

UNCLASSIFIED



RCS: DD-A&T(Q&A)823-431



B-2 Defensive Management System - Modernization (B-2 DMS-M)

As of FY 2021 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

UNCLASSIFIED

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs	3
Program Information	5
Responsible Office	5
References	6
Mission and Description	7
Executive Summary	8
Threshold Breaches	10
Schedule	11
Performance	13
Track to Budget	15
Cost and Funding	15
Charts	24
Risks	26
Low Rate Initial Production	28
Foreign Military Sales	29
Nuclear Costs	29
Unit Cost	30
Cost Variance	33
Contracts	36
Deliveries and Expenditures	37
Operating and Support Cost	38

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)
USD(A&S) - Under Secretary of Defense (Acquisition and Sustainment)

Program Information

Program Name

B-2 Defensive Management System - Modernization (B-2 DMS-M)

DoD Component

Air Force

Responsible Office

Col William Patrick
2690 Loop Road West
Area B, Building 556
WPAFB, OH 45433

william.patrick@us.af.mil

Phone: 937-713-6450

Fax: 937-656-7207

DSN Phone: 713-6450

DSN Fax: 986-7207

Date Assigned: June 27, 2016

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated May 16, 2016

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated May 16, 2016

Mission and Description

The B-2 Defensive Management System-Modernization (B-2 DMS-M) is a principal enabler of survivability for the B-2 stealth bomber aircraft. The legacy Defensive Management System Threat Emitter Locator System (TELS) detects, identifies, and locates enemy radar systems and provides real-time threat avoidance, threat warning, and threat situational awareness information to the aircrew. Shortcomings within the TELS limits overall B-2 operational capability and survivability, necessitating modernization.

A B-2 equipped with DMS-M must be capable of operating in current and projected threat environments during all mission phases and against a broad range of threats. Continued and rapid developments and/or technological improvements in worldwide air defense capabilities will place a premium on developing flexible and expandable B-2 aircraft survivability systems.

Executive Summary

Program Highlights Since Last Report

A quarterly exception SAR was submitted to reflect a schedule breach acknowledging a slip of 18 months to the APB for PD 7.1 software certification. Additionally, the follow-on APB dates associated with Milestone C, Initial Operational Test & Evaluation (IOT&E), and Required Assets Available (RAA) are anticipated to be delayed.

This slip was caused by the contractor underperforming on its software development that includes integrating additional capability leveraged from other Air Force programs. The revised software development schedule provides iterative software releases and development testing aligning with agile software development concepts. The development schedule reduces risk by testing flyable software builds as capabilities are developed. The first software release, focused on display functionality, completed testing on October 31, 2019, and was certified on November 18, 2019. The first flight is projected for March 2020.

The program was fully funded in the near-term execution and budget years. However, the program in FY 2020 is funded \$250.1M from a Service Cost Position requirement of \$294.4M, due to a Congressional mark of \$44.3M to the President's Budget request. The funding reduction drove a corresponding cut in program staff that will negatively impact program execution. The program manager relies on contractor support due to a lack of organic government personnel, and this reduction in management services funding forces a cut to this primary program execution enabler.

The FY 2021 President's Budget restructures the Defensive Management System-Modernization program, removing the antennas and sensors that are intended to provide improved threat awareness capabilities in dense threat environments. Instead, DMS-M scope has been reduced to only modernize B-2 cockpit displays and display processors, correcting critical fleet obsolescence issues. The Defense Acquisition Executive delegated the program to the Air Force on February 11, 2020. An ADM from the Service Acquisition Executive is in progress to direct the program to update the acquisition strategy and program baseline to support the descoped program.

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	Significant Development Description
March 2016	Milestone B was approved.
May 2017	MDA approved an Acquisition Strategy.
May 2017	A Undefinitized Contract Action awarded.
January 2018	A cost capability trade analysis was approved by Air Force Global Strike Command.
March 2018	Delta Preliminary Design Review was completed.
June 2018	Updated SCP was signed.
November 2018	Critical Design Review was completed.
June 2019	Contract was definitized for \$738M.
November 2019	First software build was tested and certified.

