid technology in the areas of sensors, algorithms, and the integration of the sensors, displays, and integration with the U.S.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2015	FY 2016
Congressional Add: Unmanned System Integration	0.000	5.500
FY 2015 Accomplishments: N/A		
FY 2016 Plans: Develop Integrated Separation Concepts, Airspace Integration Safety Case/Assessment; Detect and Avoid and Fusion, Separation Algorithms, Safe and Efficient Terminal Airspace Surface Operations and Traffic/Airspace Information displays. Assess Availability/Quality of Surveillance Data, Human-Automation Interaction; and Predictability/Contingency Management.		
Congressional Adds Subtotals	0.000	5.500

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Navy's efforts are in alignment with the most recent Department of Defense Report to Congress on The Progress of Research Activities to Advance Access of Unmanned Aircraft Systems to the National Airspace System - Jan 2015.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	Various	Various : Not Specified	0.000	0.000		3.770	Mar 2016	0.000		-		0.000	0.000	3.770	-
		Subtotal	0.000	0.000		3.770		0.000		-		0.000	0.000	3.770	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering	WR	NAWCAD : Patuxent River, MD	0.000	0.000		1.500	Feb 2016	0.000		-		0.000	0.000	1.500	-
		Subtotal	0.000	0.000		1.500		0.000		-		0.000	0.000	1.500	-

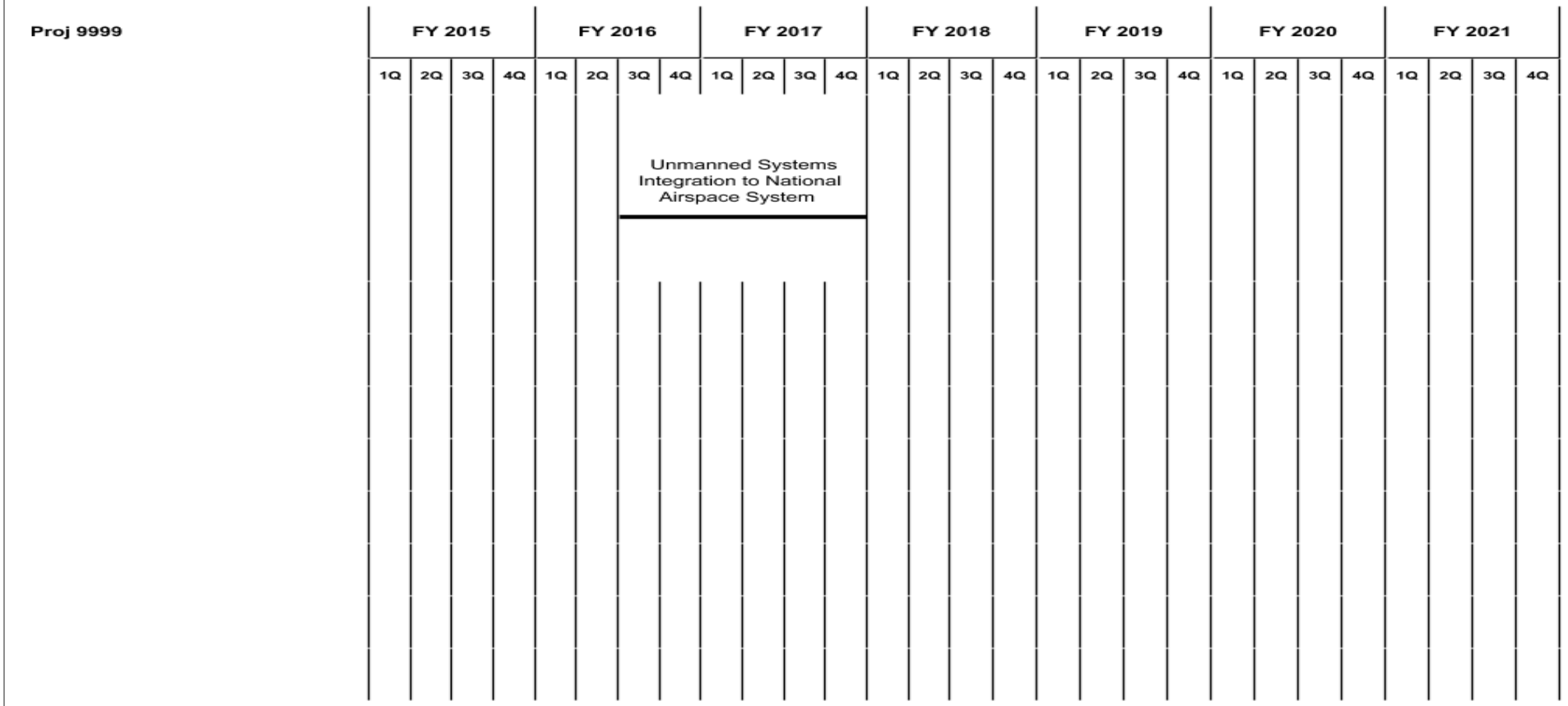
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.230	Feb 2016	0.000		-		0.000	0.000	0.230	-
		Subtotal	0.000	0.000		0.230		0.000		-		0.000	0.000	0.230	-

	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		5.500		0.000		-		0.000	0.000	5.500	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603216N / *Aviation Survivability*	**Project (Number/Name)** 9999 / *Congressional Adds*



2017PB - 0603216N - 9999

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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: Unmanned Systems Integration to National Airspace System	3	2016	4	2017

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