



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 2015 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
BA - Budget Authority/Budget Activity
BY - Base Year
DAMIR - Defense Acquisition Management Information Retrieval
Dev Est - Development Estimate
DoD - Department of Defense
DSN - Defense Switched Network
Econ - Economic
Eng - Engineering
Est - Estimating
FMS - Foreign Military Sales
FY - Fiscal Year
IOC - Initial Operational Capability
\$K - Thousands of Dollars
LRIP - Low Rate Initial Production
\$M - Millions of Dollars
MILCON - Military Construction
N/A - Not Applicable
O&S - Operating and Support
Oth - Other
PAUC - Program Acquisition Unit Cost
PB - President's Budget
PE - Program Element
Proc - Procurement
Prod Est - Production Estimate
QR - Quantity Related
Qty - Quantity
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
Sch - Schedule
Spt - Support
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting

Program Information

Program Name

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

DoD Component

Air Force

Responsible Office

Responsible Office

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Date Assigned January 17, 2012

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated June 24, 2013

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated June 24, 2013

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-9X and AIM-120D into the F-22, adds Electronic Protection techniques, incorporates new hardware, enhances Geolocate capability, and expands IFDL functionality.

Executive Summary

F-22 Inc 3.2B Mod integrates the Air Intercept Missiles AIM-9X and AIM-120D into the aircraft, adds Electronic Protection techniques, incorporates new hardware, enhances Geolocate capability, and expands Intra-Flight Data Link functionality.

The program is on-track to meet the APB parameters. The Engineering and Manufacturing Development effort is underway and the contractor completed the Integrated Baseline Review in November 2013, providing a schedule that supports APB threshold dates. Hardware qualification is over 85% complete with full completion in 4th Quarter FY 2014.

On June 26, 2013, the Under Secretary of Defense for Acquisition, Technology and Logistics (USD(AT&L)) approved Milestone B and certified (with waivers to provisions (a)(1)(B) and (a)(1)(D)) the components set forth in section 2366b of title 10, United States Code. Pursuant to this code, the USD(AT&L) waived two provisions in its certification because of differences between the Air Force's Service Cost Position and the Future Years Defense Program associated with the FY 2014 PB. The certification requirement for these two provisions has not yet been met, and the Department will continue to review the F-22 Inc 3.2B Mod program at least annually until the certification components are satisfied.

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

Threshold Breaches

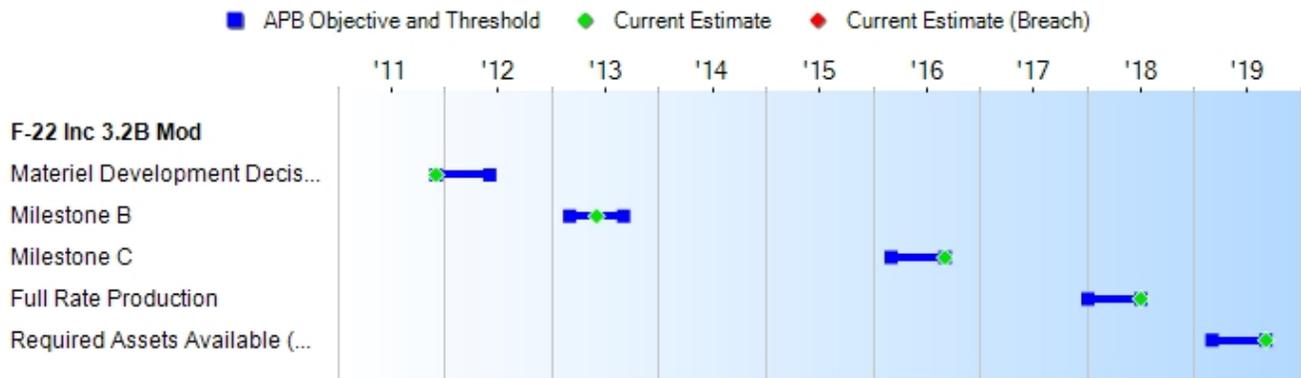
APB Breaches		
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Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
O&S Cost		<input type="checkbox"/>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