Threshold Breaches

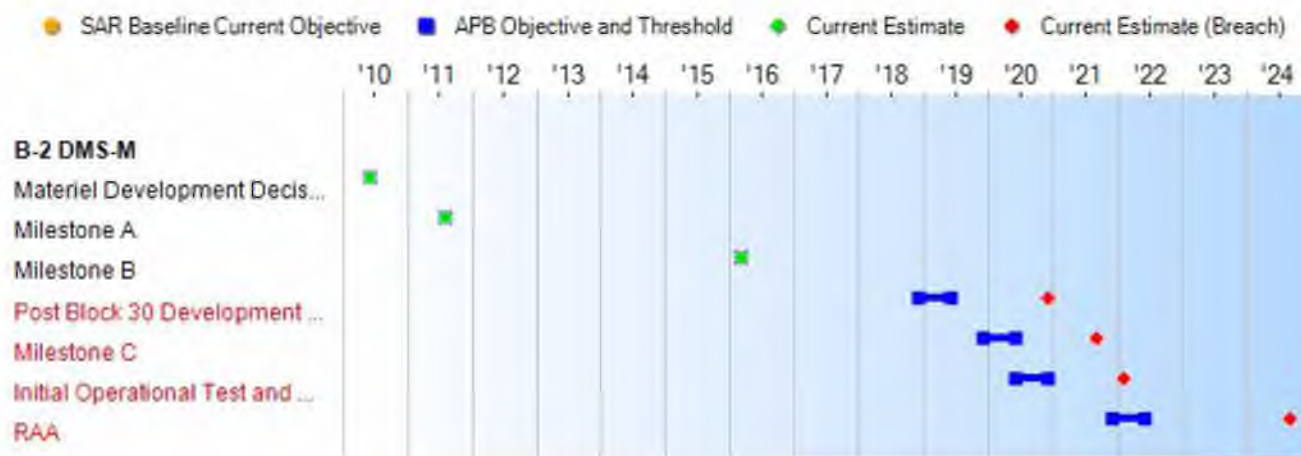
APB Breaches

		Explanation of Breach	
Schedule		<input checked="" type="checkbox"/>	The schedule breach was previously reported in the June 2019 SAR.
Performance		<input type="checkbox"/>	
Cost	RDT&E	<input checked="" type="checkbox"/>	The APB update to capture Service Acquisition Executive-approved reduced program scope is in progress.
	Procurement	<input type="checkbox"/>	
	MILCON	<input type="checkbox"/>	
	Acq O&M	<input type="checkbox"/>	
O&S Cost		<input type="checkbox"/>	The RDT&E and PAUC breach were previously reported in the December 2018 SAR.
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 Development Estimate	Current APB Development Objective/Threshold		Current Estimate
Material Development Decision	Jun 2010	Jun 2010	Jun 2010	Jun 2010
Milestone A	Aug 2011	Aug 2011	Aug 2011	Aug 2011
Milestone B	Mar 2016	Mar 2016	Mar 2016	Mar 2016
Post Block 30 Development 7.1 Certification	Dec 2018	Dec 2018	Jun 2019	Dec 2020[†]
Milestone C	Dec 2019	Dec 2019	Jun 2020	Sep 2021[†]
Initial Operational Test and Evaluation Start	Jun 2020	Jun 2020	Dec 2020	Feb 2022[†]
RAA	Dec 2021	Dec 2021	Jun 2022	Sep 2024[†]

[†] APB Breach

Change Explanations

None

Notes

The program office and Northrop Grumman jointly revised the software development schedule, which will provide iterative software releases and developmental testing aligning with agile software development concepts. This will buy down risk earlier, in smaller increments, by testing flyable software builds as capabilities are developed. The program office has also added experienced software engineers to provide the government greater insight into software development.

The DMS-M acquisition strategy and APB for the reduced program scope will be finalized following Service Acquisition Executive direction.

