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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604853F: Evolved Expendable Launch Vehicle - EMD							
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	43.628	46.545	30.245	0.000	30.245	4.333	0.000	0.000	0.000	Continuing	Continuing
650004: Evolved Expendable Launch Vehicle	43.628	46.545	30.245	0.000	30.245	4.333	0.000	0.000	0.000	0.000	1,516.730

A. Mission Description and Budget Item Justification

The Evolved Expendable Launch Vehicle (EELV) program is a space launch system developed to provide two families of launch vehicles (for example Delta IV & Atlas V). The program satisfies the government's National Launch Forecast (NLF) requirements and reduces the cost of space launch by at least 25% over legacy systems.

EELV is a launch service, not a weapon system, which is primarily funded with production funds. The program has developmental items including: qualification of the extended mission kit, fleet standardization of the RS-68 main engine upgrade, Pre-Planned Product Improvements to ensure sustainability (includes, but is not limited to, secondary payload adaptor standard service, Global Positioning System (GPS) Metric Tracking capability, development of replacement components, flight and ground instrumentation), special studies, and other related support activities.

EELV is responsible for launching government manifested payloads, including those once supported by Titan II, Delta II, Atlas II/III, and Titan IV. Evolved from heritage expendable launch systems and new applications of existing technology, EELV supports military, intelligence, civil, commercial, and international partnership mission requirements.

As of 21 August 2007, the EELV Program has formally entered the sustainment phase.

As of 31 October 2007, Air Force Space Command formally extended the EELV Program an additional 10 years, from 2020 through 2030.

This program element is in Budget Activity 5, System Development and Demonstration, because it supports development and demonstration of the EELV concept leading to deployment of a lower cost expendable launch vehicle system.

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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE			
3600: Research, Development, Test & Evaluation, Air Force		PE 0604853F: Evolved Expendable Launch Vehicle - EMD			
BA 5: Development & Demonstration (SDD)					
B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	33.628	26.545	0.000	0.000	0.000
Current President's Budget	43.628	46.545	30.245	0.000	30.245
Total Adjustments	10.000	20.000	30.245	0.000	30.245
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		20.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	10.000	0.000	30.245	0.000	30.245
Change Summary Explanation					
FY 2009: \$10M BTR for GPS Metric Tracking.					
Congress added \$20.0M in FY2010 to study options and begin research and development to achieve a common upper stage between the Atlas and Delta launch vehicle families.					
The FY2010 President's Budget submittal did not reflect FY2011 through FY2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.					

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>Development & Demonstration (SDD)</i>				R-1 ITEM NOMENCLATURE PE 0604853F: <i>Evolved Expendable Launch Vehicle - EMD</i>				PROJECT 650004: <i>Evolved Expendable Launch Vehicle</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
650004: <i>Evolved Expendable Launch Vehicle</i>	43.628	46.545	30.245	0.000	30.245	4.333	0.000	0.000	0.000	0.000	1,516.730
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification <p>The Evolved Expendable Launch Vehicle (EELV) program is a space launch system developed to provide two families of launch vehicles (for example Delta IV & Atlas V). The program satisfies the government's National Launch Forecast (NLF) requirements and reduces the cost of space launch by at least 25% over legacy systems.</p> <p>EELV is a launch service, not a weapon system, which is primarily funded with production funds. The program has developmental items including: qualification of the extended mission kit, fleet standardization of the RS-68 main engine upgrade, Pre-Planned Product Improvements to ensure sustainability (includes, but is not limited to, secondary payload adaptor standard service, Global Positioning System (GPS) Metric Tracking capability, development of replacement components, flight and ground instrumentation), special studies, and other related support activities.</p> <p>EELV is responsible for launching government manifested payloads, including those once supported by Titan II, Delta II, Atlas II/III, and Titan IV. Evolved from heritage expendable launch systems and new applications of existing technology, EELV supports military, intelligence, civil, commercial, and international partnership mission requirements.</p> <p>As of 21 August 2007, the EELV Program has formally entered the sustainment phase. As of 31 October 2007, Air Force Space Command formally extended the EELV Program an additional 10 years, from 2020 through 2030.</p> <p>This program element is in Budget Activity 5, System Development and Demonstration, because it supports development and demonstration of the EELV concept leading to deployment of a lower cost expendable launch vehicle system.</p>											
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
						43.628	46.545	30.245	0.000	30.245	