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

Schedule



Milestones	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	
		Start	End		
Materiel Development Decision	DEC 2011	DEC 2011	JUN 2012	DEC 2011	
Milestone B	MAR 2013	MAR 2013	SEP 2013	JUN 2013	
Milestone C	MAR 2016	MAR 2016	SEP 2016	SEP 2016	(Ch-1)
Full Rate Production	JAN 2018	JAN 2018	JUL 2018	JUL 2018	(Ch-1)
Required Assets Available (RAA)	MAR 2019	MAR 2019	SEP 2019	SEP 2019	(Ch-1)

Change Explanations

(Ch-1) The Milestone C, Full Rate Production, and Required Assets Available (RAA) current estimates changed from June 2016 to September 2016, January 2018 to July 2018, and March 2019 to September 2019 respectively. Previous current estimates were provided prior to the program Integrated Baseline Review and therefore reflected the APB objective dates. In order to ensure current plans are realistic and achievable, these values were updated to match APB threshold dates until system design is more mature and risk mitigation plans have proven successful.

Memo

RAA is defined as six aircraft and associated support equipment.

Performance

Characteristics	SAR Baseline Dev Est	Current APB Development 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%	(Threshold = Objective) 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.	(Threshold = Objective) 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.	(Threshold = Objective) 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 Source

Capability Production Document (CPD) dated January 4, 2007, as clarified by Joint Requirements Oversight Council Memorandum (JROCM) 052-11 dated April 19, 2011 and JROCM 134-12 dated September 4, 2012 (weapons integration performance criteria are contained in F-22A Increment 3.2B Operational Capabilities Development Document Revision A dated November 15, 2011; availability and reliability performance criteria are contained in Air Force Requirements Oversight Council Memorandum (AFROCM) 11-10-02 dated November 19, 2010 and JROCM 052-11)

Change Explanations

None

Acronyms and Abbreviations

AIM - Air Intercept Missile
KPP - Key Performance Parameter
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)
Air Force 3600	05	0605213F		
		Project	Name	
		654785	F-22 Increment 3.2B	

Procurement

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

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

Appropriation	BY2013 \$M			BY2013 \$M	TY \$M		
	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	1199.4	1199.4	1319.3	1185.1	1207.3	1207.3	1195.8
Procurement	338.2	338.2	372.0	331.0	376.8	376.8	373.9
Flyaway	--	--	--	310.9	--	--	351.3
Recurring	--	--	--	310.9	--	--	351.3
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	20.1	--	--	22.6
Other Support	--	--	--	6.5	--	--	7.3
Initial Spares	--	--	--	13.6	--	--	15.3
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	1537.6	1537.6	N/A	1516.1	1584.1	1584.1	1569.7

Confidence Level for Current APB Cost 53% -

The Life-Cycle Cost Estimate (LCCE) reflects the expected value, or mean, of the cost estimate distribution. It takes into consideration relevant risks, including ordinary levels of external and unforeseen events, aiming to provide sufficient resources to execute the program under normal conditions encountering average levels of technical, schedule, and programmatic risk and external influence.

Quantity	SAR Baseline Dev Est	Current APB Development	Current Estimate
RDT&E		9	9
Procurement		143	143
Total		152	152

The unit of measure is modified aircraft.

