NATIONAL SECURITY SPACE LAUNCH (NSSL)

Selected Acquisition Report (SAR)

DECEMBER 31, 2021

U.S. AIR FORCE

Contents

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Mission and Description

The mission of the National Security Space Launch (NSSL) program is to acquire launch services to provide critical space support required to satisfy DoD warfighter, national security, and other Government spacelift missions while fostering interagency and commercial cooperation. This mission includes the execution of flight worthiness certification processes and booster-to-satellite mission integration to maintain assured access to space and achieve 100% mission success.

The NSSL system includes launch vehicles, launch capability, a standard payload interface, support systems, mission integration (includes mission unique requirements), flight instrumentation and range interfaces, special studies, post-flight data evaluation and analysis, mission assurance, infrastructure, critical component engineering, Government Mission Director support, system/process and reliability improvements, training, and other technical support. The system also includes launch site operations activities, activities in support of assured access, systems integration and tests, and other related support activities. Additionally the program is working to develop two or more domestic, commercially viable, space launch providers that meet all National Security Space launch requirements.

In accordance with section 2273 of Title 10, U.S. Code, the DoD is responsible for maintaining assured access to space. NSSL is the foundation for the access for intermediate and larger class payloads for the foreseeable future. In accordance with policy, NSSL maintains at least two families of space launch vehicles capable of reliably launching national security payloads.

Executive Summary

Program Highlights Since Last Report

Since the last SAR (containing data as of March 1, 2020) the NSSL program office accomplished thirteen successful National Security Space (NSS) launches. Mission success is NSSL's number one priority. NSSL maintained its 100% mission success and now stands at 91 consecutive successful NSS launches over the program's existence. Other NSSL priorities include cultivating innovative mission assurance; transitioning to new launch vehicles; and assured access for current and future space architectures. Incorporating innovation and agility into the mission assurance processes will ensure continued mission success. The Space Force continues investing in industry to support the development of new launch vehicles for NSS payloads, assuring access to space into the next decade.

Of the thirteen missions launched since the last SAR, six were on Atlas V launch vehicles: Advanced Extremely High Frequency (AEHF)-6 on March 26, 2020, United States Space Force (USSF)-7 on May 17, 2020, National Reconnaissance Office Launch (NROL)-101 on November 13, 2020, Space-Based Infrared System Geosynchronous Earth Orbit-5 on May 18, 2021, Space Test Program-3 on December 7, 2021, and USSF-8 on January 21, 2022. Five were on Falcon 9 launch vehicles: Global Positioning System (GPS) III-3 on June 30, 2020, GPS III-4 on November 5, 2020, GPS III-5 on June 17, 2021, NROL-87 on February 2, 2022, and NROL-85 on April 17, 2022. There were two on a Delta IV Heavy launch vehicle: NROL-44 on December 10, 2020 and NROL-82 on April 26, 2021. The launch teams followed the Centers for Disease Control and Prevention COVID-19 guidelines to ensure the safety of all mission personnel. These measures include reducing on-site personnel, increasing physical distancing between console operators, and leveraging remote work technologies.

Since 2016 the USSF has been actively engaged in evaluating reusable launch systems, establishing common standards for reuse and developing requirements for the refurbishment of previously-flown boosters that are consistent with NSSL Mission Assurance standards. In 2019, NSSL partnered with Space Exploration Technologies (SpaceX) to begin negotiations for modifications to two Phase 1A contracts for GPS III missions to enable recovery and reuse of launch vehicle boosters. The launch services contracts for the GPS III-3 (launched and recovered June 2019), GPS III-4 (launched and recovered November 2020), GPS III-5 (launched on reused booster and recovered June 2021), and GPS III-6 (planned for 2023) missions were modified to allow SpaceX to recover the launch vehicle boosters. The contract for the GPS III-5 and GPS III-6 missions was also modified to allow those missions to be flown on hardware recovered in the previous GPS III missions. The contract modifications saved $64.5 million in funding and other considerations. The cash savings enabled the NSSL program to procure additional launch services and meet emerging requirements.

The USSF awarded the NSSL Phase 2 Launch Service Procurement contracts on August 12, 2020 to United Launch Alliance (ULA) and SpaceX. The Phase 2 contract award was a full and open competition for two firm-fixed price contracts that represent the best value, and next best value to the Government for NSS missions procured in FY 2020 through 2024, for launch in FY 2022 through 2027. Launch service orders will be allocated approximately 60% and 40% between the ULA and SpaceX, respectively. In addition to the contract awards, Order Year 1 Task Orders were placed for launches starting in FY 2022. The orders for the launch service support and launch service contracts were issued to ULA for USSF-51 and USSF-

106, and to SpaceX for USSF-67. Order Year 2 Task Orders were placed on March 9, 2021 for launches starting in FY 2023. Launch service support and launch service contracts were issued to ULA for USSF-87 and USSF-112, and to SpaceX for USSF-36 and NROL-69.