Acronyms and Abbreviations

RAA - Required Assets Available

Performance

Performance Characteristics				
SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Demonstrated Performance	Current Estimate
Survivability				
The aircraft with B-2 DMS Mod installed shall meet RCS levels of the B-2 WSS, Appendix 70	The aircraft with B-2 DMS Mod installed shall meet RCS levels of the B-2 WSS, Appendix 70	(T=O) The aircraft with B-2 DMS Mod installed shall meet RCS levels of the B-2 WSS, Appendix 70	TBD	The aircraft with B-2 DMS Mod installed shall meet RCS levels of the B-2 WSS, Appendix 70
Sustainment (Availability) has two components: Ao & Am				
The Ao of the B-2 DMS Mod upgrade shall be a minimum of 99.7% at system maturity. B-2 DMS Mod shall support the B-2 DMS Mod B-2 fleet platform Am target of 60% without the need for component cannibalizations.	The Ao of the B-2 DMS Mod upgrade shall be a minimum of 99.7% at system maturity. B-2 DMS Mod shall support the B-2 DMS Mod B-2 fleet platform Am target of 60% without the need for component cannibalizations.	(T=O) The Ao of the B-2 DMS Mod upgrade shall be a minimum of 99.7% at system maturity. B-2 DMS Mod shall support the B-2 DMS Mod B-2 fleet platform Am target of 60% without the need for component cannibalizations.	TBD	The Ao of the B-2 DMS Mod upgrade shall be a minimum of 99.7% at system maturity. B-2 DMS Mod shall support the B-2 DMS Mod B-2 fleet platform Am target of 60% without the need for component cannibalizations.
DPU Functionality				
B-2 DMS Mod shall maintain mission-critical legacy DPU capability in addition to enhancements provided by B-2 DMS Mod consistent with Integrated Functional Capability Production Version 6 baseline.	B-2 DMS Mod shall maintain mission-critical legacy DPU capability in addition to enhancements provided by B-2 DMS Mod consistent with Integrated Functional Capability Production Version 6 baseline.	(T=O) B-2 DMS Mod shall maintain mission-critical legacy DPU capability in addition to enhancements provided by B-2 DMS Mod consistent with Integrated Functional Capability Production Version 6 baseline.	TBD	B-2 DMS Mod shall maintain mission-critical legacy DPU capability in addition to enhancements provided by B-2 DMS Mod consistent with Integrated Functional Capability Production Version 6 baseline.

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

Requirements Reference

CDD - JROC approved April 15, 2013 and Air Force Requirements Oversight Council revalidated June 12, 2015

Change Explanations

None

Acronyms and Abbreviations

Am - Materiel Availability
Ao - Aircraft Availability
DMS - Defensive Management System
DPU - Display Processing Unit
RCS - Radar Cross Section
WSS - Weapons System Specification

Track to Budget

General Notes

3010 and 3600 funding for the B-2 DMS-M program were originally embedded within the primary B-2 Program Element. These lines are shared with other B-2 programs that support the B-2 weapon system. B-2 DMS-M RDT&E was realigned to PE 605931F in 2013.

RDT&E

Appn	BA	PE	
Air Force	3600	07	0101127F
	Project	Name	
	675345	B-2 Modernization	
	676023	B-2 DMS-M	
			(Sunk)
			(Sunk)
Air Force	3600	05	0605931F
	Project	Name	
	653844	B-2 Defensive Management System	

Procurement

Appn	BA	PE	
Air Force	3010	07	0101127F
	Line Item	Name	
	000075	Other Production Charges	
			(Shared)
Air Force	3010	06	0101127F
	Line Item	Name	
	000999	Initial Spares/Repair Parts	
			(Shared)
Air Force	3010	05	0101127F
	Line Item	Name	
	B00200	B-2 Defensive Management System: Modifications	
			(Shared)
Air Force	3010	07	0101127F
	Line Item	Name	
	B00200	B-2 Defensive Management System: Depot Activation	
			(Shared)
Air Force	3010	05	0101127F
	Line Item	Name	
	B2DMS0	B-2 Defensive Management System: Modifications	

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2016 \$M			BY 2016 \$M	TY \$M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	1821.9	1821.9	2004.1	2171.5 ¹	1846.2	1846.2	2253.5
Procurement	734.3	734.3	807.7	223.2	838.3	838.3	270.9
Flyaway	--	--	--	139.3	--	--	169.6
Recurring	--	--	--	139.3	--	--	169.6
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	83.9	--	--	101.3
Other Support	--	--	--	83.9	--	--	101.3
Initial Spares	--	--	--	0.0	--	--	0.0
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	2556.2	2556.2	N/A	2394.7	2684.5	2684.5	2524.4

¹ APB Breach

Current APB Cost Estimate Reference

B-2 DMS Mod SCP dated October 02, 2015

Cost Notes

No cost estimate for the program has been completed in the previous year. A service cost position was published on June 4, 2018.

