

**CLEARED
For Open Publication**

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Department of Defense
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

Selected Acquisition Report (SAR)



Infrared Search and Track (IRST)

FY 2024 President's Budget

Defense Acquisition Visibility Environment
(DAVE)

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Common Acronyms and Abbreviations

\$B - Billions of Dollars

\$K - Thousands of Dollars

\$M - Millions of Dollars

ACAT - Acquisition Category

Acq O&M - Acquisition-Related Operations and Maintenance

ADM - Acquisition Decision Memorandum

APB - Acquisition Program Baseline

APPN - Appropriation

APUC - Average Procurement Unit Cost

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

FMS - Foreign Military Sales

FOC - Full Operational Capability

FRP - Full Rate Production

FY - Fiscal Year

FYDP - Future Years Defense Program

ICE - Independent Cost Estimate

Inc - Increment

IOC - Initial Operational Capability

JROC - Joint Requirements Oversight Council

KPP - Key Performance Parameter

LRIP - Low Rate Initial Production

MDA - Milestone Decision Authority

MDAP - Major Defense Acquisition Program

MILCON - Military Construction

N/A - Not Applicable

O&M - Operations and Maintenance

O&S - Operating and Support

ORD - Operational Requirements Document

OSD - Office of the Secretary of Defense

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
U.S. - United States
UCR - Unit Cost Reporting
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

Infrared Search and Track

DoD Component

Navy

Responsible Office

Program Manager

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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

IRST

Program Highlights Since Last Report

Significant Accomplishments: The Acquisition Program Baseline (APB) re-baseline was approved in May 2022. To maintain affordability the program partnered with Air National Guard (ANG), Naval Supply (NAVSUP), and the Royal Australian Air Force (RAAF). This partnership achieved production cost efficiencies, allowing the program to keep costs within APB parameters for budgeted quantities. Block II production representative hardware & software began deliveries in October 2022 with two Gold Standard assets followed by the first two IROC Block II systems on 11 January 2023. This was a significant achievement for the program after experiencing a prolonged interruption in the production line due to production quality challenges. Production representative asset delivery also enabled the developmental flight test program to continue into the next phase. Six Test Bed Operations (TBO) flights utilizing a Beechcraft King Air were conducted over a two-week period in October/November 2022. TBO testing enabled rapid iteration and maturity gains at an affordable cost. Anomalies were discovered and fixed in days or in some cases hours between events with engineers able to monitor airborne performance and influence flight test conditions in real time. Building on the agile mindset of TBO, the program office devised and conducted the first two Software Iterative Flight Tests (SWIFT) on an F/A-18 at China Lake in January 2023. SWIFT completed ahead of schedule in early February 2023 with several fixes delivered and verified on a similarly rapid timeline giving the program confidence moving forward into the requirements verification phase of test. There are no significant software-related issues with this program at this time.

Significant Issues:None

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	Significant Development Description
May - 2022	Re-baselined APB approved by MDA.
Dec - 2021	On December 16, 2021, the Program Deviation Report was approved by the MDA.
Nov - 2021	On November 15, 2021, the Acquisition Strategy for IRST was updated to include a new contracting strategy.
Jul - 2020	On July 7, 2020, the Acquisition Strategy for IRST was updated to include a decrease in LRIP quantities.
Jan - 2020	On January 27, 2020, The IRST program had its first initial FMS procurement when the Royal Australian Air Force signed a Letter of Acceptance (LOA) for 12 IRST Units. The 12 RAAF units are included on the IRST LRIP IV procurement, totaling 16 LRIP IV systems.
Dec - 2018	On December 4, 2018, the MS C Decision Review for the IRST program was held to assess program readiness to continue the Block II Production and Deployment phase. All criterion were successfully met, and the program received MS C approval and authorization to procure Block II LRIP units. The IRST Block II LRIP III contract action for six units was awarded in December.
Oct - 2018	1st Quarter FY 2019 The Block I Infrared Optimized Configuration contract for 16 hardware kits awarded in October. Parallel activities were conducted to mature the Block II initial product baseline with successful CDR conducted in November.
Apr - 2018	RST Sensor Sub-Systems (Infrared Receiver and Processor) delta CDR was conducted in May 2018 with the Government Technical Review Board assessing that the design maturity sufficient to justify an accelerated procurement. The IRST Block II Phase 2 development contract to support CDR, non-recurring engineering, and hardware development was awarded in August.
Feb - 2017	An updated APB was approved in February 2017 to reflect the acceleration of the IRST (IOC) by two years. The IRST Block II Phase 1 contract action for six Block II engineering change proposal test assets was awarded in May.

