Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy											Date: May 2017	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	4,908.354	132.905	189.125	224.470	-	224.470	286.160	259.201	140.114	68.077	Continuing	Continuing
1662: *F/A-18 Improvement*	4,186.504	106.905	67.886	69.759	-	69.759	61.510	50.431	52.133	53.201	Continuing	Continuing
2065: *F/A-18 Radar Upgrade*	711.982	14.552	13.926	8.018	-	8.018	7.158	8.951	8.961	9.147	Continuing	Continuing
2069: *F/A-18 Infrared Search and Track (IRST)*	0.000	0.000	107.313	86.993	-	86.993	132.892	109.919	48.320	5.729	Continuing	Continuing
2071: *F/A-18 Block III*	0.000	0.000	0.000	59.700	-	59.700	84.600	89.900	30.700	0.000	0.000	264.900
9999: *Congressional Adds*	9.868	11.448	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.316
Program MDAP/MAIS Code: **Project MDAP/MAIS Code(s):** P510												

A. Mission Description and Budget Item Justification

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

Future integrated Carrier Air Wing CONOPS demand certain changes to the base line Block II Super Hornet. In response, the Block III Super Hornet is submitted. While none of the changes to the aircraft are considered revolutionary, the combined impact to the capability of the aircraft and its contribution to the Airwing are significant. The initial F/A-18 Block III concept includes low risk changes which can be incorporated in the near term with a combination of forward fit production line incorporation and via retrofit modifications to the aircraft already planned as part of the Service Life Modification (SLM) Plan. The FY18 budget request funds Non-Recurring (NRE) for these ECPs.

Congressional adds are for support of Dual Mode Brimstone and an engine noise reduction study. Funding added for Dual Mode Brimstone Integration on the F-18 aircraft has been reallocated to Universal Armament Interface (UAI) efforts. UAI implementation will bring the baseline standardized functionality to UAI compliant Air-to-Ground Type 1 weapons (standard launcher technology and enhanced functionality to UAI compliant Air-to-Ground Type 2 weapons (smart launcher technology)).

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

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy	Date: May 2017
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204136N *I F/A-18 Squadrons*

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	135.755	189.125	165.548	-	165.548
Current President's Budget	132.905	189.125	224.470	-	224.470
Total Adjustments	-2.850	0.000	58.922	-	58.922
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.011	0.000			
• SBIR/STTR Transfer	-2.840	0.000			
• Program Adjustments	0.000	0.000	58.386	-	58.386
• Rate/Misc Adjustments	0.001	0.000	0.536	-	0.536

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2016	FY 2017
Project: 9999: *Congressional Adds*		
Congressional Add: *Dual Mode Brimstone Integration*	10.000	0.000
Congressional Add: *Noise Reduction*	1.448	0.000
Congressional Add Subtotals for Project: 9999	11.448	0.000
Congressional Add Totals for all Projects	11.448	0.000

Change Summary Explanation

Technical:

1662: Not Applicable

2065: Not Applicable

2069: Not Applicable

2071: Block III request for F/A-18E/F capability upgrades Non-recurring Engineering (NRE) funding is included with the budget.

Schedule:

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy	Date: May 2017
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204136N *I F/A-18 Squadrons*

1662: The IRST LRIP II contract award for Block I systems has been deferred from 1st Quarter 2016 to 4th Quarter 2016, pending Milestone Decision Authority (MDA) approval.

Software Development build (31C) has been deferred from 1st Quarter 2016 to 1st Quarter 2017 to accommodate ongoing Software Development work with builds 27C and 29C work.

2065: Not Applicable

2069: IRST program schedule was changed.