Risks to the program are as follows:

- The program in FY20 is funded \$250.1M from a Service Cost Position requirement of \$294.4M, due to a Congressional mark of \$44.3M to the President's Budget request. The funding has resulted in a reduction in program office staff that is challenging due to the heavy reliance on contractor support caused by a lack of available organic government personnel. If DMS-M is not reduced in scope to only modernize B-2 cockpit displays and display processors, Congressional mark funding will need to be restored in order to adequately fund the firm fixed price contract in FY20.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	4	4	4
Procurement	16	16	16
Total	20	20	20

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2021 President's Budget / December 2019 SAR (TY\$ M)									
Appropriation	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
RDT&E	1660.8	250.1	154.8	128.2	59.6	0.0	0.0	0.0	2253.5
Procurement	0.0	0.0	0.0	0.0	132.1	111.3	27.5	0.0	270.9
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 2021 Total	1660.8	250.1	154.8	128.2	191.7	111.3	27.5	0.0	2524.4
PB 2020 Total	1660.6	294.4	493.1	439.5	82.0	64.2	18.1	0.0	3051.9
Delta	0.2	-44.3	-338.3	-311.3	109.7	47.1	9.4	0.0	-527.5

Quantity Summary										
FY 2021 President's Budget / December 2019 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	To Complete	Total
Development	4	0	0	0	0	0	0	0	0	4
Production	0	0	0	0	0	8	8	0	0	16
PB 2021 Total	4	0	0	0	0	8	8	0	0	20
PB 2020 Total	4	0	0	3	6	5	2	0	0	20
Delta	0	0	0	-3	-6	3	6	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
2011	--	--	--	--	--	--	85.2
2012	--	--	--	--	--	--	46.8
2013	--	--	--	--	--	--	249.8
2014	--	--	--	--	--	--	249.0
2015	--	--	--	--	--	--	95.4
2016	--	--	--	--	--	--	262.7
2017	--	--	--	--	--	--	278.4
2018	--	--	--	--	--	--	148.9
2019	--	--	--	--	--	--	244.6
2020	--	--	--	--	--	--	250.1
2021	--	--	--	--	--	--	154.8
2022	--	--	--	--	--	--	128.2
2023	--	--	--	--	--	--	59.6
Subtotal	4	--	--	--	--	--	2253.5

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
2011	--	--	--	--	--	--	90.5
2012	--	--	--	--	--	--	48.9
2013	--	--	--	--	--	--	256.5
2014	--	--	--	--	--	--	252.1
2015	--	--	--	--	--	--	95.6
2016	--	--	--	--	--	--	259.5
2017	--	--	--	--	--	--	269.5
2018	--	--	--	--	--	--	141.2
2019	--	--	--	--	--	--	227.6
2020	--	--	--	--	--	--	228.1
2021	--	--	--	--	--	--	138.4
2022	--	--	--	--	--	--	112.4
2023	--	--	--	--	--	--	51.2
Subtotal	4	--	--	--	--	--	2171.5

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	
2023	8	63.6	--	--	63.6	68.5	132.1	
2024	8	86.4	--	--	86.4	24.9	111.3	
2025	--	19.6	--	--	19.6	7.9	27.5	
Subtotal	16	169.6	--	--	169.6	101.3	270.9	

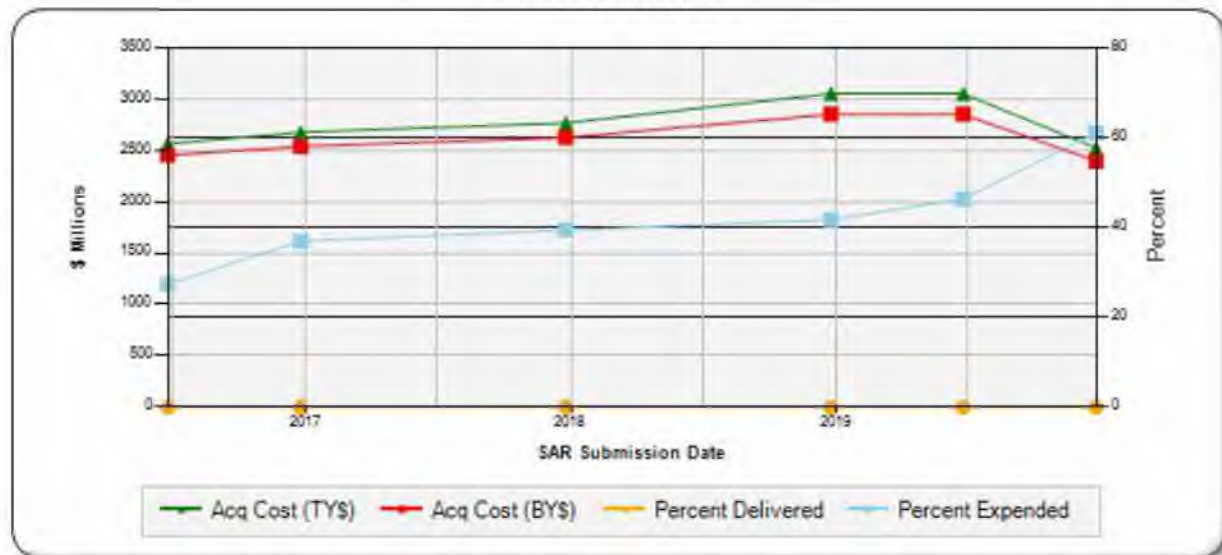
Annual Funding								
3010 Procurement Aircraft Procurement, Air Force								
Fiscal Year	Quantity	BY 2016 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2023	8	53.0	--	--	53.0	57.2	110.2	
2024	8	70.6	--	--	70.6	20.4	91.0	
2025	--	15.7	--	--	15.7	6.3	22.0	
Subtotal	16	139.3	--	--	139.3	83.9	223.2	

