

UNCLASSIFIED



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-474



F-22 Increment 3.2B Modernization (F-22 Inc 3.2B Mod)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

UNCLASSIFIED

Table of Contents

Sensitivity Originator	3
Common Acronyms and Abbreviations for MDAP Programs	4
Program Information	6
Responsible Office	6
References	7
Mission and Description	8
Executive Summary	9
Threshold Breaches	11
Schedule	12
Performance	13
Track to Budget	14
Cost and Funding	15
Low Rate Initial Production	22
Foreign Military Sales	23
Nuclear Costs	23
Unit Cost	24
Cost Variance	27
Contracts	30
Deliveries and Expenditures	33
Operating and Support Cost	34

Sensitivity Originator

Organization: AFLCMC/WWUM
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Organization Phone: 937-713-7376

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

F-22 Increment 3.2B Modernization (F-22 Inc 3.2B Mod)

DoD Component

Air Force

Responsible Office

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Date Assigned: August 25, 2017

References

SAR Baseline (Production Estimate)

Component Acquisition Executive (CAE) Approved Acquisition Program Baseline (APB) dated March 11, 2017

Approved APB

Component Acquisition Executive (CAE) Approved Acquisition Program Baseline (APB) dated March 11, 2017

Mission and Description

The F-22's combination of stealth, supercruise, maneuverability, Intra-Flight Data Link (IFDL), sensor fusion coupled with improved supportability provides an exponential leap in warfighting capabilities and allows full realization of operational concepts vital to the 21st Century Air Force and joint warfighting anti-access area denial environment. As a critical component of the Global Strike Concept of Operations, the F-22 provides unmatched air-to-air and air-to-ground capabilities.

F-22 Increment 3.2B Modernization (F-22 Inc 3.2B Mod) integrates the Air Intercept Missiles (AIM) AIM-9X and AIM-120D into the F-22, adds Electronic Protection techniques, incorporates new hardware, enhances Geolocate capability, and expands IFDL functionality.

Executive Summary

Program Highlights Since Last Report

Initial Operation Test and Evaluation was entered on August 21, 2017, resulting in Defensive Counter Air, Offensive Counter Air, and Destruction of Enemy Air Defense flight tests being successfully completed September through November 2017. November 2017 saw the completion of the Mission Support System Functional Configuration Audit. Air Combat Simulator verification and validation reviews were successfully completed and all reports were finalized and submitted. The F-22 Program Office verification and validation certification letter submittal, validating all models, slipped to February 6, 2018. The slip does not cause an impact to the scoring events. Submittal of the Air Force Operation Test and Evaluation Center (AFOTEC) accreditation report to AFOTEC Headquarters is scheduled for mid March 2018. LRIP kit production is on-going with the kit installation proposal to be awarded September 2018. The Manufacturing Readiness Assessment is in work to support the FRP July 2018 Decision Review schedule and award FRP in August 2018. First installs are on track for May 2019.

Significant Accomplishments:

A live fire flight test of two Air Intercept Missile (AIM) AIM-120 advanced medium range air to air missiles and two GBU-39 small diameter bombs was successfully accomplished at the Utah test and training range on January 10, 2018. Initial operational test and evaluation is expected to continue through April 2018.

All Air Combat Simulator Verification and Validation reviews successfully completed. The signed F-22 Program Office certification letter was submitted to AFOTEC February 9, 2018.

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

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	Significant Development Description
December 2011	USD(AT&L) approved the Material Development Decision and designated F-22 Increment 3.2B Modernization as a pre-MDAP for entry into the acquisition management system at Milestone B as an ACAT 1D program.
December 2012	USD(AT&L) approves the F-22 Increment 3.2B Modernization Acquisition Strategy.
June 2013	USD(AT&L) approves the Milestone B Decision and entry into EMD as an ACAT 1D program.
June 2013	The F-22 Program Office awarded the F-22 Increment 3.2B Modernization EMD contract.
October 2014	F-22 Increment 3.2B Modernization Developmental Test and Evaluation flight testing began.
April 2015	USD(AT&L) delegated F-22 Increment 3.2B Modernization to the Secretary of the Air Force and designated the program as ACAT IC.
July 2015	The F-22 Program Office awarded the LRIP Advance Procurement Contract.
1st Quarter FY 2016	Air Force Operational Test and Evaluation Center conducted an Operational Assessment for F-22 Increment 3.2B Modernization.
September 2016	The SAE approved the F-22 Increment 3.2B Modernization Milestone C Decision and entry into the Production and Deployment Phase.
December 2016	Modifications for the nine aircraft needed to support Initial Operational Test and Evaluation completed.
February 2017	The F-22 Program Office awarded the LRIP I and II contracts.
March 2017	The SAE approved F-22 Increment 3.2B Modernization Milestone C APB.
April 2017	The Capstone Live Fire Event was successfully accomplished.
August 2017	Entered Initial Operational Test and Evaluation.
August 2017	USD(AT&L) signed the Increment 3.2B waiver package allowing cost-plus kit installs.