2071: Block III request for F/A-18E/F capability upgrades Non-recurring Engineering (NRE) funding is included with the budget.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 1662 / *F/A-18 Improvement*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
1662: *F/A-18 Improvement*	4,186.504	106.905	67.886	69.759	-	69.759	61.510	50.431	52.133	53.201	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The F/A-18 is a multi-mission strike fighter aircraft that is used in Air-to-Air, strike, surveillance, reconnaissance and tanking roles through selected use of external equipment (fuel tanks, tactical and reconnaissance pods, and various ordnance launching racks). Additional capabilities are required for interoperability in a network-centric tactical environment. In order to respond effectively to emerging future threats, F/A-18 aircraft capabilities are being expanded and upgraded to incorporate new/enhanced weapons systems and avionics including Dual Mode Weapons, Counter-Electronic Attack (CEA), Infra-red Search and Track (IRST) integrated with the Active Electronically Scanned Array (AESA) Radar to provide Narrow Band High Gain Electronic Attack and Multi-System Integration. Continued advanced development engineering and analysis of hardware/software is required to successfully optimize fleet F/A-18 weapon systems for interoperability in a network centric tactical environment (such as Naval Integrated Fire Control-Counter Air), to include: enhanced software capabilities, potential new hardware development, enhanced existing hardware, and enhanced network centric capabilities. Additionally, continued effort is needed to perform technical evaluations, modeling and simulations, investigative flight testing, enhanced software modifications based on reported fleet deficiencies and the development and testing of design modifications to address obsolescence issues with the F/A-18 weapon system and ancillary equipment. This funding line continues F/A-18E/F "Flight Plan" spiral capability development, to include Multi-System Integration and further Flight Plan Engineering and System Configuration Set development and integration. This budget continues funding for F/A-18A-F Test Wing Maintenance support and funds development efforts needed for integration of air launched laser guided rockets on F/A-18 A+/C/D.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Infra-Red Search and Track (IRST)	43.365	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Technology development and engineering and manufacturing development of an IRST sensor for the F/A-18 E/F. Block I supports technology development and engineering and manufacturing development of an IRST sensor for the F/A-18E/F to provide an alternate fire control system in a high Electronic Attack / Radio Detection and Ranging (RADAR) denied environment. Block II IRST modifies the Infra-Red Receiver and processor to provide full Capabilities Development Document capability and enhanced warfighting capability through an improved engagement timeline, improved situational awareness, longer range passive detection and tracking and a larger field of regard with specification performance.					
FY 2016 Accomplishments:					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Begin additional development efforts for fleet required Long Wave Infrared Search and Track (LWIRST). Conduct Integrated Baseline Review 2 and Operational Test Readiness Review. Complete Integration Testing and start production on LRIP-2 (APN funded). ***FY 2017 Plans:*** N/A ***FY 2018 Base Plans:*** N/A ***FY 2018 OCO Plans:*** N/A					
Title: Multi-System Integration	32.131	35.124	49.148	0.000	49.148
Articles:	-	-	-	-	-
Description: Multi-System Integration migrates from the previous Multi-Sensor Integration Phased approach and allows for insertion of new technologies and requirements to keep pace with rapidly evolving warfighter demands. Also, includes a naming convention change in regards to System Configuration Set (SCS) builds 27, 29 & 31. Initially all "X" labeled builds to include Block I Super Hornets, now 27, 29, & 31 will no longer include Super Hornets thus going back to a "C" SCS label designation to include only legacy A-D aircraft. ***FY 2016 Accomplishments:*** Multi-System Integration will continue efforts begun with Multi-Sensor Integration Phase III including system software design and development. Primary efforts will be software driven through the development, integration and testing of System Configuration Sets H12, H14 and H16. Decision Superiority gaps in Air Warfare will be addressed through the ongoing integration of weapons and sensors combined with display improvements to enhance air-to-surface, air-to-air and Counter Electronic Attack sensor integration. Upgrades to display firmware, display symbology, Crew Vehicle Interface improvements and air-to-air Mission Tactical Picture improvements. Development and Integration of Precision Approach Landing Capability with Civilian Interoperability functionality implemented through a combined hardware and software solution utilizing a Civilian Instrument Landing System and Space Based Augmentation System including a Multi-Mode Receiver and Space Based Augmentation System enabled GPS receiver. Continued updates to Wingman Compatability improvements such as Unique Identification and Enhanced Interference Blanking Unit and continued updates to Integrated Defensive Counter Measures suite of electronic warfare hardware. ***FY 2017 Plans:***					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Flight Plan Multi-System Integration (MSI) of capabilities continue through System Configuration Set (SCS) mission computer, Joint Mission Planning System Unique Planning Component, and weapon system software updates associated with each incremental Block (H build) software update. Decision Superiority gaps in Air and Surface Warfare will continue with ongoing integration of weapons and sensors combined with Display Improvements to enhance air-to-surface, air-to-air and Counter Electronic Attack sensor integration. Increase to engineering efforts for integration of active and passive kill chain capabilities and sensors associated with flight plan Naval Integrated Fires Control, for Over the Horizon Anti-Surface Warfare and Strike Accelerator target identification transition efforts. MSI algorithm and sensor developmental efforts also increase at test activities for ongoing modeling and simulation upgrades such as Net Enabled Weapon Controller Interface Model interoperability software and equipment, and Live Virtual Construct interoperability efforts. ***FY 2018 Base Plans:*** Flight Plan Multi-System Integration (MSI) of capabilities continues through mission computer, Joint Mission Planning System Unique Planning Component (JMPS UPC), and weapon system software System Configuration Set (SCS) updates associated with each incremental Block (H build) software update. Advances in Super Hornet Air and Surface Warfare will continue with ongoing integration of weapons and sensors into a Common Tactical Picture (CTP), Display Improvements to enhance air-to-air and air-to-surface situational awareness and aircrew decision superiority, and Counter Electronic Attack enhancements to improve survivability and lethality. Increased engineering efforts for integration of active and passive kill chain capabilities and sensors associated with Flight Plan Naval Integrated Fire Control-Counter Air (NIFC-CA), Over the Horizon Anti-Surface Warfare (OASuW) and Strike Accelerator Future Naval Capability (FNC) Target Identification transition efforts continues. MSI algorithm and sensor developmental efforts also increase at test activities, including ongoing modeling and simulation upgrades such as Net Enabled Weapon Controller Interface Model interoperability software and equipment, and Live Virtual Constructive developmental efforts. Increased Test and Evaluation funding in FY18 provides funding to Commander Operational Test Forces (COTF) for MSI Operational Test (OT). ***FY 2018 OCO Plans:*** N/A					
Title: Flight Plan Engineering / System Configuration Set Development and Integration	25.863	26.956	18.011	0.000	18.011
Articles:	-	-	-	-	-
Description: Continue F/A-18 E/F and EA-18G "Flight Plan" spiral capability development is critical to the baseline of the Super Hornet next generation mission system capability. Funding will support the development, test and integration efforts required to maintain tactical relevance in support of Navy Aviation Plan 2030.					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
FY 2016 Accomplishments: Continue Flight Plan Engineering efforts to include F/A-18E/F improvements necessary for Super Hornet relevance and tactical supremacy; Navy Integrated Fire Control-Counter Air system configuration set requirements to support Navy Integrated Air and Missile Defense capability requirements and enhance F/A-18 Cooperative Engagement Capability. Funding supports development (hardware and software), test and integration efforts for Flight Plan requirements such as Distributed Targeting Processor-Networked to include Aided Target Recognition, Stationary Target Recognition, Maritime Multiple Target Track and Engagement, Multi-Level Security, Strike Accelerator and Advanced Tactical Data Link; Display Improvements for enhanced sensor integration; Tactical Targeting Network Technology internet protocol capability; Flight Path Control (Magic Carpet); and Precision Approach and Landing Capability, in support of Integrated Capability Package 2 and 3.					
FY 2017 Plans: Continue Flight Plan Engineering efforts to include F/A-18E/F improvements necessary for Super Hornet relevance and tactical supremacy, Navy Integrated Fire Control-Counter Air system configuration set requirements to support Navy Integrated Air and Missile Defense capability requirements and enhance F/A-18 Cooperative Engagement Capability. Funding supports (hardware and software), test and integration efforts for Flight Plan requirements such as Stationary Target Recognition, Maritime Multiple Target Track and Engagement, Multi-Level Security, Strike Accelerator and Advanced Tactical Data Link; Display Improvements for enhanced sensor integration; Tactical Targeting Network Technology internet protocol capability; Flight Path Control (Magic Carpet); and Precision Approach and Landing Capability, in support of Integrated Capability Package 2 and 3.					
FY 2018 Base Plans: Continue Flight Plan Engineering efforts to include F/A-18E/F improvements necessary for Super Hornet relevance and tactical supremacy, Navy Integrated Fire Control-Counter Air system configuration set requirements to support Navy Integrated Air and Missile Defense capability requirements and enhance F/A-18 Cooperative Engagement Capability. Funding supports (hardware and software), test and integration efforts for Flight Plan requirements such as Stationary Target Recognition, Maritime Multiple Target Track and Engagement, Multi-Level Security, Strike Accelerator and Advanced Tactical Data Link; Display Improvements for enhanced sensor integration; Tactical Targeting Network Technology internet protocol capability; Flight Path Control (Magic Carpet); and Precision Approach and Landing Capability, in support of Integrated Capability Package 2 and 3.					
FY 2018 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
N/A					
Title: Test Wing Maintenance Conversion	4.846	4.806	2.500	0.000	2.500
Articles:	-	-	-	-	-
Description: Funding supports maintenance of aircraft at NAVAIR Test Wing used to support Program Office objectives. ***FY 2016 Accomplishments:*** Performed aircraft maintenance on Test Wing aircraft. ***FY 2017 Plans:*** Performed aircraft maintenance on Test Wing aircraft. ***FY 2018 Base Plans:*** Perform aircraft maintenance on Test Wing aircraft. ***FY 2018 OCO Plans:*** N/A					
Title: F/A-18 Obsolescence Redesign	0.700	1.000	0.100	0.000	0.100
Articles:	-	-	-	-	-
Description: Develop and test modifications to address obsolescence issues. ***FY 2016 Accomplishments:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 weapon system and ancillary equipment obsolescence issues. ***FY 2017 Plans:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 weapon system and ancillary equipment obsolescence issues. ***FY 2018 Base Plans:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 weapon system and ancillary equipment obsolescence issues. ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	106.905	67.886	69.759	0.000	69.759

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• APN/0143: *EA-18G*	659.998	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12,707.707
• APN/05250: *F-18 SERIES MOD*	899.389	917.892	1,043.661	-	1,043.661	1,199.801	1,526.601	1,538.112	1,560.105	5,988.627	22,034.272
• RDTEN/3063: *EA-18G DEVELOPMENT*	45.384	116.761	173.488	-	173.488	152.520	68.097	68.651	53.812	Continuing	Continuing
• APN/0145: *FA-18E/F*	350.000	2,451.938	1,327.851	-	1,327.851	1,249.261	1,311.817	1,237.390	1,281.946	0.000	52,747.147
• APN/0145C: *FA-18E/F*	0.000	52.974	32.971	-	32.971	33.538	34.443	36.980	0.000	0.000	190.906

Remarks

D. Acquisition Strategy

The F/A-18 Improvement program consists of extensive spiral development efforts mapped out in the capability-based approach F/A-18 E/F "Flight Plan." These efforts are critical to the baseline of the Super Hornet next generation mission system capability and maintaining tactical relevance in support of Navy Aviation Plan 2030.
The major programs within the F/A-18 Improvement project are based on six Weapon System Capabilities: Net Centric Operations/Battle Space Management, Sensor Integration, Air to Ground and Maritime Attack, and Air to Air Attack. The major efforts included in this project are: Dual Mode Weapons integration; an Infra-Red Search and Track Multi-System Integration; continued advanced development and F/A-18E/F Flight Plan engineering and analysis; continued enhanced software capabilities development; and engineering support to perform technical evaluations, modeling and simulations, and investigative flight testing.
- Infra-Red Search and Track (IRST). The IRST Block I/II program is a Navy program in the Engineering Manufacturing and Development (EMD) phase.
- Multi-System Integration. Multi-System Integration development is provided on a sole source cost plus fixed fee contract on a Research and Development Basic Ordering Agreement to Boeing.

E. Performance Metrics

IRST Program achieved MS B on 17 June 2011 and achieved MS C on 02 December 2014.