Cost Quantity Information		
3010 Procurement Aircraft Procurement, Air Force		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 2016 \$M
2023	8	75.2
2024	8	64.1
2025	--	--
Subtotal	16	139.3

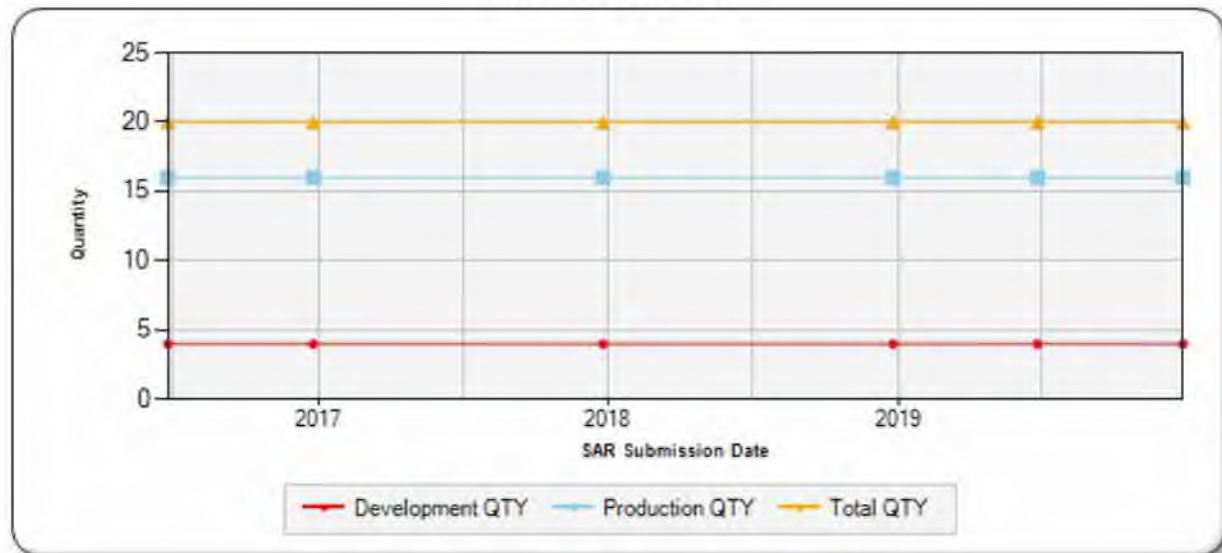
Charts

B-2 DMS-M first began SAR reporting in June 2016

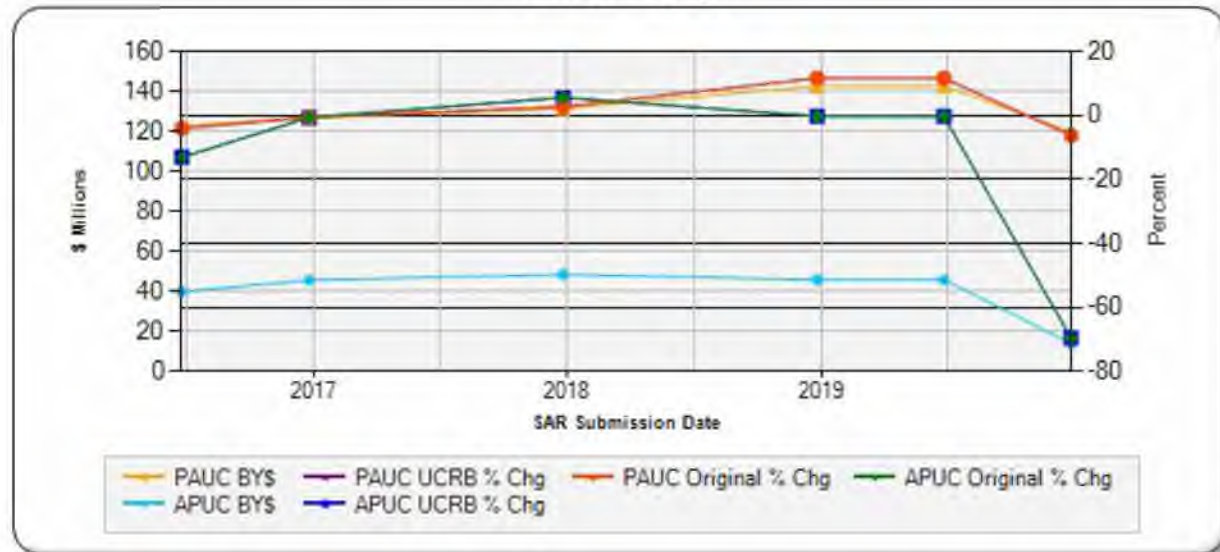
Program Acquisition Cost - B-2 DMS-M
Base Year 2016 \$M



Quantity - B-2 DMS-M



Unit Cost - B-2 DMS-M
Base Year 2016 \$M



Risks

Significant Schedule and Technical Risks

Significant Schedule and Technical Risks	
Initial Test And Evaluation Start (November 2021)	
1.	Flight Test Schedule-if insufficient developmental flight test data collection due to reduced software availability occurs then readiness for Initial Operational Test & Evaluation (IOT&E) certification will slip causing IOT&E delay.
Milestone C (March 2021)	
1.	Flight Test Schedule-if insufficient developmental flight test data collection due to reduced software availability occurs then System Verification Review will slip causing Milestone C delay.
Post Block 30 Development 7.1 Certification (May 2020)	
1.	Software Development Velocity-if PD7.1 software development does not maintain required manpower to execute necessary velocity to certify by May 2020, then the software development critical path effort will force the program to extend beyond the Acquisition Program Baseline (APB) date threshold and impact the start of flight test execution.
RAA (May 2024)	
1.	Flight Test Schedule-if developmental flight test window schedule is delayed due to reduced software availability then in LRIP start will be delayed resulting in missing Required Assets Available (RAA) date.
Current Estimate (December 2019)	
1.	Flight Test Schedule-if developmental flight test window schedule is delayed due to reduced software availability then program will be delayed and current estimate will be incorrect.

