

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
<b>4 - Advanced Component Development and Prototypes</b>		<b>0603305A - Army Missile Defense Systems Integration</b>			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	128776	90765	14683	Continuing	Continuing
TR4 MISSILE DEFENSE INTEGRATION	116464	78174	1660		196325
TR5 MISSILE DEFENSE BATTLELAB	12312	12591	13023	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This Program Element funds missile defense systems integration efforts for both the US Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT) and the Program Executive Office for Missiles and Space (PEO-MS).

USASMDC/ARSTRAT: Headquarters, Department of the Army General Order 37, dated 16 October 2006, designated USASMDC/ARSTRAT as the Army proponent for space and ground-based midcourse defense (GMD), the Army integrator for global missile defense, and the Army Service Component Command (ASCC) of the U.S. Strategic Command (USSTRATCOM). As the Army proponent for space, high altitude and GMD, USASMDC/ARSTRAT is responsible to develop warfighting concepts, conduct warfighting experiments to validate those concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Organizations, Training, Material, Leadership & Education, Personnel and Facilities (DOTMLPF) solutions to realize the GMD capabilities. As the Army integrator for global missile defense, USASMDC/ARSTRAT is responsible to review programs managed by the Army, other Services, Defense agencies and National agencies to ensure that they are correctly synchronized and will ultimately provide the capabilities required by USSTRATCOM to execute its global missile defense responsibilities.

Project TR4 funds the USASMDC/ARSTRAT to execute its proponent role for Ground-Based Missile Defense, and its role as the integrator for global missile defense.

Project TR5 funds USASMDC/ARSTRAT efforts to develop, analyze and mature warfighting concepts, focus military science and technology research, and conduct warfighting experiments associated with USASMDC/ARSTRAT's ASCC mission. Additionally, this project funds the delivery of innovations to the warfighter through prototyping, operational analysis, and experimentation in support of current and future Forces.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY

PE NUMBER AND TITLE

**4 - Advanced Component Development and Prototypes**

**0603305A - Army Missile Defense Systems Integration**

**B. Program Change Summary**

	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	127408	14005	14551
Current BES/President's Budget (FY 2010)	128776	90765	14683
Total Adjustments	1368	76760	132
Congressional Program Reductions		-300	
Congressional Rescissions			
Congressional Increases	4745	77060	
Reprogrammings			
SBIR/STTR Transfer	-3377		
Adjustments to Budget Years			132

Change Summary Explanation:

Funding  
 FY 2008 - Congressional add funds for Electro-Magnetic Flak Impulse System transferred from 0605502A/M40 in the approved revised 1414, Base for Reprogramming.

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

**May 2009**

<b>BUDGET ACTIVITY</b> <b>4 - Advanced Component Development and Prototypes</b>	<b>PE NUMBER AND TITLE</b> <b>0603305A - Army Missile Defense Systems Integration</b>			<b>PROJECT</b> <b>TR4</b>	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
TR4 MISSILE DEFENSE INTEGRATION	116464	78174	1660		196325

**A. Mission Description and Budget Item Justification:** Headquarters, Department of the Army General Order Number 37, dated 16 October 2006, designated SMDC/ARSTRAT as the Army proponent for space and ground-based midcourse defense (GMD), and the Army integrator for global missile defense. This project funds efforts associated with those roles. As the Army proponent for GMD, SMDC/ARSTRAT is responsible to develop and validate warfighting concepts, identify capabilities needed to implement the validated concepts, and develop Doctrine, Organization, Training, Materiel, Leadership & Education, Personnel and Facilities (DOTMLPF) solutions to realize GMD capabilities. As the Army integrator for global missile defense, SMDC/ARSTRAT is responsible to review programs managed by the Army, other Services, Defense agencies and National agencies to ensure that they are correctly synchronized and will ultimately provide the capabilities required by USSTRATCOM to execute its global missile defense responsibilities.

