

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604814A - Artillery Munitions - EMD			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
708 XM982 PROJECTILE	62490	79134	42452	Continuing	Continuing

A. Mission Description and Budget Item Justification: Excalibur provides improved fire support through a Precision Guided Extended Range family of munitions with greatly increased accuracy and offer significant reduction in collateral damage in most of all urban environments. The Excalibur will be interoperable with the M777A2 Lightweight 155mm howitzer (LW155), the M109A6 (Paladin) howitzer, and the Future Combat System (FCS) Non-Line of Sight Cannon (NLOS-C). Excalibur will provide a 33% range increase over current Rocket Assisted Projectiles, with a 10 meter accuracy (Circular Error Probable) at all ranges. Excalibur is an international program, teamed with the Kingdom of Sweden (KoS), who contributes resources towards the development in accordance with an established Project Agreement.

The Excalibur program is using an incremental development approach to provide a combat capability to the Soldier as quickly as possible, and to deliver advanced capabilities and lower costs as technology matures. Increment Ia-1 has been fielded to units in Iraq and Afghanistan in response to urgent need requests in support of Operation Iraqi Freedom and Enduring Freedom. Production deliveries continue to support the Warfighters. Increment Ia-2 will be delivered in FY10 and will greatly increase range to LW155, Paladin and FCS Cannon forces Army-wide. Increment Ib is a follow on Artillery Precision development effort which will provide further performance improvements while significantly lowering unit costs.

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<u>B. Program Change Summary</u>	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	64214	78197	43313
Current BES/President's Budget (FY 2010)	62490	79134	42452
Total Adjustments	-1724	937	-861
Congressional Program Reductions		-263	
Congressional Rescissions			
Congressional Increases		1200	
Reprogrammings	20		
SBIR/STTR Transfer	-1744		
Adjustments to Budget Years			-861

Change Summary Explanation:

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BUDGET ACTIVITY 5 - System Development and Demonstration		PE NUMBER AND TITLE 0604814A - Artillery Munitions - EMD			PROJECT 708	
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost	
708 XM982 PROJECTILE	62490	79134	42452	Continuing	Continuing	

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<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Complete airframe structure, warhead, guidance, systems and procure and test projectiles for system level qualification testing for Increment Ia qualification.	16655		
Conduct Systems and Specialty Engineering activities to include specification development, Cost As Independent Variable (CAIV), program metric tracking, and conduct modeling of lethality, effectiveness, and aeroballistics, and reliability.	11872	13156	1300
Procure development test hardware and conduct test and evaluation.	4806	4024	
Engineering support for Excalibur platform integration to include development and qualification of the Enhanced Platform Integration Kit and Portable Inductive Artillery Fuze Setter (EPIAFS), Portable Excalibur Fire Control System (PEFCS), Advanced Field Artillery Tactical Direction System (AFATDS), and digital howitzer integration.	750	550	300
Conduct Independent Operational Test & Evaluation (IOT&E) efforts for Increment Ia.	461	4296	
Initiate and implement Increment Ib the follow on Artillery Development effort.	26400	49884	36282
Procure development test hardware and conduct test and evaluation for Increment Ib development.		3900	4570
Advanced Cargo Projectile Technology (Congressional add not associated with Excalibur).	1546	1163	
Small Business Innovative Research/Small Business Technology Transfer Programs.		2161	
Total	62490	79134	42452

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<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
Procurement Ammunition Army: Proj 155mm Extended Range: XM982-U Excalibur: E80103	47456	69119	98292	1262052	1476919
OPA2: Enhanced Portable Inductive Fuze Setter (E-PIAFS): AD3260	7601	2571	3078		13250

Comment: Prior FYs 2005 - 2007 not included in the total Procurement Ammunition Army (PAA): Projectile 155mm Extended Range, XM982-U Excalibur, E80103 cost.

