



# *Selected Acquisition Report*

## *Program Information*

Program (Subprogram if applicable): BMDS

Effective Date: 12/31/2021

**CLEARED**  
**For Open Publication**  
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OFFICE OF PREPUBLICATION AND SECURITY REVIEW



## ***Program Manager Information***

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**Date Assigned:** May 31, 2019

## ***Mission & Description***

To develop and deploy a layered Missile Defense System (MDS) to defend the United States, its deployed forces, allies, and friends from hypersonic and missile attacks of all ranges and in all phases of flight.

Following guidance from the President, the Secretary of Defense approved the 2019 Missile Defense Review (MDR) Report (dated January 2019), which established the following principles and elements governing U.S. Missile Defense:

1. The U.S. homeland missile defense will stay ahead of rogue states' missile threats
2. The missile defense will defend U.S. forces deployed abroad and support the security of allies and partners
3. The United States will pursue new concepts and technologies
4. Comprehensive missile defense capabilities will support a broad, multi-layered approach to preventing and defeating missile attacks
5. Flexibility and adaptability will enable the United States to tailor its missile defense strategy to potential adversaries
6. Tighter offense-defense integration and interoperability will leverage the full range of assets available
7. A focus on the importance of space will provide a more effective, resilient, and adaptable missile defense posture



## Executive Summary

Does Classified Data Exist for this Data Section?

Program Highlights Since Last Report (For Release to Congress):

### Introduction

As the threat evolves and includes new offensive systems such as hypersonic glide vehicles, our Nation will need to increase investments in cutting-edge missile defense technologies, to include a persistent overhead sensor capability. If we are to support the Warfighter in a highly uncertain strategic environment, we must meet technology maturation, systems development, and manufacturing challenges head-on and continue to demonstrate missile defense capabilities through robust, operationally realistic live-fire testing. The Missile Defense Agency's (MDA's) overriding program lines of effort are to:

1. Build Warfighter confidence through focus on readiness and sustainment,
2. Increase missile defense engagement capability and capacity to outpace emerging threats, and
3. Increase speed of delivery of new capability to address evolving threats

MDA's mission today is "to develop and deploy a layered Missile Defense System to defend the United States, its deployed forces, allies, and friends from missile attacks in all phases of flight." The mission includes the capability to intercept ballistic, hypersonic and cruise missile threats.

The growing threats from ballistic and non-ballistic missiles, many of which can be armed with weapons of mass destruction, drive MDA programs. Some weapon systems have characteristics of both ballistic and cruise missiles. For example, ballistic missile-launched hypersonic glide vehicles (HGVs) are unpowered and maneuverable, capable of delivering various payloads that travel at hypersonic speed (greater than Mach 5) and spend most of their flight at much lower altitudes than a typical ballistic missile. Russia and China are developing advanced cruise missiles and hypersonic missile capabilities that can take unpredictable flight paths that challenge existing defenses.

Missile defense remains a high priority investment within the 2018 National Defense Strategy, which states, "it is now undeniable that the homeland is no longer a sanctuary." The missile defense architecture must evolve to give the Warfighter the ability to counter these threats, which now include non-ballistic threats. MDA intends to continue making progress in the design, development and delivery of an integrated and layered system and to support the investigation of new concepts and development of new technologies to address the challenging missile threat of tomorrow.

### Highlights since the previous SAR

Mar 2022	Space Tracking and Surveillance System (STSS) decommissioned. Designed for 2 years of service, STSS completed 12 Years and 2 months providing data from orbit
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## Executive Summary Continued

