Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy

Date: March 2019

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

1319: Research, Development, Test & Evaluation, Navy I BA 4: Advanced

PE 0604014N I (U)F/A-18 Infrared Search and TRack (IRST)

R-1 Line #73

Component Development & Prototypes (ACD&P)

COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	0.000	68.087	108.689	113.456	-	113.456	83.645	34.785	25.607	9.518	Continuing	Continuing
2069: F/A-18 Infrared Search and Track (IRST)	0.000	68.087	108.689	113.456	-	113.456	83.645	34.785	25.607	9.518	Continuing	Continuing

**Program MDAP/MAIS Code:** 

Project MDAP/MAIS Code(s): P510

### A. Mission Description and Budget Item Justification

The F/A-18 E/F Infra-Red Search and Track (IRST) system is a passive long-wave Infra-Red (IR) sensor that provides an alternate fire control system in a high Electronic Attack (EA) / 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.

IRST was previously completed under Program Element 0204136N F/A-18 Squadrons and has been transferred to Program Element 0604014N F/A-18 Infrared Search and Track (IRST).

B. Program Change Summary (\$ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	0.000	108.700	120.927	-	120.927
Current President's Budget	68.087	108.689	113.456	-	113.456
Total Adjustments	68.087	-0.011	-7.471	-	-7.471
<ul> <li>Congressional General Reductions</li> </ul>	-	-0.011			
<ul> <li>Congressional Directed Reductions</li> </ul>	-	-			
<ul> <li>Congressional Rescissions</li> </ul>	-	-			
Congressional Adds	-	-			
<ul> <li>Congressional Directed Transfers</li> </ul>	-	-			
<ul> <li>Reprogrammings</li> </ul>	-	-			
SBIR/STTR Transfer	-2.813	0.000			
<ul> <li>Program Adjustments</li> </ul>	0.000	0.000	-7.471	-	-7.471
<ul> <li>Rate/Misc Adjustments</li> </ul>	0.000	0.000	0.000	-	0.000
<ul> <li>Congressional Directed Reductions</li> </ul>	-16.000	-	-	-	-
Adjustments					
Congressional Add Adjustments	86.900	-	-	-	-

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#### Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy Date: March 2019 Appropriation/Budget Activity R-1 Program Element (Number/Name) 1319: Research, Development, Test & Evaluation, Navy I BA 4: Advanced PE 0604014N I (U)F/A-18 Infrared Search and TRack (IRST) Component Development & Prototypes (ACD&P)

# **Change Summary Explanation**

The FY 2020 funding request was reduced by \$10.000 million to account for the availability of prior year execution balances.

Technical: Not applicable.

Schedule: The schedule has been updated to reflect program execution status.

The FY 2020 budget has a net increase of \$4.8 million. This is due to increase to flight testing and support of fly-fix-fly testing of final software builds effecting data analysis. After achieving Block II ECP Milestone C on 4 December 2018, \$3.0 million was added via tech correction to support Block II risk reduction activities. Additional flight tests will be conducted for sensor tuning and integrated developmental/operational flight test.

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Exhibit R-2A, RDT&E Project Ju	ustification:	PB 2020 N	lavy							Date: Marc	ch 2019	
Appropriation/Budget Activity 1319 / 4						am Elemen I 4N I (U)F/A ((IRST)	•	• `	oject (Number/Name) 69 I F/A-18 Infrared Search and Track ST)			
COST (\$ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
2069: F/A-18 Infrared Search and Track (IRST)	0.000	68.087	108.689	113.456	-	113.456	83.645	34.785	25.607	9.518	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: P510

#### Note

Infrared Search and Track was funded in FY16 and prior under PE 0204136N / F/A-18 Squadrons, PU 1662 F/A-18 Improvements. Funding was realigned to a new PU 2069 / F/A-18 Infrared Search and Track (IRST) in FY17 and then transferred to a new PE 0604014N / F/A-18 Infrared Search and Track (IRST) in FY18.