Nov - 2015	In November 2015, USD (AT&L) approved the IRST APB, delegated the MDA for the IRST program to the Navy, and designated the program as an ACAT IC due to the reprogramming of APN-5 funds to RDT&E for Block II development. The IRST program completed a successful Navy Gate 6 / In Progress Review.
Jan - 2015	As a result of the successful MS C event, the IRST Block I LRIP I contract for six systems was awarded in January. In March, ASN (RDA) released the ADM authorizing entry into the Production and Deployment phase and the procurement of LRIP Lot I units.
Oct - 2013	IRST Block I entered the Production and Deployment phase after a successful MS C event.
Jul - 2013	The IRST program conducted a Delta CDR in April and Test Readiness Review in July.
Oct - 2011	The IRST Block I initial product baseline was established at the Critical Design Review (CDR).
Oct - 2010	The Preliminary Design Review (PDR) was held in November. The system PDR reflected a major change driven by funding reductions for Program Objective Memorandum, which rendered the planned program un-executable. The IRST program implemented a phased, evolutionary approach to delivery of required IRST capability and the program was reclassified as an ACAT II program. The IRST CDD was updated to capture an evolutionary acquisition approach and approved in April 2011. In June 2011, the IRST program completed a successful Milestone (MS) B and entered the EMD phase. The resultant EMD contract was awarded to Boeing.
May - 2010	The IRST program completed the System Functional Review in May.
Oct - 2007	The F/A-18E/F IRST program was designated as an ACAT III new start. In the Summer of 2008, early prototyping of the IRST system was underway. With the use of independent research and development funding, The Boeing Company used the F-14D baseline IRST with improved hardware to demonstrate passive ranging proof of concept. An ADM was issued by PEO for Tactical Aircraft Programs, approving the IRST system entry into the Technical Development (TD) phase. As a result of the ADM, System Requirements Reviews 1 and 2 were conducted. A funding reduction resulted in the baseline changing from planned delivery of the CDD-required 92 to 68 units.

Schedule

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Events	Milestone Baseline Objective	Current Baseline Objective/Threshold		Current Estimate/Actual	Deviation
Block I Milestone B Review	Jun 2011	Jun 2011	Dec 2011	Jun 2011	
Block I Milestone C Review	Mar 2015	Mar 2015	Mar 2015	Jun 2015	
Block II Milestone C Review	Dec 2018	Dec 2018	Dec 2018	Dec 2018	
Block II Pre-Development IPR	Oct 2017	Oct 2017	Oct 2017	Oct 2017	
Initial Operational Test & Evaluation (Start)	Aug 2023	Aug 2023	May 2024	Jan 2024	
Full Rate Production Decision Review (FRPDR)	Apr 2024	Apr 2024	Jan 2025	Aug 2024	
Initial Operational Capability	Mar 2024	Mar 2024	Dec 2024	Mar 2024	Yes

Notes

Risk Note: Risks that are captured are done so for MS B/MS C/Current significant schedule risks. Program has a new APB therefore no current significant schedule risks.

Deviation Explanation

Actual current estimate for IOC is CUI.

Performance

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Performance Characteristics				
Milestone Baseline	Current Baseline Objective/Threshold	Demonstrated Performance	Current Estimate/Actual	Deviation
(KPP) - Operational Availability				
	>/0.95	>/0.8	0.9	>/0.95

Requirement Reference

CPD, Capability Development Document for F/A-18 Infrared Search and Track (IRST)

Validated: October 20, 2014

IRST CPD through JROC was not applicable.

Deviation Explanation

No deviations for this program/subprogram

Notes

The current performance achieved for the limited flight testing performed to date with the Block II system. With the expected Reliability Growth as we execute Developmental Test and identify and correct failures and put significant additional flight hours on the system, we expect the Operational Availability to improve to >/0.95 when the system is operational in the Fleet.