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
Materiel Development Decision	Dec 2011	Dec 2011	Dec 2011	Dec 2011
Milestone B	Jun 2013	Jun 2013	Jun 2013	Jun 2013
Milestone C	Aug 2016	Aug 2016	Aug 2016	Aug 2016
Full Rate Production	Jul 2018	Jul 2018	Jan 2019	Jul 2018
Required Assets Available (RAA)	Mar 2019	Mar 2019	Sep 2019	Jul 2019

Change Explanations

(Ch-1) Milestone C current estimate changed from June 2016 to August 2016 to reflect actual milestone date.

(Ch-2) The RAA current estimate changed from September 2019 to July 2019 due to schedule refinement as a result of LRIP contract award in February 2017.

Notes

RAA is defined as six aircraft and associated support equipment.

Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold	Demonstrated Performance	Current Estimate	
Materiel Availability (Am)				
Do not degrade aircraft Am below current baseline performance. Baseline performance KPP: By the end of: FY 2011: 61.2% FY 2012: 62.6% FY 2013: 65.8% FY 2014: 67.6% FY 2015: 70.6%	Do not degrade aircraft Am below current baseline performance. Baseline performance KPP: By the end of: FY 2011: 61.2% FY 2012: 62.6% FY 2013: 65.8% FY 2014: 67.6% FY 2015: 70.6%	(T=O) Do not degrade aircraft Am below current baseline performance. Baseline performance KPP: By the end of: FY 2011: 61.2% FY 2012: 62.6% FY 2013: 65.8% FY 2014: 67.6% FY 2015: 70.6%	TBD	Do not degrade aircraft Am below current baseline performance. Baseline performance KPP: By the end of: FY 2011: 61.2% FY 2012: 62.6% FY 2013: 65.8% FY 2014: 67.6% FY 2015: 70.6%
Reliability, MTBCF				
Do not degrade aircraft MTBCF below current baseline performance.	Do not degrade aircraft MTBCF below current baseline performance.	(T=O) Do not degrade aircraft MTBCF below current baseline performance.	TBD	Do not degrade aircraft MTBCF below current baseline performance.
Weapons Integration				
The F-22A shall be modified as required to enable employment of the AIM-120D and the AIM-9X Block II.	The F-22A shall be modified as required to enable employment of the AIM-120D and the AIM-9X Block II.	(T=O) The F-22A shall be modified as required to enable employment of the AIM-120D and the AIM-9X Block II.	TBD	The F-22A shall be modified as required to enable employment of the AIM-120D and the AIM-9X Block II.

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

Requirements Reference

CPD, dated January 4, 2007, as modified by JROC Memorandum 052-11 dated April 19, 2011

Change Explanations

None

Acronyms and Abbreviations

AIM - Air Intercept Missile

Am - Materiel Availability

MTBCF - Mean Time Between Critical Failure

Track to Budget

RDT&E

Appn	BA	PE		
Air Force	3600	07	0207138F	
	Project		Name	
	674785		F-22	(Shared) (Sunk)
Air Force	3600	07	0207163F	
	Project		Name	
	673777		AIM-120D	(Shared) (Sunk)
Air Force	3600	05	0605213F	
	Project		Name	
	654785		F-22 Increment 3.2B	(Shared) (Sunk)

Procurement

Appn	BA	PE		
Air Force	3010	06	0207138F	
	Line Item		Name	
	000999		Initial Spares/Repair Parts	(Shared) (Sunk)
Air Force	3010	05	0207138F	
	Line Item		Name	
	F2232B		Increment 3.2B	
	F2232B		Advance Procurement	(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2016 \$M			BY 2016 \$M	TY \$M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	1181.2	1181.2	1299.3	1173.4	1139.7	1139.7	1131.3
Procurement	301.6	301.6	331.8	307.9	321.2	321.2	327.1
Flyaway	--	--	--	286.1	--	--	303.9
Recurring	--	--	--	286.1	--	--	303.9
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	21.8	--	--	23.2
Other Support	--	--	--	6.9	--	--	7.4
Initial Spares	--	--	--	14.9	--	--	15.8
MILCON	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
Total	1482.8	1482.8	N/A	1481.3	1460.9	1460.9	1458.4