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IRST - Primary Hardware Development Infra-Red Search and Track (IRST)	C/CPIF	Boeing : St. Louis, MO	164.191	3.625	Feb 2016	0.000		0.000		-		0.000	0.000	167.816	167.816
IRST - Primary Development	Various	nsma : Various	0.000	21.123	Jul 2016	0.000		0.000		-		0.000	0.000	21.123	-
Multi System Integration - Develop Sensor Integration	C/IDIQ	Various : Various	0.000	1.500	Feb 2016	12.500	Feb 2017	15.157	Feb 2018	-		15.157	Continuing	Continuing	Continuing
Multi-System Integration Development Support	WR	NAWCWD : China Lake, CA	0.000	0.000		13.500	Dec 2016	17.553	Dec 2017	-		17.553	0.000	31.053	-
Multi-System Integration Development Support	WR	NAWCAD : Pax River, MD	0.000	0.000		5.000	Dec 2016	9.659	Dec 2017	-		9.659	0.000	14.659	-
Flight Plan / PALC(WAAS)	C/CPFF	Boeing : St. Louis, MO	0.000	3.650	Jul 2016	3.664	Jul 2017	3.188	Aug 2018	-		3.188	0.000	10.502	10.502
Flight Plan/SCS Development(Magic Carpet)	C/CPIF	GE : Various	0.000	5.000	Mar 2016	0.000		0.000		-		0.000	0.000	5.000	5.000
Flight Plan/SCS Development	WR	NAWCAD : Pax River, MD	4.331	1.820	Jan 2016	5.496	Dec 2016	1.000	Dec 2017	-		1.000	0.000	12.647	-
Flight Plan/SCS Development (Magic Carpet)	C/CPIF	Boeing : St. Louis, MO	0.000	7.433	Jan 2016	11.454	Dec 2016	4.500	Dec 2017	-		4.500	0.000	23.387	23.387
Flight Plan/SCS Development	Various	DMEA : Various	0.000	0.000		0.000		4.600	Dec 2017	-		4.600	0.000	4.600	-
Prior Year Prod Dev cost no longer funded in FYDP	Various	Various : Various	580.487	0.000		0.000		0.000		-		0.000	0.000	580.487	-
		Subtotal	749.009	44.151		51.614		55.657		-		55.657	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 1662 / *F/A-18 Improvement*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IRST - Software (S/W) Development	WR	NAWCWD : China Lake, CA	10.318	1.370	Dec 2015	0.000		0.000		-		0.000	0.000	11.688	-
IRST - Development Support	WR	NAWCWD : China Lake, CA	6.894	0.332	Dec 2015	0.000		0.000		-		0.000	0.000	7.226	-
IRST - Development Support	WR	NAWCAD : Pax River, MD	15.867	2.100	Dec 2015	0.000		0.000		-		0.000	0.000	17.967	-
IRST - Development Support	WR	NAWCAD : Lakehurst, NJ	3.007	0.707	Dec 2015	0.000		0.000		-		0.000	0.000	3.714	-
IRST - Development Support	WR	FRC Southeast : Jacksonville, FL	5.861	0.503	Dec 2015	0.000		0.000		-		0.000	0.000	6.364	-
Multi-System Integration Development Support	WR	NAWCAD : Pax River, MD	3.250	2.113	Dec 2015	0.000		0.000		-		0.000	0.000	5.363	-
Multi-System Integration Development Support	WR	NAWCWD : China Lake, CA	3.775	14.733	Jan 2016	0.000		0.000		-		0.000	0.000	18.508	-
Multi-System Integration Development Support	SS/IDIQ	Boeing : St. Louis, MO	4.500	8.620	Dec 2015	0.000		0.000		-		0.000	0.000	13.120	13.120
Multi-System Integration Development Support	WR	NSMA : Arlington, VA	2.300	2.300	Mar 2016	2.300	Mar 2017	1.679	Mar 2018	-		1.679	Continuing	Continuing	Continuing
Flight Plan/System Configuration Set Development & Integration	WR	NAWCAD : Pax River, MD	2.165	0.898	Nov 2015	2.714	Nov 2016	0.350	Nov 2017	-		0.350	Continuing	Continuing	Continuing
Obsolescence Redesign	Various	Various : Various	0.200	0.700	Jun 2016	1.000	Jun 2017	0.100	Jun 2018	-		0.100	Continuing	Continuing	Continuing
Prior Year Support costs no longer funded in FYDP	Various	Various : Various	3,022.595	0.000		0.000		0.000		-		0.000	0.000	3,022.595	-
		Subtotal	3,080.732	34.376		6.014		2.129		-		2.129	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IRST - Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Pax River, MD	16.633	1.100	Dec 2015	0.000		0.000		-		0.000	0.000	17.733	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 1662 / *F/A-18 Improvement*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
IRST - DT&E	WR	NAWCWD : China Lake, CA	19.500	3.500	Dec 2015	0.000		0.000		-		0.000	0.000	23.000	-
IRST - Operational Test & Evaluation (OT&E)	WR	OPTEVFOR : VX-9	7.406	4.940	Dec 2015	0.000		0.000		-		0.000	0.000	12.346	-
Multi-System Integration	WR	OPTEVFOR : Norfolk, VA	0.661	0.800	Dec 2015	0.000		5.100	Dec 2017	-		5.100	Continuing	Continuing	Continuing
Flight Plan/SCS Test & Evaluation	WR	NAWCAD : Pax River, MD	0.000	1.000	Nov 2015	1.000	Dec 2016	0.000		-		0.000	0.000	2.000	-
AIM-120 Test Assets	MIPR	USAF : Eglin AFB, FL	2.000	2.000	Dec 2015	0.000		0.000		-		0.000	0.000	4.000	-
Prior Year T&E costs no longer funded in FYDP	Various	Various : Various	135.335	0.000		0.000		0.000		-		0.000	0.000	135.335	-
		Subtotal	181.535	13.340		1.000		5.100		-		5.100	-	-	-

Remarks

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

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Mgmt Support - MISC	Various	NAWCAD : Pax River, MD	14.205	2.100	Dec 2015	0.659	Dec 2016	0.659	Dec 2017	-		0.659	Continuing	Continuing	Continuing
Seaport CSS - Program Management Support	C/CPFF	Wyle Lab : Pax River, MD	21.324	3.442	Mar 2016	2.626	Dec 2016	2.603	Dec 2017	-		2.603	0.000	29.995	29.995
Travel	Various	NAVAIR : Pax River, MD	5.173	0.250	Nov 2015	0.250	Nov 2016	0.250	Nov 2017	-		0.250	Continuing	Continuing	Continuing
Test Wing Maintenance Conversion	WR	NAWCAD : Pax River, MD	30.157	2.423	Dec 2015	2.403	Dec 2016	1.250	Dec 2017	-		1.250	Continuing	Continuing	Continuing
Test Wing Maintenance Conversion	WR	NAWCWD : China Lake, CA	31.083	2.423	Dec 2015	2.403	Dec 2016	1.250	Dec 2017	-		1.250	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 1662 / *F/A-18 Improvement*	