Acquisition Budget Estimate

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Total Acquisition Cost

		Milestone APB	Current Baseline		Budget Estimate PB 2024		
Category	Base Year	Objective (BY\$M)	Objective (BY\$M)	Threshold (BY\$M)	BY\$M	TY\$M	Deviation
RDT&E	2008	815.7	815.7	897.3	820.3	977	
Procurement	2008	1,340.5	1,340.5	1,474.5	1,148.2	1,589.6	
MILCON	2008	0	0	0			
Acq. O&M	2008	0	0	0			
Total		2,156.2	2,156.2		1,968.5	2,566.6	
PAUC	2008	12.464	12.464	13.710	11.379	14.836	
APUC	2008	7.885	7.885	8.674	6.754	9.351	

Appropriation Category Deviation Explanations

PAUC Deviation Explanation

APUC Deviation Explanation

Budget Notes

Congressional adjustments: FY21: -\$9.654M Installation equipment excess growth (APN-5) FY21: -\$30.269M Restoring acquisition accountability: Reduce concurrency IRST pods (OSIP 04-14) (APN-5) FY21: -\$20.706M Support equipment excess growth (APN-5) FY22: -\$18.450M Reduction of four units/limit production growth (APN-5) Current estimate in accordance with PB24.

Total End Item Quantity

Quantity Category	Current APB Quantity	Current Estimate Quantity
Development	3	3
Procurement	170	170
O&M-Acquired		

Quantity Notes

Unit Cost**IRST**

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Category (\$M) Base Year:2008	Current UCR Baseline	Current Estimate	% Change

Program Acquisition Unit Cost

Cost	2,156.2	1,968.5	
Quantity	173	173	
Unit Cost	12.464	11.379	-8.71%

Average Procurement Unit Cost

Cost	1,340.5	1,148.2	
Quantity	170	170	
Unit Cost	7.885	6.754	-14.35%

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Category (\$M) Base Year:2008	Original UCR Baseline	Current Estimate	% Change

Program Acquisition Unit Cost

Cost	1,914.6	1,968.5	
Quantity	179	173	
Unit Cost	10.696	11.379	6.38%

Average Procurement Unit Cost

Cost	1,150.6	1,148.2	
Quantity	170	170	
Unit Cost	6.768	6.754	-0.21%

Cost Growth Details**Current Baseline PAUC Breach Explanation****Current Baseline APUC Breach Explanation****Original Baseline PAUC Breach Explanation****Original Baseline APUC Breach Explanation****Impacts of Schedule Changes on Unit Cost****Impacts of Performance Changes on Unit Cost****Actions Taken or Proposed to Control Future Cost Growth**

Risk and Sensitivity Analysis

IRST

Risk and Sensitivity Analysis

Current Procurement Cost(February - 2023)

Original Baseline Estimate (February - 2017)

Cost risk for the EMD Phase is assessed as moderate. The IRST system is being developed as an evolutionary Block I / II program due to funding limitations. The Block I IRST system has been developed to support IOC. Due to budget constraints, Block II is not currently funded. The program currently carries one moderate-level cost risk relating to dome reliability. There is a risk that the current dome coating will wear faster than was originally planned, requiring more dome replacements. Maintenance costs incurred for dome replacement will contribute to higher life-cycle costs.

Current Baseline Estimate (May - 2022)

Schedule Risk		
MS B	2011-04-01	Schedule risk of the EMD phase was assessed as moderate. Preliminary trade studies, modeling and simulation, more than ten demonstration flights with a representative prototype sensor flying on F/A-18E/F aircraft, and the extensive use of non-developmental item design and hardware all work to minimize risk. The program could only afford a limited number of flight test assets with spare weapon replaceable assemblies being supplied on an as-needed basis by borrowed laboratory assets. Test assets were aggressively managed throughout the program to mitigate the schedule risk caused by this asset limitation.
Technical Risks		
Current	December 24, 2021	Technical risk of reliability and maturity of Build in Test (BIT) to support reliance on it for O-level maintenance at IOC. BIT must be sufficiently matured by V3 Build 2.0 to support O-level maintenance until O-level test sets can be delivered to fleet squadrons equipped with IRST. Mitigation steps include potential opportunities to pull BIT maturation activities to the left in the development schedule to accelerate maturation, usage of contractor logistics support field service representatives to compensate for lack of fielded O-level maintenance capability and release of software updates in the field as BIT maturation continues post IOC.