### Program Highlights Since Last Report (For Release to Congress):

- Dec 2021 Construction completed on the Long Range Discrimination Radar (LRDR), Clear Space Force Station (SFS). Clear Air Force Station (AFS) was redesignated Clear SFS in Jun 2021
- Nov 2021 Upgraded Early Warning Radar (Gen 2 Phase 2) at Fylingdales, United Kingdom operationally accepted by the U.S. Space Force (USSF)
- Jul 2021 Flight Test Aegis Weapon System (FTM)-33. FTM-33 was the first operational test of Sea-Based Terminal capability to detect, track, and lethally engage a raid of two SRBM targets with four Standard Missile (SM)-6 missiles. The firing ship, USS RALPH JOHNSON, successfully detected, tracked, and engaged the raid of two SRBMs with dual salvos of SM-6 Dual IIs and intercepted one of the SRBM targets
- May 2021 Flight Test Aegis Weapon System (FTM)-31. Executed by the USS RALPH JOHNSON, the Sea-Based Terminal flight test FTM-31 Event 1 demonstrated the ability of an Aegis Baseline 9.C2.0 (BMD 5.1) ship to detect, track, and lethally intercept an MRBM target, in a salvo of two SM-6 Dual II (BMD initialized) missiles. Ultimately, the flight test was unsuccessful in achieving intercept, but MDA gathered critical data to inform future developments.
- May 2021 At Sea Demonstration/Formidable Shield 2021 (ASD/FS-21) was a series of events coordinated by U.S. Navy and Commander Task Force 64 that took place at the United Kingdom Ministry of Defence Hebrides Missile Range in Scotland and Andoya Test Center in Norway. The exercise included 11 North Atlantic Treaty Organization (NATO) nations supporting Maritime Integrated Air and Ballistic Missile Defense (IAMD) live fire operations in order to build interoperability and demonstrate IAMD Command and Control with the deployment of Commander Task Group IAMD. Notable U.S. BMD/Sea Based Terminal events included: simulated Standard Missile (SM)-6 Dual II engagement of a live Pathfinder Zombie (Short Range Ballistic Missile); live organic intercept of a Medium Range Ballistic Missile (MRBM) T4-B with an SM-3 Block IB Threat Upgrade; live Launch-on-Remote (Netherlands BMD Cueing) engagement of a MRBM T4-B with an SM-3 Block IA; and a raid engagement of multiple Anti-Air Warfare missiles with SM-2s while simultaneously engaging a simulated Enhanced Dynamic Test Target with a live SM-3 Block IA
- Apr 2021 Final three silos installed in Missile Field 4 (MF4), Fort Greely, Alaska. This was the first time that three Ground-Based Midcourse Defense Interceptor (GBI) silos had been installed in one day





## *Executive Summary Continued*

### Program Highlights Since Last Report (For Release to Congress):

- Jan 2021      Sea-Based X-Band Radar (SBX) completed maintenance cycle and headed back to sea. SBX is expected to remain at sea until Sep 2022 (600 days)
  
- Dec 2020      Silo Fabrication efforts in MF4, Fort Greely, Alaska completed ahead of schedule
  
- Nov 2020      Upgraded Early Warning Radar (UEWR) at Cape Cod AFS, Massachusetts operationally accepted by USSF
  
- Nov 2020      Flight Test Aegis Weapon System (FTM)-44. An Aegis Ballistic Missile Defense (BMD) System-equipped destroyer, intercepted and destroyed a threat-representative Intercontinental Ballistic Missile (ICBM) target with a Standard Missile-3 (SM-3) Block IIA missile. In this developmental test, the destroyer used engage-on-remote capabilities through the Command and Control Battle Management Communications (C2BMC) network as part of a defense of Hawaii scenario. This was the first Aegis intercept of an ICBM target
  
- Oct 2020      Flight Test Patriot (FTP)-27 Event 1. Successfully executed a flight test to demonstrate the Patriot Weapon System Missile Segment Enhancement extended ground range salvo engagement of threat-representative Short Range Ballistic Missile (SRBM) target exercising Patriot Launch-on-Remote using THAAD AN/TPY-2 (Terminal Mode) track and discrimination data. The test supported the THAAD Advanced Capabilities Urgent Material Release
  
- Apr 2020      UEWR at Clear AFS, Alaska operationally accepted by USSF



## History of Significant Developments Since Program Initiation

Date	Description
Feb-2020	Flight Test Patriot (FTP)-27. Joint test with the U.S. Army Lower Tier Project Office that demonstrated Patriot's Launch-on-Remote capability with Army/Navy Transportable Radar Surveillance (AN/TPY)-2's capability to detect, track and transmit that data to the Patriot Weapon System. The Patriot missile did not successfully intercept the Short Range Ballistic Missile (SRBM) target.
Aug-2019	Flight Test Terminal High Altitude Area Defense (THAAD) (FTT)-23. THAAD successfully demonstrated its expanding capabilities by intercepting a medium-range ballistic missile that was dropped from a C-17 aircraft. FTT-23 demonstrated the ability to increase the defended area of a single battery and provide additional engagement opportunities against threat ballistic missiles. Soldiers of the E-62 battery were not aware of the target launch timing. This was the 16th successful intercept in 16 attempts for the operational THAAD weapon system.
Aug-2019	Flight Test Aegis Weapon System (FTM)-31, Event 2. The Navy successfully conducted this test at the Pacific Missile Range Facility, Hawaii. The USS JOHN FINN (DDG 113) with Aegis Baseline 9.C2 (BMD 5.1) software, tracked, engaged, and intercepted for the first time a subsonic Anti-Air Warfare target with a Standard Missile-6 Dual II missile.
Aug-2019	The first radar panel for the new Long Range Discriminating Radar (LRDR) delivered to Clear Air Force Station, Alaska.
Mar-2019	Flight Test Ground-based Midcourse Defense (FTG)-11. With the successful intercept of an advanced ICBM-class target with countermeasures launched from Kwajalein, MDA executed the first Ground-based Midcourse Defense test involving a salvo engagement, involving two Ground Based Interceptors (GBIs) launched from the missile field at Vandenberg Air Force Base, California. Following detection by Air Force satellites, the Command and Control, Battle Management and Communication (C2BMC) system directed early tracking information to precision discrimination sensors deployed on Wake Island (AN/TPY-2 radar) and in the Pacific Ocean (Sea-Based X-band radar). We achieved an intercept of the lethal warhead using the lead GBI, with the trailing GBI observing the intercept flash and debris scene then intercepting the next most lethal object. During the test of homeland defenses, for the first time, Spacebased Kill Assessment sensors successfully provided data required to assess successful intercepts.
Nov-2017	44th GBI deployed to silo at Fort Greely, Alaska, completing a DoD-mandated plus-up before the end of the year.
May-2017	GBI with Redesigned Kill Vehicle successfully intercepted an ICBM target over the Pacific.
Apr-2017	THAAD battery deployed to South Korea.