After FY2010, this project is rolled into PE 0603308A, project 990 in recognition of the increasing interrelationship between space operations, exo-atmospheric ballistic missile defense and global missile defense.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Continue combat development efforts to define DOTMLPF solutions for capabilities required to execute ground-based midcourse defense operations across the four domains of missile defense (passive defense, active defense, attack operations and battle management). Ensure that the various components of a global missile defense capability remain synchronized with USSTRATCOM's concept of operations.	1739	1330	1660
Includes FY08/09 Congressional Adds for Adaptive Lightweight Materials for Missile Defense, Advanced Battery Technology, Advanced Cavitation Power Technology, Advanced Electronics Rosebud Integration, Advanced Environmental Control System, Advanced Fuel Cell Research (Advanced Laser Electric Power), Advanced Hypersonic Weapon Mission Planning, Advanced Hypersonic Weapon Technology Demonstration, Advanced Standoff Technologies for National Security, AHW BMC2 HWIL Technology Demonstration, Advanced Strap Down Seeker, Alternative Power Technology (APT) for Missile Defense, Biological Air Filtering System Technology, Compact Pulsed Power Initiative, Deployable Space and Electronic Warfare Analysis Tools, Detection Algorithms and Software for Force Protection, Detection Mitigation and Neutralization of High Explosive, Dielectrically Enhance Sensor System (DESS), Future TOC Hardware/Software Integration, Heat Dissipation for Electronic Systems & Enclosures, High Detail Architecture Analysis Tool, High Speed Digital Imaging, High Temp Polymers for Missile System Applications, Integrated Composite Mounting Hardware, Micro Seeker System for Small Steerable Projectiles, Micro-Systems and Nanotechnology for Advanced Technology Development, Model-Based Enterprise, Neutralization of IEDs, Next Generation Interceptors Materials Research, Next Generation Passive Sensors (NGPS), Orion High Altitude Long Loiter UAV, Processing DNA Data Using Classical Discrimination Techniques, Radiation Hardening Initiative (RHI), Remote Explosive Analysis and Detection System (READS), Standoff Hazardous Agent Detection & Evaluation System, Thermal and Electrical Nanoscale Transport (TENT), Transfer Missile Power System, and Vertical Integration for Missile Defense Surveillance Data.	114725	74689	
Small Business Innovative Research/Small Business Technology Transfer Programs		2155	
<b>Total</b>	<b>116464</b>	<b>78174</b>	<b>1660</b>

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY

**4 - Advanced Component Development and Prototypes**

PE NUMBER AND TITLE

**0603305A - Army Missile Defense Systems Integration**

PROJECT

**TR4**

**B. Other Program Funding Summary** Not applicable for this item.

**C. Acquisition Strategy** This project employs a mix of government employees, soldiers and various contractors for different aspects of the combat development process to ensure a degree of independent thought, and to encourage the use of various analytic approaches.

# ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
4 - Advanced Component Development and Prototypes			0603305A - Army Missile Defense Systems Integration							TR4		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Various	Execute Congressional Adds	Various	292042	114725	1-4Q	74689	1-4Q				481456	
Subtotal:			292042	114725		74689					481456	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Govt support & support contracts	Various	Various in Colorado Springs CO and Huntsville AL	11562	1739	1-4Q	3485	1-4Q	1660	1-4Q		18446	
Subtotal:			11562	1739		3485		1660			18446	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

# ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT
<b>4 - Advanced Component Development and Prototypes</b>	<b>0603305A - Army Missile Defense Systems Integration</b>						<b>TR4</b>
Project Total Cost:	303604	116464		78174		1660	499902

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# Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE																PROJECT														
<b>4 - Advanced Component Development and Prototypes</b>		<b>0603305A - Army Missile Defense Systems Integration</b>																<b>TR4</b>														
Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Continue integration of Army missile defense capabilities & DOTMLPF solutions	[REDACTED]																															
Execute FY08/09 Congressional Adds	[REDACTED]																															
	[REDACTED]				[REDACTED]																											

**Schedule Detail (R4a Exhibit)**

**May 2009**

BUDGET ACTIVITY <b>4 - Advanced Component Development and Prototypes</b>		PE NUMBER AND TITLE <b>0603305A - Army Missile Defense Systems Integration</b>					PROJECT <b>TR4</b>	
<u>Schedule Detail</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>FY 2014</u>	<u>FY 2015</u>
Continue integration of Army missile defense capabilities & DOTMLPF solutions	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Execute FY08/09 Congressional Adds	1Q - 4Q	1Q - 4Q	1Q - 4Q					

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

**May 2009**

<b>BUDGET ACTIVITY</b> <b>4 - Advanced Component Development and Prototypes</b>	<b>PE NUMBER AND TITLE</b> <b>0603305A - Army Missile Defense Systems Integration</b>			<b>PROJECT</b> <b>TR5</b>	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
TR5 MISSILE DEFENSE BATTLELAB	12312	12591	13023	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** Project TR5 funds USASMDC/ARSTRAT efforts to develop, analyze and mature warfighting concepts, focus military science and technology research, and conduct warfighting experiments. Additionally, this project funds the delivery of innovations to the warfighter through prototyping, operational analysis, and experimentation in support of current and future Forces. The concepts, experiments, analyses, and prototypes apply to all of the mission areas assigned to SMDC/ARSTRAT in its role as an ASCC to USSTRATCOM: Missile Defense, Space, Information Operations (IO), Global Strike (GS), Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR).