Risks

Risk and Sensitivity Analysis

Risks and Sensitivity Analysis	
Current Baseline Estimate (May 2016)	
1.	The service cost position was developed in 2018 when the Air Force changed the acquisition strategy to incorporate additional classified capability. The firm fixed price contract was definitized in 2019 within the bounds of the service cost position. When the program is reduced in scope to only modernize B-2 cockpit displays and display processors, a new program schedule and cost estimate will be used to inform updated APB objectives and thresholds.
Original Baseline Estimate (May 2016)	
1.	N/A
Revised Original Estimate (N/A)	
None	
Current Procurement Cost (December 2019)	
1.	The service cost position was developed in 2018 when the Air Force changed the acquisition strategy to incorporate additional classified capability. When the program is reduced in scope to only modernize B-2 cockpit displays and display processors, a new program schedule and cost estimate will be used to inform updated APB objectives and thresholds.

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	3/24/2016	3/24/2016
Approved Quantity	6	6
Reference	Milestone B ADM	Milestone B ADM
Start Year	2020	2020
End Year	2020	2020

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the B-2 being a small fleet of only 20 aircraft. The need for six kits during LRIP is based on lessons learned and factors experienced during other B-2 development and production programs (i.e., Radar Modernization and Extremely High Frequency).

Notes

Based on the revised program schedule, the LRIP is anticipated to begin in FY 2021 with the purchase of kits to be installed in FY 2023-2024. This schedule is in coordination and will be finalized upon approval of an updated APB.

