Selected Acquisition Report (SAR)

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

Evolved Expendable Launch Vehicle (EELV)

As of FY 2019 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)

Program Information

Program Name
Evolved Expendable Launch Vehicle (EELV)

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.

Responsible Office

Col. Robert P. Bongiovi, Director
SMC/LE
Los Angeles Air Force Base
483 N. Aviation Blvd, 271-B3-583
El Segundo, CA 90245-2808

Robert.Bongiovi@us.af.mil

Phone: 310-653-3134
Fax: 310-653-3151
DSN Phone: 633-3134
DSN Fax: 633-3151
Date Assigned: December 15, 2017

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 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 EELV 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. Previous launch services were provided by Titan II, Delta II, Atlas II, and Titan IV launch vehicle systems. 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. EELV is the foundation for the access for intermediate and larger class payloads for the foreseeable future. In accordance with policy, EELV maintains at least two families of space launch vehicles capable of reliably launching national security payloads.

Executive Summary

Since the 2016 SAR (containing data as of June 10, 2017) the EELV program office accomplished four successful National Security Space (NSS) launches, three on Atlas V launch vehicles and one on a Delta IV launch vehicle: National Reconnaissance Office Launch (NROL)-42 on September 24, 2017; NROL-52 on October 15, 2017; NROL-47 on January 12, 2018; and Space Based Infrared System (SBIRS) GEO-4 on January 19, 2018. There are five NSS launches planned for the rest of CY 2018, two on the Atlas V (Advanced Extremely High Frequency (AEHF)-4 and AFSPC-11), two on the Delta IV (NROL-71 and Wideband Global Satcom (WGS)-10), and one on the Falcon 9 (Global Positioning System (GPS) III-2).

The EELV Acquisition Strategy, amended in November 2016, is being executed in two parts (Phase 1 and Phase 1A) prior to moving to a new Acquisition Strategy for Phase 2. The Phase 1 contract with United Launch Alliance (ULA) includes the procurement of Launch Vehicle Production Services for 36 cores. It also includes EELV Launch Capability (ELC) for mission assurance and integration activities through FY 2019. The program office is developing a strategy to address launch operations support for Phase 1 Atlas V missions that will launch beyond the period of performance (PoP) of ELC. There are additional requirements for procurement of three Delta IV Heavy NRO launch services. These will be awarded in mid-CY 2018 on a contract that includes two portions: Launch Vehicle and Production Services (LVPS) providing hardware and labor for building the three launch vehicles; and Launch Operations Support (LOPS) providing the mission assurance and integration activities for these and two other Delta IV launches beyond the Phase 1 ELC PoP.

The EELV Phase 1A competitive procurements continued with the award of the Space Test Program (STP)-3 launch service contract to ULA on June 29, 2017. The Air Force awarded the STP-3 launch service contract for $191.1M, the launch is scheduled for June 2019. The program office released the Request for Proposal (RFP) 1A-4 in June 2017 and source selection began in August 2017. This solicitation competes five launches, including three Global Positioning System (GPS) missions grouped as a “winner-take-all” block and two AFSPC missions to be awarded individually. The Air Force projects the contract awards in the second quarter FY 2018. The program office released RFP 1A-5 to compete the launch for AFSPC-52 in September 2017, source selection began in October 2017, contract award is projected for March 2018. The program office released the RFP 1A-6 January 31, 2018 to compete five missions to be awarded individually. The Phase 1A competitions utilize the full spectrum of best value source selection methods based on each mission’s unique requirements.

The FY 2017 National Defense Authorization Act (NDAA) allows for the use of a total of 18 Russian RD-180 engines for NSS missions through FY 2022. With the award of the STP-3 launch service contract to ULA, 17 Russian RD-180 engines remain available for ULA to bid Atlas V vehicles for future competitions.