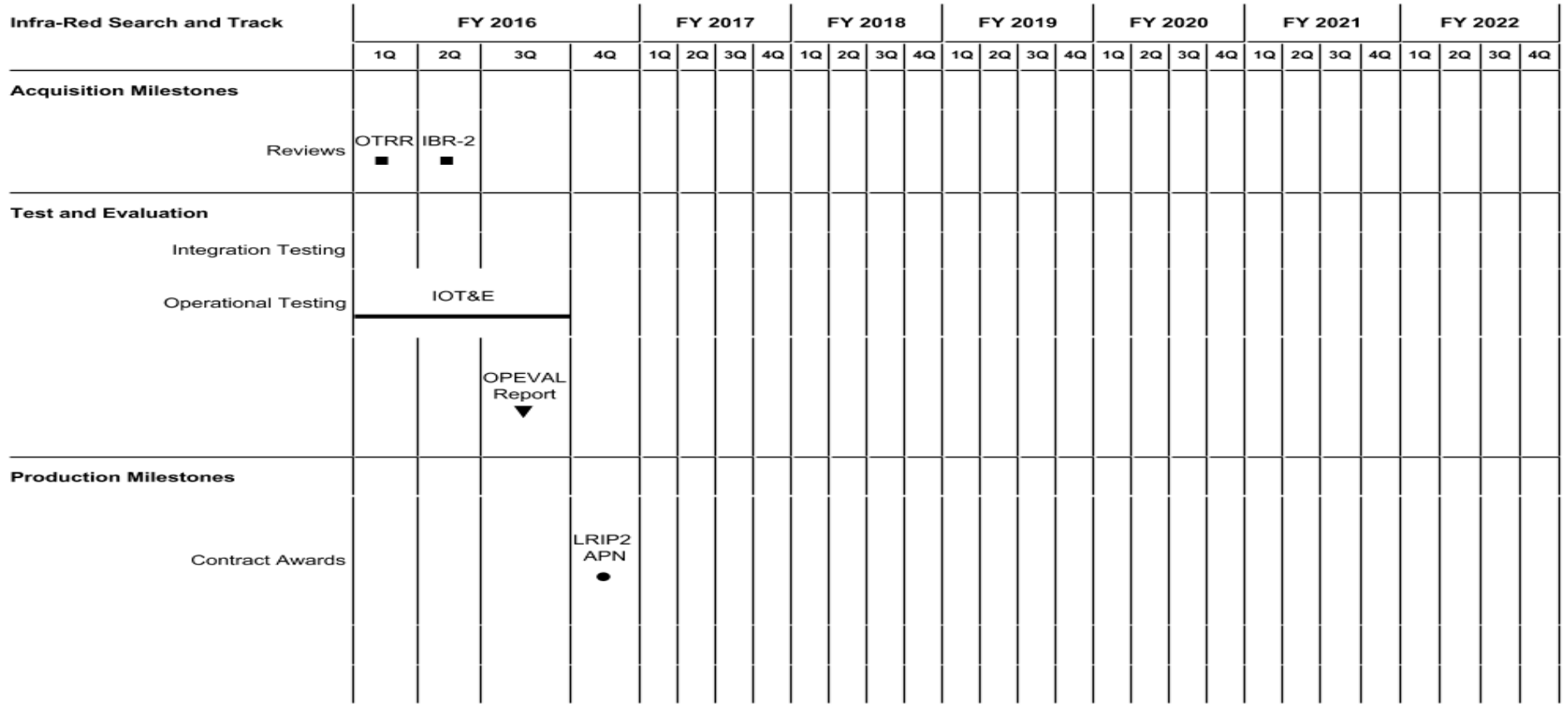
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Flight Plan / System Configuration Set Development & Integration	WR	NAWCAD : Pax River, MD	4.150	2.200	Dec 2015	0.459	Dec 2016	0.431	Dec 2017	-		0.431	Continuing	Continuing	Continuing
Flight Plan / System Configuration Set Development & Integration	WR	NAWCWD : China Lake, CA	4.150	2.200	Dec 2015	0.458	Dec 2016	0.430	Dec 2017	-		0.430	Continuing	Continuing	Continuing
Prior Year Mgmt costs no longer funded in FYDP	Various	Various : Various	64.986	0.000		0.000		0.000		-		0.000	0.000	64.986	-
		Subtotal	175.228	15.038		9.258		6.873		-		6.873	-	-	-

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4,186.504	106.905		67.886		69.759		-		69.759	-	-	-

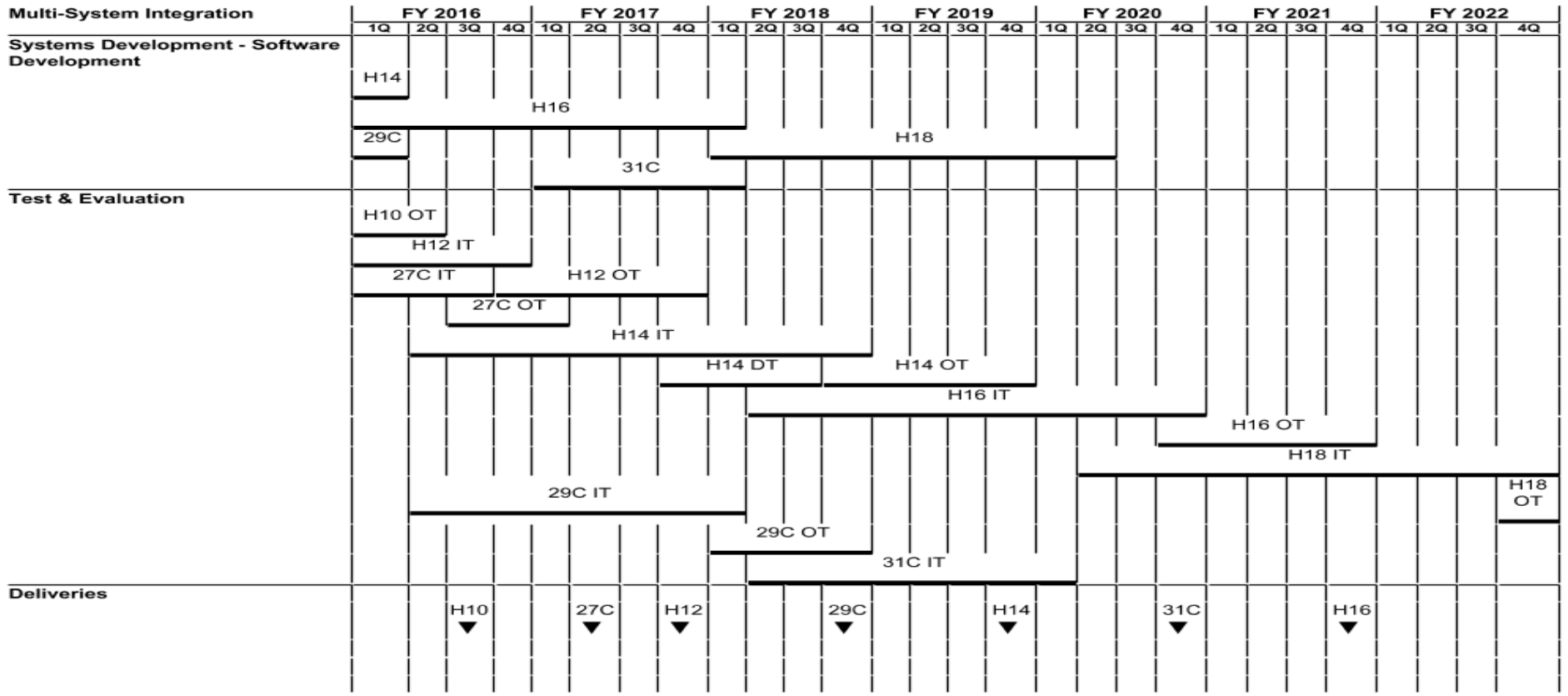
Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