### History of Significant Developments Since Program Initiation

Date	Description
Apr-2013	THAAD battery deployed to Guam.
Jan-2012	AN/TPY-2 radar deployed to Turkey.
Sep-2009	Deputy Secretary of Defense signed DoDD 5134.09, the MDA "Charter."
Sep-2008	AN/TPY-2 radar deployed to Israel.
Jun-2008	The U.S. Navy successfully shot down a damaged U.S. satellite with an SM-3 interceptor. The non-functioning National Reconnaissance Office satellite was traveling at over 17,000 mph at an altitude of 153 nautical miles above the earth. The satellite's fuel (over 1000 pounds of hydrazine) represented a danger to people if allowed to reenter the atmosphere.
May-2008	U.S. Army activated the first Terminal High Altitude Area Defense (THAAD) Battery.
Sep-2007	Sea-Based X-Band Radar deployed for first time to collect data during GBI Test.
Mar-2007	The Airborne Laser completed the first in-flight test of the laser targeting system.





### History of Significant Developments Since Program Initiation

Date	Description
Mar-2005	MDA completed first series of sea test of the Sea-Based X-Band Radar (SBX).
Jul-2004	First Ground-based Midcourse Defense Interceptor (GBI) was deployed to an underground silo at Fort Greely, Alaska. Four more GBIs were deployed before the end of the year.
Dec-2002	President George W. Bush directed that the Secretary of Defense “proceed with fielding an initial set of missile defense capabilities.”
Jan-2002	First successful intercept test of the SM-3.
Jan-2002	Secretary of Defense signed memorandum changing the name of the Ballistic Missile Defense Organization (BMDO) to the Missile Defense Agency (MDA).
Sep-2001	Following an unsuccessful test in July 2000, President Clinton announced that he was not going to initiate deployment of the national missile defense system.
Jan-2001	Aegis cruiser USS Lake Erie conducted first successful flight test of newly-developed Standard Missile-3 (SM-3) interceptor.
Jan-1999	President William J. Clinton signed the National Missile Defense Act of 1999 (Public Law 106-38) that required the United States to deploy an effective national missile defense system capable of defending the territory of the United States against limited ballistic missile attacks.





### History of Significant Developments Since Program Initiation

Date	Description





### Significant Schedule Risks

*(Provide current risks and risks identified at previous key decision points)*

Event	Date	Description
Select		
Select		
Select		
Select		
Select		
Select		
Select		
Select		
Select		
Select		

#### Schedule Notes:

For schedule milestones, see the unclassified Missile Defense Accountability Report (MDAR) and the MDAR Classified Annex scheduled for release in the 2nd Quarter FY 2022.

#### Schedule Deviation Explanations:

## Performance

Does Classified Data Exist for this Data Section?

### Performance Attributes

Current Objective	Current Threshold	Current Estimate	Deviation?	Demonstrated Performance	Date
Attribute Title:				KPP <input type="radio"/> KSA <input type="radio"/> APA <input type="radio"/>	
See Performance Notes			Yes <input type="checkbox"/>		
Attribute Title:				KPP <input type="radio"/> KSA <input type="radio"/> APA <input type="radio"/>	
			Yes <input type="checkbox"/>		
Attribute Title:				KPP <input type="radio"/> KSA <input type="radio"/> APA <input type="radio"/>	
			Yes <input type="checkbox"/>		



Performance Notes:

For performance characteristics, see the unclassified Missile Defense Accountability Report (MDAR) and the MDAR Classified Annex scheduled for release in the 2nd Quarter FY 2022.

Performance Deviation Explanations:

## Acquisition Budget Estimate

Does Classified Data Exist for this Data Section?