The Air Force's strategy for Phase 2 is to assure access to space by leveraging industry's commercial launch solutions to meet NSS requirements and transition off the RD-180 engine. The program office is engaged with a number of commercial companies for rocket propulsion technology maturation and risk reduction. The Air Force is executing the Rocket Propulsion Systems (RPS) Other Transaction Authority (OTA) Agreements with SpaceX, Orbital ATK, United Launch Alliance (ULA) and Aerojet Rocketdyne to develop industry solutions. In CY 2017, the four RPS OTAs resulted in successfully completing a combined total of 50 development milestones valued at $228.6M. The RPS OTAs made progress on multiple test campaigns with subscale and full-scale hardware and at the component and system levels. The manufacturing of liquid rocket engines using both methane and kerosene as fuel and solid rocket motors also saw major progress.

The Launch Service Agreements (LSA) Acquisition Strategy Document, approved June 2017, initiated two key priorities: improving affordable assured access to space via sustainable competition with commercial providers and transition from the use of non-allied engines. The strategy invests in new and/or upgraded commercial launch solutions that also meet National Security Space (NSS) requirements. The program office released the RFP on October 5, 2017 and received proposals on November 20, 2017. The program office plans to award up to three LSAs in Summer CY 2018. The Air Force expects results from these investments to have initial EELV launch capabilities in FY 2022. The Phase 2 Acquisition Strategy Panel (ASP) with the Service Acquisition Executive (SAE) occurred on November 8, 2017 and a vector check

held with the DAE on December 12, 2017. The Air Force plans Phase 2 procurements, starting in FY 2020, to be competitively ordered missions from certified launch service providers for launches to occur approximately FY 2022 to FY 2027.

In anticipation of the LSAs, the EELV certification teams continue to actively engage with industry. The Air Force approved the Certification Plan for the ULA Vulcan December 2016. The Certification Plan for the SpaceX Falcon family of launch systems is in development. The Air Force signed the Orbital ATK Next Generation Launcher (NGL) Certification Plan in December 2017. These Certification Plans will be included in the Statements of Work for the LSAs and certification milestones will be used as payment milestones on each LSA to monitor progress and demonstrate technical maturity. 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 program office published the SPRD Revision B and SIS Revision C in June 2017.

The Air Force, 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 risks associated with a dynamic launch manifest, and technical issues of both the current launch systems and the RPS since the last SAR.

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

Threshold Breaches

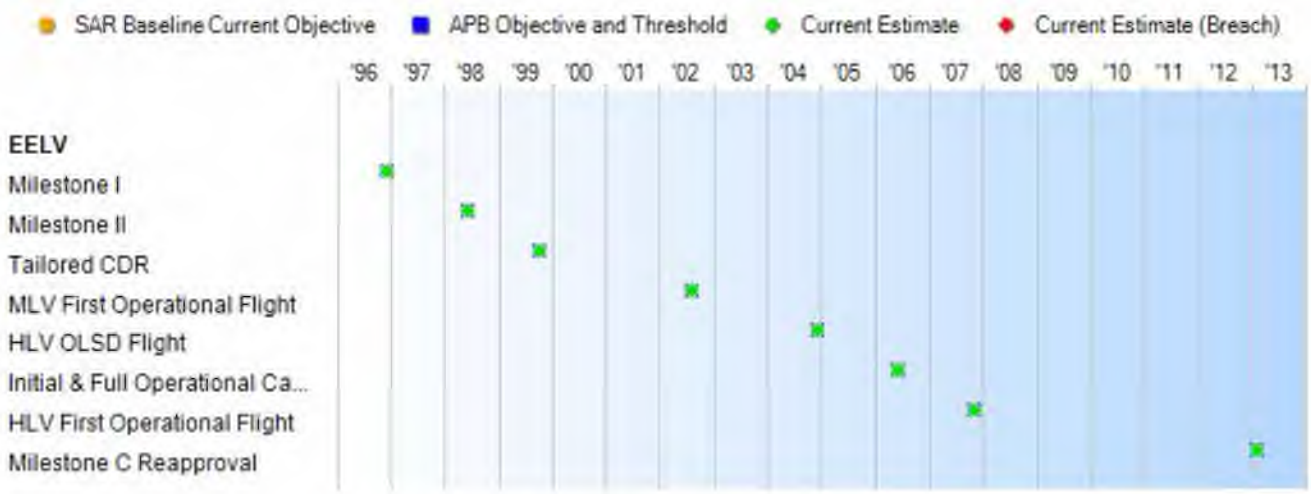
APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☑
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

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

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.