The Phase 2 competitive acquisition award adds to the considerable savings the NSSL program has achieved since the 2013 Phase 1 Block Buy contract award. The total life cycle cost estimate reduction since the February 2013 program rebaseline now stands at $28 billion. The NSSL program has returned approximately $7 billion in procurement funds to the Air Force, Space Force, and National Reconnaissance Office (NRO), enabling them to fund additional capabilities. The NSSL program garnered these savings by creating new acquisition strategies, procuring launch services in economic order quantities, and fostering robust competition precipitated by investments in new commercial launch systems that also meet more stressing NSSL needs.

NSSL made significant progress in certifying both Phase 2 providers' launch vehicle systems. The SpaceX Falcon Heavy launch system Non-Recurring Design Validation (NRDV) activities were completed on schedule in September 2020; the first launch is planned for 2022. The ULA Vulcan launch system NRDV and development activities continue to make progress towards first NSS launch in 2023. The Vulcan program is focused on completing major subsystem qualification testing and production ramp up to support operational Phase 2 launch service procurement missions.

A key component of the Phase 2 Acquisition Strategy was the three Launch Service Agreements (LSA) Other Transaction Authority (OTA) agreements awarded in 2018 as public-private partnerships to leverage industry's new commercial launch solutions and facilitate development of NSSL launch system prototypes. The strategy included terminating LSA OTA agreements with contractors not awarded Phase 2 procurement contracts. Subsequent to the Phase 2 award to the ULA Vulcan Centaur and SpaceX Falcon family launch systems, the U.S. Space Force worked with Blue Origin and Northrop Grumman Space Systems to complete specific LSA milestones of benefit to the Government, and concluded all activities on December 31, 2020.

Space Systems Command Launch Enterprise is engaged with the commercial launch industry and Government satellite customers to help shape future NSSL launch service investment and procurement strategies. Specifically, the Launch Enterprise released a Request for Information (RFI) in support of NSSL program planning in November 2020, hosted an Industry Day with 17 private industry participants in August 2021 and conducted site visits of potential NSSL Phase 3 providers from September to December 2021. In January 2022 Launch Enterprise released a second RFI inquiring about Launch System Capability, Readiness and Business Cases to be used in the strategy development process for the Phase 3 launch service procurement.

The Space Systems Command Launch Enterprise, in partnership with the Space Enterprise Consortium (SpEC), released three Request for Prototype Proposals (RPPs) to support NSSL RDT&E Investments on May 11, 2021 in compliance with the FY 2021 Appropriations Act and the FY 2021 National Defense Authorization Act (NDAA) and on September 24, 2021, awarded four prototype project agreements; one each to SpaceX, ULA, Rocket Lab USA, and Blue Origin. These prototypes will facilitate testing for Next Generation Rocket Engines, and accelerate the development of Upper Stage Resiliency Enhancements for future launch service procurements. These collaborative efforts strive to incentivize industry innovation

and accelerate development of launch systems capabilities vital to providing our Nation's warfighters and intelligence community with space-based capabilities.

NSSL continues to successfully implement multi-manifesting capability to maximize the use of the launch vehicle performance to rapidly meet NSS requirements and warfighter needs. The USSF is utilizing this flexibility and efficiency to make seamless manifest changes on previously-planned National Aeronautics and Space Administration (NASA) missions. NASA's Landsat-9 mission was identified as an opportunity to integrate DoD payloads on a NASA-procured launch service. Four DoD and NASA small satellites were integrated on the EELV Secondary Payload Adapter (ESPA) Flight System for the Landsat-9 mission. The Landsat 9 mission, including the four small multi-manifested DoD and NASA satellites, successfully launched on September 27, 2021. These efforts underscore the ability to understand customer and mission partner's programs and provide late-stage solutions for evolving capability needs. The USSF is committed to innovative mission manifest solutions and creating other opportunities for interagency cooperation for future multi-manifesting.

The NSSL APB has been revised to close the 2015 RDT&E Total Cost APB Breach caused by receipt of Congressional RDT&E funds for Rocket Propulsion development. The Air Force Cost Analysis Agency (AFCAA) completed an SCP in November 2021; and the MDA approved the new APB March 22, 2022. The breach has caused no impact to procurement of launch services.