Cost and Funding

Funding Summary

Appropriation and Quantity Summary FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	642.1	135.8	197.5	147.4	73.0	0.0	0.0	0.0	1195.8
Procurement	0.0	0.0	28.5	74.0	83.9	153.6	13.3	20.6	373.9
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 2015 Total	642.1	135.8	226.0	221.4	156.9	153.6	13.3	20.6	1569.7
	--	--	--	--	--	--	--	--	--

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	9	0	0	0	0	0	0	0	0	9
Production	0	0	0	0	35	36	72	0	0	143
PB 2015 Total	9	0	0	0	35	36	72	0	0	152
	--	--	--	--	--	--	--	--	--	--

Cost and Funding

Annual Funding By Appropriation

Annual Funding TY\$

3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
2004	--	--	--	--	--	--	6.4
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	16.5
2007	--	--	--	--	--	--	33.0
2008	--	--	--	--	--	--	31.4
2009	--	--	--	--	--	--	40.8
2010	--	--	--	--	--	--	131.0
2011	--	--	--	--	--	--	129.5
2012	--	--	--	--	--	--	124.5
2013	--	--	--	--	--	--	129.0
2014	--	--	--	--	--	--	135.8
2015	--	--	--	--	--	--	197.5
2016	--	--	--	--	--	--	147.4
2017	--	--	--	--	--	--	73.0
Subtotal	9	--	--	--	--	--	1195.8

Annual Funding BY\$**3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force**

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2013 \$M	Non End Item Recurring Flyaway BY 2013 \$M	Non Recurring Flyaway BY 2013 \$M	Total Flyaway BY 2013 \$M	Total Support BY 2013 \$M	Total Program BY 2013 \$M
2004	--	--	--	--	--	--	7.6
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	18.5
2007	--	--	--	--	--	--	36.0
2008	--	--	--	--	--	--	33.6
2009	--	--	--	--	--	--	43.1
2010	--	--	--	--	--	--	136.5
2011	--	--	--	--	--	--	132.4
2012	--	--	--	--	--	--	125.1
2013	--	--	--	--	--	--	127.4
2014	--	--	--	--	--	--	131.8
2015	--	--	--	--	--	--	188.3
2016	--	--	--	--	--	--	137.9
2017	--	--	--	--	--	--	66.9
Subtotal	9	--	--	--	--	--	1185.1

Annual Funding TY\$
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
2015	--	28.5	--	--	28.5	--	28.5
2016	35	68.5	--	--	68.5	5.5	74.0
2017	36	78.1	--	--	78.1	5.8	83.9
2018	72	142.9	--	--	142.9	10.7	153.6
2019	--	13.1	--	--	13.1	0.2	13.3
2020	--	20.2	--	--	20.2	0.4	20.6
Subtotal	143	351.3	--	--	351.3	22.6	373.9

Annual Funding BY\$
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2013 \$M	Non End Item Recurring Flyaway BY 2013 \$M	Non Recurring Flyaway BY 2013 \$M	Total Flyaway BY 2013 \$M	Total Support BY 2013 \$M	Total Program BY 2013 \$M
2015	--	26.4	--	--	26.4	--	26.4
2016	35	62.2	--	--	62.2	5.0	67.2
2017	36	69.5	--	--	69.5	5.2	74.7
2018	72	124.7	--	--	124.7	9.3	134.0
2019	--	11.2	--	--	11.2	0.2	11.4
2020	--	16.9	--	--	16.9	0.4	17.3
Subtotal	143	310.9	--	--	310.9	20.1	331.0

Cost Quantity Information
3010 | Procurement | Aircraft Procurement, Air Force

Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned with Quantity) BY 2013 \$M
2015	--	--
2016	35	76.1
2017	36	78.3
2018	72	156.5
2019	--	--
2020	--	--
Subtotal	143	310.9