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 EELV program office accomplished 71 successful NSS launches (40 on Atlas V launch vehicles and 31 on Delta IV launch vehicles).

Performance Characteristics do not represent any specific satellite mission. The Government verified Demonstrated Performance by review and analysis.

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-Sychronous 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).

Due to the creation of a new Major Force Program for Space, beginning in FY 2018 funding formerly under PE 0604853F will now be under PE 1206853F.

Procurement

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

Line Item	Name
MSEELV	Evolved Expendable Launch Vehicle (Space)

Notes

The program also receives funding from Navy for procurement of EELV Launch Services (ELS) 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.

Due to the creation of a new Major Force Program for Space, beginning in FY 2018 funding formerly under PE 0305953F is under PE 1203953F.

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	4297.6[1]	1962.1	1962.1	4126.4
Procurement	59078.3	59078.3	64986.1	47195.1	67367.3	67367.3	53097.5
Flyaway	--	--	--	47195.1	--	--	53097.5
Recurring	--	--	--	47195.1	--	--	53097.5
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	51492.7	69329.4	69329.4	57223.9

[1] *APB Breach*

Cost Notes

In accordance with Section 842 of the National Defense Authorization Act for FY 2017, which amended title 10 U.S.C. § 2334, the Director of Cost Assessment and Program Evaluation, and the Secretary of the military department concerned or the head of the Defense Agency concerned, must issue guidance requiring a discussion of risk, the potential impacts of risk on program costs, and approaches to mitigate risk in cost estimates for MDAPs and major subprograms. The information required by the guidance is to be reported in each SAR. This guidance is not yet available; therefore, the information on cost risk is not contained in this SAR.

The deviation is due to receiving additional RDT&E funding to transition off the Russian RD-180 engine. The sources of the additional funding are the FY 2014 Omnibus reprogramming for a technical maturation and risk reduction program to invest in key propulsion technologies; the FY 2015 National Defense Authorization Act (NDAA) and Appropriations Act, 2015 for development of a Rocket Propulsion System no later than FY 2019; the FY 2016 NDAA, Appropriations Act, 2016 and additional funding in the FY 2017 PB to invest in one or more launch provider's emerging launch systems. The breach will be resolved with a revised APB based on the approval of an updated Acquisition Strategy incorporating the increased scope.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	1	1	1
Procurement	151	151	160
Total	152	152	161

Quantity Notes

The decrease in quantity from 169 in the previous report to 161 is due to a decrease in launch services requirements.

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2019 President's Budget / December 2017 SAR (TY$ M)									
Appropriation	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
RDT&E	2784.3	297.6	245.4	196.4	197.2	201.3	100.7	103.5	4126.4
Procurement	25083.6	2028.6	2544.9	2077.3	1688.3	1680.0	2255.5	15739.3	53097.5
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 2019 Total	27867.9	2326.2	2790.3	2273.7	1885.5	1881.3	2356.2	15842.8	57223.9
PB 2018 Total	27873.2	2326.2	2504.5	2336.1	1697.8	2249.1	3052.2	17187.7	59226.8
Delta	-5.3	0.0	285.8	-62.4	187.7	-367.8	-696.0	-1344.9	-2002.9

Quantity Summary										
FY 2019 President's Budget / December 2017 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Development	1	0	0	0	0	0	0	0	0	1
Production	0	86	4	8	5	4	4	7	42	160
PB 2019 Total	1	86	4	8	5	4	4	7	42	161
PB 2018 Total	1	86	4	7	5	4	6	10	46	169
Delta	0	0	0	1	0	0	-2	-3	-4	-8

