



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-510



Infrared Search and Track (IRST)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

~~This document contains information that may be exempt from mandatory disclosure under the FOIA.~~

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Sensitivity Originator

Organization: F/A-18 & EA-18G Program Office. PMA-265 Program Security Manager

Organization Email:

Organization Phone: 301-757-7516

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
\$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
\$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

Infrared Search and Track (IRST)

DoD Component

Navy

Responsible Office

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References

SAR Baseline (Production Estimate)

Assistant Secretary of the Navy (Research, Development & Acquisition) (ASN(RDA)) Approved Acquisition Program Baseline (APB) dated February 13, 2017

Approved APB

Assistant Secretary of the Navy (Research, Development & Acquisition) (ASN(RDA)) Approved Acquisition Program Baseline (APB) dated February 13, 2017

Mission and Description

The F/A-18E/F (Block II and later aircraft) Infrared Search and Track (IRST) system is a centerline-mounted store consisting of a passive long-wave infrared sensor and aerodynamic structural assembly integrated onto the front end of an external fuel tank.

The IRST system will provide the F/A-18E/F an alternative fire control solution with the ability to search for, detect, and track targets in a high electronic attack / radar-denied environment. It will also give the F/A-18E/F the ability to guide Beyond Visual Range missiles to engage those targets.

Executive Summary

The F/A-18E/F Infrared Search and Track (IRST) is a long-wave infrared sensor that provides a passive, out-of-band alternate fire control system capable of detecting, tracking and engaging airborne targets, at long range, in a heavy Electronic Attack (EA) or radar-denied environment. The IRST system can autonomously, or in combination with other sensors, support the guidance of Beyond Visual Range missiles including AIM-120C/D and AIM-9X Block II.

The program was established as an ACAT III new start in CY 2008. In CY 2010, it was reclassified as an ACAT II. A Congressional mark in FY 2010 delayed the program and forced it into an evolutionary acquisition strategy consisting of Block I and Block II capabilities.

IRST Block I integrated components from fielded F-14D and F-15 Korea/Singapore IRST systems into a Fuel Tank Assembly that possessed the same outer mold line as the current F/A-18E/F 480-gallon external fuel tank. The Block I effort also integrated the IRST pod onto the centerline station of the F/A-18E/F, supported full aeromechanical flight test, carrier suitability testing and integrated IRST into the aircraft's software.

IRST Block II is an engineering change proposal (ECP-6497) to the Block I system that upgrades the sensor's optics, processor and software to increase system performance and achieve full CDD and CPD capabilities. Block II development was scheduled to begin in FY 2014; however, Congressional marks in FY 2014 and budget cuts in FY 2015 and FY 2016 delayed the Block II effort.

The re-programming of APN-5 to RDT&E in the FY 2016 PB (to support of Block II development) pushed the F/A-18E/F IRST over the threshold for a MDAP and the program was reclassified as an ACAT IC on November 5, 2015.

In June 2016, Director, Air Warfare, truncated IRST Block I procurement at 18 total systems to be used for test and evaluation, tactics development and fleet training.

To date, three IRST Block I contracts have been awarded. The IRST Block I EMD contract for three systems was awarded on August 19, 2011. All deliveries have been completed. The IRST Block I LRIP I contract for six systems was awarded on January 15, 2015. All deliveries have been completed. Lastly, the IRST Block I LRIP II contract for 12 systems was awarded on December 16, 2016. Deliveries will begin in February 2019.

The IRST Block II Phase 1 undefinitized contract action for six Block II ECP test assets was awarded May 25, 2017. The contract was definitized on August 22, 2017.

On October 13, 2017, the IRST program passed its Block II pre-development In-Process Review / Gate 6 Review.