### A. Mission Description and Budget Item Justification

F/A-18 Infra-Red Search and Track (IRST): The F/A-18 E/F Infrared Search and Track system is a passive long-wave Infra-Red sensor which provides an alternate fire control system in a high Electronic Attack / Radio Detection and Ranging denied environment. The Infrared Search and Track Block II Engineering Change Proposal upgrades two Weapons Replaceable Assemblies; the Infra-Red Receiver and processor; and modifies the sensor assembly structure accordingly in order 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.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2020	FY 2020	FY 2020
	FY 2018	FY 2019	Base	oco	Total
Title: Infra-Red Search and Track (IRST)	68.087	108.689	113.456	0.000	113.456
Articles:	-	-	-	-	-
<b>Description:</b> Technology development and engineering and manufacturing development of an IRST sensor for the F/A-18 E/F. Block I supported 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 I systems currently in production will be utilized as test assets for continued integration, tactics development and aircrew familiarization; will be upgraded via retrofit to a Block II configuration prior to fleet delivery. 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 2019 Plans:					

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Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy	Date: March 2019						
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number PE 0604014N I (U)F/A-18 Infrare and TRack (IRST)	,	Project (Number/Name) 2069 I F/A-18 Infrared Search and Track (IRST)				
B. Accomplishments/Planned Programs (\$ in Millions, Article Quant	ities in Each)			FY 2020	FY 2020	FY 2020	

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Continue IRST Block II ECP Development Phase 2 (hardware and software). Conduct IRST Block II Technology Readiness Review. Continue IRST Integration Testing (H14 and H16). Continue development of support equipment. Continue King Air Integration Lab flight testing. Continue Block I/II prototype/EDM conversions and upgrades to full Block II configuration.					
FY 2020 Base Plans: Continue IRST Block II ECP Development Phase 2 (hardware and software). Continue IRST Integration Testing with H16. Continue development of support equipment. Continue Block I/II prototype/EDM conversions and upgrades to full Block II configuration. Continue Block II prototype and begin Block II EDM configuration lab and flight test, flight worthiness, and qualification.					
<b>FY 2020 OCO Plans:</b> N/A					
FY 2019 to FY 2020 Increase/Decrease Statement: Increase of \$4.8M due primarily to risk reduction activities, increased flight test, associated analysis, and software updates.					
Accomplishments/Planned Programs Subtotals	68.087	108.689	113.456	0.000	113.456

# C. Other Program Funding Summary (\$ in Millions)

			FY 2020	FY 2020	FY 2020					Cost To	
Line Item	FY 2018	FY 2019	<b>Base</b>	<u>000</u>	<u>Total</u>	FY 2021	FY 2022	FY 2023	FY 2024	Complete	<b>Total Cost</b>
• APN/05250: <i>F-18</i>	134.034	60.195	85.835	-	85.835	185.110	229.598	199.719	208.859	321.601	1,582.317

## Series Mod (OSIP 04-14) Remarks

# D. Acquisition Strategy

The Infrared Search and Track system is an evolutionary Navy acquisition program with Block I and Block II capabilities. The Infrared Search and Track 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. Infrared Search and Track Block I is in the Production and Deployment phase following a successful Milestone C decision in December 2014 and will support continued integration with the F/A-18E/F Advanced Mission Computer software through flight testing with System Configuration Sets H14 and H16.

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Exh	ibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
App	ropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (N	umber/Name)
1319	9/4	PE 0604014N I (U)F/A-18 Infrared Search	2069 I F/A-	-18 Infrared Search and Track
		and TRack (IRST)	(IRST)	
Infr	ared Search and Track Block II is an Engineering Change Proposal that up	grades two Weapons Replaceable Assemblies	and provid	les full Canabilities Develonment

Infrared Search and Track Block II is an Engineering Change Proposal that upgrades two Weapons Replaceable Assemblies and provides full Capabilities Development Document capability. Early risk reduction activities were initiated in FY2016 and the program executed a pre-development In-Progress Review (IPR 1) in October 2017. The IRST Block II ECP achieved Milestone C on 4 December 2018 and entered into low rate initial production (APN-5 funded) to achieve an Initial Operating Capability in 4th Quarter FY2021.

### **E. Performance Metrics**

Infrared Search and Track Program achieved Milestone B on 17 June 2011, achieved Milestone C on 02 December 2014. Infrared Search and Track Block II Pre-
Development IPR-1 was conducted 1st Quarter 2018; Block II ECP Milestone C was achieved on 4 December 2018. Infrared Search and Track Block II systems are
beginning production in FY2019 (LRIP III, APN-5, Qty-6) and will achieve Initial Operating Capability in 4th Quarter FY 2021

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Date: March 2019 Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy

Appropriation/Budget Activity R-1 Program Element (Number/Name)

1319 / 4

Project (Number/Name) PE 0604014N I (U)F/A-18 Infrared Search 2069 I F/A-18 Infrared Search and Track and TRack (IRST) (IRST)

