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Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-176



National Security Space Launch (NSSL)

As of FY 2020 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Sensitivity Originator

No originator info Available at this time.

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

National Security Space Launch (NSSL)

DoD Component

Air Force

In the Pre-EMD phase, RDT&E funding was also received from Defense Advanced Research Projects Agency (Defense-Wide PE 0603226E) and the National Reconnaissance Office.

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References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated February 10, 2013

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated February 10, 2013

Mission and Description

The mission of the National Security Space Launch (NSSL) (formally known as Evolved Expendable Launch Vehicle (EELV)) 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 (alternative upper and lower stage rocket propulsion sub-systems, mission feasibility analysis, secondary payloads, dual integration, special flight instrumentation, loads analysis, etc.), 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 and 2013 U.S. Space Transportation Policy 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 2017 SAR (containing data as of April 3, 2018) the National Security Space Launch (NSSL) (formally known as EELV) program office accomplished four successful National Security Space (NSS) launches, two on Atlas V launch vehicles, one on the Delta IV Heavy launch vehicle and one on the Falcon 9 launch vehicle: Air Force Space Command (AFSPC)-11 on April 14, 2018; Advanced Extremely High Frequency (AEHF)-4 on October 17, 2018; Global Positioning System (GPS) III-2 on December 23, 2018; and National Reconnaissance Office Launch (NROL)-71 on January 19, 2019.

NSSL is focused on four main priorities: mission success; innovative mission assurance; transitioning to new launch vehicles; and assured access for future space architectures. NSSL continued to maintain 100% mission success with 75 consecutive NSS launches to date. Incorporating innovation and agility into the mission assurance processes will ensure continued mission success. In 2018, the Air Force (AF) began investing in the development of new launch vehicles for NSS payloads, assuring access to space into the next decade.

NSSL is transitioning to new launch systems to improve affordable assured access to space via sustainable competition with commercial providers, and cease dependence on the use of non-allied engines. This transition began with the AF's partnership with industry for Rocket Propulsion System (RPS) technology maturation and risk reduction. RPS Other Transaction Authority (OTA) agreements resulted in multiple boost and upper stage engine successes. These RPS technologies are being incorporated into the new launch systems development efforts.

The AF awarded three Launch Service Agreement (LSA) OTA agreements on October 10, 2018. The LSA OTA public-private partnerships leverage industry's commercial launch solutions to ensure those systems meet NSS requirements. The LSA OTAs facilitate development of three NSSL launch system prototypes and maturing those launch systems prior to selecting two NSS launch service providers for launch service procurements beginning in FY 2020. The AF awarded Launch Service Agreements to Blue Origin for the New Glenn Launch System, Orbital Sciences (subsidiary of Northrop Grumman) for the Omega Launch System, and United Launch Alliance (ULA) for the Vulcan Centaur Launch System.

The USD(A&S) approved the Acquisition Strategy Document (ASD) for NSSL Phase 2 procurements on October 5, 2018. This strategy allows the AF to competitively award service contracts to launch providers for NSS missions to occur in approximately FY 2022-2027. The program office released the Phase 2 initial draft RFP on December 6, 2018 and held an Industry Day meeting for launch service providers on December 11, 2018. Additionally, multiple rounds of coordination with industry have occurred including one-on-one discussions. The final RFP release is projected 2nd quarter FY 2019, and award is projected in 2nd quarter FY 2020. The contract is a full and open competition with awards to two providers; any launch service provider can compete regardless of their LSA award status. If an LSA OTA awardee is not selected in the Phase 2 competition, their remaining OTA will be terminated.

The AF is executing the current launch services procurements with multiple contract actions. The Phase 1 contract with ULA procured launch vehicle production services for 36 cores and provides launch operations support through September 30, 2019. There are Atlas V Phase 1 missions scheduled to launch beyond the existing Phase 1 period of performance (PoP); the program office is in the process of awarding launch operations support for these missions. NSSL released the RFP to ULA on October 18, 2018 with award expected in 4th quarter FY 2019.

NSSL awarded the first contract action for three additional Delta IV Heavy NRO missions to ULA on October 24, 2018. The Delta IV Heavy Launch Vehicle Production Services (LVPS) contract includes hardware and labor for the three launch vehicles. The program office is negotiating with ULA for the Launch Operations Support (LOPS) contract providing the mission assurance and integration activities for these and two other Delta IV Heavy missions launching beyond the Phase 1 launch operations support PoP.