Current APB Cost Estimate Reference

F-22 Increment 3.2B SCP signed by SAF/FMC, dated July 29, 2016

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	9	9	9
Procurement	143	143	143
Total	152	152	152

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	1117.7	13.6	0.0	0.0	0.0	0.0	0.0	0.0	1131.3
Procurement	178.4	113.5	9.0	20.2	6.0	0.0	0.0	0.0	327.1
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	1296.1	127.1	9.0	20.2	6.0	0.0	0.0	0.0	1458.4
PB 2018 Total	1298.7	127.1	13.1	20.4	6.0	0.0	0.0	0.0	1465.3
Delta	-2.6	0.0	-4.1	-0.2	0.0	0.0	0.0	0.0	-6.9

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	71	72	0	0	0	0	0	0	143
PB 2019 Total	9	71	72	0	0	0	0	0	0	152
PB 2018 Total	9	71	72	0	0	0	0	0	0	152
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding							
3600 RDT&E Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2004	--	--	--	--	--	--	6.4
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	16.5
2007	--	--	--	--	--	--	33.0
2008	--	--	--	--	--	--	31.4
2009	--	--	--	--	--	--	40.8
2010	--	--	--	--	--	--	131.0
2011	--	--	--	--	--	--	129.5
2012	--	--	--	--	--	--	127.5
2013	--	--	--	--	--	--	129.0
2014	--	--	--	--	--	--	109.1
2015	--	--	--	--	--	--	180.2
2016	--	--	--	--	--	--	115.6
2017	--	--	--	--	--	--	67.7
2018	--	--	--	--	--	--	13.6
Subtotal	9	--	--	--	--	--	1131.3

Annual Funding							
3600 RDT&E Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2016 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2004	--	--	--	--	--	--	7.9
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	19.2
2007	--	--	--	--	--	--	37.4
2008	--	--	--	--	--	--	34.9
2009	--	--	--	--	--	--	44.7
2010	--	--	--	--	--	--	141.8
2011	--	--	--	--	--	--	137.6
2012	--	--	--	--	--	--	133.1
2013	--	--	--	--	--	--	132.5
2014	--	--	--	--	--	--	110.5
2015	--	--	--	--	--	--	180.7
2016	--	--	--	--	--	--	114.3
2017	--	--	--	--	--	--	65.8
2018	--	--	--	--	--	--	13.0
Subtotal	9	--	--	--	--	--	1173.4

Annual Funding							
3010 Procurement Aircraft Procurement, Air Force							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2015	--	28.5	--	--	28.5	--	28.5
2016	35	62.5	--	--	62.5	4.6	67.1
2017	36	75.8	--	--	75.8	7.0	82.8
2018	72	102.5	--	--	102.5	11.0	113.5
2019	--	8.8	--	--	8.8	0.2	9.0
2020	--	19.8	--	--	19.8	0.4	20.2
2021	--	6.0	--	--	6.0	--	6.0
Subtotal	143	303.9	--	--	303.9	23.2	327.1

Annual Funding							
3010 Procurement Aircraft Procurement, Air Force							
Fiscal Year	Quantity	BY 2016 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2015	--	27.9	--	--	27.9	--	27.9
2016	35	60.3	--	--	60.3	4.4	64.7
2017	36	71.8	--	--	71.8	6.7	78.5
2018	72	95.1	--	--	95.1	10.2	105.3
2019	--	8.0	--	--	8.0	0.2	8.2
2020	--	17.7	--	--	17.7	0.3	18.0
2021	--	5.3	--	--	5.3	--	5.3
Subtotal	143	286.1	--	--	286.1	21.8	307.9

Cost Quantity Information		
3010 Procurement Aircraft Procurement, Air Force		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 2016 \$M
2015	--	--
2016	35	70.0
2017	36	72.0
2018	72	144.1
2019	--	--
2020	--	--
2021	--	--
Subtotal	143	286.1

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	6/26/2013	6/26/2013
Approved Quantity	71	71
Reference	Milestone B ADM	Milestone B ADM
Start Year	2016	2016
End Year	2017	2017

The Current Total LRIP Quantity is more than 10% of the total production quantity due to an opportunity to capture economic order quantity efficiencies. This strategy was approved as part of the Milestone B review.