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

History of Significant Developments Since Program Initiation

History of Significant Developments Since Program Initiation	
Date	**Significant Development Description**
August 1994	President approved National Space Transportation Policy (NSTP) establishing the EELV program, a space launch system that satisfies the National Launch Forecast requirements to place National Security Space (NSS) space vehicles on orbit.
August 1995	Awarded four contracts to begin the development of evolved expendable launch systems with the intent to down-select to one launch provider.
December 1996	Awarded two Pre-EMD contracts, one each to The Boeing Company (previously McDonnell Douglass) (Boeing) and Lockheed Martin Corporation (Lockheed), in line with the strategy to down-select to one provider.
December 1996	MDA approved EELV Milestone (MS) I.
November 1997	Updated acquisition strategy to partner with industry to develop two families of launch vehicles instead of selecting one, based on the commercial launch industry's projections for a robust commercial launch market. The new strategy procured launch services, where the Government would not take ownership of any hardware or property.
June 1998	MDA approved MS II and EELV entered into EMD.
October 1998	Awarded Initial Launch Services (ILS) two Firm Fixed Price (FFP) competitive contracts for 28 missions and two Other Transaction Authority Agreements (OTAs): one each to Lockheed and Boeing. The OTAs provided Government capital investments to meet NSS unique requirements.
December 1999	The U.S suffered six space launch failures over ten months. A Broad Area Review was established to evaluate practices, procedures, and operations, and make recommendations to avoid further failures.
September 2000	ILS contracts and OTA agreements were restructured based on a review of NSS requirements. The demand for West Coast launch services was not sufficient to support two contractors and Lockheed was relieved of the requirement to build a West Coast launch facility. In consideration, the AF awarded Boeing all ILS West Coast launches and funded a Heavy-Lift vehicle (HLV) demonstration flight to increase mission success confidence.
December 2002	Lockheed's Atlas V and Boeing's Delta IV successfully launched their first missions (both commercial).
December 2002	Both contractors considered exiting the launch market due to the lack of a commercial launch market. To protect assured access to space with two families of launch vehicles, the Government planned to fund EELV fixed costs.
March 2003	Successfully accomplished the first Delta IV NSS launch, Defense Satellite Communications System (DSCS) IIIB-27 (A3) on March 11, 2003.
December 2003	Breached Critical Nunn-McCurdy cost thresholds. The primary cause was price increases from the collapse of the commercial launch market. The FY 2005 PB funded EELV to cover an expected 50% increase in prices, and the cost of continued assured access to space.

April 2004	MDA certified to Congress that EELV had met all requirements pursuant to the NM law.
December 2004	President signed National Security Policy Directive (NSPD)-40, National Space Transportation Policy (NSTP), in December 2004. Stating in part: "The Secretary of Defense shall maintain overall management responsibilities for the EELV program and shall fund the annual fixed costs for both launch services providers".
December 2004	Accomplished the successful launch of the Delta IV HLV demonstrating the capability to meet all NSS launch requirements.
March 2005	Revised EELV Acquisition Strategy to implement the 2004 NSPD-40 direction to "fund the annual fixed costs for both launch services providers" by implementing separate contracts for launch services and for annual infrastructure capability, known as EELV Launch Services (ELS) and EELV Launch Capability (ELC).
June 2005	MDA approved MS C and placed the program into its Production Phase.
October 2006	Federal Trade Commission granted United Launch Alliance (ULA) anti-trust clearance allowing Boeing and Lockheed to form ULA. The new company stood up on December 1, 2006.
December 2006	Air Force Space Command (AFSPC) Commander declared EELV IOC and FOC.
March 2007	Successfully accomplished the first Atlas V NSS launch, Space Test Programs (STP)-1 on March 9, 2007.
August 2007	MDA approved an APB reflecting the end of Production Phase, marking the completion of MS III (MS C), and moving EELV from an active MDAP to a Sustainment Program. In September 2007, EELV submitted a termination SAR ending EELV MDAP reporting.
October 2007	AFSPC extended the EELV program lifecycle from 2020 to 2030.
October 2011	New Entrant Certification Guide was approved, establishing that: "The Air Force strategic intent is to promote the viability of multiple domestic EELV-class launch providers as soon as feasible."
November 2011	Restructured the Acquisition Strategy to maintain mission success while incentivizing cost reductions through steady production rates, long-term commitments, and opportunities for competition.
April 2012	In the FY 2012 National Defense Authorization Act (NDAA), Congress required EELV to resume MDAP reporting. EELV resumed SAR reporting with updated APUC and PAUC, triggering a critical NM breach. The breach was caused by Satellite Vehicle programs' delivery delays or cancellation, decreased NSS launch service demand from 138 to 92 missions and the rising cost of launch vehicle propulsion systems largely due to the cancellation of the Space Shuttle program.
July 2012	MDA certified to Congress that EELV had met all requirements pursuant to the NM law.
February 2013	MDA approved a revised APB updating the Current and Original Baseline cost thresholds, extending the program from 2020 to 2030 and increasing the quantity of launch services by 60. MDA also approved the amended Acquisition Strategy Document (ASD) and the ADM reinstating MS C (MS III).