C. Acquisition Strategy Excalibur is a family of Precision Guided Extended Range Munitions. A competitive source selection awarded an Engineering and Manufacturing Development (E&MD) contract for the initial increment, with options for the other increment's development and all Low Rate Initial Production (LRIP) quantities. In coordination with the Defense Acquisition Executive, the Army implemented an incremental development process that provided for an early fielding capability in FY07 in response to an Urgent Needs Statement. The Product Manager's Office is currently managing a contract for the Increment Ia LRIP. Increment Ib was solicited as a full and open competition and awarded to two contractors. Increment Ib strategy is to conduct a demonstration phase followed by a shoot off and down select to a single contractor for qualification and production.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
5 - System Development and Demonstration			0604814A - Artillery Munitions - EMD							708		
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
Excalibur Increment Ia Development	C/CPIF	Raytheon Missile System, Tucson, AZ	417390	12857	2-4Q						430247	
Fee on Excalibur Development Contract	N/A	Raytheon Missile System, Tucson, AZ	35379								35379	
TCM Merger Assessment	FP	Bofors Defence, Karlskoga, Sweden	14430								14430	
Platform Integration-Systems Contractor	MIPR	ARES, Annapolis, MD	720	120	3Q	120	3Q			Cont.	Cont.	
Misc Support Contracts	Various	Various	2466	624	1-2Q	200	1-2Q	300	2-3Q	Cont.	Cont.	
Platform Integration/Fire Control - AFATDS	SS/CPIF	Raytheon AFATDS, Ft Wayne, IN	4945			250	1-2Q	150	1-2Q	Cont.	Cont.	
Platform Integration Firing Tables Development	MIPR	ARDEC, Firing Tables Branch, Picatinny, NJ/Aberdeen, MD	1974	150	1Q	150	1Q	150	1Q	Cont.	Cont.	
Platform Integration LW155 M777A2	C/CPIF	BAE, Burlington Vt.	11989								11989	
SS-SFM Test Projectiles	C/FFP	Various	10815								10815	
Increment Ib Development	Various	ARDEC, Picatinny, NJ		21000	2-4Q	46058	1-4Q	29660	1-4Q	Cont.	Cont.	
Govt IPT Support Platform Integration Development	MIPR	ARDEC, Picatinny, NJ	6550	225	1-4Q	500	1-4Q	200	1-4Q	Cont.	Cont.	
Platform Integration & EPIAFS Software Development	MIPR	Navy, Surface Warfare Center, MD	230								230	
Follow on Precision Artillery risk reduction	C/CPFF	Picatinny, NJ	3234			1827	2Q				5061	
ARDEC fuze technology maturation	DOTC	Picatinny, NJ		2500	2Q						2500	
Advanced Cargo Projectile Technology	MIPR	DMEA, McClellan, CA		1396	4Q	1013	2Q				2409	
Subtotal:			510122	38872		50118		30460		Cont.	Cont.	

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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
Program Management	In House	PM Excalibur , Picatinny, NJ	24070	1103	1-4Q	1380	1-4Q	1538	1-4Q	Cont.	Cont.	
Government IPT Support-Excalibur XM982	MIPR	ARDEC, Picatinny, NJ	54039	4794	1-4Q	5700	1-4Q	4000	1-4Q	Cont.	Cont.	
Government TCM Support	MIPR	ARDEC, Picatinny, NJ	910								910	
Government Support- Ft Sill	MIPR	Ft. Sill, OK	3409	315	1-2Q	370	1-2Q	150	1-2Q	Cont.	Cont.	
Paladin Platform Integration	MIPR	PM Paladin Picatinny, NJ	930								930	
Modeling and Structural Development	MIPR	Army Research Labs, Adelphi, MD	7174	1860	1-4Q	250	1-4Q	100	1-4Q	Cont.	Cont.	
Govt IPT Support Platform Integration	MIPR	ARDEC, Picatinny, NJ	6041	200	1-4Q	120	1-4Q	120	1-4Q	Cont.	Cont.	
Milestone Support	SS/FP	Camber, Alexandria, VA	1540			250	1-4Q	200	1-4Q	Cont.	Cont.	
Technical Spt Contract for Platform Integration	SS/FP	Camber, Dallas, TX	821								821	
Fire Control development support	MIPR	Ft Monmouth, NJ/Ft Sill, OK	1008								1008	
Miscellaneous Support	MIPR	Various	3850	300	1-4Q	958	1-4Q	1284	1-4Q		6392	
Platform Integration Software Support	MIPR	Navy Surface Warfare Center, MD	390								390	
PM CAS SS-SFM	In-House	PM CAS, Picatinny, NJ	700								700	
Government IPT Support - SS-SFM	MIPR	ARDEC, Picatinny, NJ	1625								1625	
Increment Ia Engineering Services	C/CPFF	DRS, Eatontown, NJ	5784	8566	1-4Q						14350	
Increment Ia Engineering Services	TBS	TBS				2500	3-4Q				2500	
Government IPT Support-Advanced Cargo Projectile Technology	MIPR	ARDEC, Picatinny NJ		150	2-4Q	150	1-4Q				300	
Subtotal:			112291	17288		11678		7392		Cont.	Cont.	