Budget Position: **President's Budget (PB)**

Budget Year: 2023

Base Year: 2002

### Total Acquisition and Quantity

Appropriation Category (\$Millions)	Objective Base Year	Threshold Base Year	Budget Estimate Base Year	Budget Estimate Then Year	Deviation?
RDT&E			\$ 151,608.3	\$ 192,404.5	Yes <input type="checkbox"/>
Procurement			\$ 22,726.4	\$ 31,738.1	Yes <input type="checkbox"/>
MILCON			\$ 1,485.7	\$ 2,100.6	Yes <input type="checkbox"/>
Acq O&M			\$ 0.0	\$ 0.0	Yes <input type="checkbox"/>
<b>Total Acquisition</b>			<b>\$ 175,820.4</b>	<b>\$ 226,243.2</b>	
PAUC					Yes <input type="checkbox"/>
APUC					Yes <input type="checkbox"/>

Quantity	Current APB	Current Estimate
Development Qty	0	0
Procurement Qty	0	0



**Budget Notes:**

For Major Defense Acquisition Programs, DoD requires an APB at program initiation. The APB establishes cost, quantity, schedule, and performance parameters that form the basis for unit cost reporting under 10 U.S.C. Sec. 2433. As a single integrated system of systems, the BMDS does not have an APB. In response to other statutory requirements, however, Missile Defense Agency provides the Congress with an annual Missile Defense Accountability Report (MDAR), which includes schedule, technical, operational capacity, resource, and contract baselines that guide development of ballistic missile defense capabilities. The MDAR includes unit cost baselines for key assets (e.g. SM-3 missiles and THAAD interceptors) comprising the BMDS.

**Quantity Notes:**

Quantities of Key BMDS Assets (grouped by appropriation, total buys from FY 2002-27):

Program Component		RDT&E	Proc
Terminal High Altitude Area Defense (THAAD)	Batteries	2	5
	Interceptors	50	730
Aegis	SM-3 Block IA	79	71
	SM-3 Block IIA	17	120
	SM-3 Block IB	21	611
Ground-Based Midcourse Defense (GMD)	Ground-Based Interceptors (GBIs)	58	0
Sensors	AN/TPY-2	7	5

**Acquisition Cost Deviation Explanations:**

For Major Defense Acquisition Programs, DoD requires an APB at program initiation. The APB establishes cost, quantity, schedule, and performance parameters that form the basis for unit cost reporting under 10 U.S.C. Sec. 2433. As a single integrated system of systems, the BMDS does not have an APB. In response to other statutory requirements, however, Missile Defense Agency provides the Congress with an annual Missile Defense Accountability Report (MDAR), which includes schedule, technical, test, operational capacity, resource, and contract baselines that guide development of ballistic missile defense capabilities. The MDAR includes unit cost baselines for key assets (e.g. SM-3 missiles and THAAD interceptors) comprising the BMDS.

Risk and Sensitivity Analysis

Current Procurement Risks	
1	
2	
3	
4	
5	

*Current and Original Baseline Risks will be pulled from the appropriate APBs.*

## Operating and Support Costs – Total Costs

Does Classified Data Exist for this Data Section?

Base Year: 2002

### Total Program Operating and Support Estimate Compared with Baseline

	Current Base Year Objective	Current Base Year Threshold	Current Base Year Estimate	Current Then Year Estimate	Deviation?
<b>Total O&amp;S (\$Millions)</b>					Yes <input type="checkbox"/>

Deviation Explanation:

### Operating and Support Cost Estimate

*(Allocate O&S estimate by each weapon system (or system variants) acquired by the program)*

Category (Base Year \$Millions)	System Name:	System Name:	System Name:
Unit-Level Manpower			
Unit Operations			
Maintenance			
Sustaining Support			
Continued System Improvements			
Other			
<b>Total O&amp;S</b>	\$ 0.0	\$ 0.0	\$ 0.0

### Cost Estimate Source – O&S

Type: Select

Approval Authority and Date:

**Note:** The Missile Defense Agency (MDA) is predominately a research and development organization that is responsible for the development and fielding of several subsystems that comprise the BMDS. MDA works with the Services to transition subsystems as they mature, allowing MDA to return to focusing on its core research mission. Although MDA does budget for a subsystem's BMDS unique mission costs leading up to transition, it does not capture the Service's portion of the cost. Therefore, since the MDA portion does not represent the entire operating and support cost of each subsystem, MDA does not report these in the SAR.



O&S Notes:

See note on previous page.