MS B	April 21, 2011	<p>Performance risk was assessed as moderate. Initial Infrared Search and Track (IRST) technical risk assessments by the prime contractor revealed only low and medium risks. The technology behind the legacy F-14D IRST system is well documented over its history. Hardware improvements being incorporated from other platforms are, likewise, known sub-systems. The primary source of technological risks came from software development and aircraft integration. Of the medium category risks, the only hardware-related item was the centerline pod environment. Other medium risks were integration and software issues such as Multi-Source Integration, data processing throughput, Inertial Measurement Unit integration, new technology compatibility, and false alarm rate. Therefore, future risk reduction activities were centered on these areas as both the prime contractor and sub-contractor offer considerable experience on the F/A-18 and other aircraft.</p>
MS C	December 22, 2018	<p>Technical risk for Impact of Built In Test (BIT) False Alarms on Reliability. Mitigation includes BIT design characterization analysis and compliance prediction at critical design review (CDR), verification that correction of Block I BIT false alarms translate to Block II, verifies correction in flight test, implements fixes for new BIT false alarms occurring in Block II flight test, verifies correction in F/A-18 prototype flight test, conduct scored OA event, and demonstrate threshold value in OPEVAL (1L/4C).</p>
MS C	December 22, 2018	<p>Technical risk for Impact of Processor Stability on System Performance. Mitigation begins with Critical Design Review (CDR) showing compliant design (timing, memory, processing and throughput), lab testing with flight data and off-nominal flight data, static analysis and corrections prior to flight tests.</p>

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	12/05/2018	11/15/2021
Approved Quantity	43	55
Reference	AS	AS Update #2
Start Year	2019	2019
End Year	2024	2024

Rationale if quantity exceeds 10% of the total number of articles to be procured:

Notes

Contracts & Efforts

Contract Data	
Contract Number	N00019-19-C-0019
Effort Number	7
Modification Number	P00004
Award Date	12/28/2018
Definitization Date	03/27/2020
Order Number	
CAGE Code/CAGE Legal Name	76301/The Boeing Company
Contract Title	Block II LRIP III and IV
Contract Address	St. Louis, MO
Contracting Office	N00019
Supported Phase	Production
Contract Strategy	
Contract Type	Fixed-Price Incentive (Firm Target)
Modification Date	August 30, 2022
Work Start Date	
Technical Data Rights	
Work Completed	71.53%

Contracts/Effort Price, Quantity, and Performance (TY\$M)

Initial Target Price	Current Target Price	
\$44.7	\$156.7	
Initial Ceiling Price	Current Ceiling Price	
\$45.6	\$159.8	
Contractor EAC	PM EAC	
\$38.4	\$40.4	
Initial Quantity	Current Quantity	Delivered Quantity
6	22	
BAC	BCWP	ACWP
\$39.7	\$28.4	\$26.7

BCWS	Cost Variance	Schedule Variance
\$37.1	\$1.7	-\$8.7

Contract Notes:

Earned Value Management is only being reported for the LRIP III portion of this Contract. An EVM deviation waiver for the LRIP IV portion of this contract was approved by DASN on August 27, 2020. The RAAF is included in this contract for a quantity of 12 per case ATP-GQF (RAAF pods, which will deliver after USN LRIP units are included in Contractor's completion estimate but not in PM completion estimate). The purpose of P00004 modification is to extend the delivery dates of CLIN 0001, 0002, and 0003. In addition, this modification extends the period of performance of CLIN 0004. The Government is due Consideration for the delivery date and period of performance extensions. Consideration is outlined below: 1. Boeing will be providing five Cover Sets (P/N: 74D740535-1001) and six Umbilical Cables (P/N: 74A926269-1002). As a result, CLINs 0005 Cover Sets and 0006 Umbilical Cables are added to this Contract at no cost to the Government. 2. In Section J, this modification deletes and replaces Statement of Work to reflect the updated SOW Attachment 1, dated 27 June 2022. The scope captured in the updated SOW Paragraph 3.21 reflects the incorporation of the Coversets and Umbilical Cables.

