

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2007
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BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0604855F Operationally Responsive Launch
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Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	45.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	87.686
A013 Small Launch Vehicle	45.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	87.686

In FY 2007 this PE was closed and the effort transferred to PE 0604857F, Operationally Responsive Space. The new PE recognizes the broader scope of not just responsive launchers, but also satellites and ranges, necessary for a responsive space system.

(U) A. Mission Description and Budget Item Justification

The 2002 Operationally Responsive Spacelift (ORS) Mission Needs Statement (MNS) established the requirement for responsive, on-demand access to, through and from space. This requirement encompasses the spacelift missions of delivering payloads to, or from, mission orbit and changing the orbit of existing systems to better satisfy new mission requirements. It also requires on-demand, flexible, and cost effective operations.

In December 2002 the DepSecDef directed the Air Force (AF) and the Defense Advanced Research Projects Agency (DARPA) to establish a joint program office to accelerate the Operationally Responsive Space (ORS) effort to meet portions of this requirement. This joint technology development program has been named Falcon and is focused on the development and transition of more mature technologies into a future weapon system capable of delivering and deploying conventional payloads worldwide from and through space such as Joint Warfighting Space satellites. Concept development, risk reduction and technology maturation are the key elements in the ORS program; and demonstrations, modeling and simulations are the critical tools. Although Falcon is a joint program, the Air Force is funding the ORS portion; DARPA is sharing the Hypersonic Technology Vehicle costs with the Air Force.

In July 2004 the Air Force Requirements for Operational Capabilities Council (AFROCC) reviewed the ORS Analysis of Alternatives (AoA), and approved the following recommendations: (1.) Leverage lessons learned from AF-DARPA Falcon demo (2.) Conduct Architecture Studies -- Responsive spacecraft: size and functions study, -- Integration and technology needs (3.) Pursue a Hybrid (part reusable, part expendable) launch vehicle: spiral development approach, Step one: Small scale hybrid integration demonstrator, Step two: Full scale operational hybrid demonstrator, Step three: Vehicle production /operations. The AoA evolutionary approach begins with a starting point Hybrid Demonstrator to reduce risk and uncertainties.

In FY 2006 Congress added funds to conduct operational, technical, and economic analysis of Near Space vehicle design, development, and operational architectures. Near Space provides a persistent, responsive and dedicated capability to perform reconnaissance, communications, electronic warfare, and other missions.

This program is Budget Activity 4, Advanced Component Development and Prototypes, because it involves evaluating integrated technologies in as realistic an operating environment as possible to assess the performance or cost reduction potential of advanced technology.

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2007

BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0604855F Operationally Responsive Launch

(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	38.519	0.000	0.000	0.000
(U) Current PBR/President's Budget	45.155	0.000	0.000	0.000
(U) Total Adjustments	6.636			
(U) Congressional Program Reductions				
Congressional Rescissions				
Congressional Increases				
Reprogrammings	6.636			
SBIR/STTR Transfer				
(U) <u>Significant Program Changes:</u>				
FY06: Increased for Tactical Satellite (TacSat) launch.				
FY07: This PE is being closed and funding transferred to PE 0604857F, Operationally Responsive Space.				

Exhibit R-2a, RDT&E Project Justification

DATE
February 2007

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)				PE NUMBER AND TITLE 0604855F Operationally Responsive Launch			PROJECT NUMBER AND TITLE A013 Small Launch Vehicle			
Cost (\$ in Millions)	FY 2006 Actual	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
A013 Small Launch Vehicle	45.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	87.686
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

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In December 2002 the DepSecDef directed the Air Force (AF) and the Defense Advanced Research Projects Agency (DARPA) to establish a joint program office to accelerate the Operationally Responsive Space (ORS) effort to meet portions of this requirement. This joint technology development program has been named Falcon and is focused on the development and transition of more mature technologies into a future weapon system capable of delivering and deploying conventional payloads worldwide from and through space such as Joint Warfighting Space satellites. Concept development, risk reduction and technology maturation are the key elements in the ORS program; and demonstrations, modeling and simulations are the critical tools. Although Falcon is a joint program, the Air Force is funding the ORS portion; DARPA is sharing the Hypersonic Technology Vehicle costs with the Air Force.

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This program is Budget Activity 4, Advanced Component Development and Prototypes, because it involves evaluating integrated technologies in as realistic an operating environment as possible to assess the performance or cost reduction potential of advanced technology.