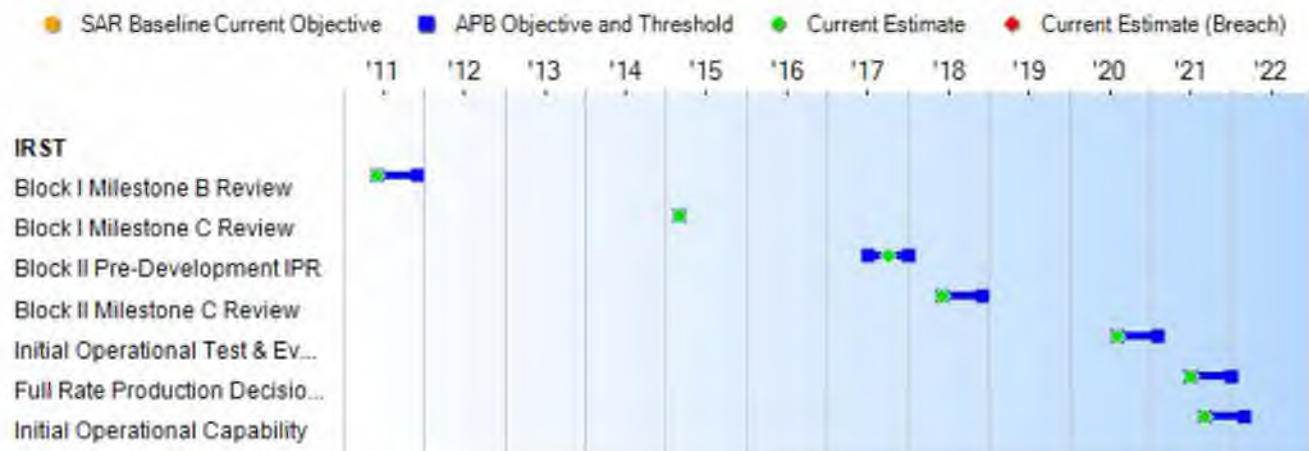
There are no significant software-related issues with this program at this time.

Threshold Breaches

APB Breaches		
Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
O&S Cost		<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Schedule Events				
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate
Block I Milestone B Review	Jun 2011	Jun 2011	Dec 2011	Jun 2011
Block I Milestone C Review	Mar 2015	Mar 2015	Mar 2015	Mar 2015
Block II Pre-Development IPR	Jul 2017	Jul 2017	Jan 2018	Oct 2017
Block II Milestone C Review	Jun 2018	Jun 2018	Dec 2018	Jun 2018
Initial Operational Test & Evaluation (Start)	Aug 2020	Aug 2020	Feb 2021	Aug 2020
Full Rate Production Decision Review (FRPDR)	Jul 2021	Jul 2021	Jan 2022	Jul 2021
Initial Operational Capability	Sep 2021	Sep 2021	Mar 2022	Sep 2021

Change Explanations

(Ch-1) The current estimate for Block II Pre-Development IPR changed from July 2017 to October 2017 due to scheduling challenges.

Acronyms and Abbreviations

IPR - In Process Review

Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate
Operational Availability				
>/0.95	>/0.95	>/0.8	TBD	>/0.95

Classified Performance information is provided in the classified annex to this submission.

Requirements Reference

F/A-18E/F Infrared Search and Track CDD, Change 2, dated October 20, 2014

Change Explanations

None

Track to Budget

RDT&E

Appn	BA	PE	
Navy	1319	07	0204136N
	Project	Name	
	1662	F/A18 Improvement	(Shared) (Sunk)
	2069	F/A18 Infrared Search and Track (IRST)	
Navy	1319	04	0604014N
	Project	Name	
	2069	F/A-18 Infrared Search and Track (IRST)	

Procurement

Appn	BA	PE	
Navy	1506	05	0204136N
	Line Item	Name	
	0525	F-18 Series	(Shared)

Notes

APN-6 interim spares included in procurement.