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	--	--	--	--	--	--	297.6
2019	--	--	--	--	--	--	245.4
2020	--	--	--	--	--	--	196.4
2021	--	--	--	--	--	--	197.2
2022	--	--	--	--	--	--	201.3
2023	--	--	--	--	--	--	100.7
2024	--	--	--	--	--	--	103.5
Subtotal	1	--	--	--	--	--	4126.4

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	--	--	--	--	--	--	210.9
2017	--	--	--	--	--	--	351.5
2018	--	--	--	--	--	--	269.7
2019	--	--	--	--	--	--	218.4
2020	--	--	--	--	--	--	171.5
2021	--	--	--	--	--	--	168.8
2022	--	--	--	--	--	--	168.9
2023	--	--	--	--	--	--	82.8
2024	--	--	--	--	--	--	83.5
Subtotal	1	--	--	--	--	--	4297.6

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	3010.5	--	--	3010.5	--	3010.5
2013	7	2161.7	--	--	2161.7	--	2161.7
2014	6	1774.9	--	--	1774.9	--	1774.9
2015	7	1927.9	--	--	1927.9	--	1927.9
Subtotal	75	21329.7	7.3	--	21337.0	--	21337.0

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	2097.3
2010	5	1510.2
2011	8	2134.6
2012	9	2864.7
2013	7	2118.0
2014	6	1018.5
2015	7	1067.8
Subtotal	75	21329.7

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	2006.0	--	--	2006.0	--	2006.0
2017	5	2065.4	--	--	2065.4	--	2065.4
2018	4	2028.6	--	--	2028.6	--	2028.6
2019	8	2544.9	--	--	2544.9	--	2544.9
2020	5	2077.3	--	--	2077.3	--	2077.3
2021	4	1688.3	--	--	1688.3	--	1688.3
2022	4	1680.0	--	--	1680.0	--	1680.0
2023	7	2255.5	--	--	2255.5	--	2255.5
2024	9	2896.9	--	--	2896.9	--	2896.9
2025	5	1835.0	--	--	1835.0	--	1835.0
2026	7	2457.0	--	--	2457.0	--	2457.0
2027	11	3526.2	--	--	3526.2	--	3526.2
2028	10	3342.9	--	--	3342.9	--	3342.9
2029	--	829.8	--	--	829.8	--	829.8
2030	--	851.5	--	--	851.5	--	851.5
Subtotal	85	32085.3	--	--	32085.3	--	32085.3

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	1846.4	--	--	1846.4	--	1846.4
2017	5	1866.7	--	--	1866.7	--	1866.7
2018	4	1794.9	--	--	1794.9	--	1794.9
2019	8	2209.5	--	--	2209.5	--	2209.5
2020	5	1768.5	--	--	1768.5	--	1768.5
2021	4	1409.1	--	--	1409.1	--	1409.1
2022	4	1374.7	--	--	1374.7	--	1374.7
2023	7	1809.4	--	--	1809.4	--	1809.4
2024	9	2278.4	--	--	2278.4	--	2278.4
2025	5	1414.9	--	--	1414.9	--	1414.9
2026	7	1857.4	--	--	1857.4	--	1857.4
2027	11	2613.4	--	--	2613.4	--	2613.4
2028	10	2429.0	--	--	2429.0	--	2429.0
2029	--	591.1	--	--	591.1	--	591.1
2030	--	594.7	--	--	594.7	--	594.7
Subtotal	85	25858.1	--	--	25858.1	--	25858.1

All EELV 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 101 of the 160 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 EELV 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	2693.5
2017	5	2483.1
2018	4	947.8
2019	8	1593.1
2020	5	1768.5
2021	4	1409.1
2022	4	1374.7
2023	7	1809.4
2024	9	2278.4
2025	5	1414.9
2026	7	1857.4
2027	11	2613.4
2028	10	3614.8
2029	--	--
2030	--	--
Subtotal	85	25858.1

Low Rate Initial Production

There is no LRIP for this program.