February 2013	Amended the ASD to include competitive launch service awards starting in FY 2015, reintroducing competition to EELV for the first time since 1998.
June 2013	Awarded one Firm Fixed Price/Cost Plus Incentive Fees contact for launch production services for 36 launch vehicle cores and launch capability implementing the 2011 ASD.
February 2015	Breached Research, Development, Test, and Evaluation APB total cost threshold. This was due to cumulative effect of additional EELV funds provided in three actions: 1) FY 2014 Omnibus to invest in key propulsion technologies for a technical maturation and risk reduction program to invest in key propulsion technologies; 2) FY 2015 NDAA and Appropriations Act initiated development of a Rocket Propulsion System; and 3) FY 2016 Resource Management Decision directing the Air Force to provide two, commercially-viable, domestically-sourced, space launch services.
May 2015	Announced that the Space Exploration Technologies (SpaceX) Falcon 9 Launch System was capable of meeting NSS launch requirements.
April 2016	Reintroduced competition and awarded the first FFP competitive contract in over a decade. This contract was the first with SpaceX and the Falcon 9 launch vehicle.
May 2016	AFSPC publishes CPD to replace 1998 ORD. Basis for next generation rocket requirements (Standard Interface Specifications (SIS) and Systems Performance Requirements Document (SPRD) were both updated and signed in June 2017) with guidance leaning forward to space warfighting capability in the 2020s.
June 2017	MDA approved the Launch Service Agreements (LSA) ASD with two key priorities: improving affordable NSS assured access to space and transitioning from the use of non-allied engines. The strategy implements the funding provided in FY 2016 and 2017 PBs to invest in one or more launch provider's emerging systems.
October 2018	MDA approved a new ASD to allow a full and open competition with an award to two providers for FY 2020 – 2025 procurements.
October 2018	Awarded three LSA OTAs for development of Launch System Prototypes.
December 2018	Successfully accomplished the first Falcon 9 EELV launch, Global Positions System (GPS) III-2 on December 23, 2018.
March 2019	The FY 2019 NDAA contained a provision to re-name the EELV program the National Security Space Launch (NSSL) program effective March 1, 2019.
August 2020	Awarded two Firm Fixed Price contracts for launch service procured in FY 2020 through 2024, launching in FY 2022 through 2027; one each to SpaceX and ULA.
June 2021	Successfully accomplished the first NSSL launch of a reused launch vehicle, Falcon 9 GPS III-5 mission on June 17, 2021.
September 2021	Awarded four Space Enterprise Consortium (SpEC) prototype project agreements to incentivize industry innovation and development of launch systems capabilities.
March 2022	MDA approved a revised APB updating the Current Baseline to close the 2015 RDT&E Total Cost APB Breach caused by receipt of Congressional RDT&E funds for Rocket Propulsion development.

April 2022	Accomplished 91 successful NSSL launches since the inception of the NSSL program.

Schedule

Schedule Events

Schedule Events					
Events	**Development APB Objective**	**Current APB Development Objective/Threshold**		**Actual**	**Deviation**
Milestone I	Dec 1996	Dec 1996	Dec 1996	December 11, 1996	None
Milestone II	Jun 1998	Jun 1998	Jun 1998	October 15, 1998	None
Tailored CDR	Oct 1999	Oct 1999	Oct 1999	October 31, 1999	None
MLV First Operational Flight	Aug 2002	Aug 2002	Aug 2002	August 21 2002	None
HLV OLSD Flight	Dec 2004	Dec 2004	Dec 2004	December 21, 2004	None
Initial & Full Operational Capability	Jun 2006	Jun 2006	Jun 2006	June 28, 2006	None
HLV First Operational Flight	Nov 2007	Nov 2007	Nov 2007	November 11, 2007	None
Milestone C Reapproval	Feb 2013	Feb 2013	Feb 2013	February 10, 2013	None

Significant Schedule Risks

Significant Schedule and Technical Risks	
Current Estimate (December 2021)	
1.	There are no schedule risks identified at this time.