Cost and Funding

Cost Summary

Total Acquisition Cost						
Appropriation	BY 2008 \$M			BY 2008 \$M	TY \$M	
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective
RDT&E	764.0	764.0	840.4	753.9	878.6	878.6
Procurement	1150.6	1150.6	1265.7	1153.7	1468.5	1468.5
Flyaway	--	--	--	690.3	--	--
Recurring	--	--	--	649.9	--	--
Non Recurring	--	--	--	40.4	--	--
Support	--	--	--	463.4	--	--
Other Support	--	--	--	255.1	--	--
Initial Spares	--	--	--	208.3	--	--
MILCON	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0
Total	1914.6	1914.6	N/A	1907.6	2347.1	2347.1

Current APB Cost Estimate Reference

Component Cost Position dated December 08, 2016

Cost Notes

In accordance with Section 842 of the National Defense Authorization Act for FY 2017, which amended title 10 U.S.C. § 2334, the Director of Cost Assessment and Program Evaluation, and the Secretary of the military department concerned or the head of the Defense Agency concerned, must issue guidance requiring a discussion of risk, the potential impacts of risk on program costs, and approaches to mitigate risk in cost estimates for MDAPs and major subprograms. The information required by the guidance is to be reported in each SAR. This guidance is not yet available; therefore, the information on cost risk is not contained in this SAR.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	9	9	9
Procurement	170	170	170
Total	179	179	179

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2019 President's Budget / December 2017 SAR (TY\$ M)									
Appropriation	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
RDT&E	482.5	86.9	108.7	120.9	56.0	5.4	5.6	0.0	866.0
Procurement	206.7	3.7	112.5	133.8	228.1	303.6	177.6	301.4	1467.4
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2019 Total	689.2	90.6	221.2	254.7	284.1	309.0	183.2	301.4	2333.4
PB 2018 Total	695.2	91.0	245.1	243.5	275.9	308.8	177.1	301.3	2337.9
Delta	-6.0	-0.4	-23.9	11.2	8.2	0.2	6.1	0.1	-4.5

Quantity Summary										
FY 2019 President's Budget / December 2017 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Development	9	0	0	0	0	0	0	0	0	9
Production	0	18	0	6	12	25	40	40	29	170
PB 2019 Total	9	18	0	6	12	25	40	40	29	179
PB 2018 Total	9	18	0	6	12	25	40	40	29	179
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2007	--	--	--	--	--	--	3.5
2008	--	--	--	--	--	--	4.8
2009	--	--	--	--	--	--	16.8
2010	--	--	--	--	--	--	24.6
2011	--	--	--	--	--	--	58.0
2012	--	--	--	--	--	--	40.2
2013	--	--	--	--	--	--	93.1
2014	--	--	--	--	--	--	59.7
2015	--	--	--	--	--	--	45.0
2016	--	--	--	--	--	--	42.7
2017	--	--	--	--	--	--	94.1
2018	--	--	--	--	--	--	86.9
2019	--	--	--	--	--	--	108.7
2020	--	--	--	--	--	--	120.9
2021	--	--	--	--	--	--	56.0
2022	--	--	--	--	--	--	5.4
2023	--	--	--	--	--	--	5.6
Subtotal	9	--	--	--	--	--	866.0

Annual Funding								
1319 RDT&E Research, Development, Test, and Evaluation, Navy								
Fiscal Year	Quantity	BY 2008 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2007	--	--	--	--	--	--	--	3.5
2008	--	--	--	--	--	--	--	4.7
2009	--	--	--	--	--	--	--	16.4
2010	--	--	--	--	--	--	--	23.7
2011	--	--	--	--	--	--	--	54.5
2012	--	--	--	--	--	--	--	37.2
2013	--	--	--	--	--	--	--	85.2
2014	--	--	--	--	--	--	--	53.9
2015	--	--	--	--	--	--	--	40.1
2016	--	--	--	--	--	--	--	37.4
2017	--	--	--	--	--	--	--	81.1
2018	--	--	--	--	--	--	--	73.7
2019	--	--	--	--	--	--	--	90.5
2020	--	--	--	--	--	--	--	98.7
2021	--	--	--	--	--	--	--	44.8
2022	--	--	--	--	--	--	--	4.2
2023	--	--	--	--	--	--	--	4.3
Subtotal	9	--	--	--	--	--	--	753.9