Foreign Military Sales

None

Nuclear Costs

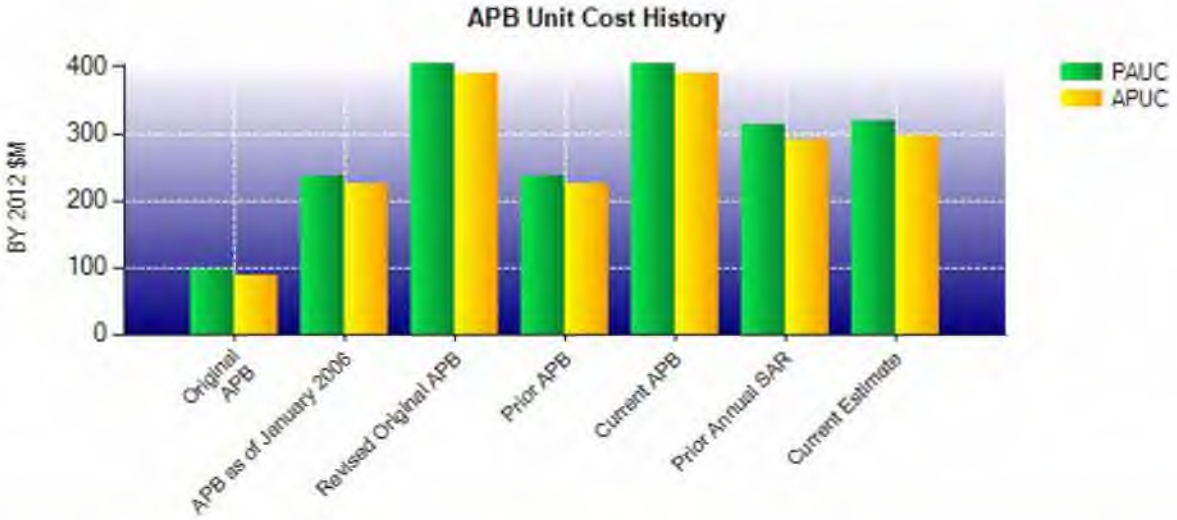
None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2012 $M Current UCR Baseline (Feb 2013 APB)	BY 2012 $M Current Estimate (Dec 2017 SAR)	% Change
Program Acquisition Unit Cost			
Cost	61443.4	51492.7	
Quantity	152	161	
Unit Cost	404.233	319.830	-20.88
Average Procurement Unit Cost			
Cost	59078.3	47195.1	
Quantity	151	160	
Unit Cost	391.247	294.969	-24.61

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2012 $M Revised Original UCR Baseline (Feb 2013 APB)	BY 2012 $M Current Estimate (Dec 2017 SAR)	% Change
Program Acquisition Unit Cost			
Cost	61443.4	51492.7	
Quantity	152	161	
Unit Cost	404.233	319.830	-20.88
Average Procurement Unit Cost			
Cost	59078.3	47195.1	
Quantity	151	160	
Unit Cost	391.247	294.969	-24.61

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 2016	312.982	290.195	350.454	329.067
Current Estimate	Dec 2017	319.830	294.969	355.428	331.859

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	1.046	-22.501	2.594	0.000	-81.825	0.000	0.000	-100.686	355.428

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	1.106	-22.081	2.610	0.000	-95.917	0.000	0.000	-114.282	331.859

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	57223.9
Total Quantity	N/A	181	152	161
PAUC	N/A	95.844	456.114	355.428

Cost Variance

Summary TY $M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	1962.1	67367.3	--	69329.4
Previous Changes				
Economic	+2.3	+361.1	--	+363.4
Quantity	--	+2996.5	--	+2996.5
Schedule	--	+417.6	--	+417.6
Engineering	--	--	--	--
Estimating	+1979.2	-15859.3	--	-13880.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+1981.5	-12084.1	--	-10102.6
Current Changes				
Economic	-10.8	-184.2	--	-195.0
Quantity	--	-2514.1	--	-2514.1
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+193.6	+512.6	--	+706.2
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+182.8	-2185.7	--	-2002.9
Total Changes	+2164.3	-14269.8	--	-12105.5
CE - Cost Variance	4126.4	53097.5	--	57223.9
CE - Cost & Funding	4126.4	53097.5	--	57223.9