Product Developmen	nt (\$ in Mi	illions)		FY 2	2018	FY 2	2019	FY 2 Ba	2020 ise	FY 2	2020 CO	FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Development (Hardware/Software) Infra- Red Search and Track	Various	Boeing : St. Louis, MO	0.000	30.733	Dec 2017	49.228	Dec 2018	46.200	Dec 2019	-		46.200	137.658	263.819	263.819
Hardware Development	MIPR	USAF (MIT) : Hanscom AFB, MA	0.000	0.060	Dec 2017	1.020	Jul 2019	1.040	Jul 2020	-		1.040	Continuing	Continuing	Continuing
Software Development	WR	NAWCWD : China Lake, CA	0.000	1.423	Dec 2017	3.348	Nov 2018	4.359	Nov 2019	-		4.359	Continuing	Continuing	Continuing
Infrared Search and Track Support Equipment Development	WR	NAWCAD : Lakehurst, NJ	0.000	0.045	Nov 2017	0.050	Nov 2018	0.812	Nov 2019	-		0.812	Continuing	Continuing	Continuing
Primary Development	Various	NSMA : Various	0.000	24.217	Jan 2018	42.518	Nov 2018	40.368	Nov 2019	-		40.368	Continuing	Continuing	Continuing
		Subtotal	0.000	56.478		96.164		92.779		-		92.779	Continuing	Continuing	N/A

#### **Remarks**

Prior years were funded under Program Element (PE) 0204136N under Project Units (PUs) 1662 and 2069. NAWCWD China Lake, CA, software development increase supports increased software corrections identified during increased flight testing to support Initial Operating Capability in FY21.

Support (\$ in Millions)				FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
Development Support	WR	NAWCWD : China Lake, CA	0.000	1.143	Nov 2017	1.181	Nov 2018	1.205	Nov 2019	-		1.205	Continuing	Continuing	Continuing
Development Support	WR	NAWCAD : Patuxent River, MD	0.000	1.637	Nov 2017	3.136	Nov 2018	3.199	Nov 2019	-		3.199	Continuing	Continuing	Continuing
Development Support	WR	NSWC : Indian Head, MD	0.000	0.000		0.060	Nov 2018	0.062	Nov 2019	-		0.062	Continuing	Continuing	Continuing
Development Support	WR	NAWCWD : Pt. Mugu, CA	0.000	0.000		0.022	Dec 2018	0.023	Nov 2019	-		0.023	Continuing	Continuing	Continuing
Development Support	WR	FRC Southeast : Jacksonville, FL	0.000	0.900	Nov 2017	0.890	Nov 2018	0.908	Nov 2019	-		0.908	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy

R-1 Program Element (Number/Name)

Date: March 2019 **Project (Number/Name)** 

**Appropriation/Budget Activity** 1319 / 4

PE 0604014N I (U)F/A-18 Infrared Search and TRack (IRST)

2069 I F/A-18 Infrared Search and Track

(IRST)

Support (\$ in Millions					FY 2018		FY 2019		2020 ise	FY 2020 OCO		FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
Development Support	C/CPFF	NRL : Washington, DC	0.000	0.339	Dec 2017	0.350	Dec 2018	0.357	Dec 2019	-		0.357	0.369	1.415	1.415
Development Support	WR	NAVSUP : Mechanicsburg, PA	0.000	0.020	Jan 2018	0.042	Jan 2019	0.043	Jan 2020	-		0.043	Continuing	Continuing	Continuing
Obsolescence Redesign	Various	Various : Various	0.000	0.250	Dec 2017	0.255	Dec 2018	0.260	Dec 2019	-		0.260	Continuing	Continuing	Continuing
		Subtotal	0.000	4.289		5.936		6.057		-		6.057	Continuing	Continuing	N/A

#### Remarks

Prior years were funded under Program Element (PE) 0204136N under Project Units (PUs) 1662 and 2069. NRL total cost reflects effort funded under current PE; prior year funding included \$338 thousand for first year of contract effort in FY17 under PE 0204136N which is reflected in target value of contract.