Foreign Military Sales

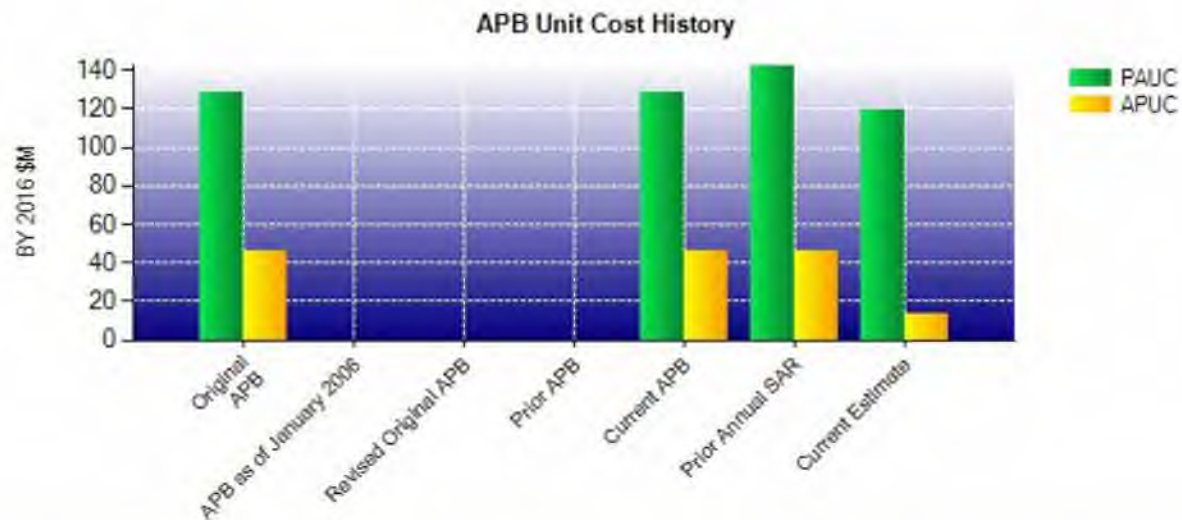
None

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 (May 2016 APB)	Current Estimate (Dec 2019 SAR)	
Program Acquisition Unit Cost			
Cost	2556.2	2394.7	
Quantity	20	20	
Unit Cost	127.810	119.735	-6.32
Average Procurement Unit Cost			
Cost	734.3	223.2	
Quantity	16	16	
Unit Cost	45.894	13.950	-69.60
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2016 \$M	BY 2016 \$M	% Change
	Original UCR Baseline (May 2016 APB)	Current Estimate (Dec 2019 SAR)	
Program Acquisition Unit Cost			
Cost	2556.2	2394.7	
Quantity	20	20	
Unit Cost	127.810	119.735	-6.32
Average Procurement Unit Cost			
Cost	734.3	223.2	
Quantity	16	16	
Unit Cost	45.894	13.950	-69.60



APB Unit Cost History					
Item	Date	BY 2016 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	May 2016	127.810	45.894	134.225	52.394
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	May 2016	127.810	45.894	134.225	52.394
Prior Annual SAR	Dec 2018	142.575	45.731	152.595	53.750
Current Estimate	Dec 2019	119.735	13.950	126.220	16.931

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
134.225	0.455	0.000	0.830	18.150	-19.890	0.000	-7.550	-8.005	126.220

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
52.394	0.188	0.000	1.038	0.000	-27.250	0.000	-9.438	-35.462	16.931

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	Aug 2011	N/A	Aug 2011
Milestone B	N/A	Mar 2016	N/A	Mar 2016
Milestone C	N/A	Dec 2019	N/A	Sep 2021
IOC	N/A	Dec 2021	N/A	Sep 2024
Total Cost (TY \$M)	N/A	2684.5	N/A	2524.4
Total Quantity	N/A	20	N/A	20
PAUC	N/A	134.225	N/A	126.220

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	1846.2	838.3	--	2684.5
Previous Changes				
Economic	+6.6	+4.2	--	+10.8
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	+363.0	--	--	+363.0
Estimating	-23.9	+139.3	--	+115.4
Other	--	--	--	--
Support	--	-121.8	--	-121.8
Subtotal	+345.7	+21.7	--	+367.4
Current Changes				
Economic	-0.5	-1.2	--	-1.7
Quantity	--	--	--	--
Schedule	--	+16.6	--	+16.6
Engineering	--	--	--	--
Estimating	+62.1	-575.3	--	-513.2
Other	--	--	--	--
Support	--	-29.2	--	-29.2
Subtotal	+61.6	-589.1	--	-527.5
Total Changes	+407.3	-567.4	--	-160.1
Current Estimate	2253.5	270.9	--	2524.4