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APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)		R-1 ITEM NOMENCLATURE PE 0604853F: Evolved Expendable Launch Vehicle - EMD		PROJECT 650004: Evolved Expendable Launch Vehicle		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Fund EELV product improvements, replacement components, system enhancements, and studies to allow EELV to meet National Launch Forecast requirements through 2030. FY 2009 Accomplishments: In FY 2009: Continued development and qualification of the extended mission kit. Continued development of GPS metric tracking system. Began fleet-wide integration and certification of RS-68 upgrade. Continued development of secondary payload standard service. FY 2010 Plans: In FY 2010: Continue fleet-wide integration and certification of RS-68 upgrade. Continue development and qualification of the Atlas V extended mission kit. Continue development of GPS metric tracking system. Continued development of secondary payload standard service. FY 2011 Base Plans: In FY 2011: Continue fleet-wide integration and certification of RS-68 upgrade. Continued development of secondary payload standard service. Continue development of GPS metric tracking system. Conduct studies. FY 2011 OCO Plans: In FY2011 OCO: N/A						
Accomplishments/Planned Programs Subtotals		43.628	46.545	30.245	0.000	30.245

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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (22530): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D. Acquisition Strategy

The EELV concept of families of launch vehicles emphasizes commonality of hardware and infrastructure to enhance production, operations, and support efficiencies. Four initial contracts were awarded for the Low Cost Concept Validation (LCCV) phase in August 1995. The Air Force downselected to two contractors - The Boeing Company (TBC) and Lockheed Martin (LM) - for the Pre-Engineering and Manufacturing Development (Pre-EMD) phase in December 1996. In 1998, two \$500M Other Transaction Agreements (OTA) were awarded to TBC and LM for the development effort. The contractors have contributed additional funds of their own, as necessary, to bring their national launch operational capability on line. It is estimated that each contractor has invested in excess of \$1.5B. At the same time as the award of the development effort, Initial Launch Services (ILS) contracts were awarded to Boeing for 19 missions and to Lockheed Martin for 9 missions.

All of the ILS (Buy 1/awarded) launch services are firm-fixed price contracts. Due to the decrease in the commercial market, the projected costs of the unawarded EELV launches have increased. The new acquisition strategy, implemented in FY06, separates the launch service price from the infrastructure costs. Follow-on (Buy 3) Launch Service procurements will include launch service costs on a fixed-price contract. EELV Launch Capability infrastructure costs (includes launch and range operations, mission integration, mission unique development and integration, subcontract support engineering, factory engineering, etc.) are funded on an annual basis via a cost-plus, award-fee contract. The 2005 Space System Acquisition Strategy (SSAS) for EELV documents this modified approach to provide assured access to space with two viable launch vehicle families.

The acquisition approach supports the 2004 National Space Transportation Policy, caps the government's development costs, and allows partnership with industry, while still reducing the program's overall cost to launch the NLF by at least 25% over legacy systems. The EELV system will launch the majority of the government portion of the NLF through 2030 and the government will continue to work to partner with industry to continuously improve products and processes to enhance reliability and reduce both the contractor's and government's total costs. The Air Force is evaluating the addition of other potential EELV suppliers.

In December 2006, TBC and LM initiated a joint venture, the United Launch Alliance (ULA), with the approval of the Federal Trade Commission. ULA will continue mission success and assure access to space with two launch vehicle systems by combining Delta IV/Atlas V management and engineering in Denver, CO; combining most of the manufacturing in Decatur, AL; and combining launch teams at both launch sites.

As of 21 August 2007, the EELV program has formally entered the sustainment phase.

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As of 31 Oct 2007, Air Force Space Command formally extended the EELV Program an additional 10 years, from 2020 through 2030.		
<u>E. Performance Metrics</u> Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force											DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604853F: Evolved Expendable Launch Vehicle - EMD					PROJECT 650004: Evolved Expendable Launch Vehicle				
Product Development (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Delta Prime Contractor	C/FFP	Boeing Huntington Beach, CA	710.182	0.000		0.000		0.000		0.000	0.000	710.182	0.000	
Atlas Prime Contractor	C/FFP	Lockheed Martin Denver, CO	583.511	0.000		0.000		0.000		0.000	0.000	583.511	0.000	
United Launch Alliance (ULA) Prime Contractor	SS/CPAF	ULA Decatur, AL	50.023	43.175	Oct 2009	28.390		0.000		28.390	4.333	125.921	Continuing	
Subtotal			1,343.716	43.175		28.390		0.000		28.390	4.333	1,419.614		
Remarks														
Support (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
SPO/CTF Range Mission Spt	Various/ Various	Space and Missile Center Los Angeles Air Force Base, CA	43.617	0.000		0.000		0.000		0.000	0.000	43.617	0.000	
FFRDC	SS/CPAF	Aerospace El Segundo, CA	67.214	0.000		0.000		0.000		0.000	0.000	67.214	0.000	
Other Cntr Spt	Various/ Various	Various Various	15.192	3.370		1.855		0.000		1.855	0.000	20.417	Continuing	

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Support (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			126.023	3.370		1.855		0.000		1.855	0.000	131.248	
Remarks													
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,469.739	46.545		30.245		0.000		30.245	4.333	1,550.862	
Remarks													
Total Prior Years Cost may include only FY 2009 data.													