Low Rate Initial Production

	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

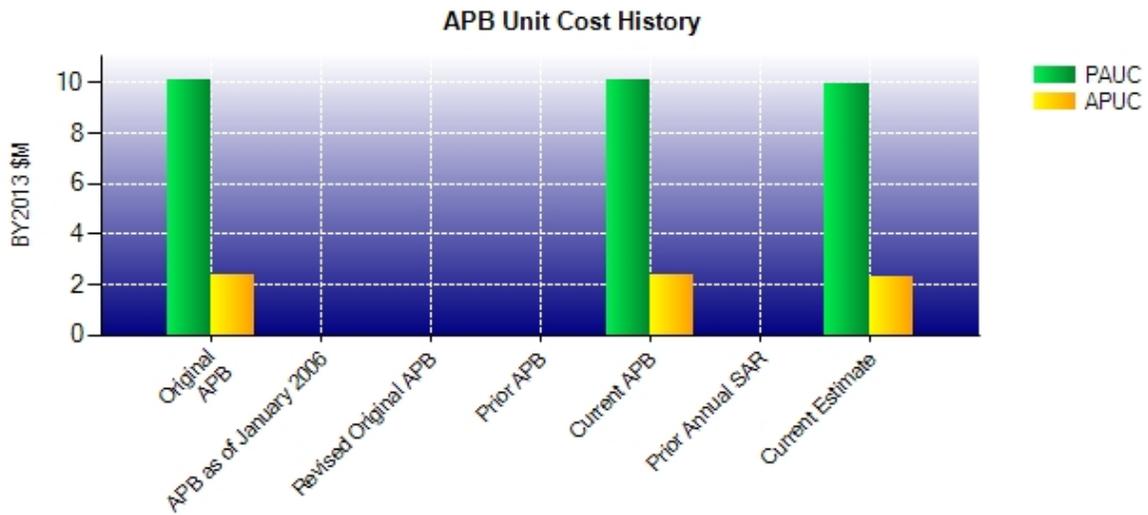
None

Unit Cost**Unit Cost Report**

	BY2013 \$M	BY2013 \$M	
Unit Cost	Current UCR Baseline (JUN 2013 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1537.6	1516.1	
Quantity	152	152	
Unit Cost	10.116	9.974	-1.40
Average Procurement Unit Cost (APUC)			
Cost	338.2	331.0	
Quantity	143	143	
Unit Cost	2.365	2.315	-2.11

	BY2013 \$M	BY2013 \$M	
Unit Cost	Original UCR Baseline (JUN 2013 APB)	Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	1537.6	1516.1	
Quantity	152	152	
Unit Cost	10.116	9.974	-1.40
Average Procurement Unit Cost (APUC)			
Cost	338.2	331.0	
Quantity	143	143	
Unit Cost	2.365	2.315	-2.11

Unit Cost History



	Date	BY2013 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	JUN 2013	10.116	2.365	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	N/A	N/A	N/A	N/A	N/A
Current APB	JUN 2013	10.116	2.365	10.422	2.635
Prior Annual SAR	N/A	N/A	N/A	N/A	N/A
Current Estimate	DEC 2013	9.974	2.315	10.327	2.615

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
10.422	0.059	0.000	0.000	0.000	-0.151	0.000	-0.003	-0.095	10.327

Current SAR Baseline to Current Estimate (TY \$M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2.635	0.039	0.000	0.000	0.000	-0.057	0.000	-0.003	-0.021	2.615

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	MAR 2013	N/A	JUN 2013
Milestone C	N/A	MAR 2016	N/A	SEP 2016
RAA	N/A	MAR 2019	N/A	SEP 2019
Total Cost (TY \$M)	N/A	1584.1	N/A	1569.7
Total Quantity	N/A	152	N/A	152
Prog. Acq. Unit Cost (PAUC)	N/A	10.422	N/A	10.327

The previously reported "Current Estimate" for program milestone dates was provided prior to the program Integrated Baseline Review and the current estimate reflected the APB objective dates. In order to ensure current plans are realistic and achievable, the "Current Estimate" was updated to match APB threshold dates until system design is more mature and risk mitigation plans have proven successful. The Total Cost and PAUC changes reflect fact of life changes in the FY 2015 PB.