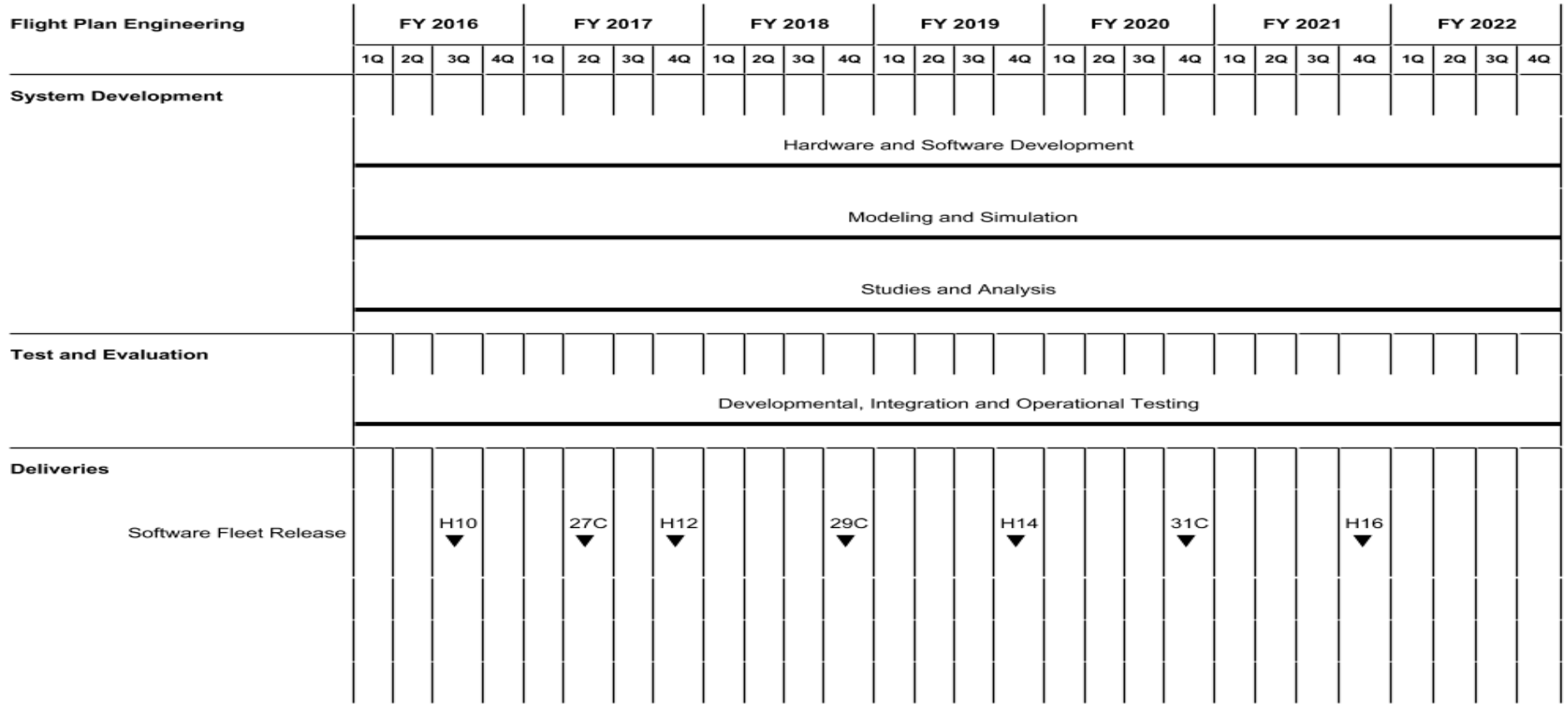
2018PB - 0204136N - 1662

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



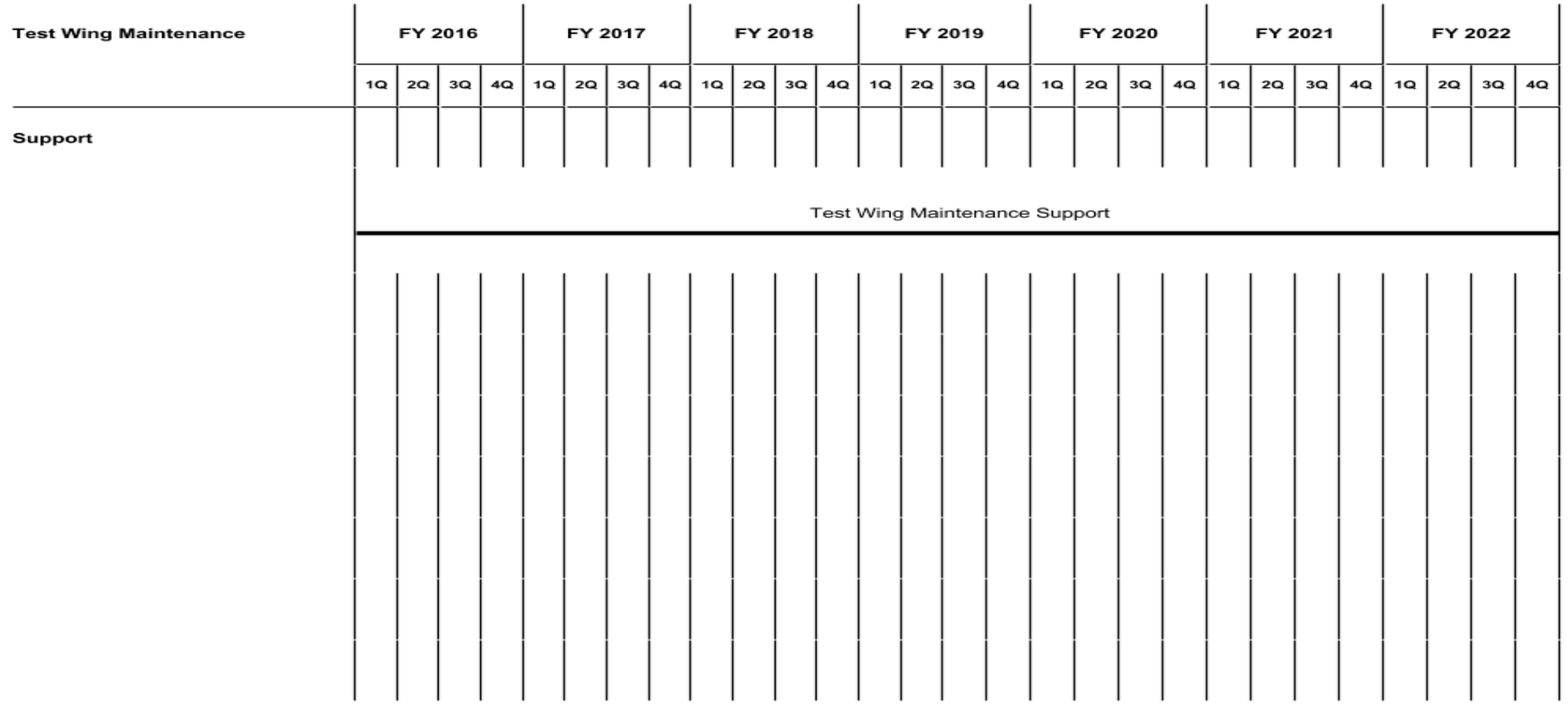
2018PB - 0204136N - 1662

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



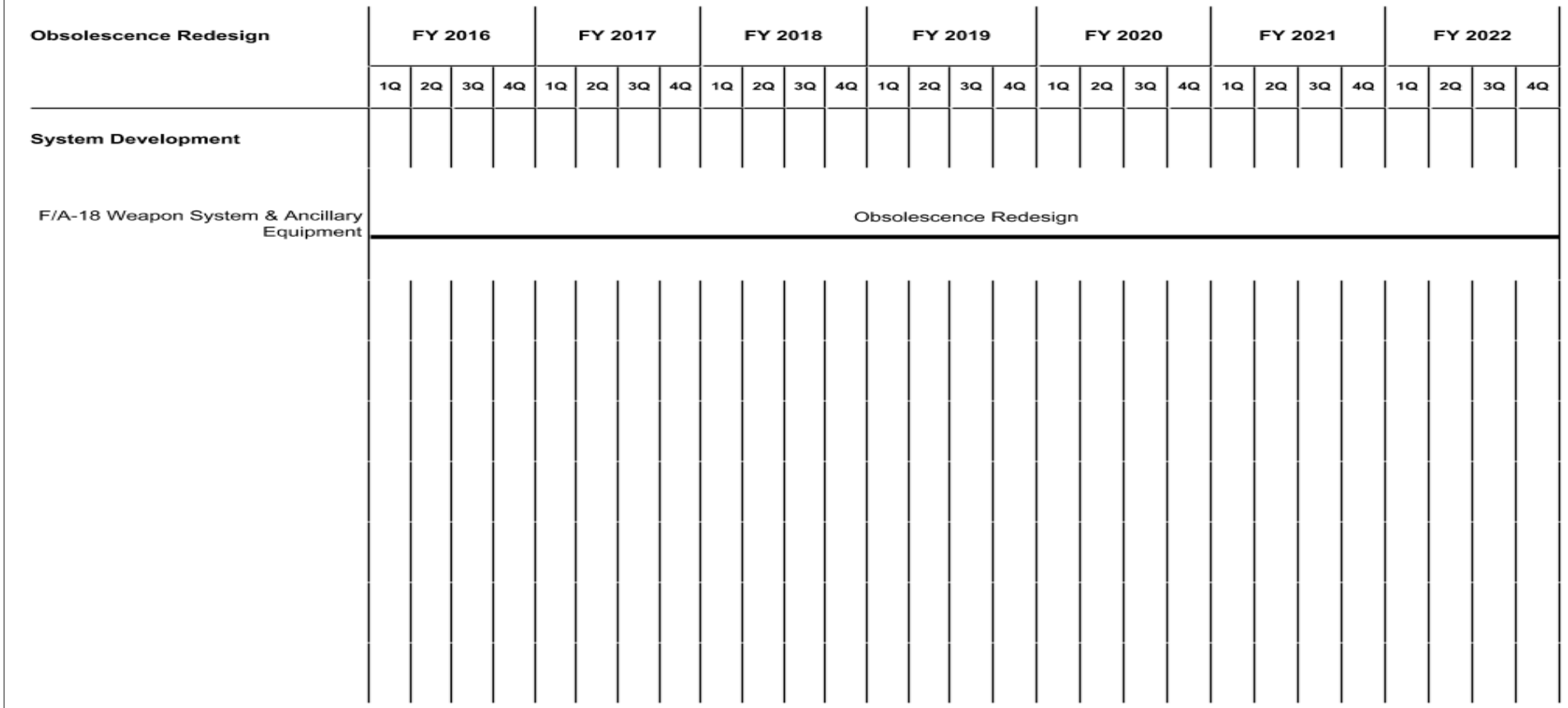
2018PB - 0204136N - 1662

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



2018PB - 0204136N - 1662

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*



2018PB - 0204136N - 1662

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Infra-Red Search and Track				
Acquisition Milestones: Reviews: Integrated Baseline Review (IBR) - 2	2	2016	2	2016
Acquisition Milestones: Reviews: Operational Testing Readiness Review (OTRR)	1	2016	1	2016
Test and Evaluation: Operational Testing: Integrated Operational Test & Evaluation (IOT&E)	1	2016	3	2016
Test and Evaluation: Operational Testing: OPEVAL Report	3	2016	3	2016
Production Milestones: Contract Awards: LRIP 2 APN	4	2016	4	2016
Multi-System Integration				
Systems Development - Software Development: H14 Software Development	1	2016	1	2016
Systems Development - Software Development: H16 Software Development	1	2016	1	2018
Systems Development - Software Development: H18 Software Development	1	2018	2	2020
Systems Development - Software Development: 29C Software Development	1	2016	1	2016
Systems Development - Software Development: 31C Software Development	1	2017	1	2018
Test & Evaluation: H10 Operational Testing	1	2016	2	2016
Test & Evaluation: H12 Integration Testing	1	2016	4	2016
Test & Evaluation: H12 Operational Testing	4	2016	4	2017
Test & Evaluation: 27C Integration Testing	1	2016	3	2016
Test & Evaluation: 27C Operational Testing	3	2016	1	2017
Test & Evaluation: H14 Integration Testing	2	2016	4	2018
Test & Evaluation: H14 Developmental Testing	4	2017	3	2018
Test & Evaluation: H14 Operational Testing	4	2018	4	2019
Test & Evaluation: H16 Integration Testing	2	2018	4	2020
Test & Evaluation: H16 Operational Testing	4	2020	4	2021

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test & Evaluation: H18 Integration Testing	2	2020	4	2022
Test & Evaluation: H18 Operational Testing	4	2022	4	2022
Test & Evaluation: 29C Integration Testing	2	2016	1	2018
Test & Evaluation: 29C Operational Testing	1	2018	4	2018
Test & Evaluation: 31C Integration Testing	2	2018	1	2020
Deliveries: H10 Fleet Release	3	2016	3	2016
Deliveries: H12 Fleet Release	4	2017	4	2017
Deliveries: 27C Fleet Release	2	2017	2	2017
Deliveries: 29C Fleet Release	4	2018	4	2018
Deliveries: H14 Fleet Release	4	2019	4	2019
Deliveries: H16 Fleet Release	4	2021	4	2021
Deliveries: 31C Fleet Release	4	2020	4	2020
Flight Plan Engineering				
System Development: Hardware and Software Development	1	2016	4	2022
System Development: Modeling and Simulation	1	2016	4	2022
System Development: Studies and Analysis	1	2016	4	2022
Test and Evaluation: Developmental, Integration and Operational Testing	1	2016	4	2022
Deliveries: Software Fleet Release: H10 Fleet Release	3	2016	3	2016
Deliveries: Software Fleet Release: H12 Fleet Release	4	2017	4	2017
Deliveries: Software Fleet Release: 27C Fleet Release	2	2017	2	2017
Deliveries: Software Fleet Release: 29C Fleet Release	4	2018	4	2018
Deliveries: Software Fleet Release: H14 Fleet Release	4	2019	4	2019
Deliveries: Software Fleet Release: H16 Fleet Release	4	2021	4	2021
Deliveries: Software Fleet Release: 31C Fleet Release	4	2020	4	2020
Test Wing Maintenance				
Support: Test Wing Maintenance Support	1	2016	4	2022

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 1662 / *F/A-18 Improvement*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Obsolescence Redesign				
System Development: F/A-18 Weapon System & Ancillary Equipment: Obsolescence Redesign Development & Testing	1	2016	4	2022

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy										Date: May 2017		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*				Project (Number/Name) 2065 / *F/A-18 Radar Upgrade*			
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
2065: *F/A-18 Radar Upgrade*	711.982	14.552	13.926	8.018	-	8.018	7.158	8.951	8.961	9.147	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

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

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**
Title: Distributed Targeting - CEA Software Development, Developmental Testing, Operational Testing, & Integration	14.372	12.691	5.788	0.000	5.788
Articles:	-	-	-	-	-
Description: Funding being utilized to support hardware (HW) and software (SW) capabilities development, integration and associated testing.					
FY 2016 Accomplishments: Continue SW development, integration and testing of instrumentation required to support AESA RADAR spiral capability upgrades. Funds program management and engineering support required for the APG-65/73-79 RADAR systems.					
FY 2017 Plans: Continue HW/SW development, integration and testing of instrumentation required to support AESA RADAR spiral capability upgrades. Funds program management and engineering support required for the APG-65/73-79 RADAR systems.					