The AF competitively awarded launch service contracts for twelve Phase 1A missions since the last SAR in 2017. Launches associated with RFP 1A-4: awarded three GPS III missions to SpaceX; and awarded two AFSPC missions to

ULA. The AFSPC-52 mission, associated with RFP 1A-5, was awarded to SpaceX on June 20, 2018. The six missions associated with RFP Phase 1A-6 were awarded on February 19, 2019. The launch service contract awarded to ULA is for the three missions: SILENT BARKER, Space-Based Infrared System (SBIRS)-5 and SBIRS-6. The launch service contract awarded to SpaceX is also for the three missions: NROL-85, NROL-87, and AFSPC-44. The Phase 1A competitions utilized the full spectrum of best value source selection methods based on each mission's unique requirements. With the completion of the Phase 1A-6 source selection, a total of 15 missions have been procured (9 to SpaceX and 6 to ULA). This is the last planned Phase 1A competition as NSSL transitions to the Phase 2 acquisition strategy. The successful on-ramp of a new entrant and reintroduction of competition into the NSSL program provides significant savings through the reduction of launch services costs. The total savings to the Government from Phase 1A competition is over \$670M.

The FY 2017 NDAA allows for the use of a total of 18 Russian RD-180 engines for NSS missions through FY 2022. With the award of six Phase 1A missions to ULA, the AF can procure Atlas V launch services using up to 12 Russian RD-180 engines. Currently, the AF does not intend to procure additional Atlas V launch services for the NSSL program. This is a sufficient number to support NSS launches through the 2022 transition to the next generation of launch systems.

The AF, in coordination with the NRO, is developing a total program SCP. The SCP will support a revised APB and address the current RDT&E Total Cost APB Breach, caused by receipt of Congressional RDT&E funds for Rocket Propulsion development in CY 2015 that drove the current estimate to exceed the APB Threshold.

The program continues to effectively manage program risks associated with a dynamic launch manifest, Phase 2 strategy, technical issues of the current launch systems, RPS technologies, and LSA launch systems prototype development.

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 Douglas) (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 an 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) III B-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.
January 2019	Accomplished 75 successful NSS launches since the inception of the EELV program.
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.

Threshold Breaches

APB Breaches

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

Explanation of Breach

The RDT&E breach was previously reported in the December 2015 SAR. A Program Deviation Report (PDR) was submitted and the Air Force, in coordination with the National Reconnaissance Office, is developing a total program SCP. The SCP will support a revised APB and address the current RDT&E Total Cost breach.

Nunn-McCurdy Breaches

Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Schedule Events				
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold	Current Estimate	
Milestone I	Dec 1996	Dec 1996	Dec 1996	Dec 1996
Milestone II	Jun 1998	Jun 1998	Jun 1998	Jun 1998
Tailored CDR	Oct 1999	Oct 1999	Oct 1999	Oct 1999
MLV First Operational Flight	Aug 2002	Aug 2002	Aug 2002	Aug 2002
HLV OLSD Flight	Dec 2004	Dec 2004	Dec 2004	Dec 2004
Initial & Full Operational Capability	Jun 2006	Jun 2006	Jun 2006	Jun 2006
HLV First Operational Flight	Nov 2007	Nov 2007	Nov 2007	Nov 2007
Milestone C Reapproval	Feb 2013	Feb 2013	Feb 2013	Feb 2013

Change Explanations

None

Acronyms and Abbreviations

CDR - Critical Design Review
 HLV - Heavy-Lift Vehicle
 MLV - Medium-Lift Vehicle
 OLSD - Operational Launch Service Demonstration

Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold	Demonstrated Performance	Current Estimate	
Performance Mass to Orbit				
LEO: 100nm X 100nm 63.4 deg (lbs)				
19,550	19,550	17,000	17,000	17,000
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
POLAR 2: 100nm x 100nm, 90 deg (lbs)				
43,050	43,050	41,000	41,000	41,000
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
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
MOLNIYA: 21,150nm x 650nm, 63.4 deg (lbs)				
8,050	8,050	7,000	7,000	7,000
GEO: 19,323nm x19,323nm, 0 deg (lbs)				
14,175	14,175	13,500	13,500	13,500
Vehicle Design Reliability (%)				
>98	>98	98	98	98
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
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)

Requirements Reference

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

Change Explanations

None

Notes

The NSSL program office accomplished 75 successful NSS launches (42 on Atlas V launch vehicles, 32 on Delta IV launch vehicles, and one on Falcon 9 launch vehicle).

Performance Characteristics do not represent any specific satellite mission. The Government verified Demonstrated Performance by 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 (System Performance Requirements Document (SPRD) and Standard Interface Specification (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 the revised APB.

Acronyms and Abbreviations

add'l - additional
configs - configurations
deg - degree
GEO - Geosynchronous Earth Orbit
GTO - Geosynchronous Transfer Orbit
lbs - pounds
LEO - Low Earth Orbit
MOLNIYA - A highly inclined, highly elliptical orbit first used by the Russian MOLNIYA satellite
NASA - National Aeronautics and Space Administration
nm - nautical mile
NSS - National Security Space
POLAR - Polar Orbit
rqmts - requirements
SEMI-SYNC - Semi-Synchronous Orbit
Std - Standard

Track to Budget

RDT&E

Appn	BA	PE		
Air Force	3600	04	0603853F	
	Project		Name	
	650006		EELV Pre-EMD	(Sunk)
			Notes: FY 1995-1998	
Air Force	3600	05	0604853F	
	Project		Name	
	650004		Evolved Expendable Launch Vehicle EMD	(Sunk)
	650006		Next Generation Liquid Rocket Engine	(Sunk)
Air Force	3600	05	1206853F	
	Project		Name	
	650006		Next Generation Launch System Investment	

Notes

The program also received funding from Defense Advanced Research Projects Agency (Defense-Wide PE 0603226E) and National Reconnaissance Office (Sunk).