(U) B. Accomplishments/Planned Program (\$ in Millions)	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Continued SLV system design and development, systems engineering and flight test planning for Phase II	17.300			
(U) Supported early demonstration flights and launch/test facilities evaluation and improvement	3.139			
(U) Performed analysis, costing and assess utility for operationally responsive space concepts/requirements and Program Management support	2.480			
(U) Blue MAJIC				

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DATE
February 2007

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0604855F Operationally Responsive Launch	PROJECT NUMBER AND TITLE A013 Small Launch Vehicle
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(U) <u>B. Accomplishments/Planned Program (\$ in Millions)</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Advanced Rocket Components				
(U) TacSat Launch	14.436			
(U) Tactical Satellite Demonstrations	5.700			
(U) Near Space analysis and program development	2.100			
(U) Total Cost	45.155	0.000	0.000	0.000

(U) <u>C. Other Program Funding Summary (\$ in Millions)</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Complete</u>							
(U) AF RDT&E, PE 0604857F, ORS (R-xx)		35.411	87.032	111.657	52.791	52.710	52.579	52.499	Continuing	TBD

(U) **D. Acquisition Strategy**
 Small Launch Vehicle (SLV) efforts executed by the joint AF/DARPA Falcon Program Office. An open competition was held for Phase II contracts in August 2004, resulting in Other Transactional Agreement contract vehicles. TacSat launches will be provided with existing contracts.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis

DATE
February 2007

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0604855F Operationally Responsive Launch	PROJECT NUMBER AND TITLE A013 Small Launch Vehicle
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<u>(U) Cost Categories</u> (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior to FY 2006 Cost</u>	<u>FY 2006 Cost</u>	<u>FY 2006 Award Date</u>	<u>FY 2007 Cost</u>	<u>FY 2007 Award Date</u>	<u>FY 2008 Cost</u>	<u>FY 2008 Award Date</u>	<u>FY 2009 Cost</u>	<u>FY 2009 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
<u>(U) Product Development</u>														
Nine Phase I contractors	FFP	various											0.000	3.490
Phase II contractors:												Continuing	TBD	TBD
Air Launch	OTA	Reno, NV		17.300	Oct-05							Continuing	TBD	TBD
Lockheed Martin	OTA	New Orleans, LA										Continuing	TBD	TBD
Microcosm	OTA	El Segundo										Continuing	TBD	TBD
Space-X	OTA	El Segundo										Continuing	TBD	TBD
TBD Phase III contractors	TBD	TBD										Continuing	TBD	TBD
Hybrid Design and Development	TBD	TBD											0.000	
Near Space analysis and program development	TBD	TBD		2.100	May-06								2.100	
Subtotal Product Development			0.000	19.400		0.000		0.000		0.000		Continuing	TBD	TBD
Remarks:														
<u>(U) Test & Evaluation</u>														
Test Stand 2A Modification	MIPR	Edwards AFB, CA											0.000	3.804
Range Services	MIPR	Army-Huntsville, AL										Continuing	TBD	TBD
Flight Demo Support	MIPR	various		3.139	Oct-05							Continuing	TBD	TBD
SLC-3W Modification	MIPR	Naval Research Lab/Wash DC											0.000	1.700
Blue MAJIC	CPFF	Sparta, Lake Forest CA											0.000	2.000
Advanced Rocket Components	SBIR	Rocket Prop. Eng., Mojave CA											0.000	1.000
TacSat Launch	FFP	SMC Det 12/RP/Kirtland AFB NM		14.436	May-06								14.436	
TacSat Demonstrations	FFP	SMC Det 12/RP/Kirtland AFB NM		5.700	May-06								5.700	
Subtotal Test & Evaluation			0.000	23.275		0.000		0.000		0.000		Continuing	TBD	TBD
Remarks:														
<u>(U) Development Support and Management</u>														

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis							DATE February 2007		
BUDGET ACTIVITY				PE NUMBER AND TITLE			PROJECT NUMBER AND TITLE		
04 Advanced Component Development and Prototypes (ACD&P)				0604855F Operationally Responsive Launch			A013 Small Launch Vehicle		
Perform analysis and assess alternative concepts/requirements & program support	various	various	2.480	Oct-05			Continuing	TBD	TBD
Subtotal Development Support and Management			0.000	2.480	0.000	0.000	0.000	Continuing	TBD
Remarks:									
(U) Total Cost			0.000	45.155	0.000	0.000	0.000	Continuing	TBD