Summary BY 2012 $M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	2365.1	59078.3	--	61443.4
Previous Changes				
Economic	--	--	--	--
Quantity	--	+2217.4	--	+2217.4
Schedule	--	-9.2	--	-9.2
Engineering	--	--	--	--
Estimating	+1776.1	-12533.7	--	-10757.6
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+1776.1	-10325.5	--	-8549.4
Current Changes				
Economic	--	--	--	--
Quantity	--	-1972.2	--	-1972.2
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	+156.4	+414.5	--	+570.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+156.4	-1557.7	--	-1401.3
Total Changes	+1932.5	-11883.2	--	-9950.7
CE - Cost Variance	4297.6	47195.1	--	51492.7
CE - Cost & Funding	4297.6	47195.1	--	51492.7

Previous Estimate: December 2016

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-10.8
Revised estimate to align with FY 2019 PB for launch systems investment. (Estimating)	+153.2	+190.1
Adjustment for current and prior escalation. (Estimating)	+3.2	+3.5
RDT&E Subtotal	+156.4	+182.8

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-184.2
Quantity variance due to a decrease of eight launch services, from 168 to 160, based on decreased Satellite Vehicle requirements. (Quantity)	-1972.2	-2514.1
Revised estimate due to changes in satellite vehicle requirements necessitating assignment of missions to different configurations. (Estimating)	+382.0	+477.0
Adjustment for current and prior escalation. (Estimating)	+32.5	+35.6
Procurement Subtotal	-1557.7	-2185.7

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: FY13+ Phase I Buy
Contractor: United Launch Services, LLC
Contractor Location: 9501 East Panorama Circle
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	4146.8	N/A	0	3957.4	3952.4

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, two, on the FFP portion on the contract.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	+98.3	-15.0
Previous Cumulative Variances	+82.1	-13.2
Net Change	+16.2	-1.8

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to resource allocation and additional contract labor being added slower than anticipated.

The unfavorable net change in the schedule variance is due to a launch delay.

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 Services, LLC
Contractor Location: 9501 East Panorama Circle
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	4637.8	N/A	36	4637.8	4637.8

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 $4,107.1M to $4,637.8M and the increase in Current Quantity from 34 to 36 is due to contract modifications and the addition of 2 cores.

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 36 launch procurements, 19 have been launched. Contract completion is estimated to be in CY 2020.

Contract Identification

Appropriation: Procurement
Contract Name: FY12 EELV Launch Services (ELS5)
Contractor: United Launch Services, LLC.
Contractor Location: 9501 East Panorama Circle
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 2018.

There were no changes to this contract.

Contract Identification

Appropriation: Procurement
Contract Name: GPS III Launch Services
Contractor: Space Exploration Technologies
Contractor Location: Hawthorne, CA 90250
Contract Number: FA8811-16-C-0001
Contract Type: Firm Fixed Price (FFP)
Award Date: April 27, 2016
Definitization Date: April 27, 2016

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
83.3	N/A	1	83.3	N/A	1	83.3	83.3

Cost and Schedule Variance Explanations

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

Notes

The Global Positioning System (GPS) III-2 mission is planned for launch in CY 2018.

There were no changes to this contract.

Contract Identification

Appropriation: Procurement
Contract Name: GPS III Launch Services
Contractor: Space Exploration Technologies
Contractor Location: Hawthorne, CA 90250
Contract Number: FA8811-17-C-0005
Contract Type: Firm Fixed Price (FFP)
Award Date: March 14, 2017
Definitization Date: March 14, 2017

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
96.5	N/A	1	96.5	N/A	1	96.5	96.5

Cost and Schedule Variance Explanations

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

Notes

The Global Positioning System (GPS) III-3 mission is planned for launch in CY 2019.

There were no changes to this contract.

Contract Identification

Appropriation: Procurement
Contract Name: STP-3 Launch Services
Contractor: United Launch Services, LLC
Contractor Location: 9501 East Panorama Circle
Centennial, CO 80112
Contract Number: FA8811-17-C-0008
Contract Type: Firm Fixed Price (FFP)
Award Date: June 29, 2017
Definitization Date: June 29, 2017

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
191.1	N/A	1	191.1	N/A	1	191.1	191.1

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.