Foreign Military Sales

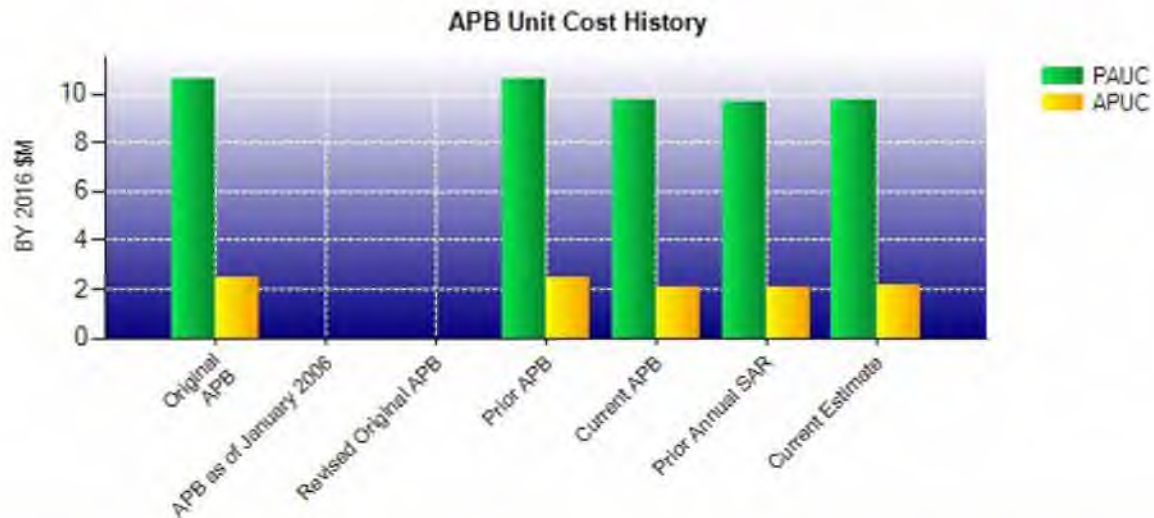
None

Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2016 \$M	BY 2016 \$M	% Change
	Current UCR Baseline (Mar 2017 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	1482.8	1481.3	
Quantity	152	152	
Unit Cost	9.755	9.745	-0.10
Average Procurement Unit Cost			
Cost	301.6	307.9	
Quantity	143	143	
Unit Cost	2.109	2.153	+2.09
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2016 \$M	BY 2016 \$M	% Change
	Original UCR Baseline (Jun 2013 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	1607.9	1481.3	
Quantity	152	152	
Unit Cost	10.578	9.745	-7.87
Average Procurement Unit Cost			
Cost	353.7	307.9	
Quantity	143	143	
Unit Cost	2.473	2.153	-12.94



APB Unit Cost History					
Item	Date	BY 2016 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Jun 2013	10.578	2.473	10.422	2.635
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	Jun 2013	10.578	2.473	10.422	2.635
Current APB	Mar 2017	9.755	2.109	9.611	2.246
Prior Annual SAR	Dec 2016	9.698	2.111	9.640	2.317
Current Estimate	Dec 2017	9.745	2.153	9.595	2.287

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
10.422	0.051	0.000	0.000	0.000	-0.860	0.000	-0.002	-0.811	9.611

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
9.611	-0.010	0.000	0.000	0.000	-0.009	0.000	0.003	-0.016	9.595

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2.635	0.029	0.000	0.000	0.000	-0.416	0.000	-0.002	-0.389	2.246

Current SAR Baseline to Current Estimate (TY \$M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2.246	-0.009	0.000	0.000	0.000	0.047	0.000	0.003	0.041	2.287

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	Mar 2013	Jun 2013	Jun 2013
Milestone C	N/A	Mar 2016	Aug 2016	Aug 2016
RAA	N/A	Mar 2019	N/A	N/A
Total Cost (TY \$M)	N/A	1584.1	1460.9	1458.4
Total Quantity	N/A	152	152	152
PAUC	N/A	10.422	9.611	9.595