<b><u>Accomplishments/Planned Program:</u></b>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Participated in numerous Integrated Capabilities Development Teams and provided concept development support for the Space Functional Needs Analysis (FNA), the Space Capabilities Integration Map (CIM) and the GMD Concept Capability Plan (CCP). Experimented with advanced prototype components of future operational- and tactical-level command and control (C2) systems to assess their impact on Doctrine, Organization, Training, Material, Leadership and Education, Personnel and Facilities (DOTMLPF) issues. Participated in major Army and Joint Experiments integrating space, missile defense, IO, GS and C4ISR integrating, functional and operational concepts into the Army Campaign Plan (ACP). For example, during FY08, SMDC/ARSTRAT participated in several technology assessments, experiments, and demonstrations including Omni Fusion 08, Joint Expeditionary Force Experiment 08, and Coalition Warrior Interoperability Demonstration (CWID) 08, Internet Protocol Routing in Space (IRIS) and Communications Air-Borne Layer Expansion (CABLE) plus several TRADOC micro experiments. Experiments and Wargames scheduled in FY09 include; Unified Quest 09, Schreiver V, STRATCOM MAST, Tactical Satellite (TacSat) 3 Joint Military Utility Assessment, High Altitude Enabled Capabilities Assessment, Earth Wind and Fire, Keen Edge 09, Coalition Warrior Interoperability Demonstration (CWID) 09, Coalition Warfighter Program (CWP) and the Intelligence, Surveillance and Reconnaissance (ISR) Warfighter Exercise. The Future Operation Capability (FOC) test bed has integrated commercial state-of-the-art technologies into C4ISR experiments, and continues to support National Capital Region operational missions, integrated emerging commercial technologies into the Future Operation Capability (FOC). Prototype derivatives of the FOC are supporting Operation Iraqi Freedom and various Homeland Defense missions including the National Capital Region Integrated Air Defense System.	7272	7488	7746
Operational Analysis/Tools, Modeling and Simulation (M&S) - Studies and Analysis accomplishments include operational assessments of concepts, doctrine, organizations, technologies and tactics. Efforts also included examination of Future Combat system/Transformation issues for space and missile defense including new doctrine for Space Superiority and Operational Analysis of High Altitude (HA) capabilities at the Tactical Level, Theater Missile Defense concepts, and Space ISR. Tools and M&S accomplishments include: M&S for experimentation and operational assessments, and the maintenance of M&S tools including developing an operational representation of HA and space based capabilities into OneSAF and the development of the Joint Embedded Messaging System (JEMS) for translation and transfer of space-based information for M&S and tactical systems. Evolving concepts will require analysis that addresses emerging needs in FY08. Space superiority and operationally responsive space will require assessments to support the military utility analysis and requirements definition in FY08. Additionally, M&S integration is required to support the fielding of Army simulations and experiments	5040	4893	5277

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT	
<b>4 - Advanced Component Development and Prototypes</b>	<b>0603305A - Army Missile Defense Systems Integration</b>	<b>TR5</b>	
for Strategic Planning, Information Operations and Global Strike. Plans include continued maintenance of M&S tools and operation of the SMD Battle Lab Collaborative Simulation Environment in support of experimentation and analysis.			
Small Business Innovative Research/Small Business Technology Transfer Programs		210	
<b>Total</b>		12312	12591
			13023

**B. Other Program Funding Summary** Not applicable for this item.

**C. Acquisition Strategy** Not applicable for this item.

# ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
4 - Advanced Component Development and Prototypes			0603305A - Army Missile Defense Systems Integration							TR5		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Experiments & technology enhancements of prototypes/tools and analysis.	CPAFF/CPFF	Various Colorado Springs CO and Huntsville AL	30327	5040	1-4Q	4893	1-4Q	7746	1-4Q	Cont.	Cont.	
Govt Support and Support Contracts	MIPR/Allot	Various Colorado Springs CO and Huntsville AL	47906	7272	1-4Q	7698	1-4Q	5277	1-4Q	Cont.	Cont.	
Subtotal:			78233	12312		12591		13023		Cont.	Cont.	
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

# ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY	PE NUMBER AND TITLE						PROJECT		
<b>4 - Advanced Component Development and Prototypes</b>	<b>0603305A - Army Missile Defense Systems Integration</b>						<b>TR5</b>		
Project Total Cost:	78233	12312		12591		13023	Cont.	Cont.	

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# Schedule Profile (R4 Exhibit)

May 2009

BUDGET ACTIVITY  
**4 - Advanced Component Development and Prototypes**

PE NUMBER AND TITLE  
**0603305A - Army Missile Defense Systems Integration**

PROJECT  
**TR5**

Event Name	FY 08				FY 09				FY 10				FY 11				FY 12				FY 13				FY 14				FY 15			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Experiments & technology enhancements of prototypes/tools and analysis.																																

**Schedule Detail (R4a Exhibit)**

**May 2009**

BUDGET ACTIVITY <b>4 - Advanced Component Development and Prototypes</b>		PE NUMBER AND TITLE <b>0603305A - Army Missile Defense Systems Integration</b>					PROJECT <b>TR5</b>	
<u>Schedule Detail</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>FY 2014</u>	<u>FY 2015</u>
Experiments & technology enhancements of prototypes/tools and analysis.	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q

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