Procurement

Appn	BA	PE		
Air Force	3020	05	0305953F	
	Line Item		Name	
	MSEELC		Evolved Expendable Launch Vehicle Capability	(Sunk)
	MSEELV		Evolved Expendable Launch Vehicle	(Sunk)
Air Force	3021	01	0305953F	
	Line Item		Name	
	MSEELC		Evolved Expendable Launch Capability (Space)	(Sunk)
Air Force	3021	01	1203953F	
	Line Item		Name	
	MSEELC		Evolved Expendable Launch Capability (Space)	(Sunk)
Air Force	3021	01	0305953F	
	Line Item		Name	
	MSEELV		Evolved Expendable Launch Vehicle (Space)	(Sunk)
Air Force	3021	01	1203953F	
	Line Item		Name	
	MSEELV		National Security Space Launch (Space)	

Notes

The program also receives funding from Navy for procurement of NSSL Launch Services for Mobile User Objective System (MUOS) spacecraft (APPN 1507, BA 02, PE 0303109N, Line Item 243300), as well as from the National Reconnaissance Office.

In December 2014, the Office of Management and Budget directed the DoD to establish a new space procurement appropriation. Beginning in FY 2016, Air Force major procurement funding formerly under 3020F (Missile Procurement, Air Force) BA 05 is contained in 3021F (Space Procurement, Air Force) BA 01, a three-year procurement account.

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2012 \$M			BY 2012 \$M	TY \$M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	2365.1	2365.1	2601.6	5205.2 ¹	1962.1	1962.1	5198.6
Procurement	59078.3	59078.3	64986.1	49209.1	67367.3	67367.3	56134.9
Flyaway	--	--	--	49209.1	--	--	56134.9
Recurring	--	--	--	49209.1	--	--	56134.9
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	0.0	--	--	0.0
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	61443.4	61443.4	N/A	54414.3	69329.4	69329.4	61333.5

¹ APB Breach

Cost Notes

No cost estimate has been completed on this program in the previous year.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E		1	1
Procurement		151	179
Total		152	180

Quantity Notes

The increase in quantity from 161 in the previous report to 180 is due to an increase in launch service requirements.

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2020 President's Budget / December 2018 SAR (TY\$ M)									
Appropriation	Prior	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
RDT&E	3166.2	443.0	432.0	561.2	287.3	221.7	87.2	0.0	5198.6
Procurement	26768.0	2454.9	1980.3	1921.2	1892.8	2265.2	2555.8	16296.7	56134.9
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 2020 Total	29934.2	2897.9	2412.3	2482.4	2180.1	2486.9	2643.0	16296.7	61333.5
PB 2019 Total	30194.1	2790.3	2273.7	1885.5	1881.3	2356.2	3000.4	12842.4	57223.9
Delta	-259.9	107.6	138.6	596.9	298.8	130.7	-357.4	3454.3	4109.6

Quantity Summary										
FY 2020 President's Budget / December 2018 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	To Complete	Total
Development	1	0	0	0	0	0	0	0	0	1
Production	0	89	8	5	4	4	6	8	55	179
PB 2020 Total	1	89	8	5	4	4	6	8	55	180
PB 2019 Total	1	90	8	5	4	4	7	9	33	161
Delta	0	-1	0	0	0	0	-1	-1	22	19

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
1994	--	--	--	--	--	--	9.8
1995	--	--	--	--	--	--	30.0
1996	--	--	--	--	--	--	110.6
1997	--	--	--	--	--	--	62.9
1998	--	--	--	--	--	--	92.3
1999	--	--	--	--	--	--	242.0
2000	--	--	--	--	--	--	321.8
2001	--	--	--	--	--	--	388.0
2002	--	--	--	--	--	--	321.8
2003	--	--	--	--	--	--	55.8
2004	--	--	--	--	--	--	7.5
2005	--	--	--	--	--	--	21.0
2006	--	--	--	--	--	--	19.1
2007	--	--	--	--	--	--	29.9
2008	--	--	--	--	--	--	18.3
2009	--	--	--	--	--	--	33.3
2010	--	--	--	--	--	--	43.9
2011	--	--	--	--	--	--	53.8
2012	--	--	--	--	--	--	14.5
2013	--	--	--	--	--	--	29.9
2014	--	--	--	--	--	--	46.2
2015	--	--	--	--	--	--	225.6
2016	--	--	--	--	--	--	224.9
2017	--	--	--	--	--	--	381.4
2018	--	--	--	--	--	--	381.9
2019	--	--	--	--	--	--	443.0
2020	--	--	--	--	--	--	432.0
2021	--	--	--	--	--	--	561.2
2022	--	--	--	--	--	--	287.3
2023	--	--	--	--	--	--	221.7
2024	--	--	--	--	--	--	87.2
Subtotal	1	--	--	--	--	--	5198.6