Annual Funding 1506 Procurement Aircraft Procurement, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2015	6	55.3	--	2.7	58.0	31.1	89.1
2016	12	69.4	--	3.5	72.9	42.2	115.1
2017	--	--	--	--	--	2.5	2.5
2018	--	--	--	--	--	3.7	3.7
2019	6	64.1	--	4.3	68.4	44.1	112.5
2020	12	72.6	--	3.4	76.0	57.8	133.8
2021	25	158.3	--	6.6	164.9	63.2	228.1
2022	40	149.3	--	6.7	156.0	147.6	303.6
2023	40	141.2	--	6.3	147.5	30.1	177.6
2024	29	111.8	--	4.9	116.7	88.7	205.4
2025	--	--	--	13.8	13.8	51.7	65.5
2026	--	--	--	--	--	17.4	17.4
2027	--	--	--	--	--	11.0	11.0
2028	--	--	--	--	--	1.0	1.0
2029	--	--	--	--	--	0.5	0.5
2030	--	--	--	--	--	0.6	0.6
Subtotal	170	822.0	--	52.2	874.2	593.2	1467.4

Annual Funding 1506 Procurement Aircraft Procurement, Navy							
Fiscal Year	Quantity	BY 2008 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2015	6	48.7	--	2.4	51.1	27.4	78.5
2016	12	60.1	--	3.0	63.1	36.5	99.6
2017	--	--	--	--	--	2.1	2.1
2018	--	--	--	--	--	3.1	3.1
2019	6	52.5	--	3.5	56.0	36.2	92.2
2020	12	58.4	--	2.7	61.1	46.5	107.6
2021	25	124.8	--	5.2	130.0	49.8	179.8
2022	40	115.4	--	5.2	120.6	114.0	234.6
2023	40	107.0	--	4.8	111.8	22.7	134.5
2024	29	83.0	--	3.6	86.6	65.9	152.5
2025	--	--	--	10.0	10.0	37.7	47.7
2026	--	--	--	--	--	12.4	12.4
2027	--	--	--	--	--	7.7	7.7
2028	--	--	--	--	--	0.7	0.7
2029	--	--	--	--	--	0.3	0.3
2030	--	--	--	--	--	0.4	0.4
Subtotal	170	649.9	--	40.4	690.3	463.4	1153.7

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	12/2/2014	12/15/2016
Approved Quantity	6	18
Reference	Milestone C ADM	LRIP II ADM
Start Year	2015	2015
End Year	2017	2020

The Current Total LRIP Quantity is more than 10% of the total production quantity in order to field the Resource Sponsor's required number of IRST systems prior to CY 2024.