Factors Contributing to Cost Variance and Projected Effects on Program Costs

EVM and delivery data as of 13 March 2023. Cost Performance: The cumulative favorable cost variance is mainly due to WBS 1.4.1 (Non-ILS Program Management). This variance is the result of CUM underrun driven by the Engineering Management bulk labor account and Program Management account. The Program Management account will offset as the support will be conducted in the future. Earned Value Management is only being reported for the LRIP III portion of this Contract. An EVM deviation waiver for the LRIP IV portion of this contract was approved by DASN on August 27, 2020.

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule

EVM and delivery data as of 13 March 2023. Schedule Performance: The cumulative unfavorable schedule variance is primarily due to Lockheed Martin, specifically WBS 1.1.1 (IR Receiver Assembly). This variance is driven by late deliveries of telescopes from the supplier. This delay was due to manufacturing issues and failure review boards.

Contract Data	
Contract Number	N00019-18-C-1022
Effort Number	5
Modification Number	P00024
Award Date	08/17/2018
Definitization Date	08/17/2018
Order Number	
CAGE Code/CAGE Legal Name	76301/The Boeing Company
Contract Title	Block II Phase II
Contract Address	St. Louis, MO
Contracting Office	N00019
Supported Phase	Production
Contract Strategy	
Contract Type	Other
Modification Date	December 19, 2022
Work Start Date	
Technical Data Rights	
Work Completed	87.00%

Contracts/Effort Price, Quantity, and Performance (TYSM)		
Initial Target Price	Current Target Price	
\$152.5	\$167	
Initial Ceiling Price	Current Ceiling Price	
\$152.5		
Contractor EAC	PM EAC	
\$159.9	\$176.6	
Initial Quantity	Current Quantity	Delivered Quantity
3	3	
BAC	BCWP	ACWP
\$149.1	\$129.7	\$137.8
BCWS	Cost Variance	Schedule Variance

\$140.4	-\$8.1	-\$10.7
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Contract Notes:

The purpose of modification P00024 was to fund a cost overrun in the amount of \$8,460,885.00.

Factors Contributing to Cost Variance and Projected Effects on Program Costs

EVM and delivery data as of 13 March 2023. Cost Performance: (\$6,612K) The unfavorable cost performance is driven by Lockheed Martin (LM). Schedule delays due to additional design complexity have led to additional Receiver and System Integration support costs beyond the baseline budget. Cost variance expected to degrade as the schedule recovers.

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule

EVM and delivery data as of 13 March 2023. Schedule Performance: (\$13,664K) The unfavorable schedule performance is driven primarily by LM procurement efforts which are experiencing poor yields. Yield improvement measures are being implemented at sub-tier supplier facilities. Additional delays have occurred due to Quality Assurance (QA) review backlogs. All work is baselined to have completed by 30 April 2022, therefore variance will improve each month as the backlog is reduced. The Period of Performance has been extended to 31 December 2023 however work has not yet been re-baselined to the new target. An Over Target Baseline/Schedule (OTB/OTS) reprogramming request has been submitted by Boeing and approved by the program office and Contracts. Boeing is working to ensure their Latest Revised Estimate includes Lockheed Martin risks accurately.

Contract Data	
Contract Number	N00019-16-G-0001
Effort Number	6
Modification Number	P00011
Award Date	10/25/2018
Definitization Date	05/19/2020
Order Number	N0001919F2410
CAGE Code/CAGE Legal Name	76301/The Boeing Company
Contract Title	Infrared Optimized Configuration (IROC)
Contract Address	St. Louis, MO
Contracting Office	N00019
Supported Phase	Production
Contract Strategy	
Contract Type	Fixed-Price Incentive (Firm Target)
Modification Date	December 12, 2022
Work Start Date	
Technical Data Rights	
Work Completed	77.60%

Contracts/Effort Price, Quantity, and Performance (TY\$M)		
Initial Target Price	Current Target Price	
\$112	\$132.7	
Initial Ceiling Price	Current Ceiling Price	
\$114	\$135.1	
Contractor EAC	PM EAC	
\$106.9	\$108.5	
Initial Quantity	Current Quantity	Delivered Quantity
16	16	2
BAC	BCWP	ACWP
\$117.5	\$91.1	\$86.9
BCWS	Cost Variance	Schedule Variance

\$102.5	\$4.3	-\$11.3
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Contract Notes:

The purpose of modification P00011 is to update CLIN 0001 Section E inspection and acceptance.