Annual Funding							
3600 RDT&E Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2012 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1994	--	--	--	--	--	--	13.2
1995	--	--	--	--	--	--	39.7
1996	--	--	--	--	--	--	143.6
1997	--	--	--	--	--	--	80.6
1998	--	--	--	--	--	--	117.5
1999	--	--	--	--	--	--	304.9
2000	--	--	--	--	--	--	399.4
2001	--	--	--	--	--	--	474.8
2002	--	--	--	--	--	--	389.7
2003	--	--	--	--	--	--	66.7
2004	--	--	--	--	--	--	8.7
2005	--	--	--	--	--	--	23.9
2006	--	--	--	--	--	--	21.1
2007	--	--	--	--	--	--	32.1
2008	--	--	--	--	--	--	19.3
2009	--	--	--	--	--	--	34.6
2010	--	--	--	--	--	--	45.1
2011	--	--	--	--	--	--	54.2
2012	--	--	--	--	--	--	14.4
2013	--	--	--	--	--	--	29.1
2014	--	--	--	--	--	--	44.4
2015	--	--	--	--	--	--	214.6
2016	--	--	--	--	--	--	210.8
2017	--	--	--	--	--	--	350.3
2018	--	--	--	--	--	--	343.5
2019	--	--	--	--	--	--	390.7
2020	--	--	--	--	--	--	373.5
2021	--	--	--	--	--	--	475.7
2022	--	--	--	--	--	--	238.8
2023	--	--	--	--	--	--	180.6
2024	--	--	--	--	--	--	69.7
Subtotal	1	--	--	--	--	--	5205.2

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.

Included in the previous years funds above are Defense Advanced Research Projects Agency (DARPA) and National Reconnaissance Office (NRO) provided funding. Previously stated in past SARs as Advanced Research Projects Agency (ARPA) and National User.

Annual Funding 3020 Procurement Missile 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
2000	1	68.1	--	--	68.1	--	68.1
2001	5	518.4	--	--	518.4	--	518.4
2002	--	--	6.1	--	6.1	--	6.1
2003	1	200.2	--	--	200.2	--	200.2
2004	7	1094.2	--	--	1094.2	--	1094.2
2005	4	670.6	--	--	670.6	--	670.6
2006	1	721.7	--	--	721.7	--	721.7
2007	3	1013.1	--	--	1013.1	--	1013.1
2008	5	1586.0	--	--	1586.0	--	1586.0
2009	6	2213.2	--	--	2213.2	--	2213.2
2010	5	1558.5	--	--	1558.5	--	1558.5
2011	8	2097.9	--	--	2097.9	--	2097.9
2012	9	3070.5	--	--	3070.5	--	3070.5
2013	7	2254.8	--	--	2254.8	--	2254.8
2014	6	1877.3	--	--	1877.3	--	1877.3
2015	7	2061.6	--	--	2061.6	--	2061.6
Subtotal	75	21006.1	6.1	--	21012.2	--	21012.2

Annual Funding								
3020 Procurement Missile Procurement, Air Force								
Fiscal Year	Quantity	BY 2012 \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2000	1	83.6	--	--	83.6	--	83.6	
2001	5	629.7	--	--	629.7	--	629.7	
2002	--	--	7.3	--	7.3	--	7.3	
2003	1	236.4	--	--	236.4	--	236.4	
2004	7	1264.6	--	--	1264.6	--	1264.6	
2005	4	753.6	--	--	753.6	--	753.6	
2006	1	788.2	--	--	788.2	--	788.2	
2007	3	1079.4	--	--	1079.4	--	1079.4	
2008	5	1659.5	--	--	1659.5	--	1659.5	
2009	6	2283.3	--	--	2283.3	--	2283.3	
2010	5	1585.4	--	--	1585.4	--	1585.4	
2011	8	2091.0	--	--	2091.0	--	2091.0	
2012	9	3010.1	--	--	3010.1	--	3010.1	
2013	7	2160.4	--	--	2160.4	--	2160.4	
2014	6	1772.5	--	--	1772.5	--	1772.5	
2015	7	1923.9	--	--	1923.9	--	1923.9	
Subtotal	75	21321.6	7.3	--	21328.9	--	21328.9	

Cost Quantity Information		
3020 Procurement Missile Procurement, Air Force		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 2012 \$M
2000	1	83.6
2001	5	629.7
2002	--	--
2003	1	236.4
2004	7	1264.6
2005	4	753.6
2006	1	1789.1
2007	3	2125.4
2008	5	1636.2
2009	6	2097.5
2010	5	1510.1
2011	8	2134.0
2012	9	2863.4
2013	7	2115.4
2014	6	1017.1
2015	7	1065.5
Subtotal	75	21321.6