## Operating and Support Costs – Disposal and Unitized Costs

### Annual Unitized Operating and Support Cost Comparison with Antecedent System

*(Compare unitized O&S estimate of one system variant acquired by the program with its antecedent system)*

Annual Unitized O&S Cost Definition and Calculation Relative to Total O&S Cost:

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

Base Year: 2002

Annual Unitized O&S Cost by Category Base Year \$ Unit: \$K	System Name:	Antecedent System Name:
Unit-Level Manpower		
Unit Operations		
Maintenance		
Sustaining Support		
Continued System Improvements		
Other		
<b>Total O&amp;S</b>	\$ 0.0	\$ 0.0

### Disposal/Demilitarization Cost Estimate

*(Allocate Disposal estimate by each weapon system (or system variants) acquired by the program)*

(Base Year \$Millions)	System Name:	System Name:	System Name:
<b>Total Disposal</b>			

## Cost Estimate Source – Disposal

Type: Select

Approval Authority and Date:

Note:

The Missile Defense Agency (MDA) is predominately a research and development organization that is responsible for the development and fielding of several subsystems that comprise the BMDS. MDA works with the Services to transition subsystems as they mature, allowing MDA to return to focusing on its core research mission. Although MDA does budget for a subsystem's BMDS unique disposal costs, it does not capture the Service's portion of the cost. Therefore, since the MDA portion does not represent the entire disposal cost of each subsystem, MDA does not report these in the SAR.

Disposal Cost Notes:

See note above.

Sustainment Strategy:

Antecedent Information:



## Unit Cost

Current Baseline Compared with Current Estimate

Current Baseline Base Year: 2002

Category (\$M)	Current Baseline	Current Estimate	% Change	Breach? Significant or Critical
<b>Program Acquisition Unit Cost</b>				
Acquisition Cost		\$ 175,820.4		
Program Quantity				
PAUC			0.00%	None
<b>Average Procurement Unit Cost</b>				
Procurement Cost		\$ 22,726.4		
Procurement Quantity	0	0		
APUC			0.00%	None

Original Baseline Compared with Current Estimate

Original Baseline Base Year:

Category (\$M)	Original Baseline	Current Estimate	% Change	Breach? Significant or Critical
<b>Program Acquisition Unit Cost</b>				
Acquisition Cost				
Program Quantity				
PAUC			0.00%	None
<b>Average Procurement Unit Cost</b>				
Procurement Cost				
Procurement Quantity		0		
APUC			0.00%	None

## Critical Cost Growth Details

Current Baseline PAUC Breach Explanation (if applicable):

For Major Defense Acquisition Programs, DoD requires an APB at program initiation. The APB establishes cost, quantity, schedule, and performance parameters that form the basis for unit cost reporting under 10 U.S.C. Sec. 2433. As a single integrated system of systems, the BMDS does not have an APB. In response to other statutory requirements, however, Missile Defense Agency provides the Congress with an annual Missile Defense Accountability Report (MDAR), which includes schedule, technical, test, operational capacity, resource, and contract baselines that guide development of ballistic missile defense capabilities. The MDAR includes unit cost baselines for key assets (e.g. SM-3 missiles and THAAD interceptors) comprising the BMDS.

Original Baseline PAUC Breach Explanation (if applicable):

N/A.

Current Baseline APUC Breach Explanation (if applicable):

N/A.

Original Baseline APUC Breach Explanation (if applicable):

N/A.

Impacts of Schedule Changes on Unit Cost:

Actions Taken or Proposed to Control Future Cost Growth:

Unit Cost Notes:



## Technologies and Systems Engineering

Does Classified Data Exist for this Data Section?

### Significant Technical Risks

*(Provide current risks and risks identified at previous key decision points)*

Event	Date	Description
Select		
Select		
Select		
Select		
Select		

## Contracts

### External Government Activities

Activity Title					
Supported Phase	Development	CAGE Code		City	
Work Start Date		CAGE Legal Name		State/Province	
Notes					

Activity Title					
Supported Phase	Development	CAGE Code		City	
Work Start Date		CAGE Legal Name		State/Province	
Notes					

Activity Title					
Supported Phase	Development	CAGE Code		City	
Work Start Date		CAGE Legal Name		State/Province	
Notes					

Contracts and Efforts

<b>Contract Number</b>	HQ0147-12-C-0004	<b>Order Number</b>	N/A	<b>Contract Title</b>	Development and Sustainment Contract (DSC)		
CAGE Code	3A768	City	Huntsville	Contracting Office	MDA/GMK		
CAGE Legal Name	The Boeing Company	State/Province	Alabama	Contract Strategy	FAR 15: Negotiated Contracts		
<b>Effort Number</b>							
Supported Phase	Development	Latest Modification Number	P00125	Definitization Date	12/30/2011		
Contract Type	Multiple Types	Latest Modification Date	12/20/2021	Work Start Date	12/30/2011		
Technical Data Rights	None	Notes 1) Contract: HQ0147-12-C-0004 / HQ0147-19-C-0004; Title: Development & Sustainment Contract (DSC). 2) Contract Types: Cost (CR), Cost Plus Fixed Fee (CPFF), Cost Plus Incentive Fee (CPIF), Cost Plus Award Fee (CPAF), Fixed Price Incentive (Firm Target) (FPIF). 3) Original NCC 2,570.19M. 4) FY2021 Obligation Amount is \$1,422,614,706 as of 09/30/2021 (HQ014712C0004 is \$38,276,796 HQ014719C0004 is \$1,384,337,909) 5) Total Contract Value (as of 12/31/2021), Exercised is \$11,526,991,277 (Unexercised is \$586,867,157). Total Contract Value is \$12,113,858,434.					
<b>Contract/Effort Price, Quantity and Performance (\$M)</b>							
Initial Target Price	\$ 2,816.80	Current Target Price	\$ 10,898.30	Contractor's EAC	\$ 10,654.76		
Initial Ceiling Price	\$ 2,816.80	Current Ceiling Price	\$ 10,898.30	PM's EAC	\$ 10,769.24		
Initial Quantity		BAC	\$ 10,457.24	BCWP	\$ 7,482.66	Work Completed	71.55%
Current Quantity		ACWP	\$ 7,717.33	BCWS	\$ 7,534.00	Cost Variance	-\$ 234.67
Delivered Quantity						Schedule Variance	-\$ 51.34