Cost Variance

Summary Then Year \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	1207.3	376.8	--	1584.1
Previous Changes				
Economic	+3.5	+6.4	--	+9.9
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-3.5	-6.1	--	-9.6
Other	--	--	--	--
Support	--	-0.3	--	-0.3
Subtotal	--	--	--	--
Current Changes				
Economic	-0.2	-0.8	--	-1.0
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-11.3	-2.0	--	-13.3
Other	--	--	--	--
Support	--	-0.1	--	-0.1
Subtotal	-11.5	-2.9	--	-14.4
Total Changes	-11.5	-2.9	--	-14.4
CE - Cost Variance	1195.8	373.9	--	1569.7
CE - Cost & Funding	1195.8	373.9	--	1569.7

Summary Base Year 2013 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	1199.4	338.2	--	1537.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-3.3	-5.2	--	-8.5
Other	--	--	--	--
Support	--	-0.2	--	-0.2
Subtotal	-3.3	-5.4	--	-8.7
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-11.0	-1.7	--	-12.7
Other	--	--	--	--
Support	--	-0.1	--	-0.1
Subtotal	-11.0	-1.8	--	-12.8
Total Changes	-14.3	-7.2	--	-21.5
CE - Cost Variance	1185.1	331.0	--	1516.1
CE - Cost & Funding	1185.1	331.0	--	1516.1

Previous Estimate: June 2013

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.2
Adjustment for current and prior escalation. (Estimating)	-1.6	-1.6
Revised estimate to reflect budget reductions in FY 2013 and FY 2014. (Estimating)	-9.9	-10.1
Additional external funding executed. (Estimating)	+0.5	+0.4
RDT&E Subtotal	-11.0	-11.5

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.8
Reductions to reflect FY 2015 funding for Air Force-wide inflationary adjustments. (Estimating)	-1.7	-2.0
Decrease in Initial Spares. (Support)	-0.1	-0.1
Procurement Subtotal	-1.8	-2.9

Contracts

Appropriation: RDT&E

Contract Name	F-22 Mod DO 0070, Incr 3.2 H/W
Contractor	Lockheed Martin Aeronautics
Contractor Location	1 Lockheed Blvd Ft. Worth, TX 76108-3619
Contract Number, Type	F33657-02-D-0009/4, CPIF
Award Date	February 08, 2011
Definitization Date	February 08, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
81.1	N/A	N/A	81.1	N/A	N/A	81.1	81.1

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	+2.6	-4.3
Previous Cumulative Variances	+4.1	-1.8
Net Change	-1.5	-2.5

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to delayed payments for late supplier deliveries. Overall, the cost variance remains positive.

The unfavorable net change in the schedule variance is due to late supplier deliveries. These tasks do not impact the critical path of the Engineering and Manufacturing Development contract.

Contract Comments

Delivery Order (DO) 0070 was issued under the overarching F-22 Raptor, Enhancement, Development, and Integration I Indefinite Delivery Indefinite Quantity Contract (F33657-02-D-0009). Definitization date is same as award date and does not indicate this DO was issued as a letter contract or Undefinitized Contractual Action.

Appropriation: RDT&E

Contract Name **F-22 Mod, DO 0071, Integ & Test Eqpt Dev**
 Contractor Lockheed Martin Aeronautics
 Contractor Location 1 Lockheed Blvd
 Ft. Worth, TX 76108-3619
 Contract Number, Type F33657-02-D-0009/2, CPFF/FFP
 Award Date February 08, 2011
 Definitization Date February 08, 2011

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
71.4	N/A	N/A	71.4	N/A	N/A	71.4	71.4

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	+2.1	+0.2
Previous Cumulative Variances	+1.4	+0.2
Net Change	+0.7	+0.0

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to lower than expected program management overhead.

Contract Comments

Delivery Order (DO) 0071 was issued under the overarching F-22 Raptor, Enhancement, Development, and Integration I Indefinite Delivery Indefinite Quantity Contract (F33657-02-D-0009). Definitization date is same as award date and does not indicate this DO was issued as a letter contract or Undefined Contractual Action.

The price above reflects costs associated with Contract Line Item Numbers (CLIN) 0301 and 0502 only. Other CLINs on this DO are reported in the F-22 baseline program.