Annual Funding 3021 Procurement Space 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
2016	6	1994.1	--	--	1994.1	--	1994.1
2017	5	2025.8	--	--	2025.8	--	2025.8
2018	3	1735.9	--	--	1735.9	--	1735.9
2019	8	2454.9	--	--	2454.9	--	2454.9
2020	5	1980.3	--	--	1980.3	--	1980.3
2021	4	1921.2	--	--	1921.2	--	1921.2
2022	4	1892.8	--	--	1892.8	--	1892.8
2023	6	2265.2	--	--	2265.2	--	2265.2
2024	8	2555.8	--	--	2555.8	--	2555.8
2025	15	3760.1	--	--	3760.1	--	3760.1
2026	13	3542.9	--	--	3542.9	--	3542.9
2027	14	3774.1	--	--	3774.1	--	3774.1
2028	13	3743.1	--	--	3743.1	--	3743.1
2029	--	728.7	--	--	728.7	--	728.7
2030	--	747.8	--	--	747.8	--	747.8
Subtotal	104	35122.7	--	--	35122.7	--	35122.7

Annual Funding 3021 Procurement Space Procurement, Air Force							
Fiscal Year	Quantity	BY 2012 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2016	6	1828.9	--	--	1828.9	--	1828.9
2017	5	1819.6	--	--	1819.6	--	1819.6
2018	3	1522.5	--	--	1522.5	--	1522.5
2019	8	2110.9	--	--	2110.9	--	2110.9
2020	5	1669.4	--	--	1669.4	--	1669.4
2021	4	1587.9	--	--	1587.9	--	1587.9
2022	4	1533.7	--	--	1533.7	--	1533.7
2023	6	1799.5	--	--	1799.5	--	1799.5
2024	8	1990.5	--	--	1990.5	--	1990.5
2025	15	2871.0	--	--	2871.0	--	2871.0
2026	13	2652.1	--	--	2652.1	--	2652.1
2027	14	2769.8	--	--	2769.8	--	2769.8
2028	13	2693.2	--	--	2693.2	--	2693.2
2029	--	514.0	--	--	514.0	--	514.0
2030	--	517.2	--	--	517.2	--	517.2
Subtotal	104	27880.2	--	--	27880.2	--	27880.2

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 Air Force missions, purchased with Missile (3020) and Space (3021) Procurement funds, comprise 109 of the 179 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. There is one additional Air Force mission, the Heavy-Lift Vehicle Demonstration mission, purchased with RDT&E (3600) funds.

Cost Quantity Information		
3021 Procurement Space Procurement, Air Force		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 2012 \$M
2016	6	2562.8
2017	5	2387.0
2018	3	788.7
2019	8	1543.4
2020	5	1669.4
2021	4	1587.9
2022	4	1533.7
2023	6	1799.5
2024	8	1990.5
2025	15	2871.0
2026	13	2652.1
2027	14	2769.8
2028	13	3724.4
2029	--	--
2030	--	--
Subtotal	104	27880.2

Low Rate Initial Production

There is no LRIP for this program.

Foreign Military Sales

None

Nuclear Costs

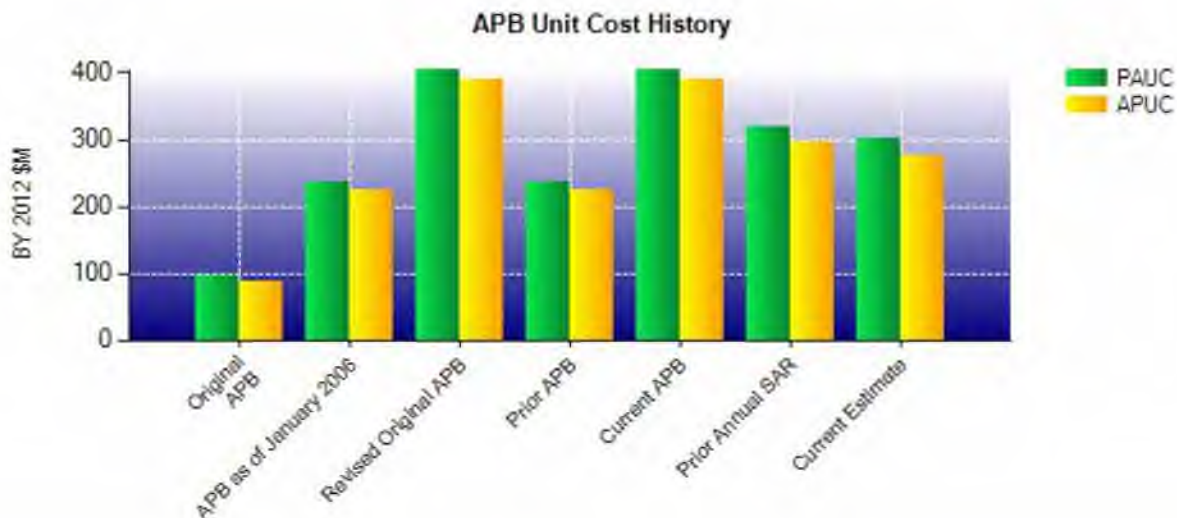
None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2012 \$M	BY 2012 \$M	% Change
	Current UCR Baseline (Feb 2013 APB)	Current Estimate (Dec 2018 SAR)	
Program Acquisition Unit Cost			
Cost	61443.4	54414.3	
Quantity	152	180	
Unit Cost	404.233	302.302	-25.22
Average Procurement Unit Cost			
Cost	59078.3	49209.1	
Quantity	151	179	
Unit Cost	391.247	274.911	-29.73