Factors Contributing to Cost Variance and Projected Effects on Program Costs

EVM and delivery data as of 13 March 2023. Cost Performance: The cumulative favorable cost variance is due to WBS 1.2 (Platform Integration, Assembly, Test, and Checkout). This variance is the result of less effort required than originally planned as a result of schedule delays. These delays are pushing scheduled work to the right, limiting completion of successor tasking. The favorable variance is expected to degrade as hardware is built and delivered.

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule

EVM and delivery data as of 13 March 2023. Schedule Performance: The cumulative unfavorable schedule variance is primarily due to Lockheed Martin tasks. They have had late deliveries, component failures, and they've needed additional time for failure cause analysis. Lockheed Martin's subcontractors are experiencing delays with Telescopes, Fiber Optic Gyroscopes (FOGs), and Compressors which are leading to further slips in the schedule. The Telescopes are 8 units behind schedule. The FOGs are 14 units behind schedule. The compressors are 2 units behind schedule.

Contract Data	
Contract Number	N0001920G0029
Effort Number	8
Modification Number	P00003
Award Date	07/27/2021
Definitization Date	07/27/2021
Order Number	N0001921F0316
CAGE Code/CAGE Legal Name	04939/Lockheed Martin Corporation
Contract Title	IRST LM LRIP V
Contract Address	Orlando, FL
Contracting Office	N00019
Supported Phase	Development
Contract Strategy	
Contract Type	Firm-Fixed-Price
Modification Date	February 28, 2023
Work Start Date	
Technical Data Rights	
Work Completed	

Contracts/Effort Price, Quantity, and Performance (TYSM)		
Initial Target Price	Current Target Price	
\$48.8	\$58.7	
Initial Ceiling Price	Current Ceiling Price	
\$48.8	\$58.7	
Contractor EAC	PM EAC	
Initial Quantity	Current Quantity	Delivered Quantity
19	23	
BAC	BCWP	ACWP
BCWS	Cost Variance	Schedule Variance

Contract Notes:

This contract is for nine Infrared Receivers (IRRs) and nine Processors plus one unit under test. The Lockheed Martin WRAs will be provided to Boeing as GFE for incorporation into the all-up pod. 2 RAAF IRRs and 2 RAAF Processors were included in this procurement.

Factors Contributing to Cost Variance and Projected Effects on Program Costs**Factors Contributing to Schedule Variance and Projected Effects on Program Schedule**

Contract Data	
Contract Number	N0001920G0029
Effort Number	5
Modification Number	P00001
Award Date	06/30/2022
Definitization Date	06/30/2022
Order Number	N0001922F2503
CAGE Code/CAGE Legal Name	04939/Lockheed Martin Corporation
Contract Title	IRST LM LRIP VI and VII
Contract Address	Orlando, FL
Contracting Office	N00019
Supported Phase	Development
Contract Strategy	
Contract Type	Firm-Fixed-Price
Modification Date	January 31, 2023
Work Start Date	
Technical Data Rights	
Work Completed	

Contracts/Effort Price, Quantity, and Performance (TYSM)		
Initial Target Price	Current Target Price	
\$72.1	\$133.6	
Initial Ceiling Price	Current Ceiling Price	
\$72.1	\$133.6	
Contractor EAC	PM EAC	
\$72.1	\$133.6	
Initial Quantity	Current Quantity	Delivered Quantity
53	138	
BAC	BCWP	ACWP
BCWS	Cost Variance	Schedule Variance

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Contract Notes:

The purpose of modification P00001 is to procure LRIP VII quantities of IRST Weapons Replaceable Assemblies (WRAs), including Infrared Receivers (IRRs), Inertial Measurement Units (IMUs), and System Processors, and associated data. This procurement includes WRAs supporting NAVAIR, NAVSUP, and Air National Guard (ANG).