Summary BY 2016 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	1821.9	734.3	--	2556.2
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	+325.8	--	--	+325.8
Estimating	-27.9	+106.2	--	+78.3
Other	--	--	--	--
Support	--	-108.8	--	-108.8
Subtotal	+297.9	-2.6	--	+295.3
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+51.7	-481.0	--	-429.3
Other	--	--	--	--
Support	--	-27.5	--	-27.5
Subtotal	+51.7	-508.5	--	-456.8
Total Changes	+349.6	-511.1	--	-161.5
Current Estimate	2171.5	223.2	--	2394.7

Previous Estimate: June 2019

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-0.5
Adjustment for current and prior escalation. (Estimating)	+0.4	+0.4
Revised estimate due to a Congressional mark in FY 2020. (Estimating)	-40.4	-44.3
Revised estimate due to MDAP penalty relief in FY 2019. (Estimating)	+0.2	+0.2
Revised estimate to align to the FY 2021 PB which transitioned DMS-M to a displays only program. (Estimating)	+91.5	+105.8
RDT&E Subtotal	+51.7	+61.6

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-1.2
Stretch-out of procurement buy profile from FY 2021 to FY 2024 due to the FY 2021 PB which transitioned DMS-M to a displays only program. (Schedule)	0.0	+16.6
Revised estimate to align to the FY 2021 PB which transitioned DMS-M to a displays only program. (Estimating)	-481.0	-575.3
Increase in Other Support to align to the FY 2021 PB which transitioned DMS-M to a displays only program. (Support)	+58.5	+71.0
Decrease in Initial Spares to align to the FY 2021 PB which transitioned DMS-M to a displays only program. (Support)	-86.0	-100.2
Procurement Subtotal	-508.5	-589.1

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: FAST II Delivery Order: EMD DMS-M
Contractor: Northrop Grumman Corporation Aerospace Systems
Contractor Location: 3520 E. Avenue M
 Palmdale, CA 93550
Contract Number: FA8616-14-D-6060/2
Contract Type: Firm Fixed Price (FFP), Cost Plus Fixed Fee (CPFF)
Award Date: May 24, 2017
Definitization Date: June 03, 2019

Contract Price								
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
738.0	N/A	0	738.0	N/A	0	738.0	738.0	

Cost and Schedule Variance Explanations

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

General Contract Variance Explanation

The Flight Test CLIN is CPFF, for \$33.3M, but it has not exceeded the earned value management reporting threshold as the contract will be reduced in scope. The remainder of the negotiated \$738M contract is firm fixed price.

The difference between the \$738M negotiated contract value and the previously reported \$741M contract value in the June 2019 SAR is a result of successful contract negotiations that definitized the contract \$3M below the Undefined Contract Award (UCA) Not To Exceed (NTE) amount.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	4	0.00%
Production	0	0	16	0.00%
Total Program Quantity Delivered	0	0	20	0.00%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	2524.4	Years Appropriated	10
Expended to Date	1540.8	Percent Years Appropriated	66.67%
Percent Expended	61.04%	Appropriated to Date	1910.9
Total Funding Years	15	Percent Appropriated	75.70%

The above data is current as of February 10, 2020.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:

Source of Estimate:

Quantity to Sustain:

Unit of Measure:

Service Life per Unit:

Fiscal Years in Service:

B-2 DMS-M O&S costs are not included in the APB or SAR per direction of the MDA. The associated O&S cost is included and tracked at the overall B-2 system level. Per signed ADM, B-2 DMS-M O&S costs are estimated to be less than 1% of the total B-2 fleet O&S costs.

Sustainment Strategy

Antecedent Information

Annual O&S Costs BY2016 \$M		
Cost Element	B-2 DMS-M	No Antecedent (Antecedent)
Unit-Level Manpower	--	--
Unit Operations	--	--
Maintenance	--	--
Sustaining Support	--	--
Continuing System Improvements	--	--
Indirect Support	--	--
Other	--	--
Total	--	--

Item	Total O&S Cost \$M		
	B-2 DMS-M		No Antecedent (Antecedent)
	Current Development APB Objective/Threshold	Current Estimate	
Base Year	0.0	0.0	0.0
Then Year	0.0	N/A	0.0

O&S Cost Variance

Category	BY 2016 \$M	Change Explanations
Prior SAR Total O&S Estimates - Jun 2019 SAR	0.0	
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	0.0	

Disposal Estimate Details

Date of Estimate:

Source of Estimate:

Disposal/Demilitarization Total Cost (BY 2016 \$M):