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2012 \$M	BY 2012 \$M	% Change
	Revised Original UCR Baseline (Feb 2013 APB)	Current Estimate (Dec 2018 SAR)	
Program Acquisition Unit Cost			
Cost	61443.4	54414.3	
Quantity	152	180	
Unit Cost	404.233	302.302	-25.22
Average Procurement Unit Cost			
Cost	59078.3	49209.1	
Quantity	151	179	
Unit Cost	391.247	274.911	-29.73

Average unit cost figures reported above are a combination of each of three different 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.



APB Unit Cost History					
Item	Date	BY 2012 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Oct 1998	97.147	87.193	95.844	87.827
APB as of January 2006	Jul 2004	236.886	223.191	230.358	219.571
Revised Original APB	Feb 2013	404.233	391.247	456.114	446.141
Prior APB	Aug 2007	236.886	223.191	230.358	219.571
Current APB	Feb 2013	404.233	391.247	456.114	446.141
Prior Annual SAR	Dec 2017	319.830	294.969	355.428	331.859
Current Estimate	Dec 2018	302.302	274.911	340.742	313.603

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial PAUC Development Estimate	Changes								PAUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
95.844	-6.787	55.829	-1.019	1.510	310.650	0.087	0.000	360.270	456.114

Current SAR Baseline to Current Estimate (TY \$M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
456.114	2.691	-46.195	2.320	0.000	-74.188	0.000	0.000	-115.372	340.742

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
87.827	-6.789	54.306	-1.026	0.000	311.823	0.000	0.000	358.314	446.141

Current SAR Baseline to Current Estimate (TY \$M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
446.141	2.677	-44.894	2.333	0.000	-92.654	0.000	0.000	-132.538	313.603

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	Dec 1996	Dec 1996	Dec 1996	Dec 1996
Milestone II	Jun 1998	N/A	Jun 1998	Jun 1998
Milestone III	Jul 2003	N/A	N/A	N/A
IOC	TBD	TBD	Jun 2006	Jun 2006
Total Cost (TY \$M)	2000.0	17347.8	69329.4	61333.5
Total Quantity	N/A	181	152	180
PAUC	N/A	95.844	456.114	340.742

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	1962.1	67367.3	--	69329.4
Previous Changes				
Economic	-8.5	+176.9	--	+168.4
Quantity	--	+482.4	--	+482.4
Schedule	--	+417.6	--	+417.6
Engineering	--	--	--	--
Estimating	+2172.8	-15346.7	--	-13173.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+2164.3	-14269.8	--	-12105.5
Current Changes				
Economic	+13.7	+302.3	--	+316.0
Quantity	--	+3973.5	--	+3973.5
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+1058.5	-1238.4	--	-179.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+1072.2	+3037.4	--	+4109.6
Total Changes	+3236.5	-11232.4	--	-7995.9
CE - Cost Variance	5198.6	56134.9	--	61333.5
CE - Cost & Funding	5198.6	56134.9	--	61333.5

Summary BY 2012 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	2365.1	59078.3	--	61443.4
Previous Changes				
Economic	--	--	--	--
Quantity	--	+245.2	--	+245.2
Schedule	--	-9.2	--	-9.2
Engineering	--	--	--	--
Estimating	+1932.5	-12119.2	--	-10186.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+1932.5	-11883.2	--	-9950.7
Current Changes				
Economic	--	--	--	--
Quantity	--	+2948.4	--	+2948.4
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+907.6	-934.4	--	-26.8
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+907.6	+2014.0	--	+2921.6
Total Changes	+2840.1	-9869.2	--	-7029.1
CE - Cost Variance	5205.2	49209.1	--	54414.3
CE - Cost & Funding	5205.2	49209.1	--	54414.3

Previous Estimate: December 2017

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+13.7
Increased funding to invest in new launch systems providers to support National Security Space mission requirements. (Estimating)	+912.9	+1064.4
Adjustment for current and prior escalation. (Estimating)	-5.3	-5.9
RDT&E Subtotal	+907.6	+1072.2