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, Type FA8611-13-D-2850/3, CPIF/CPFF
 Award Date June 26, 2013
 Definitization Date June 26, 2013

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	328.8	N/A	9	328.8	328.8

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	+3.2	-3.2
Previous Cumulative Variances	0.0	0.0
Net Change	+3.2	-3.2

Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to lower than expected program management overhead.

The unfavorable cumulative schedule variance is due to required supplier baseline changes identified during the November Integrated Baseline Review.

Contract Comments

Delivery Order (DO) 0004 was issued under the overarching F-22 Raptor, Enhancement, Development, and Integration II Indefinite Delivery Indefinite Quantity Contract (FA8611-13-D-2850). Definitization date is same as award date and does not indicate this DO was issued as a letter contract or Undefined Contractual Action.

Deliveries and Expenditures

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	9	0.00%
Production	0	0	143	0.00%
Total Program Quantity Delivered	0	0	152	0.00%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	1569.7	Years Appropriated	11
Expended to Date	570.8	Percent Years Appropriated	64.71%
Percent Expended	36.36%	Appropriated to Date	777.9
Total Funding Years	17	Percent Appropriated	49.56%

The above data is current as of 1/31/2014.

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 FY2013 with approval of Milestone B.

Operating and Support Cost

F-22 Inc 3.2B Mod

Assumptions and Ground Rules

Cost Estimate Reference:

Cost Assessment and Program Evaluation Memorandum, Independent Cost Estimate (ICE) for F-22A Modernization Increment 3.2B Milestone B Defense Acquisition Board Review, May 16, 2013.

Sustainment Strategy:

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). 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. Initial fielding of F-22 Inc 3.2B Mod is scheduled for 2018 with "steady state" achieved in 2022.

Antecedent Information:

None

Unitized O&S Costs BY2013 \$K		
Cost Element	F-22 Inc 3.2B Mod Average Annual Cost per Modified Aircraft	No Antecedent (Antecedent) No Antecedent
Unit-Level Manpower	0.000	0.000
Unit Operations	0.000	0.000
Maintenance	33.000	0.000
Sustaining Support	0.000	0.000
Continuing System Improvements	0.000	0.000
Indirect Support	0.000	0.000
Other	0.000	0.000
Total	33.000	--

Unitized Cost Comments:

Steady state year 2022 calculated in BY 2013.

Annual cost per aircraft as a result of the F-22 Inc 3.2B Mod: \$0.033M

Total O&S: \$80.9M

Average Primary Aircraft Assigned (PAA): 163

Estimated years in service: 15

Unitized cost estimate is calculated:

Total O&S / estimated service life / Average PAA; $(\$80.9M/15/163) = \$0.033M$

Total O&S Cost \$M				
	Current Development APB Objective/Threshold		Current Estimate	
	F-22 Inc 3.2B Mod		F-22 Inc 3.2B Mod	No Antecedent (Antecedent)
Base Year	80.9	89.0	80.9	N/A
Then Year	104.5	N/A	104.5	N/A

Total O&S Costs Comments:

The F-22 Inc 3.2B Mod O&S costs will not be tracked separately as directed by the June 26, 2013 Acquisition Decision Memorandum. The Inc 3.2B Mod O&S costs, estimated to be \$81M (BY 2013), will be reported as part of the estimated \$67.1B overall F-22 baseline program O&S costs.

The F-22 service life is 8000 hours and Air Combat Command estimated 326 flying hours per year. Converting to years, 8000 / 326, gives a service life 24.5 years. The final aircraft was delivered in 2012, which would then be retired in 2036. The program uses 2033 for estimating total O&S estimates.

The AF expects F-22 Incr 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 Primary Aircraft Assigned (PAA) value used in the calculation includes all F-22s, not just the aircraft receiving the Increment 3.2B modification.

Total O&S costs were estimated for initial "steady state" year, 2022.

- Costs were identified to unit operations, hardware maintenance, and software maintenance (\$5.323M)
- Cost were then applied for the years 2018 (1st modified aircraft is fielded) through 2033 (15 years)

Disposal Costs:

None