Test and Evaluation	(\$ in Milli	ons)		FY 2	2018	FY 2	2019		2020 ise		2020 CO	FY 2020 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWCAD : Patuxent River, MD	0.000	1.429	Nov 2017	1.696	Nov 2018	3.816	Nov 2019	-		3.816	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NAWCWD : China Lake, CA	0.000	4.824	Nov 2017	2.183	Nov 2018	5.349	Nov 2019	-		5.349	Continuing	Continuing	Continuing
Operational Test & Evaluation	WR	OPTEVFOR : VX-9	0.000	0.000		1.500	Dec 2018	3.775	Dec 2019	-		3.775	Continuing	Continuing	Continuing
Operational Test & Evaluation - CSS	Various	OPTEVFOR : VX-9	0.000	0.100	Jul 2018	0.120	Jul 2019	0.360	Jul 2020	-		0.360	Continuing	Continuing	Continuing
Operational Test & Evaluation - CSS	Various	OPTEVFOR : Norfolk, VA	0.000	0.000		0.100	Mar 2019	0.300	Mar 2020	-		0.300	Continuing	Continuing	Continuing
	*	Subtotal	0.000	6.353		5.599		13.600		-		13.600	Continuing	Continuing	N/A

#### Remarks

Prior years funded in PE 0204136N under PUs 1662 and 2069. Increased flight testing in FY20 to support fly-fix-fly testing of final software builds, sensor tuning, and integrated developmental/operational flight test period.

PE 0604014N: (U)F/A-18 Infrared Search and TRack (IRS... Navy

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy

Date: March 2019

Appropriation/Budget Activity

1319 / 4

R-1 Program Element (Number/Name) PE 0604014N I (U)F/A-18 Infrared Search and TRack (IRST)

Project (Number/Name) 2069 I F/A-18 Infrared Search and Track

(IRST)

Management Services (\$ in Millions)		FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO							
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
Travel	Various	NAVAIR : Patuxent River, MD	0.000	0.020	Oct 2017	0.020	Oct 2018	0.020	Oct 2019	-		0.020	Continuing	Continuing	Continuing
Program Management Support - MISC	Various	NAWCAD : Patuxent River, MD	0.000	0.947	Oct 2017	0.970	Oct 2018	1.000	Oct 2019	-		1.000	Continuing	Continuing	Continuing
		Subtotal	0.000	0.967		0.990		1.020		-		1.020	Continuing	Continuing	N/A

#### Remarks

Prior years were funded under Program Element (PE) 0204136N under Project Units (PUs) 1662 and 2069.

	Prior Years	FY 20	018	FY 2019		2020 ase	FY 2	2020 CO	FY 2020 Total	Cost To	Total Cost	Target Value of Contract
Project Cost Totals	0.000	68.087		108.689	113.456		-		113.456	Continuing	Continuing	N/A

#### Remarks

Navy

**UNCLASSIFIED** PE 0604014N: (U)F/A-18 Infrared Search and TRack (IRS...

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy Date: March 2019 Appropriation/Budget Activity R-1 Program Element (Number/Name) Project (Number/Name) PE 0604014N I (U)F/A-18 Infrared Search 2069 I F/A-18 Infrared Search and Track 1319 / 4 and TRack (IRST) (IRST) Infra-Red Search and Track FY 2019 FY 2022 FY 2023 FY 2024 FY 2018 FY 2020 FY 2021 1Q 1Q 2Q 3Q | 2Q | 3Q 1Q |2Q|3Q|4Q 1Q |2Q|3Q|4Q 1Q |2Q|3Q|4Q **Acquisition Milestones** IPR FRP MSD MS C IOC DR Milestones ▲ System Development Engineering and Manufacturing Block II Hardware Development Development Block I/II Prototype/EDM Upgrades & Conversions KAIL KAIL KAIL PH 1 Development Testing PH 2 PH 3 Prototype/EDM Lab & Flight Test Block II OFP IRST Block II Software OFP B1 B2 вз В4 **B**5 ▾ IRST OFP / SCS H14/H16 Tuning/Correction//Modification CDR TRR PCAPRR Reviews ▾ Test and Evaluation H14 H16 Aircraft Software Release ▾ ▾ H16 IT Integration Testing H14 OT H16 OT Operational Testing **Production Milestones** LRIP LRIP LRIP FRP FRP FRP 3 Contract Awards (APN) (APN) (APN) (APN) (APN) (APN) Prototypes **EDMs** Deliveries LRIP 3 LRIP 4 LRIP 5 FRP 1 LRIP 2 (BI-Q12) (BII-Q6) (BII-Q12) (BII-Q25) (BII-Q40) 2020OSD - 0604014N - 2069

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0604014N I (U)F/A-18 Infrared Search and TRack (IRST)	- 3 (	umber/Name) -18 Infrared Search and Track