The Space Test Program-3 mission is planned to be launched in CY 2019.

Contract Identification

Appropriation: RDT&E

Contract Name: Rocket Propulsion System Prototypes: Common Booster Segment, BE-3U Extendable Nozzle & GEM63XL

Contractor: ATK Launch Systems Inc

Contractor Location: 5000 S. 8400 W.
Magna, UT 84044-2202

Contract Number: FA8811-16-9-0002

Contract Type: Other Transaction Agreement (OTA)

Award Date: January 13, 2016

Definitization Date: January 13, 2016

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
47.0	N/A	0	159.9	N/A	0	159.2	159.2

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to modifications for additional work within the scope of the original agreement.

Cost and Schedule Variance Explanations

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

Notes

This OTA is for the shared cost investment in the development of subject Rocket Propulsion Systems Prototypes, with at most one-third statutory cost-sharing by contractor.

Contract Identification

Appropriation: RDT&E
Contract Name: AR1 Rocket Propulsion System Prototype for EELV Program
Contractor: Aeroject Rocketdyne of DE, INC
Contractor Location: Rancho Cordova, CA 95742
Contract Number: FA8811-16-9-0003
Contract Type: Other Transaction Agreement (OTA)
Award Date: February 29, 2016
Definitization Date: February 29, 2016

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
115.3	N/A	0	174.0	N/A	0	174.0	174.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to modifications for additional work within the scope of the original agreement.

Cost and Schedule Variance Explanations

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

Notes

This OTA is for the shared cost investment in the development of subject Rocket Propulsion Systems Prototypes, with at most one-third statutory cost-sharing by contractor.

Contract Identification

Appropriation: RDT&E
Contract Name: Raptor Rocket Propulsion System (RPS) Prototype for EELV Program
Contractor: Space Exploration Technologies
Contractor Location: Hawthorne, CA 90250
Contract Number: FA8811-16-9-0001
Contract Type: Other Transaction Agreement (OTA)
Award Date: January 13, 2016
Definitization Date: January 13, 2016

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
33.7	N/A	N/A	97.8	N/A	N/A	97.8	97.8

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to modifications for additional work within the scope of the original agreement.

Cost and Schedule Variance Explanations

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

Notes

This OTA is for the shared cost investment in the development of subject Rocket Propulsion Systems Prototypes, with at most one-third statutory cost-sharing by contractor.

Contract Identification

Appropriation: RDT&E
Contract Name: Vulcan DE-4 and ACES Rocket Propulsion System Prototype for EELV Program
Contractor: United Launch Services, LLC
Contractor Location: Denver, CO 90275
Contract Number: FA8811-16-9-0004
Contract Type: Other Transaction Agreement (OTA)
Award Date: February 29, 2016
Definitization Date: February 29, 2016

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
46.6	N/A	N/A	128.6	N/A	N/A	128.6	128.6

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to modifications for additional work within the scope of the original agreement.

Cost and Schedule Variance Explanations

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

Notes

This OTA is for the shared cost investment in the development of subject Rocket Propulsion Systems Prototypes, with at most one-third statutory cost-sharing by contractor.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	1	1	1	100.00%
Production	71	71	160	44.38%
Total Program Quantity Delivered	72	72	161	44.72%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	57223.9	Years Appropriated	25
Expended to Date	24397.1	Percent Years Appropriated	67.57%
Percent Expended	42.63%	Appropriated to Date	30194.1
Total Funding Years	37	Percent Appropriated	52.76%

The above data is current as of February 12, 2018.

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

EELV 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 EELV program provides launch services for DoD and National Reconnaissance Office satellite vehicles. No single antecedent system covered EELV'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.

Annual O&S Costs BY2012 $M		
Cost Element	**EELV 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			
	EELV			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	0.0

Equation to Translate Annual Cost to Total Cost

EELV 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 2016 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):

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