FY 2018 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2065 / *F/A-18 Radar Upgrade*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Continue HW/SW development, integration and testing of instrumentation required to support AESA RADAR spiral capability upgrades. Funds engineering efforts associated with software development and integration of active and passive kill chain capabilities and sensors into the AESA Radar in support of CEA. ***FY 2018 OCO Plans:*** N/A					
Title: F/A-18 RADAR Obsolescence Redesign ***Articles:*** ***Description:*** Develop and test design modifications to address obsolescence issues. ***FY 2016 Accomplishments:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 RADAR system obsolescence issues. ***FY 2017 Plans:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 RADAR system obsolescence issues. ***FY 2018 Base Plans:*** Develop and test design modifications to hardware components and software systems in response to F/A-18 RADAR system obsolescence issues. ***FY 2018 OCO Plans:*** N/A	0.180 -	1.235 -	2.230 -	0.000 -	2.230 -
Accomplishments/Planned Programs Subtotals	14.552	13.926	8.018	0.000	8.018

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• APN/0143: *EA-18G*	659.998	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12,707.707
• APN/05250: *F-18 Series Mod (OSIP 002-07)*	110.818	148.546	197.762	-	197.762	95.145	282.659	156.838	150.024	167.536	2,147.375
• APN/0145: *FA-18E/F*	350.000	2,451.938	1,327.851	-	1,327.851	1,249.261	1,311.817	1,237.390	1,281.946	0.000	52,747.147
• APN/0145C: *FA-18E/F*	0.000	52.974	32.971	-	32.971	33.538	34.443	36.980	0.000	0.000	190.906

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2065 / *F/A-18 Radar Upgrade*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

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

E. Performance Metrics

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

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 2069 / *F/A-18 Infrared Search and Track (IRST)*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
2069: *F/A-18 Infrared Search and Track (IRST)*	0.000	0.000	107.313	86.993	-	86.993	132.892	109.919	48.320	5.729	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: P510

A. Mission Description and Budget Item Justification

F/A-18 Infra-Red Search and Track (IRST): The F/A-18 E/F IRST system is a passive long-wave Infra-Red (IR) sensor which provides an alternate fire control system in a high Electronic Attack / Radio Detection and Ranging (RADAR) denied environment. The IRST Block II Engineering Change Proposal (ECP) upgrades two Weapons Replaceable Assemblies (WRAs); the Infra-Red Receiver (IRR) and processor in order to provide full Capabilities Development Document (CDD) capability and enhanced warfighting capability through an improved engagement timeline, improved situational awareness, longer range passive detection and tracking and a larger field of regard with specification performance.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: Infra-Red Search and Track (IRST)	0.000	107.313	86.993	0.000	86.993
Articles:	-	6	-	-	-
Description: Technology development and engineering and manufacturing development of an IRST sensor for the F/A-18 E/F. Block I supports technology development and engineering and manufacturing development of an IRST sensor for the F/A-18E/F to provide an alternate fire control system in a high Electronic Attack / Radio Detection and Ranging (RADAR) denied environment. Block II IRST upgrades the Infra-Red Receiver (IRR) and processor to provide full Capabilities Development Document (CDD) capability and enhanced warfighting capability through an improved engagement timeline, improved situational awareness, longer range passive detection and tracking and a larger field of regard with specification performance.					
FY 2016 Accomplishments: N/A					
FY 2017 Plans: Complete IRST Block II ECP Development Phase 1. Conduct IRST Block II ECP Preliminary Design Review. Begin IRST Block II ECP Development Phase 2, procure six IRST Block II EDMs (RDT&E funded). Continue					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2069 / *F/A-18 Infrared Search and Track (IRST)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
IRST Integration Testing. Begin Block I EDM conversion to Block II configuration. Award IRST Block I LRIP-3 production contract (APN funded). ***FY 2018 Base Plans:*** Continue IRST Block II ECP Development Phase 2. Continue Block I EDM conversion to Block II. Conduct Block II ECP Delta Critical Design Review. Continue IRST Integration Testing. ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	0.000	107.313	86.993	0.000	86.993

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• APN/05250: *F-18 Series Mod (OSIP 04-14)*	95.706	5.320	3.655	-	3.655	86.270	88.200	181.340	211.140	488.732	1,228.048

Remarks

D. Acquisition Strategy

Infra-Red Search and Track (IRST). The IRST system is an evolutionary Navy acquisition program with Block I and Block II capabilities. The IRST Block I system developed by the Navy provides a basic capability, supported integration of the sensor onto a fuel tank and into the aircraft and supported aeromechanical flight test required for clearance and carrier qualification of the system. IRST Block I is in the Production and Deployment phase following a successful MS-C decision in December 2014 and will support continued integration with the F/A-18E/F Advanced Mission Computer software.