# Schedule Details

	Sta	art	End		
Events by Sub Project	Quarter	Year	Quarter	Year	
Infra-Red Search and Track					
Acquisition Milestones: Milestones: Full Rate Production Decision Review (FRP DR)	3	2021	3	2021	
Acquisition Milestones: Milestones: Gate 6 / CSB (IPR 1)	1	2018	1	2018	
Acquisition Milestones: Milestones: Block II ECP Milestone C	1	2019	1	2019	
Acquisition Milestones: Milestones: Initial Operating Capability (IOC)	4	2021	4	2021	
Acquisition Milestones: Milestones: Material Support Date	1	2024	1	2024	
System Development: Engineering and Manufacturing Development: Block II ECP Hardware Development	1	2018	1	2021	
System Development: Engineering and Manufacturing Development: Sensor Hardware Conversion and Upgrades (Block I/II Prototype & EDM)	1	2019	4	2020	
System Development: Development Testing: King Air Integration Lab Block II Phase I	4	2018	1	2019	
System Development: Development Testing: King Air Integration Lab Block II Phase II	3	2019	3	2019	
System Development: Development Testing: King Air Integration Lab Block II Phase III	4	2019	4	2019	
System Development: Development Testing: Block II Test Asset Lab and Flight Testing	2	2019	1	2021	
System Development: IRST Block II Software: IRST Block II Software Development	2	2018	1	2021	
System Development: IRST Block II Software: IRST OFP SW B1	4	2018	4	2018	
System Development: IRST Block II Software: IRST OFP SW B2	2	2019	2	2019	
System Development: IRST Block II Software: IRST OFP SW B3	4	2019	4	2019	
System Development: IRST Block II Software: IRST OFP SW B4	2	2020	2	2020	
System Development: IRST Block II Software: IRST OFP SW B5	1	2021	1	2021	
System Development: IRST Block II Software: IRST OFP SW Performance Tuning, Correction & Modification with SCS H14/H16	1	2018	1	2021	
System Development: Reviews: Block II ECP System PDR	1	2018	1	2018	

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy

Appropriation/Budget Activity

1319 / 4

R-1 Program Element (Number/Name)
PE 0604014N / (U)F/A-18 Infrared Search and Track (IRST)

PE 0604014N / (IRST)

	Sta	art	End		
Events by Sub Project	Quarter	Year	Quarter	Year	
System Development: Reviews: Block II ECP System CDR	4	2018	4	2018	
System Development: Reviews: Technology Readiness Review (TRR)	4	2019	4	2019	
System Development: Reviews: Block II ECP Delta PCA	2	2021	2	2021	
System Development: Reviews: Block II ECP PRR	3	2021	3	2021	
Test and Evaluation: Aircraft Software Release: SCS H14 Fleet Release	4	2019	4	2019	
Test and Evaluation: Aircraft Software Release: SCS H16 Fleet Release	4	2021	4	2021	
Test and Evaluation: Integration Testing: SCS H16 Integration Testing	2	2018	4	2020	
Test and Evaluation: Operational Testing: SCS H14 Operational Testing	4	2018	4	2019	
Test and Evaluation: Operational Testing: Verification of Correction of Deficiencies	1	2022	4	2023	
Test and Evaluation: Operational Testing: SCS H16 Operational Testing	4	2020	4	2021	
Production Milestones: Contract Awards: Block II LRIP 3 (APN)	1	2019	1	2019	
Production Milestones: Contract Awards: Block II LRIP 4 (APN)	1	2020	1	2020	
Production Milestones: Contract Awards: Block II LRIP 5 (APN)	1	2021	1	2021	
Production Milestones: Contract Awards: Block II FRP 1 (APN)	1	2022	1	2022	
Production Milestones: Contract Awards: Block II FRP 2 (APN)	1	2023	1	2023	
Production Milestones: Contract Awards: Block II FRP 3 (APN)	1	2024	1	2024	
Production Milestones: Deliveries: Block II Prototype Test Assets (RDTE)	4	2019	1	2020	
Production Milestones: Deliveries: Block II EDM Test Assets (RDTE)	4	2020	4	2020	
Production Milestones: Deliveries: LRIP 2 (Block I Lot 2 - Qty 12)	2	2019	1	2020	
Production Milestones: Deliveries: LRIP 3 (Block II Lot 1 - Qty 6)	2	2021	3	2021	
Production Milestones: Deliveries: LRIP 4 (Block II Lot 2 - Qty 12)	2	2022	1	2023	
Production Milestones: Deliveries: LRIP 5 (Block II Lot 3 - Qty 25)	2	2023	1	2024	
Production Milestones: Deliveries: FRP 1 (Block II Lot 4 - Qty 40)	2	2024	4	2024	