Factors Contributing to Cost Variance and Projected Effects on Program Costs:

Cumulative Cost Variance primarily driven by: 1) Terminated Redesigned Kill Vehicle 2) Ground Based Interceptor (GBI) historical technical issues and 3) Ground Systems (GS), Launch Support Systems (LSS) / Launch Site Components (LSC) Development.

Factors Contributing to Schedule Variance and Projected Effects on Program Schedule:

Cumulative Schedule Variance primarily driven by: 1) GBI Vehicle Integration and Booster motor delays and 2) GS Launch Support Equipment-2 (LSE2) rack design, complexities, and supply chain constraints.





### Contracts and Efforts

<b>Contract Number</b>	HQ0276-15-C-0003	<b>Order Number</b>	N/A	<b>Contract Title</b>	Standard Missile 3 (SM3) Block IIA All Up Round		
CAGE Code	15090	City	Tucson	Contracting Office	MDA/ABK		
CAGE Legal Name	Raytheon Missile D	State/Province	Arizona	Contract Strategy	FAR 15: Negotiated Contracts		
<b>Effort Number</b>							
Supported Phase	Development	Latest Modification Number	P00121	Definitization Date	8/28/2017		
Contract Type	Multiple Types	Latest Modification Date	2/25/2022	Work Start Date	6/11/2015		
Technical Data Rights	None	Notes Contract: HQ0276-15-C-0003; Title: Standard Missile 3 Block IIA All Up Round. Contract Types: CPIF, COST, CPFF					
<b>Contract/Effort Price, Quantity and Performance (\$M)</b>							
Initial Target Price	\$ 634.00	Current Target Price	\$ 2,463.27	Contractor's EAC	\$ 2,197.69		
Initial Ceiling Price	\$ 0.00	Current Ceiling Price	\$ 2,695.98	PM's EAC	\$ 2,223.88		
Initial Quantity	17	BAC	\$ 2,038.04	BCWP	\$ 1,032.08	Work Completed	50.64%
Current Quantity	79	ACWP	\$ 1,079.54	BCWS	\$ 1,021.90	Cost Variance	-\$ 47.46
Delivered Quantity	17					Schedule Variance	\$ 10.18

#### Factors Contributing to Cost Variance and Projected Effects on Program Costs:

Factors contributing to the cost variance are CLINS 0014 and 0015 (\$16M) material price for Aerojet Throttleable Divert and Attitude Control System (TDACS) due to timing issues from the definitization of FY 2018-FY 2020 purchase order with the supplier. Also driven by (\$9.5M) Responsible Engineering Authority due to higher than planned labor resources increasing costs. (\$7.5M) is attributed to bridge chips purchased for FY18 AURs but not suitable for use in AURs based on recent discoveries and FRBs.

No concerns currently with costs. Program Costs will continue to trend favorably as contract moves forward.



#### Factors Contributing to Schedule Variance and Projected Effects on Program Schedule:

Factors contributing to the schedule variance are early receipt of Third Stage Rocket Motors (TSRMs), Second Stage Rocket Motors (SSRMs), and Steering Control Sections (SCS). No concerns currently with schedule. All future deliveries are on track to complete as currently planned.