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	1139.7	321.2	--	1460.9
Previous Changes				
Economic	+3.6	+9.3	--	+12.9
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-9.4	+2.1	--	-7.3
Other	--	--	--	--
Support	--	-1.2	--	-1.2
Subtotal	-5.8	+10.2	--	+4.4
Current Changes				
Economic	-3.8	-10.6	--	-14.4
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+1.2	+4.6	--	+5.8
Other	--	--	--	--
Support	--	+1.7	--	+1.7
Subtotal	-2.6	-4.3	--	-6.9
Total Changes	-8.4	+5.9	--	-2.5
CE - Cost Variance	1131.3	327.1	--	1458.4
CE - Cost & Funding	1131.3	327.1	--	1458.4

Summary BY 2016 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	1181.2	301.6	--	1482.8
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-9.0	+1.6	--	-7.4
Other	--	--	--	--
Support	--	-1.3	--	-1.3
Subtotal	-9.0	+0.3	--	-8.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+1.2	+4.3	--	+5.5
Other	--	--	--	--
Support	--	+1.7	--	+1.7
Subtotal	+1.2	+6.0	--	+7.2
Total Changes	-7.8	+6.3	--	-1.5
CE - Cost Variance	1173.4	307.9	--	1481.3
CE - Cost & Funding	1173.4	307.9	--	1481.3

Previous Estimate: December 2016

RD&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-3.8
Adjustment for current and prior escalation. (Estimating)	+3.7	+3.8
Revised estimate to reflect actuals. (Estimating)	-2.5	-2.6
New Estimating change. Revised estimate to reflect actuals. (Estimating)	0.0	0.0
RD&E Subtotal	+1.2	-2.6

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-10.6
Adjustment for current and prior escalation. (Estimating)	+7.6	+8.1
Revised estimate due to updated actuals, incorporation of negotiated LRIP costs, and updated install schedule. (Estimating)	-3.3	-3.5
Adjustment for current and prior escalation. (Support)	+0.7	+0.7
Increase in Other Support due to update in the FRP estimate. (Support)	+0.1	+0.2
Increase in Initial Spares due to updated actuals. (Support)	+0.9	+0.8
Procurement Subtotal	+6.0	-4.3

Contracts

Contract Identification	
Appropriation:	RDT&E
Contract Name:	F-22 Mod, DO 0004 REDI II, Incr 3.2B Ph C&D
Contractor:	Lockheed Martin Aeronautics
Contractor Location:	1 Lockheed Blvd Ft. Worth, TX 76108-3619
Contract Number:	FA8611-13-D-2850/3
Contract Type:	Cost Plus Incentive Fee (CPIF), Cost Plus Fixed Fee (CPFF)
Award Date:	June 26, 2013
Definitization Date:	June 26, 2013

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
328.8	N/A	9	364.9	N/A	9	333.4	333.4

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the addition of one Engineering Change Proposal (ECP) and four Contract Change Proposals (CCPs) in CY 2016:

Contract Modification 000412 added ECP 0661 - Addition of 7th Dual Computing Engine (DuCE) and Global Inertial Navigation System (GINS) 09 to Increment 3.2B; as a result, the Delivery Order (DO) 0004 price increased by \$.9M.

Contract Modification 000417 added CCP 438 - Credit for stop work of maintenance training courseware activities; as a result, the DO 0004 price decreased by \$.3M.

Contract Modification 000419 added CCP 0452 - Partial stop work and addition of new work due to Air Force Operational Test and Evaluation Center (AFOTEC) providing new threat model requirements beyond the scope of DO 0004 and deleted threat model requirements previously identified; as a result, the DO 0004 price increased by \$3.1M.

Contract Modification 000432 increased the price of CLIN 0201 by \$12.4M.

The total net value of DO 0004 contract changes in CY 2016 amount to \$16.1M.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/28/2018)	-39.7	-2.3
Previous Cumulative Variances	-27.1	-3.1
Net Change	-12.6	+0.8

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to delays in flight testing and settlement of the Request for Equitable Adjustment.

The favorable net change in the schedule variance is due to the maturity of the contract.

Notes

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

Contract Identification

Appropriation: Procurement
Contract Name: Increment 3.2B Production
Contractor: Lockheed Martin Corporation
Contractor Location: 1 Lockheed Blvd
Fort Worth, TX 76108-3619
Contract Number: FA8611-13-D-2850/5
Contract Type: Firm Fixed Price (FFP)
Award Date: July 22, 2015
Definitization Date: July 22, 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
20.4	N/A	0	145.9	N/A	71	145.9	145.9

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to multiple modifications for Advance Procurement for EMD, Diminishing Manufacturing Sources, and Processor Interface Control and Communication 3 for \$7.6M, the awards on February 28, 2017 of 3.2B Production and Deployment LRIPs I and II in the amount of \$114.3M, and the award on March 28, 2017 of Advance Procurement for Production in the amount of \$3.4M.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP) contract.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	9	9	9	100.00%
Production	0	0	143	0.00%
Total Program Quantity Delivered	9	9	152	5.92%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	1458.4	Years Appropriated	15
Expended to Date	1193.8	Percent Years Appropriated	83.33%
Percent Expended	81.86%	Appropriated to Date	1423.2
Total Funding Years	18	Percent Appropriated	97.59%

The above data is current as of February 28, 2018.