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+302.3
Quantity Variance due to an increase of 19 launch services, from 160 to 179, based on Satellite Vehicle requirements. (Quantity)	+2948.4	+3973.5
Revised estimate due to changes in cost model which include the following: cost estimating relationships; and technical inputs for launch vehicle components. (Estimating)	-392.1	-534.9
Long Duration Propulsive Evolved Expendable Launch Vehicle Secondary Payload Adapter and associated integration costs being transferred from the NSSL program to Space Systems Prototype Transition. (Estimating)	-479.1	-632.2
Adjustment for current and prior escalation. (Estimating)	-63.2	-71.3
Procurement Subtotal	+2014.0	+3037.4

Contracts

General Notes

In accordance with SAR guidance, this report includes contract inputs for the six largest contracts based on Target Price. NSSL has a total of 18 active programmatic contracts:

<u>Contract Number</u>	<u>Type</u>	<u>Contract name</u>	<u>Company</u>
FA8811-13-C-0003	CPIF	Phase I Buy	ULA
FA8811-13-C-0003/1	FFP	Phase I Buy	ULA
FA8811-19-9-0003	OTA	Launch Services Agreement	ULA
FA8811-19-9-0002	OTA	Launch Services Agreement	Orbital Sciences Corp.
FA8811-13-C-0002	FFP	FY12 EELV Launch Services	ULA
FA8811-19-9-0001	OTA	Launch Services Agreement	Blue Origin LLC
FA8811-19-C-0002	FFP	Delta IV Heavy LVPS	ULA
FA8811-19-C-0005	FFP	SILENTBARKER, SBIRS-5/6	ULA
FA8811-18-C-0002	FFP	AFSPC-8/12 Launch Services	ULA
FA8811-16-9-0003	OTA	Rocket Propulsion Systems	Aerojet Rocketdyne
FA8811-19-C-0004	FFP	AFSPC-44, NROL-85/87 Launch Services	ULA
FA8811-18-C-0001	FFP	GPS III Launch Services	SpaceX
FA8811-17-C-0008	FFP	STP-3 Launch Services	ULA
FA8811-16-9-0002	OTA	Rocket Propulsion Systems	ATK Launch Systems, Inc.
FA8811-18-C-0003	FFP	AFSPC-52 Launch Services	SpaceX
FA8811-16-9-0004	OTA	Rocket Propulsion Systems	ULA
FA8811-16-9-0001	OTA	Rocket Propulsion Systems	SpaceX
FA8811-17-C-0005	FFP	GPS III Launch Services	SpaceX
FA8811-16-C-0001	FFP	GPS III Launch Services	SpaceX

Acronyms:

LVPS – Launch Vehicle Production Services

SpaceX - Space Exploration Technologies

ULA - United Launch Alliance

Contract Identification

Appropriation: Procurement
Contract Name: FY13+ Phase I Buy
Contractor: United Launch Alliance
Contractor Location: Centennial, CO 80112
Contract Number: FA8811-13-C-0003
Contract Type: Cost Plus Incentive Fee (CPIF), Cost Plus Fixed Fee (CPFF)
Award Date: June 26, 2013
Definitization Date: December 18, 2013

Contract Price								
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
1087.0	N/A	7	4959.3	N/A	0	4692.9	4687.9	

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to an increase in the scope of work as a result of the increase in the quantity of launch services on the FFP portion on the contract.

Contract Variance			
Item	Cost Variance		Schedule Variance
Cumulative Variances To Date (2/28/2019)	+154.4		-13.7
Previous Cumulative Variances	+98.3		-15.0
Net Change	+56.1		+1.3

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to continued improvement in operation efficiency.

The favorable net change in the schedule variance is due to recovery from previous launch delays.

Notes

Contract FA881-C-13-0003 is reported as two separate efforts to enable Cost and Schedule Variance reporting for the CPIF/CPFF efforts. Contract number FA881-C-13-0003/1 is the FFP portion, including the quantity, of the contract.

Contract Identification

Appropriation: Procurement
Contract Name: FY13+ Phase I Buy
Contractor: United Launch Alliance
Contractor Location: Centennial, CO 80112
Contract Number: FA8811-13-C-0003/1
Contract Type: Firm Fixed Price (FFP)
Award Date: June 26, 2013
Definitization Date: December 18, 2013

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1946.2	N/A	14	4814.7	N/A	35	4814.7	4814.7

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to additional launch procurements. The increase in Current Target Price from \$4,637.8M to \$4,814.7 is due to contract modifications. The decrease in Current Quantity from 36 to 35 is due to a decrease in launch service requirements for one core.

Cost and Schedule Variance Explanations

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

Notes

Contract FA881-C-13-0003 is reported as two separate efforts to enable Cost and Schedule Variance reporting for the CPIF/CPFF efforts. Contract number FA881-C-13-0003/1 is the FFP portion of the contract.

Of the 35 launch procurements, 24 have been launched. Contract completion is estimated to be in CY 2020.