### Contracts and Efforts

<b>Contract Number</b>	HQ0851-20-C-0002	<b>Order Number</b>	N/A	<b>Contract Title</b>	Standard Missile 3 (SM3) Block IB Multi-Year		
CAGE Code	15090	City	Tucson	Contracting Office	MDA/ABK		
CAGE Legal Name	Raytheon Missile D	State/Province	Arizona	Contract Strategy	FAR 15: Negotiated Contracts		
<b>Effort Number</b>							
Supported Phase	Development	Latest Modification Number	P0013	Definitization Date			
Contract Type	Multiple Types	Latest Modification Date	2/3/2022	Work Start Date	3/27/2020		
Technical Data Rights	None	Notes Contract: HQ0851-20-C-0002; Title: Standard Missile 3 Block IB Multi-Year Procurement. Contract Types: FPI, FFP, CPFF					
<b>Contract/Effort Price, Quantity and Performance (\$M)</b>							
Initial Target Price	\$ 2.09	Current Target Price	\$ 2.11	Contractor's EAC	\$ 1,854.21		
Initial Ceiling Price	\$ 2.09	Current Ceiling Price	\$ 2.14	PM's EAC	\$ 1,854.21		
Initial Quantity	230	BAC	\$ 1,854.21	BCWP	\$ 530.50	Work Completed	28.61%
Current Quantity	230	ACWP	\$ 531.29	BCWS	\$ 441.25	Cost Variance	-\$ 0.80
Delivered Quantity						Schedule Variance	\$ 89.25

#### Factors Contributing to Cost Variance and Projected Effects on Program Costs:

Factors contributing to the cost variance are is driven by Tucson Factory Support allocations occurring sooner than planned in support of the FY 2019 AURs on CLIN 0001. Cost Variance is also driven by slower than expected ramp up of labor due to engineering resources being shared between multiple projects.

No concerns currently with costs. Program Costs will continue to trend favorably as contract moves forward.

#### Factors Contributing to Schedule Variance and Projected Effects on Program Schedule:

Factors contributing to the schedule variance include, delivery of the FY 2019 U.S. AUR CLIN 0001 Boosters and FY 2019 U.S. AUR CLIN 0001 Integrated Dewar Assemblies (IDAs) ahead of the baseline schedule. This variance also accounts for all of the FY 2020 U.S. AUR CLIN 1001 IDAs being delivered ahead of the baseline schedule.

No concerns currently with schedule. All future deliveries are on track to complete as currently planned.



### Contracts and Efforts

<b>Contract Number</b>	HQ014714C0001	<b>Order Number</b>	N/A	<b>Contract Title</b>	Medium Range Ballistic Missile Type 1 / Type		
CAGE Code	7VXX4	City	Orlando	Contracting Office	MDA/TCK		
CAGE Legal Name	AEROJET ROCKET	State/Province	Florida	Contract Strategy	FAR 15: Negotiated Contracts		
<b>Effort Number</b>							
Supported Phase	Development	Latest Modification Number	148	Definitization Date	10/31/2013		
Contract Type	Fixed-Price Incenti	Latest Modification Date	12/8/2021	Work Start Date	10/31/2013		
Technical Data Rights	Limited Rights to T	Notes Technical Data/Computer Software to be Furnished with Restrictions (Limited Rights) eSR19 and Roll Control					
<b>Contract/Effort Price, Quantity and Performance (\$M)</b>							
Initial Target Price	\$ 73.36	Current Target Price	\$ 77.68	Contractor's EAC	\$ 424.27		
Initial Ceiling Price	\$ 78.69	Current Ceiling Price	\$ 1,122.46	PM's EAC	\$ 440.95		
Initial Quantity	6	BAC	\$ 371.17	BCWP	\$ 294.53	Work Completed	79.35%
Current Quantity	12	ACWP	\$ 340.08	BCWS	\$ 316.07	Cost Variance	-\$ 45.56
Delivered Quantity	5					Schedule Variance	-\$ 21.55

#### Factors Contributing to Cost Variance and Projected Effects on Program Costs:

Factors contributing to cost variance are the majority of cost overrun in the past from Non-Recurring Engineering efforts with future cost growth in the enhanced solid rocket motor and roll control system areas. The cost overrun on the program is unrecoverable, however, costs are currently covered within controls and there are no funding impacts.

Note: The information presented above does not include any FFP CLINs or CLINs with EVM Waivers, so the EV data computes less than the Current Target Price.



#### Factors Contributing to Schedule Variance and Projected Effects on Program Schedule:

Factors contributing to the schedule variance are production delays from delayed design due to ongoing enhanced solid rocket motor issues; and Thrust Vector Control System (TVCS) delays due to ongoing de-scope of effort in order to move TVCS redesign.

Note: The information presented above does not include any FFP CLINs or CLINs with EVM Waivers, so the EV data computes less than the Current Target Price.