Performance

Performance Characteristics					
Development APB Objective	**Current APB Development Objective/Threshold**		**Demonstrated Performance (include Date of Demonstration)**	**Actual**	**Deviation**
Performance Mass to Orbit					
LEO: 100nm X 100nm 63.4 deg (lbs)					
19,550	19,550	17,000	17,000	17,000	None
POLAR 1: 450nm x 450nm, 98.2 deg (lbs)					
5,060-8,050 (15%)	5,060-8,050 (15%)	4,400-7,000	4,400-7,000	4,400-7,000	None
POLAR 2: 100nm x 100nm, 90 deg (lbs)					
43,050	43,050	41,000	41,000	41,000	None
SEMI-SYNC: 10,998nm x 100nm, 55.0 deg (lbs)					
2,875-5,152 (15%)	2,875-5,152 (15%)	2,500-4,725	2,500-4,725	2,500-4,725	None
GTO: 19,324nm x 90nm, 27 deg (lbs)					
7,015-9,775 (15%)	7,015-9,775 (15%)	6,100-8,500	6,100-8,500	6,100-8,500	None
MOLNIYA: 21,150nm x 650nm, 63.4 deg (lbs)					
8,050	8,050	7,000	7,000	7,000	None
GEO: 19,323nm x19,323nm, 0 deg (lbs)					
14,175	14,175	13,500	13,500	13,500	None
Vehicle Design Reliability (%)					
>98	>98	98	98	98	None
Standardization					
Launch Pads					
Standardized and able to launch all configs of EELV for that site	Standardized and able to launch all configs of EELV for that site	Standardized and able to launch all configs of EELV for that site	Standardized and able to launch all configs of EELV for that site	Standardized and able to launch all configs of EELV for that site	None
Payload Interfaces					
One std payload interface	One std payload interface	Std payload interface for each vehicle class (add'l interface rqmts met by payload adapter)	Std payload interface for each vehicle class (add'l interface rqmts met by payload adapter)	Std payload interface for each vehicle class (add'l interface rqmts met by payload adapter)	None

Requirements Source

Operational Requirements Document (ORD) II dated September 15, 1998.

Performance Notes

The NSSL program office successfully accomplished 91 NSS NSSL program launches (49 on Atlas V launch vehicles, 36 on Delta IV launch vehicles, and six on Falcon 9 launch vehicle).

Performance Characteristics were not designed to represent any specific satellite mission. Demonstrated Performance has been verified via Government review and analysis.

Air Force Space Command and the program office completed a Spacelift CPD on May 31, 2016. The requirements have been incorporated into two subsequent documents (SPRD and SIS), driving the design of new launch vehicles and capturing new space vehicle requirements for Phase 2 implementation. The Performance Requirements Reference will be updated in a revised APB.

Acquisition Budget Estimate

Total Acquisition Cost

		Development APB	Current APB 03/22/2022		Budget Estimate PB 2023		
Category	**Base Year**	**Objective (BY$)**	**Objective (BY$)**	**Threshold (BY$)**	**BY$**	**TY$**	**Deviation**
RDT&E	2012	2,365.1	5,128.1	5,640.9	5,086.4	5,086.2	None
Procurement	2012	59,078.3	59,078.3	64,986.1	48,502.7	55,871.1	None
MILCON							
Acq. O&M							
Total		61,443.4	64,206.4	70,627.0	53,589.1	60,957.3	
PAUC	2012	404.233	422.411	464.651	263.986		None
APUC	2012	391.247	391.247	430.372	240.112		None

Total End Item Quantity

Quantity Category	Current APB Quantity	Current Estimate Quantity
Development	1	1
Procurement	151	202

Budget Notes

Since the last SAR in 2019, the NSSL Procurement Cost Estimate has decreased by $-1.9B due to the revision of the estimating methodology based on the final Phase 2 Launch Service Procurement contract award resulting in a decrease to total procurement costs of -$3.7B; an increase of $1.5B due to an increase in quantity of eleven launch services procurements, from 191 to 202, based on Satellite Vehicle requirements; as well as Congressional reductions and other funding revisions.

Since the last SAR in 2019, the NSSL RDT&E Cost Estimate has decreased by $151M due to realignment of funding priorities to allow NSSL to focus on Launch Services Agreements completion and propellant characterization testing.