Exhibit R-4, RDT&E Schedule Profile

DATE
February 2007

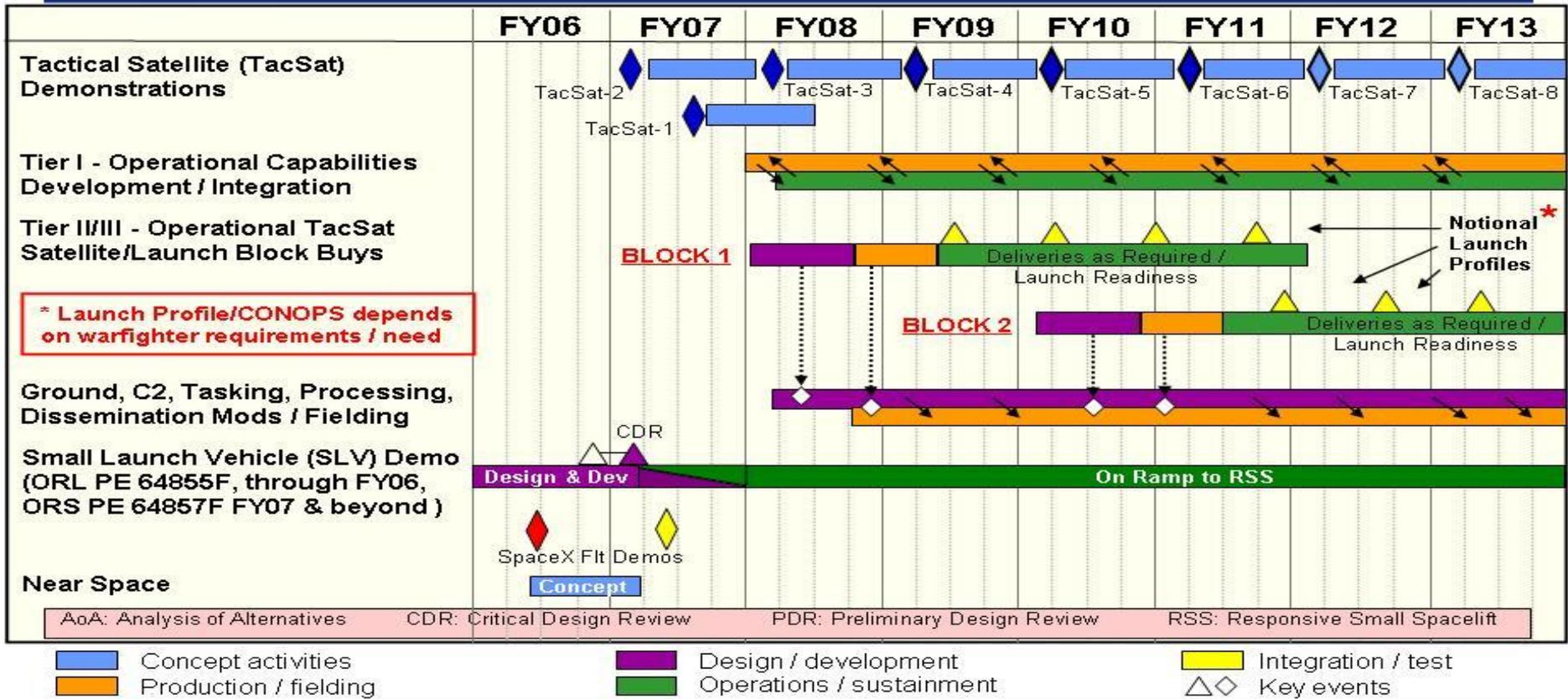
BUDGET ACTIVITY
04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE
0604855F Operationally Responsive Launch

PROJECT NUMBER AND TITLE
A013 Small Launch Vehicle



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ORS
Schedule



* Launch Profile/CONOPS depends on warfighter requirements / need

SLV Funded

Exhibit R-4a, RDT&E Schedule Detail	DATE February 2007
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BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0604855F Operationally Responsive Launch	PROJECT NUMBER AND TITLE A013 Small Launch Vehicle
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	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) <u>Schedule Profile</u>				
(U) TacSat-2 Launch		1Q		
(U) Space-X Demo Launch		2Q		
(U) TacSat-1 Launch		3Q		