Contract Identification

Appropriation: RDT&E
Contract Name: United Launch Alliance Launch Services Agreement
Contractor: United Launch Alliance
Contractor Location: Centennial, CO 80112
Contract Number: FA8811-19-9-0003
Contract Type: Other Transaction Agreement (OTA)
Award Date: October 10, 2018
Definitization Date:

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
967.0	N/A	N/A	967.0	N/A	N/A	967.0	967.0

Cost and Schedule Variance Explanations

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

Notes

This is the first time this contract is being reported.

This OTA is for shared cost investment in the development of Launch Systems Prototypes with at least one-third statutory cost-sharing by contractor.

Contract Identification

Appropriation: RDT&E
Contract Name: Orbital Sciences Launch Services Agreement
Contractor: Orbital Sciences Corp.
Contractor Location: Chandler, AZ 85248
Contract Number: FA8811-19-9-0002
Contract Type: Other Transaction Agreement (OTA)
Award Date: October 10, 2018
Definitization Date:

Contract Price								
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)		
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager	
791.6	N/A	N/A	791.6	N/A	N/A	791.6	791.6	

Cost and Schedule Variance Explanations

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

Notes

This is the first time this contract is being reported.

This OTA is for shared cost investment in the development of Launch Systems Prototypes with at least one-third statutory cost-sharing by contractor.

Contract Identification

Appropriation: Procurement
Contract Name: FY12 EELV Launch Services (ELS5)
Contractor: United Launch Alliance
Contractor Location: Centennial, CO 80112
Contract Number: FA8811-13-C-0002
Contract Type: Firm Fixed Price (FFP)
Award Date: May 02, 2011
Definitization Date: January 10, 2014

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1787.0	N/A	10	552.1	N/A	4	552.1	552.1

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the April 2013 contract de-scope, moving 6 missions to the FY 2011 EELV Launch Services contract FA8811-11-C-0001 and contract modifications.

Cost and Schedule Variance Explanations

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

Notes

Of the four missions, three have been launched. Contract completion is estimated to be in CY 2019.

Contract Identification

Appropriation: RDT&E
Contract Name: Blue Orgin LLC Launch Services Agreement
Contractor: Blue Orgin LLC
Contractor Location: Kent, WA 98032
Contract Number: FA8811-19-9-0001
Contract Type: Other Transaction Agreement (OTA)
Award Date: October 10, 2018
Definitization Date:

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
500.0	N/A	N/A	500.0	N/A	N/A	500.0	500.0

Cost and Schedule Variance Explanations

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

Notes

This is the first time this contract is being reported.

This OTA is for shared cost investment in the development of Launch Systems Prototypes with at least one-third statutory cost-sharing by contractor.

Contract Identification

Appropriation: Procurement
Contract Name: Delta IV Heavy Launch Vehicle Production Services
Contractor: United Launch Alliance
Contractor Location: Centennial, CO 80112
Contract Number: FA8811-19-C-0002
Contract Type: Firm Fixed Price (FFP)
Award Date: October 24, 2018
Definitization Date:

Contract Price

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
467.0	N/A	3	467.0	N/A	3	467.0	467.0

Cost and Schedule Variance Explanations

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

Notes

This is the first time this contract is being reported.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	1	1	1	100.00%
Production	74	74	179	41.34%
Total Program Quantity Delivered	75	75	180	41.67%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	61333.5	Years Appropriated	26
Expended to Date	27509.7	Percent Years Appropriated	70.27%
Percent Expended	44.85%	Appropriated to Date	32832.1
Total Funding Years	37	Percent Appropriated	53.53%

The above data is current as of March 11, 2019.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	December 31, 2015
Source of Estimate:	Headquarter Air Force Space Command
Quantity to Sustain:	0
Unit of Measure:	Years
Service Life per Unit:	31.00 Years
Fiscal Years in Service:	FY 2000 - FY 2030

Sustainment Strategy

NSSL is a launch service procurement. The Government never takes possession of hardware, therefore has no sustainment strategy.

Antecedent Information

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.

Cost Element	Annual O&S Costs BY2012 \$M	
	NSSL Average Annual Cost Per Years	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
Continuing System Improvements	--	--
Indirect Support	--	0.343
Other	40.500	--
Total	40.500	92.201

Other O&S funds support critical infrastructure at the Eastern and Western Ranges.

Item	Total O&S Cost \$M			
	NSSL		Titan IV (Antecedent)	
	Current Production APB Objective/Threshold	Current Estimate		
Base Year	1256.8	1382.5	1255.5	N/A
Then Year	1388.3	N/A	1381.1	N/A

Equation to Translate Annual Cost to Total Cost

NSSL unitized costs are calculated by using the Total O&S Cost divided by the Service Life: BY 2012 \$1,255.5M divided by 31 years to equal the annual cost of \$40.5M.

O&S Cost Variance		
Category	BY 2012 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2017 SAR	1255.5	
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	1255.5	

Disposal Estimate Details

Date of Estimate: December 31, 2015
Source of Estimate: Headquarters Air Force Space Command
Disposal/Demilitarization Total Cost (BY 2012 \$M):

NSSL is a launch service and therefore has no disposal costs.