All NSSL launch services are fully funded in the year ordered, two or three years prior to launch, depending on vehicle configuration, and are fixed price. Launch support and capability costs are funded on an annual basis. The Space Force missions, purchased with Missile (3020), Space (3021), and Space Force (3022) Procurement funds, comprise 114 of the 202 total launches. The remaining missions in the table above include funding and quantities from other sources to include the National Reconnaissance Office and the Department of the Navy. Navy launch service procurement funding and quantities are included in the NSSL SAR; however, the satellite program baselines also include these funds.

Quantity Notes

RDT&E Development Quantity of one represents the Heavy-Lift Vehicle (HLV) Operational Launch Service Demonstration (OLSD), also referred to as the Heavy Demo, launched in December 2004. RDT&E funds include past Defense Advanced Research Projects Agency (DARPA) and National Reconnaissance Office

(NRO) funding. Previously stated in past reports as Advanced Research Projects Agency (ARPA) and National User.

Risk and Sensitivity Analysis

Risks and Sensitivity Analysis	
Current Procurement Cost (December 2021)	
1.	Impacts of variability in National Security Space launch requirements; that the program launch manifest and procurement requirements remain relatively stable.
Original Baseline Estimate (October 1998)	
1.	There are no risks identified with this Baseline Estimate.
Revised Original Estimate (February 2013)	
1.	The Revised Original Estimate is the Current Baseline Estimate.
Current Baseline Estimate (March 2022)	
1.	The Current Baseline Estimate for: Procurements is the Independent Cost Estimate developed by the OSD Cost Analysis and Program Evaluation team in January 2013; RDT&E is the Service Cost Position developed by the Air Force Cost Analysis Agency in November 2021. The following are two risks identified in their estimate: creation of a more competitive launch provider environment in a declining launch need environment could increase costs to the program; and that the program launch manifest and procurement requirements remain relatively stable.

Unit Cost

Current Baseline Compared with Current Estimate

Category ($M)	Current APB	Current Estimate	% Change	NMC Breach
PAUC				
Cost	64,206.4	53,589.1		
Quantity	152	203		
Unit Cost	422.411	263.986	-37.50%	No
APUC				
Cost	59,078.3	48,502.7		
Quantity	151	202		
Unit Cost	391.247	240.112	-38.63%	No

Original Baseline Compared with Current Estimate

Category ($M)	Current APB	Current Estimate	% Change	NMC Breach
PAUC				
Cost	61,443.4	53,589.1		
Quantity	152	203		
Unit Cost	404.233	263.986	-34.69%	No
APUC				
Cost	59,078.3	48,502.7		
Quantity	151	202		
Unit Cost	391.247	240.112	-38.63%	No

Unit Cost Notes:

Average unit cost figures reported above are a combination of each of multiple launch vehicle configurations and annual launch capability requirements. The average unit cost will vary due to shifts in payload weight and volume, mission-unique services, number of missions per year and other factors.

Contracts

Contract Data ($TYM)		
Contract Number	FA8811-20-D-0001	
Effort Number	--	
Contract Type	FFP	
Modification Number	--	
Award Date	8/12/2020	
Definitization Date	8/12/2020	
Order Number	--	
CAGE Code/CAGE Legal Name	--	
Contract Title	NSSL Phase 2 Launch Service Procurements	
Contract Address	United Launch Alliance, Centennial, CO 80112	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
3,399.7	3,399.7	
Initial Ceiling Price	Current Ceiling Price	
N/A	N/A	
Contract's EAC	PM's EAC	
3,399.7	3,399.7	
Initial Quantity	Current Quantity	Delivered Quantity
2	4	0
BAC	BCWP	ACWP
N/A	N/A	N/A
BCWS	Cost Variance	Schedule Variance
N/A	N/A	N/A

Contract Notes

This is the first time this contract is being reported. Schedule and Cost Variance is not required for this FFP contract. Of the four planned launches, none have been launched.

Contracts

Contract Data ($TYM)		
Contract Number	FA8811-20-D-0002	
Effort Number	--	
Contract Type	FFP	
Modification Number	--	
Award Date	8/12/2020	
Definitization Date	8/12/2020	
Order Number	--	
CAGE Code/CAGE Legal Name	--	
Contract Title	NSSL Phase 2 Launch Service Procurements	
Contract Address	Space Exploration Technology, Hawthorne, CA 90250	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
3,338.9	3,338.9	
Initial Ceiling Price	Current Ceiling Price	
----	----	
Contract's EAC	PM's EAC	
3,338.9	3,338.9	
Initial Quantity	Current Quantity	Delivered Quantity
1	3	0
BAC	BCWP	ACWP
N/A	N/A	N/A
BCWS	Cost Variance	Schedule Variance
N/A	N/A	N/A

Contract Notes

This is the first time this contract is being reported. Schedule and Cost Variance is not required for this FFP contract. Of the three planned launches, none have been launched.