Foreign Military Sales

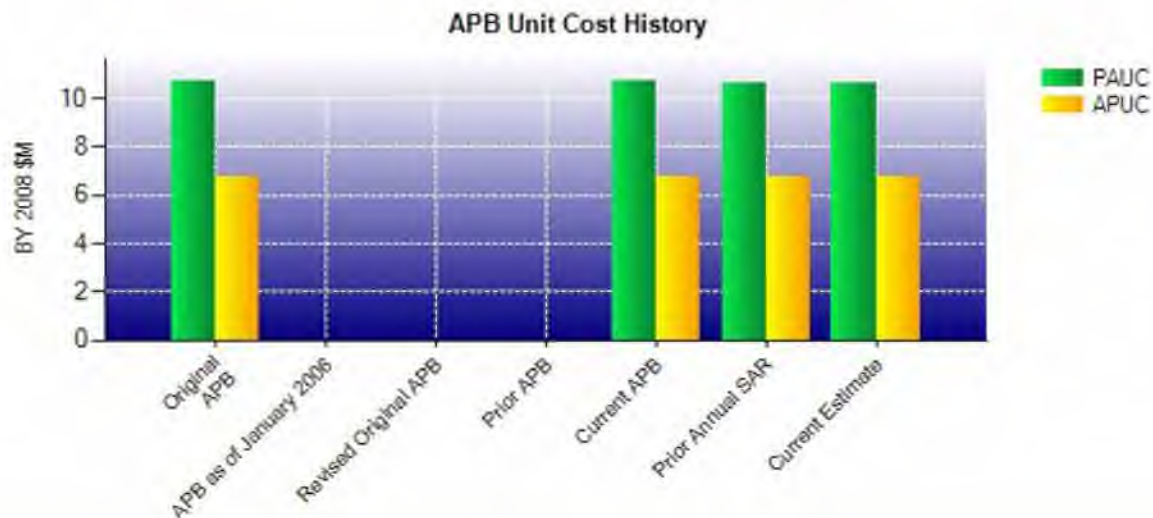
None

Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2008 \$M	BY 2008 \$M	% Change
	Current UCR Baseline (Feb 2017 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	1914.6	1907.6	
Quantity	179	179	
Unit Cost	10.696	10.657	-0.36
Average Procurement Unit Cost			
Cost	1150.6	1153.7	
Quantity	170	170	
Unit Cost	6.768	6.786	+0.27
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2008 \$M	BY 2008 \$M	% Change
	Original UCR Baseline (Feb 2017 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	1914.6	1907.6	
Quantity	179	179	
Unit Cost	10.696	10.657	-0.36
Average Procurement Unit Cost			
Cost	1150.6	1153.7	
Quantity	170	170	
Unit Cost	6.768	6.786	+0.27



APB Unit Cost History					
Item	Date	BY 2008 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Feb 2017	10.696	6.768	13.112	8.638
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	N/A	N/A	N/A	N/A	N/A
Current APB	Feb 2017	10.696	6.768	13.112	8.638
Prior Annual SAR	Dec 2016	10.636	6.756	13.061	8.638
Current Estimate	Dec 2017	10.657	6.786	13.036	8.632

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
13.112	-0.039	0.000	0.000	0.000	-0.031	0.000	-0.006	-0.076	13.036

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
8.638	-0.031	0.000	0.000	0.000	0.031	0.000	-0.006	-0.006	8.632

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	N/A	Jun 2011	Jun 2011
Milestone C	N/A	N/A	Mar 2015	Mar 2015
IOC	N/A	N/A	Sep 2021	Sep 2021
Total Cost (TY \$M)	N/A	N/A	2347.1	2333.4
Total Quantity	N/A	N/A	179	179
PAUC	N/A	N/A	13.112	13.036

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	878.6	1468.5	--	2347.1
Previous Changes				
Economic	+0.7	+2.9	--	+3.6
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-9.9	-1.8	--	-11.7
Other	--	--	--	--
Support	--	-1.1	--	-1.1
Subtotal	-9.2	--	--	-9.2
Current Changes				
Economic	-2.6	-8.1	--	-10.7
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-0.8	+7.0	--	+6.2
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-3.4	-1.1	--	-4.5
Total Changes	-12.6	-1.1	--	-13.7
Current Estimate	866.0	1467.4	--	2333.4

Summary BY 2008 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	764.0	1150.6	--	1914.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-8.6	-1.3	--	-9.9
Other	--	--	--	--
Support	--	-0.8	--	-0.8
Subtotal	-8.6	-2.1	--	-10.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-1.5	+5.5	--	+4.0
Other	--	--	--	--
Support	--	-0.3	--	-0.3
Subtotal	-1.5	+5.2	--	+3.7
Total Changes	-10.1	+3.1	--	-7.0
Current Estimate	753.9	1153.7	--	1907.6

Previous Estimate: December 2016

RDT&E		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-2.6
Adjustment for current and prior escalation. (Estimating)		+0.6	+0.7
Revised estimate to reflect prior actuals. (Estimating)		-2.8	-3.2
Revised estimate to reflect service-wide funding adjustments. (Estimating)		+0.7	+1.7
RDT&E Subtotal		-1.5	-3.4