IRST Block II is an ECP to upgrade two WRAs that will provide full CDD capability. ECP development was begun in FY 2016 under Project Unit 1662 and continues in FY17 and beyond under Project Unit 2069. FY 2016 funded risk reduction activities and the program will execute a pre-development phase In Progress Review (IPR) 1 in 3Q17 and a pre-production IPR-2 in 2Q18 leading to a planned production (APN-5 funded) start in FY 2019 achieving Initial Operating Capability (IOC) in FY 2021.

E. Performance Metrics

IRST Program achieved MS B on 17 June 2011, achieved MS C on 02 December 2014. IRST Block II Pre-Development IPR-1 is scheduled for 3rd Quarter FY17; Pre-Production IPR-2 is scheduled for 2nd Quarter FY18. IRST Block II systems are scheduled to begin production in FY2019 and IOC in FY2021.

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2069 / *F/A-18 Infrared Search and Track (IRST)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Development (Hardware/Software) Infra-Red Search and Track (IRST)	Various	Boeing : St. Louis, MO	0.000	0.000		57.122	Dec 2016	43.418	Dec 2017	-		43.418	206.813	307.353	-
Hardware Development	MIPR	USAF (MIT) : Hanscom AFB, MA	0.000	0.000		1.500	Nov 2016	1.000	Nov 2017	-		1.000	Continuing	Continuing	Continuing
Software (S/W) Development	WR	NAWCWD : China Lake, CA	0.000	0.000		1.871	Nov 2016	0.206	Dec 2017	-		0.206	Continuing	Continuing	Continuing
IRST Support Equipment Development	WR	NAWCAD : Lakehurst, NJ	0.000	0.000		0.218	Nov 2016	0.000		-		0.000	Continuing	Continuing	Continuing
IRST Design Development	WR	FRC Southeast : Jacksonville, FL	0.000	0.000		0.917	Nov 2016	0.944	Nov 2017	-		0.944	Continuing	Continuing	Continuing
Primary Development	Various	NSMA : Various	0.000	0.000		32.938	Nov 2016	33.712	Nov 2017	-		33.712	0.000	66.650	-
		Subtotal	0.000	0.000		94.566		79.280		-		79.280	-	-	-

Remarks

NAWCAD Lakehurst, New Jersey, is developing Support Equipment necessary to support the IRST pods.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NAWCWD : China Lake, CA	0.000	0.000		0.475	Nov 2016	2.253	Nov 2017	-		2.253	Continuing	Continuing	Continuing
Development Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		2.209	Nov 2016	1.626	Nov 2017	-		1.626	Continuing	Continuing	Continuing
Development Support	WR	NSWC : Indian Head, MD	0.000	0.000		0.060	Dec 2016	0.000		-		0.000	Continuing	Continuing	Continuing
Development Support	WR	NAWCWD : Pt. Mugu, CA	0.000	0.000		0.022	Dec 2016	0.022	Dec 2017	-		0.022	Continuing	Continuing	Continuing
Obsolescence Redesign	Various	Various : Various	0.000	0.000		0.250	Dec 2016	0.250	Dec 2017	-		0.250	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		3.016		4.151		-		4.151	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2069 / *F/A-18 Infrared Search and Track (IRST)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.889	Nov 2016	1.196	Nov 2017	-		1.196	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWCWD : China Lake, CA	0.000	0.000		2.077	Nov 2016	1.000	Nov 2017	-		1.000	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	OPTEVFOR : VX-9	0.000	0.000		4.050	Nov 2016	0.000		-		0.000	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E) - CSS	Various	OPTEVFOR : VX-9	0.000	0.000		0.247	Dec 2016	0.000		-		0.000	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E)	WR	OPTEVFOR : Norfolk, VA	0.000	0.000		0.006	Nov 2016	0.000		-		0.000	Continuing	Continuing	Continuing
Operational Test & Evaluation (OT&E) - CSS	Various	OPTEVFOR : Norfolk, VA	0.000	0.000		0.096	May 2017	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		7.365		2.196		-		2.196	-	-	-

Remarks

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

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	NAVAIR : Patuxent River, MD	0.000	0.000		0.020	Oct 2016	0.020	Oct 2017	-		0.020	Continuing	Continuing	Continuing
Program Management Support - MISC	Various	NAWCAD : Patuxent River, MD	0.000	0.000		2.346	Oct 2016	1.346	Oct 2017	-		1.346	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		2.366		1.366		-		1.366	-	-	-

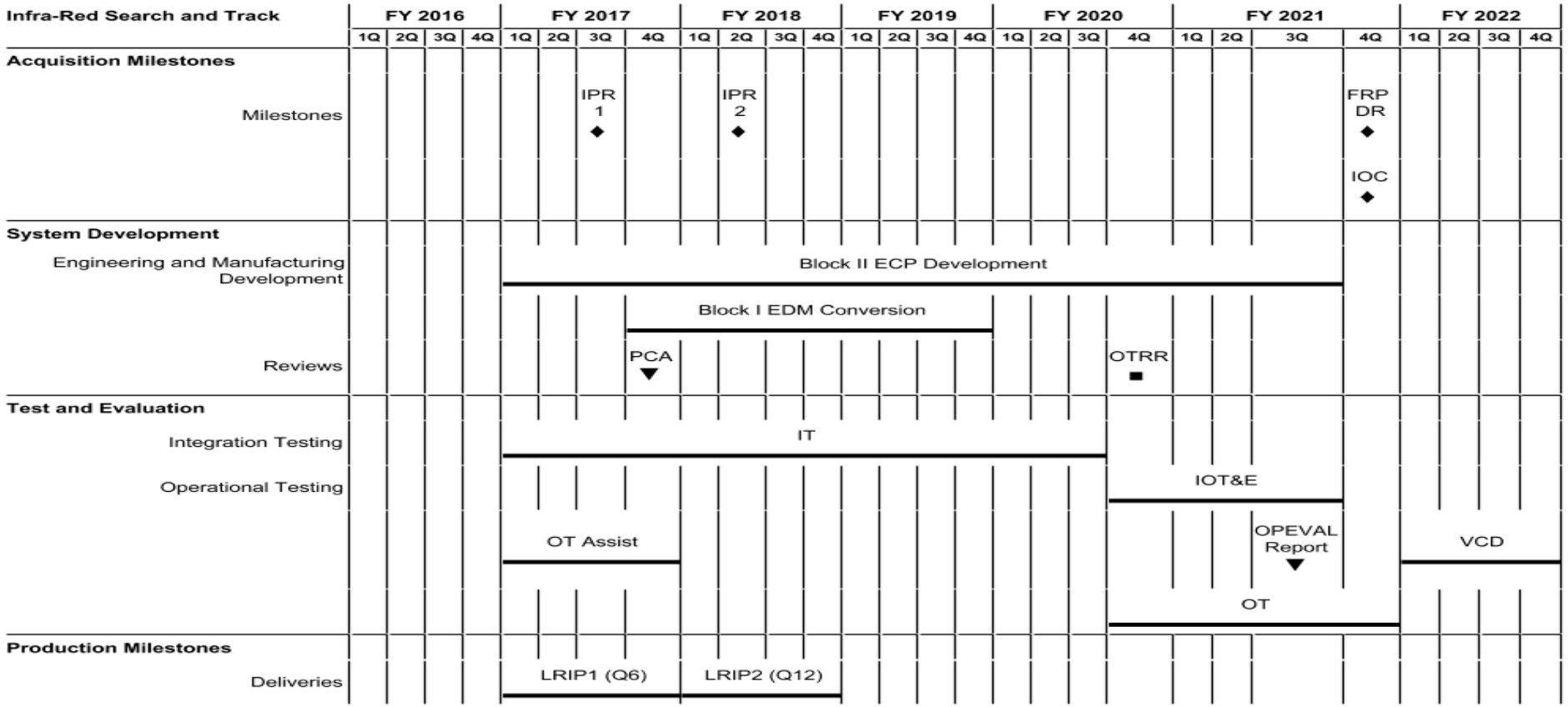
	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		107.313		86.993		-		86.993	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 2069 / *F/A-18 Infrared Search and Track (IRST)*	