Factors Contributing to Cost Variance and Projected Effects on Program Costs

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule

External Government Activities

Activity Title		Government Entity		Supported Phase
CAGE		Work Start Date		
City		State/Province:		
Notes				

Deliveries and Expenditures

IRST

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	3	3	3	100.00%
Production	170	2	2	100.00%
Total Program Quantity Delivered	173	5	5	100.00%

Expended and Appropriated (TY \$M)

Years Appropriated to date: 338.84

Total Years Appropriated Funding (Current Baseline): 1074.483

Percent Years Appropriated: 31.54%

Then-Year Funding Appropriated as Percentage of Total Acquisition Estimate: 0.00%

Then-Year Funding Expended as Percentage of Total Acquisition Estimate: 0.00%

Total Acquisition Cost: 2,566.6

Deliveries & Expenditures Notes:

Operating and Support Costs

IRST

O&S Cost Breakdown:

Category (BY\$ Million)	F/A-18E/F IRST
Unit-Level Manpower	.0
Unit Operations	.0
Maintenance	410.7
Sustaining Support	77.5
Continued System Improvements	214.5
Other	.0
Total	702.7

Cost Estimate Source: POE dated February 01, 2023

O&S Cost Notes:

a. Disposal/Demilitarization Cost Estimate and Source of Estimate: \$4.24M CY 2008: \$7.93 TY; POE

b. Sustainment Strategy: IRST is set to operate in F/A-18E/F squadrons and the service life of the IRST system is limited only by the existence of those squadrons. The estimate utilizes the Naval Synchronization Toolset data version 2021-06 to model F/A-18 E/F aircraft and TACAIR squadron availability. 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, NAS Lemoore and Marine Corps Air Station Iwakuni; 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 initially support IRST tactics development, aircrew familiarization, test and evaluation, maintainer training, software configuration set testing, and early fleet demonstration. Block I systems are not intended to be permanently fielded to fleet squadrons. The program will reach Initial Operating Capability (IOC) upon delivery of the first six Block II IRST systems in late FY2024. 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.

c. For Each Acquired System or System Variant: IRST

i. Quantity to Sustain: 170

ii. First Operational Fiscal Year: 2024

iii. Final Operational Fiscal Year: 2040

iv. Unit Expected Service Life: 14.5

d. Antecedent System(s) O&S Costs:

i. There is no antecedent for this system.

Total Program O&S Cost Compared with Baseline					
	Current Baseline				
	Objective (BY\$M)	Threshold (BY\$M)	Current Estimate (BY\$M)	Current Estimate (TY\$M)	Deviation
Total O&S	906.8	997.5	702.7	1,109.7	

Note:

Then year amount is: \$1,109.71M.O&S cost estimate includes a schedule shift of MSD from FY2025 to FY2026 which accompanied a shift to the right of the program acquisition schedule. Additionally, updated flight hours, prices, and reliabilities were incorporated.

O&S Cost Deviation Explanation

Operating and Support Costs - Disposal and Unitized Costs**IRST****Annual Unitized O&S Cost Definition and Calculation Relative to Total O&S Cost:**

Sustainment Factors	System Name: IRST	Antecedent System Name:
Quantity to Sustain	170	
Unit of Measure	System	
Unit Expected Service Life	14.5	

Base Year:

Annual Unitized O&S Cost by Category Base Year \$ Unit:(\$M)	System Name: IRST	Antecedent System Name:
Unit-Level Manpower	0.0	
Unit Operations	0.0	
Maintenance	0.4	
Sustaining Support	0.1	
Continued System Improvements	0.2	
Other	0.0	
Total O&S	0.6	0.0

Disposal/Demilitarization Cost Estimate

(Base Year \$Millions)	System Name: IRST	Antecedent System Name:
Total Disposal	4.2	

Cost Estimate Source - Disposal	
Type:	Program Office Estimate
Approval Authority and Date:	
Note:	
Disposal Cost Notes:	
\$4.24M CY2008; \$7.93M TY	
Additional O&S Estimate Assumptions:	
Sustainment Strategy:	

IRST is set to operate in F/A-18E/F squadrons and the service life of the IRST system is limited only by the existence of those squadrons. The estimate utilizes the Naval Synchronization Toolset data version 2021-06 to model F/A-18 E/F aircraft and TACAIR squadron availability. 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, NAS Lemoore and Marine Corps Air Station Iwakuni; 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 initially support IRST tactics development, aircrew familiarization, test and evaluation, maintainer training, software configuration set testing, and early fleet demonstration. Block I systems are not intended to be permanently fielded to fleet squadrons. The program will reach Initial Operating Capability (IOC) upon delivery of the first six Block II IRST systems in late FY2024. 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.

Antecedent Estimate Assumptions:

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