### Contracts and Efforts

<b>Contract Number</b>	HQ0147-19-C-0005	<b>Order Number</b>	N/A	<b>Contract Title</b>	Type 4 (T4) Subscale Targets		
CAGE Code	27555	City	Chandler	Contracting Office	MDA/TCK		
CAGE Legal Name	Orbital Sciences Corp	State/Province	Arizona	Contract Strategy	FAR 15: Negotiated Contracts		
<b>Effort Number</b>							
Supported Phase	Development	Latest Modification Number	P00025	Definitization Date	9/20/2019		
Contract Type	Multiple Types	Latest Modification Date	1/28/2022	Work Start Date	9/20/2019		
Technical Data Rights	None	Notes None to date. The Contractor has submitted documentation to support their request to incorporate data rights, but they have not been accepted.					
<b>Contract/Effort Price, Quantity and Performance (\$M)</b>							
Initial Target Price	\$ 0.19	Current Target Price	\$ 0.20	Contractor's EAC	\$ 208.72		
Initial Ceiling Price	\$ 0.20	Current Ceiling Price	\$ 0.22	PM's EAC	\$ 214.27		
Initial Quantity	9	BAC	\$ 214.01	BCWP	\$ 51.54	Work Completed	24.08%
Current Quantity	9	ACWP	\$ 52.62	BCWS	\$ 54.28	Cost Variance	-\$ 1.08
Delivered Quantity	0					Schedule Variance	-\$ 2.74

#### Factors Contributing to Cost Variance and Projected Effects on Program Costs:

The main cost contributor is higher vendor prices on the Thrust Vector Actuator components and cable components. No effects on costs at this time.

#### Factors Contributing to Schedule Variance and Projected Effects on Program Schedule:

The main schedule contributor is driven by Orion 38 milestones that are delayed due to delamination investigation that the supplier is working. No impact to program milestones at this time.



### Contracts and Efforts

<b>Contract Number</b>	HQ0147-11-C-0006	<b>Order Number</b>	N/A	<b>Contract Title</b>	IRBM/ICBM Targets		
CAGE Code	27555	City	Chandler	Contracting Office	MDA/TCK		
CAGE Legal Name	Orbital Sciences Co	State/Province	Arizona	Contract Strategy	FAR 15: Negotiated Contracts		
<b>Effort Number</b>							
Supported Phase	Development	Latest Modification Number	P00300	Definitization Date	3/7/2011		
Contract Type	Multiple Types	Latest Modification Date	2/28/2022	Work Start Date	3/7/2011		
Technical Data Rights	Government Purpose	Notes					
<b>Contract/Effort Price, Quantity and Performance (\$M)</b>							
Initial Target Price	\$ 231.62	Current Target Price	\$ 1,501.87	Contractor's EAC	\$ 1,159.35		
Initial Ceiling Price	\$ 259.32	Current Ceiling Price	\$ 1,501.87	PM's EAC	\$ 1,161.22		
Initial Quantity	16	BAC	\$ 1,175.69	BCWP	\$ 962.05	Work Completed	81.83%
Current Quantity	29	ACWP	\$ 969.73	BCWS	\$ 945.48	Cost Variance	-\$ 7.68
Delivered Quantity	21					Schedule Variance	\$ 16.56

#### Factors Contributing to Cost Variance and Projected Effects on Program Costs:

Factors contributing to the cost variance are closed CLINs, (\$32.9M), and Kit-15 Non-Recurring Engineering, (\$3.5M), which has been offset by material costing less than baselined, production learning curve efficiencies, and labor efficiencies in production and pre/post mission tasks, \$28.9M. No concerns currently with costs. Program Costs will continue to trend favorably as contract moves forward.

#### Factors Contributing to Schedule Variance and Projected Effects on Program Schedule:

Factors contributing to the schedule variance are early receipt of material and completion of Motor and Carriage Extraction System production milestones ahead of baseline. No concerns currently with schedule. All future deliveries are on track to complete as currently planned.



## Deliveries & Expenditures

Quantities	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development			0	0.00%
Procurement			0	0.00%
<b>Total</b>			0	0.00%

Please note **Percent Delivered** is for display purposes only. It uses Current Estimate Quantities from this form. Current Estimate Quantities (pulled from DAVE—not this form) and values from this table will be used to calculate this percentage in Advana.

Years Appropriated to date: 20

Total Years Appropriated Funding (Current Baseline): 26

Percent Years Appropriated: 76.92%

Appropriation Category (\$Millions)	Then Year Appropriated Amount	Then Year Expended Amount
RDT&E	152,126.70	140,529.10
Procurement	23,242.80	16,638.40
MILCON	1,537.70	1,338.10
Acq O&M		
<b>Percent Appropriated/Expended</b>	78.19%	70.06%

Please note **Percent Appropriated/Expended** is for display purposes only. It uses Total Acquisition Cost from this form. Total Acquisition Cost (pulled from DAVE—not this form) and values from this table will be used to calculate this percentage in Advana.

Deliveries & Expenditures Notes:

The above data reflects the FY 2022 Enacted position and is current as of March 10, 2022.

**Low Rate Initial Production**

	<b>Initial Decision LRIP</b>	<b>Current Total LRIP</b>
Approval Date		
Approval LRIP Quantity		
Approval Document Title		
Start Year		
End Year		

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

Quantity Note:

There is no LRIP for this program.