Procurement		\$M	
Current Change Explanations		Base Year	Then Year
Revised escalation indices. (Economic)		N/A	-8.1
Adjustment for current and prior escalation. (Estimating)		+0.2	+0.2
Revised estimate to reflect prior year actuals. (Estimating)		+2.4	+3.1
Revised estimate to reflect the rephasing of funds from FY 2024 to FY 2025 to correct the previous SAR's alignment. (Estimating)		+0.4	+0.8
Revised estimate to reflect application of new out-year escalation indices. (Estimating)		+2.5	+2.9
Decrease in Other Support is due to the removal of all Initial Spares funds that were incorrectly aligned as Other Support funds. (Support)		-208.6	-258.8
Increase in Initial Spares is due to the addition of all Initial Spares funds that were incorrectly aligned as Other Support funds. (Support)		+208.3	+258.8
Procurement Subtotal		+5.2	-1.1

(U//FOUO) Contracts**(U//FOUO) Contract Identification**

Appropriation: Procurement
Contract Name: IRST LRIP I
Contractor: The Boeing Company
Contractor Location: 6200 James McDonnell Blvd
 St. Louis, MO 63134
Contract Number: N00019-15-C-0036/2
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: January 15, 2015
Definitization Date: January 15, 2015

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
(b)(4)							

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to an increase in contract scope with a contract modification in September 2015.

Contract Variance

Item	Cost Variance	Schedule Variance
(b)(4)		

Cost and Schedule Variance Explanations

(b)(4)

Notes

This contract is more than 90% complete; therefore, this is the final report for this contract.

IRST

December 2017 SAR

(U//FOUO) Contract Identification

Appropriation: Procurement
Contract Name: IRST Block I LRIP II
Contractor: The Boeing Company
Contractor Location: 6200 James S. McDonnell Blvd
 St. Louis, MO 63134
Contract Number: N00019-17-C-0026/3
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: December 15, 2016
Definitization Date: December 15, 2016

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager

(b)(4)

(b)(6) Contract Identification

Appropriation: RDT&E
Contract Name: Block II Phase 1
Contractor: The Boeing Company
Contractor Location: 6200 James S McDonnell Boulevard
 St. Louis, MO 63134
Contract Number: N00019-17-C-0024/4
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: May 25, 2017
Definitization Date: August 22, 2017

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager

(b)(4)

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	3	3	9	33.33%
Production	6	6	170	3.53%
Total Program Quantity Delivered	9	9	179	5.03%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	2333.4	Years Appropriated	12
Expended to Date	458.5	Percent Years Appropriated	50.00%
Percent Expended	19.65%	Appropriated to Date	779.8
Total Funding Years	24	Percent Appropriated	33.42%

The above data is current as of February 12, 2018.

In the last SAR, the total expended to date was entered incorrectly. The values above are correct.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	February 09, 2018
Source of Estimate:	POE
Quantity to Sustain:	170
Unit of Measure:	System
Service Life per Unit:	18.92 Years
Fiscal Years in Service:	FY 2017 - FY 2043

Unit-Level Manpower, Unit Operations, and Indirect Support Costs are not estimated for the IRST program, as the integration of an IRST system onto an F/A-18E/F aircraft does not increase costs for these three elements of the CAPE O&S Cost Estimating Structure (CES). For CAPE O&S CES element 3.0 (Maintenance) and element 4.6 (Sustaining Support/Data and Tech Pub), costs are variable and based on system flight hours. For CAPE O&S CES element 4.1 (Sustaining Support/System Specific Training and associated personnel), costs are estimated based on the annual requirement for those elements. CAPE O&S element 4.2 (Sustaining Support/Support Equipment Replacement and Repair) is estimated as a total requirement and then applied on an annual basis. CAPE O&S CES element 5.1 (Continuing System Improvements/Hardware Modifications) is based on the total number of operating and pipeline pods while CES element 5.2 (Continuing System Improvements/Software Maintenance) is based on current Software Lines of Code (SLOC) count and accounts for SLOC count growth in outyears.