Contracts

Contract Data ($TYM)		
Contract Number	FA8811-19-C-0002	
Effort Number	--	
Contract Type	FFP	
Modification Number	--	
Award Date	10/24/2018	
Definitization Date	10/24/2018	
Order Number	--	
CAGE Code/CAGE Legal Name	--	
Contract Title	Delta IV Heavy Launch Service Procurements	
Contract Address	United Launch Alliance, Centennial, CO 80112	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
467.0	1,668.6	
Initial Ceiling Price	Current Ceiling Price	
----	----	
Contract's EAC	PM's EAC	
1,668.6	1,668.6	
Initial Quantity	Current Quantity	Delivered Quantity
3	3	0
BAC	BCWP	ACWP
N/A	N/A	N/A
BCWS	Cost Variance	Schedule Variance
N/A	N/A	N/A

Contract Notes

The difference between the Initial Target Price and the Current Target Price is due to the modification for launch operations support. Schedule and Cost Variance is not required for this FFP contract. The contract name has changed to "Delta IV Heavy Launch Service Procurements" from "Delta IV Heavy Launch Vehicle Services" to align with the contract document name. Of the three planned launches, none have been launched.

Contracts

Contract Data ($TYM)		
Contract Number	FA8811-19-9-0003	
Effort Number	--	
Contract Type	OTA	
Modification Number	--	
Award Date	10/10/2018	
Definitization Date	10/10/2018	
Order Number	--	
CAGE Code/CAGE Legal Name	--	
Contract Title	United Launch Alliance Launch Services Agreement	
Contract Address	United Launch Alliance, Centennial, CO 80112	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
967.0	967.0	
Initial Ceiling Price	Current Ceiling Price	
----	----	
Contract's EAC	PM's EAC	
967.0	967.0	
Initial Quantity	Current Quantity	Delivered Quantity
0	0	0
BAC	BCWP	ACWP
N/A	N/A	N/A
BCWS	Cost Variance	Schedule Variance
N/A	N/A	N/A

Contract Notes

There were no changes to this contract. Schedule and Cost Variance is not required for this OTA contract. Other Transaction Agreement is for the shared cost investment in the development of Launch Systems Prototypes with at least one-third statutory cost-sharing by contractor.

Contracts

Contract Data ($TYM)		
Contract Number	FA8811-19-C-0005	
Effort Number	--	
Contract Type	FFP	
Modification Number	--	
Award Date	2/19/2019	
Definitization Date	2/19/2019	
Order Number	--	
CAGE Code/CAGE Legal Name	--	
Contract Title	Phase 1A-6	
Contract Address	United Launch Alliance, Centennial, CO 80112	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
441.8	455.6	
Initial Ceiling Price	Current Ceiling Price	
----	----	
Contract's EAC	PM's EAC	
455.6	455.6	
Initial Quantity	Current Quantity	Delivered Quantity
3	3	1
BAC	BCWP	ACWP
N/A	N/A	N/A
BCWS	Cost Variance	Schedule Variance
N/A	N/A	N/A

Contract Notes

The difference between the Initial Target Price and the Current Target Price is due to contract modifications for mission unique items. The contract name has changed to "NSSL Phase 1A-6" from "SILENTBARKER, SBIRS-5, & SBIRS-6 Launch Services" to align with the contract document name. Schedule and Cost Variance is not required for this FFP contract. Of the three planned launches, one has been launched.

Contracts

Contract Data ($TYM)		
Contract Number	FA8811-18-C-0002	
Effort Number	--	
Contract Type	FFP	
Modification Number	--	
Award Date	3/14/2018	
Definitization Date	3/14/2018	
Order Number	--	
CAGE Code/CAGE Legal Name	--	
Contract Title	NSSL Phase 1A-4	
Contract Address	United Launch Alliance, Centennial, CO 80112	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
352.4	355.8	
Initial Ceiling Price	Current Ceiling Price	
----	----	
Contract's EAC	PM's EAC	
355.8	355.8	
Initial Quantity	Current Quantity	Delivered Quantity
2	2	0
BAC	BCWP	ACWP
N/A	N/A	N/A
BCWS	Cost Variance	Schedule Variance
N/A	N/A	N/A

Contract Notes

This is the first time this contract is being reported. Schedule and Cost Variance is not required for this FFP contract. Of the two planned launches, none have been launched.