	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2069 / *F/A-18 Infrared Search and Track (IRST)*



2018PB - 0204136N - 2069

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2069 / *F/A-18 Infrared Search and Track (IRST)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Infra-Red Search and Track				
Acquisition Milestones: Milestones: Full Rate Production Decision Review (FRP DR)	4	2021	4	2021
Acquisition Milestones: Milestones: Pre-development In Process Review (IPR 1)	3	2017	3	2017
Acquisition Milestones: Milestones: Pre-production In Process Review (IPR 2)	2	2018	2	2018
Acquisition Milestones: Milestones: IOC	4	2021	4	2021
System Development: Engineering and Manufacturing Development: Block II ECP Development	1	2017	3	2021
System Development: Engineering and Manufacturing Development: Block I EDM Conversion	4	2017	4	2019
System Development: Reviews: Operational Testing Readiness Review (OTRR)	4	2020	4	2020
System Development: Reviews: Physical Configuration Audit (PCA)	4	2017	4	2017
Test and Evaluation: Integration Testing: Integration Testing (IT)	1	2017	3	2020
Test and Evaluation: Operational Testing: Integrated Operational Test & Evaluation (IOT&E)	4	2020	3	2021
Test and Evaluation: Operational Testing: OPEVAL Report	3	2021	3	2021
Test and Evaluation: Operational Testing: Verification of Correction of Deficiencies	1	2022	4	2022
Test and Evaluation: Operational Testing: OT Assist	1	2017	4	2017
Test and Evaluation: Operational Testing: OT	4	2020	4	2021
Production Milestones: Deliveries: LRIP 1 (Lot 1 - Qty 6)	1	2017	4	2017
Production Milestones: Deliveries: LRIP 2 (Lot 2 - Qty 12)	1	2018	4	2018

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 2071 / *F/A-18 Block III*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
2071: *F/A-18 Block III*	0.000	0.000	0.000	59.700	-	59.700	84.600	89.900	30.700	0.000	0.000	264.900
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

F/A-18 Block III is a series of several of Engineering Change Proposals (ECPs) that bring several planned upgrades to the F/A-18E/F. The combined impact of these upgrades brings significant capability to the aircraft. Block III is a follow-on to Block II upgrades. The FY18 budget request funds Non-Recurring Engineering (NRE) for these ECPs which include Advanced Network Architecture, aircraft Signature Enhancements, Advanced Cockpit Displays, and Conformal Fuel tanks.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: F/A-18 Block III	0.000	0.000	59.700	0.000	59.700
Articles:	-	-	-	-	-
Description: Block III Super Hornet upgrades provide additional capability to the aircraft and its contribution to the Airwing are significant. The capability upgrades consist of several Engineering Change Proposals (ECPs) which will be incorporated in the near term with a combination of forward fit production line incorporation and via retrofit modifications to the aircraft already planned as part of the Service Life Modification (SLM) Plan. The FY18 budget request funds Non-Recurring (NRE) for these ECPs.					
FY 2016 Accomplishments: N/A					
FY 2017 Plans: N/A					
FY 2018 Base Plans: F/A-18 Block III is a series of several of Engineering Change Proposals (ECPs) that bring several planned upgrades to the F/A-18E/F aircraft. The combined impact of these upgrades brings significant capability to the aircraft. The FY18 budget request funds the Non-Recurring (NRE) needed for these ECPs.					
FY 2018 OCO Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.000	0.000	59.700	0.000	59.700

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2071 / *F/A-18 Block III*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

A series of Block III Engineering Change Proposals (ECPs) are planned to be incorporated into production aircraft starting in FY19. The ECPs will provide capability upgrades to Block II aircraft to give them Block III capabilities. Block II Fleet aircraft (Lots 26 and up) will receive capability upgrades when inducted for Service Life Modification (SLM) events.

E. Performance Metrics

The PB18 budget request funds the Non-Recurring Engineering (NRE) for the Block III Engineering Change Proposals (ECPs) that will provide upgraded capabilities to the F/A-18 E/F aircraft. Block III capability upgrades is planned to be incorporated into the aircraft on the production line starting with the FY19 procurement. Block II aircraft will receive the Block III ECPs when the aircraft are inducted for Service Life Modification (SLM) events.

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2071 / *F/A-18 Block III*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Block III primary development	Various	Boeing : St Louis MO	0.000	0.000		0.000		58.700	Dec 2017	-		58.700	195.200	253.900	253.900
		Subtotal	0.000	0.000		0.000		58.700		-		58.700	195.200	253.900	253.900

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		1.000	Dec 2017	-		1.000	10.000	11.000	-
		Subtotal	0.000	0.000		0.000		1.000		-		1.000	10.000	11.000	-

	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		59.700		-		59.700	205.200	264.900	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2071 / *F/A-18 Block III*

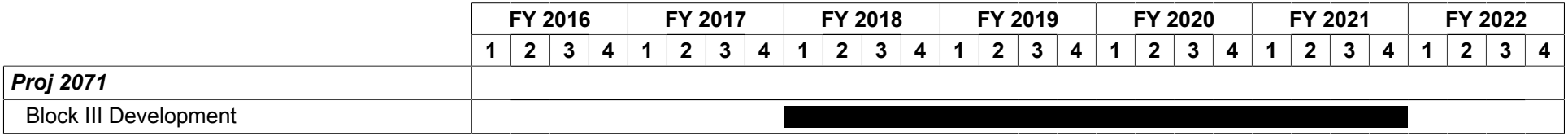


Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 2071 / *F/A-18 Block III*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2071				
Block III Development	1	2018	4	2021

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204136N / *F/A-18 Squadrons*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
9999: *Congressional Adds*	9.868	11.448	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	21.316
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional Add.

Research, Development, Test and Evaluation (RDT&E) funding to support the integration feasibility of the Brimstone II air-to-ground missile on the F/A-18E/F. This is the continuation of the Phase I assessment currently being conducted through funding provided in FY14. FY15 funding was for the continued qualification work and to assess software compatibility with the F/A-18E/F software configuration sets (SCS). Test and evaluation efforts are being conducted as required to qualify the missile to the Navy environment and to quantify missile performance. Brimstone II system functionality and response to stimuli will be measured in order to determine whether the missile is compatible with the F/A-18E/F in the current design. FY16 funding for continued qualification efforts. The FY16 RDTE Congressional increase for Dual Mode Brimstone Integration on the F/A-18 aircraft was executed for related Universal Armament Interface (UAI) efforts.

Research, Development, Test and Evaluation (RDTE) fund to support Universal Armament Interface (UAI) efforts. UAI implementation will bring the baseline standardized functionality to UAI compliant Air-to-Ground Type 1 weapons (standard launcher technology and enhanced functionality to UAI compliant Air-to-Ground Type 2 weapons (smart launcher technology)).

Noise Reduction study conducted by the University of Mississippi National Center for Physical Acoustics (NCPA).

B. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017
Congressional Add: Dual Mode Brimstone Integration ***FY 2016 Accomplishments:*** N/A ***FY 2017 Plans:*** N/A	10.000	0.000
Congressional Add: Noise Reduction ***FY 2016 Accomplishments:*** N/A ***FY 2017 Plans:*** N/A	1.448	0.000
Congressional Adds Subtotals	11.448	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204136N / *F/A-18 Squadrons*	**Project (Number/Name)** 9999 / *Congressional Adds*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

Not Required for Congressional Adds.

E. Performance Metrics

Not Required for Congressional Adds.