The service life of the IRST system is limited by the availability of the F/A-18E/F aircraft. The estimate uses Naval Synchronization Toolset data version 2015-02 to model F/A-18E/F aircraft availability, per program management direction.

Total System Procurement: 170

Total System Operating Years: 3,216

Service Life Per Unit: 18.92 years, calculated by dividing Total System Operating Years by Total System Procurement

Flight Hours per Fleet System per month: 27.4

Total Life Cycle Flight Hours: 431,858

Sustainment Strategy

The IRST Sustainment Strategy is based on the following assumptions:

The IRST system will be operated by F/A-18E/F aircraft assigned to land and carrier based squadrons. The current plan is for six IRST assets per squadron to be fielded to 24 operating F/A-18E/F squadrons. These squadrons are to be located at Naval Air Station (NAS) Oceana, VA; NAS Lemoore, CA; NAS Atsugi, Japan; and Marine Corps Air Station Iwakuni, Japan; and will deploy aboard aircraft carriers based on the most current operational schedule.

The IRST program is an evolutionary acquisition program with Block I and Block II systems. Procurement involves the acquisition of 18 Block I systems, followed by 152 Block II systems and retrofits of the 18 Block I systems to the Block II configuration. The 18 Block I LRIP systems will be used to support IRST tactics development, Software Configuration System testing, and will be used by the Strike Fighter Wings at NAS Lemoore and Oceana to begin fleet introduction of the IRST system. The program will reach IOC upon delivery of the first six Block II IRST systems in FY 2021.

The IRST system logistics concept will leverage off logistics support processes currently in place for the F/A-18E/F aircraft. No specialized logistics processes should be required to support the IRST system.

The IRST hardware support will be a joint effort between Boeing, Lockheed Martin Missiles and Fire Control, Integral Aerospace, Lakehurst, NJ; In-Service Support Center (ISSC), Jacksonville, FL; ISSC North Island, CA; Naval Supply Systems Command, and Naval Air Systems Command. The planned IRST support concept is a three-level "Organizational to Intermediate to Depot" maintenance concept. A Level of Repair Analysis was conducted that resulted in a recommendation for a three level support infrastructure for all weapons replaceable assemblies except the Inertial Measurement Unit and Processor. The original equipment manufacturer will provide interim support until intermediate-level and organic depot-level maintenance capabilities are stood up, which will occur no later than IOC + four years.

Antecedent Information

No Antecedent.

Annual O&S Costs BY2008 \$M			
Cost Element	IRST Average Annual Cost Per System	N/A (Antecedent) N/A	
Unit-Level Manpower	0.000	--	
Unit Operations	0.000	--	
Maintenance	0.211	--	
Sustaining Support	0.031	--	
Continuing System Improvements	0.030	--	
Indirect Support	0.000	--	
Other	--	--	
Total	0.272	--	

Item	Total O&S Cost \$M			
	IRST			N/A (Antecedent)
	Current Production APB Objective/Threshold	Current Estimate		
Base Year	1213.9	1335.3	874.8	N/A
Then Year	1772.1	N/A	1289.8	N/A

Equation to Translate Annual Cost to Total Cost

The average annual cost per system for IRST is calculated by dividing the Total O&S Cost of \$874.8M CY2008 by 3,216 total IRST system operating years, resulting in \$0.272M CY2008 per system per year.

O&S Cost Variance		
Category	BY 2008 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2016 SAR	890.7	

Programmatic/Planning Factors	-16.4	OPNAV Planning Factors reflect a reduction in Flight Hours per Month
Cost Estimating Methodology	-0.4	Correction in consumables calculation
Cost Data Update	0.9	Updated inflation
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	-15.9	
Current Estimate	874.8	

Disposal Estimate Details

Date of Estimate: February 09, 2018
Source of Estimate: POE
Disposal/Demilitarization Total Cost (BY 2008 \$M): Total costs for disposal of all System are 4.4

The TY\$ value is \$8.5M.