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 5: Development & Demonstration (SDD)

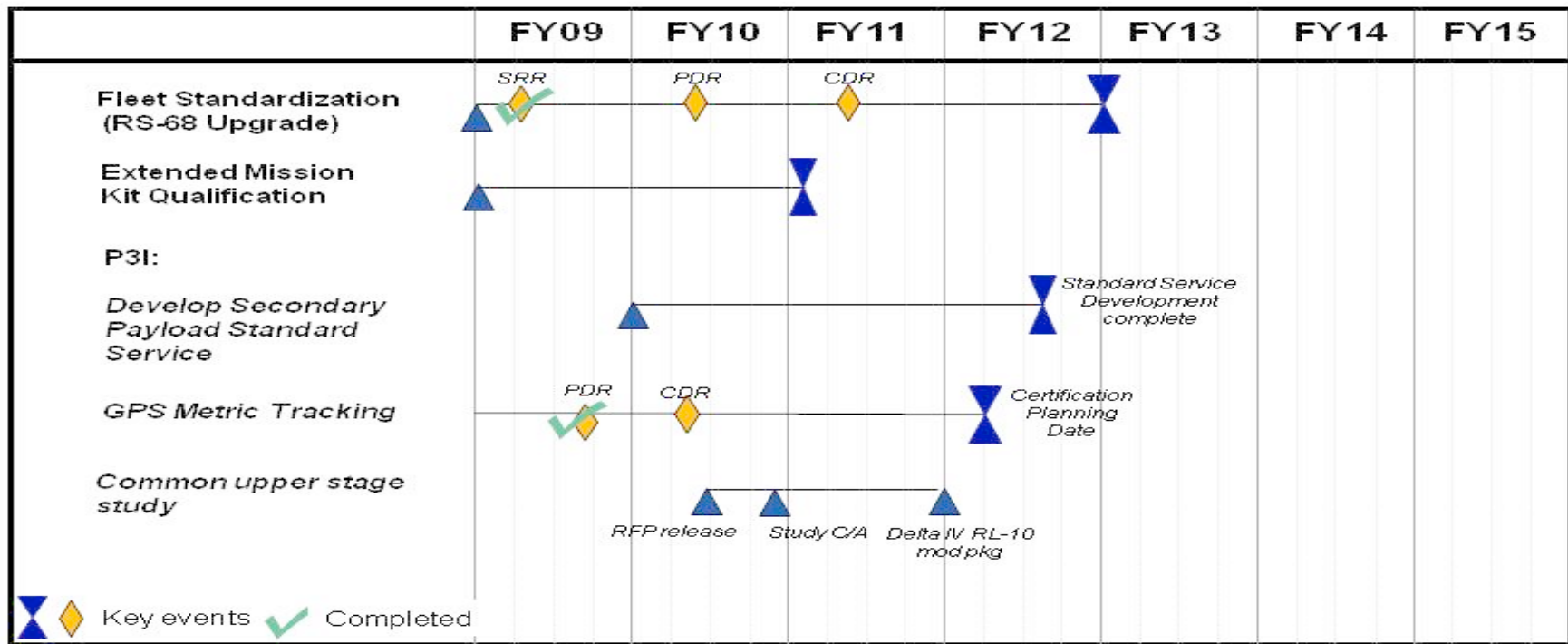
R-1 ITEM NOMENCLATURE

PE 0604853F: Evolved Expendable Launch Vehicle - EMD

PROJECT

650004: Evolved Expendable Launch Vehicle

EELV Development Program - Key Events



Key:

CDR - Critical Design Review GPS - Global Positioning System
 P3I - Pre-Planned Product Improvements PDR - Preliminary Design Review
 SRR - System Requirements Review

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force			DATE: February 2010
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Pre-Planned Product Improvement (P3I): Secondary Payload Standard Service	1	2010	4	2011
Pre-Planned Product Improvement (P3I): GPS Metric Tracking Development	1	2009	4	2011
Pre-Planned Product Improvement (P3I): GPS Metric Tracking Development - Preliminary Design Review	3	2009	3	2009
Pre-Planned Product Improvement (P3I): GPS Metric Tracking Development - Critical Design Review	2	2010	2	2010
Atlas V Extended Mission Kit Qualification	1	2009	4	2010
Fleet Standardization (RS-68 Upgrade implementation)	1	2009	4	2011
Fleet Standardization - System Requirements Review	2	2009	2	2009
Fleet Standardization - Preliminary Design Review	2	2010	2	2010
Fleet Standardization - Critical Design Review	2	2011	2	2011
Common booster upper stage study RFP release	2	2010	3	2010
Common booster upper stage study proposal	3	2010	4	2010
Common booster stage study activities	1	2011	4	2011

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