Total funding years reflect development executed in support of the F-22 Inc 3.2B Mod program. Beginning in FY 2011 the program was rescope into smaller increments of capability (e.g. 3.2A, 3.2B) to adjust to financial constraints, facilitate improved baseline control/management, and meet capability delivery needs. F-22 Inc 3.2B Mod officially started in FY 2013 with approval of Milestone B.

LRIP I deliveries are expected to begin in April 2019.

Operating and Support Cost

Cost Estimate Details

Date of Estimate: July 29, 2016
Source of Estimate: SCP
Quantity to Sustain: 149
Unit of Measure: Modified Aircraft
Service Life per Unit: 33.00 Years
Fiscal Years in Service: FY 2018 - FY 2051

The F-22 Inc 3.2B Mod is a capability upgrade modification program. The program will modify 152 F-22A aircraft (9 RDT&E and 143 Procurement). Of the 152 aircraft, 3 are development test assets, and 149 will be sustained with O&S funds.

Sustainment Strategy

Given the low hardware risk of the F-22 Inc 3.2B Mod upgrade, sustainment requirements will be managed within the baseline F-22 sustainment concept with minimal impact on O&S cost estimates or achievement of materiel availability goals. The F-22 sustainment strategy is to sustain F-22 readiness and availability at the lowest cost over the life of the weapon system. The F-22 sustainment strategy employs Performance-Based Logistics contracts with Public/Private Partnering for depot repair capabilities to meet Air Force Core requirements.

Antecedent Information

No Antecedent

Annual O&S Costs BY2016 \$K		
Cost Element	F-22 Inc 3.2B Mod Average Annual Cost Per Modified Aircraft	No Antecedent (Antecedent)
Unit-Level Manpower	0.000	0.000
Unit Operations	0.000	0.000
Maintenance	7.100	0.000
Sustaining Support	0.000	0.000
Continuing System Improvements	26.400	0.000
Indirect Support	0.000	0.000
Other	0.000	0.000
Total	33.500	--

Average Primary Aircraft Assigned (PAA): 163 (entire F-22 fleet)

Item	Total O&S Cost \$M			
	F-22 Inc 3.2B Mod			No Antecedent (Antecedent)
	Current Production APB Objective/Threshold	Current Estimate		
Base Year	180.0	198.0	180.0	N/A
Then Year	260.9	N/A	0.0	0.0

The F-22 Inc 3.2B Mod O&S costs will not be tracked separately as directed by the June 26, 2013 ADM. F-22A Modernization Increment 3.2B O&S cost estimate from the Milestone C SCP is \$180M (BY 2016), \$260.9M (TY). The total life cycle cost estimate for the F-22A system is \$96.3B (BY 2016\$). The service life of the F-22 system was increased from 15 years to 33 years per modified aircraft.

The Air Force expects F-22 Inc 3.2B Mod O&S costs to be budgeted in the baseline F-22 PE (27138F) and expended along with baseline program O&S funds, so the PAA value used in the calculation includes all F-22s, not just the aircraft receiving the Inc 3.2B modification.

Costs are applied for the years 2018 (1st modified aircraft is fielded) through 2051 (33 years).

Equation to Translate Annual Cost to Total Cost

Unitized cost estimate is calculated:

Total O&S / estimated service life / Average PAA; $(\$180.0M/33/163) = \$33.5K$

The average annual cost per modified aircraft represents the additional O&S cost of the 149 modified aircraft spread over the entire fleet of F-22 aircraft (163 PAA). This is necessary since the modified aircraft will be reported as part of the overall F-22 baseline program.

O&S Cost Variance		
Category	BY 2016 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2016 SAR	180.0	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	0.0	
Current Estimate	180.0	

Disposal Estimate Details

Date of Estimate:

Source of Estimate:**Disposal/Demilitarization Total Cost (BY 2016 \$M):**

Disposal costs for this modification are included in the F-22 platform.