Contracts

Contract Data ($TYM)		
Contract Number	FA8811-19-9-0002	
Effort Number	--	
Contract Type	OTA	
Modification Number	--	
Award Date	10/10/2018	
Definitization Date	10/10/2018	
Order Number	--	
CAGE Code/CAGE Legal Name	--	
Contract Title	Orbital Sciences Launch Services Agreement	
Contract Address	Orbital Sciences, Chandler, AZ 85248	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
531.7	531.7	
Initial Ceiling Price	Current Ceiling Price	
----	----	
Contract's EAC	PM's EAC	
531.7	531.7	
Initial Quantity	Current Quantity	Delivered Quantity
0	0	0
BAC	BCWP	ACWP
N/A	N/A	N/A
BCWS	Cost Variance	Schedule Variance
N/A	N/A	N/A

Contract Notes

This contract is more than 90% complete; therefore, this is the final report for this contract. Schedule and Cost Variance is not required for this OTA contract. Other Transaction Agreement is for the shared cost investment in the development of Launch Systems Prototypes with at least one-third statutory cost-sharing by contractor.

Contracts

Contract Data ($TYM)		
Contract Number	FA8811-19-9-0001	
Effort Number	--	
Contract Type	OTA	
Modification Number	--	
Award Date	10/10/2018	
Definitization Date	10/10/2018	
Order Number	--	
CAGE Code/CAGE Legal Name	--	
Contract Title	Blue Origin LLC Launch Services Agreement	
Contract Address	Blue Origin LLC, Kent, WA 98032	
Contracts/Effort Price, Quantity, and Performance ($M)		
Initial Target Price	Current Target Price	
255.5	255.5	
Initial Ceiling Price	Current Ceiling Price	
----	----	
Contract's EAC	PM's EAC	
255.5	255.5	
Initial Quantity	Current Quantity	Delivered Quantity
0	0	0
BAC	BCWP	ACWP
N/A	N/A	N/A
BCWS	Cost Variance	Schedule Variance
N/A	N/A	N/A

Contract Notes

This contract is more than 90% complete; therefore, this is the final report for this contract. Schedule and Cost Variance is not required for this OTA contract. Other Transaction Agreement is for the shared cost investment in the development of Launch Systems Prototypes with at least one-third statutory cost-sharing by contractor.

Technologies and Systems Engineering

Significant Technical Risks

Significant Technical Risks	
Current Estimate (December 2021)	
1.	There are no technical risks identified at this time.

Deliveries and Expenditures

Deliveries

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	1	1	1	100.00%
Production	90	90	202	44.55%
Total Program Quantity Delivered	91	91	203	44.82%

Expended and Appropriated (TY $M)

Total Acquisition Cost: 60,957.3
Expended to Date: 35,372.8
Percent Expended: 58.03%
Total Funding Years: 37
Years Appropriated: 29
Percent Years Appropriated: 78.38%
Appropriated to Date: 36,406.6
Percent Appropriated: 59.72%

Low Rate Initial Production

LRIP Note

There is no LRIP for this program.

Operating and Support Costs

Total Program O&S Cost Compared with Baseline

	Current APB Objective (BY$)	Current APB Threshold (BY$)	Current Estimate (BY$)	Current Estimate (TY$)	Deviation
Total O&S ($Millions)	1,256.8	1,382.5	1,382.5	1,255.5	None

O&S Cost Breakdown

Allocate O&S estimate by each weapon system (or system variants) acquired by the program) into the CAPE Cost Categories. Add a fresh column for each variant/system.

Category (BY$ Million)	Titan IV (Antecedent) Average Annual Cost Per Launch Vehicle
Unit-Level Manpower	11.561
Unit Operations	67.656
Maintenance	12.638
Sustaining Support	0.003
Continued System Improvements	0
Other	0.343
Total O&S	92.201

O&S Cost Notes

The Antecedent System is Titan IV. The NSSL program provides launch services for DoD and National Reconnaissance Office satellite vehicles. No single antecedent system covered NSSL's combined launch capabilities. Previous launch services were provided by Titan II, Delta II, Atlas II, and Titan IV launch vehicle systems. Of these, Titan IV was selected as the program that was the closest representation of an antecedent system. Cost details were provided by the Air Force Total Ownership Cost database.