ARMY RDT&E COST ANALYSIS (R3)

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BUDGET ACTIVITY
5 - System Development and Demonstration

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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
TECOM Test Range	MIPR	YPG, Yuma, AZ	18493	1350	1-4Q	3285	1-4Q	2150	1-4Q	Cont.	Cont.	
Test Instrumentation and Analysis	MIPR	Army Research Labs, Adelphi, MD	3377	150	1-4Q	250	1-4Q	250	1-4Q		4027	
Telemetry Support	SS/FF	Physical Science Laboratories (PSL), Las Cruces, NM	2546	450	2Q	450	2Q	400	2Q	Cont.	Cont.	
Telemetry Support	MIPR	ARDEC, Picatinny, NJ	17061	1161	1-4Q	500	1-4Q	500	1-4Q	Cont.	Cont.	
Telemetry Cryptographic Support & Anti-Jam Support	MIPR	Ft. Huachuca, AZ	223	332	2-3Q	171	2-3Q	200	2-3Q	Cont.	Cont.	
Tri-Service Software Assessment	MIPR	OSD, Wash, DC	61								61	
Operational Test Support & AEC	MIPR	ATEC, Alexandria, VA	8671	148	1-4Q	204	1-4Q	120	1-4Q	Cont.	Cont.	
Target Replacement, Definition, Maintenance and Repair and Threat Assessment	MIPR	Target Management Office, Huntsville, AL.	1250			300	1-2Q	330	1-2Q	Cont.	Cont.	
ARDEC Testing	MIPR	ARDEC, Picatinny, NJ	1865	489	1-4Q	1300	1-4Q	250	1-4Q	Cont.	Cont.	
Test Gun Equipment	MIPR	Watervliet Arsenal, NY	3972								3972	
SS-SFM Testing	MIPR	Yuma Proving Grounds, Yuma, AZ	2300								2300	
Live Fire Test and Evaluation	MIPR	ARL, Aberdeen, MD	296	200	1-4Q						496	
TECOM Test Range	MIPR	White Sands Missile Range, NM	1032	1389	2-4Q	4591	2-4Q			Cont.	Cont.	
Test Hardware	SS/CPFF	SAVIT, Parsippany, NJ	250	200	2-3Q	200	2-4Q	200	2-4Q	Cont.	Cont.	
Operational Test Support	MIPR	Ft. Sill, Ok		461	1-2Q	3926	2-4Q	200	1-3Q		4587	
Subtotal:			61397	6330		15177		4600		Cont.	Cont.	

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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
SBIR/STTR						2161					2161	
Subtotal:						2161					2161	
Project Total Cost:			683810	62490		79134		42452		Cont.	Cont.	

Schedule Detail (R4a Exhibit)

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<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>
Increment Ia-1 Prod. Deliveries	1Q - 4Q	1Q - 4Q	1Q - 4Q					
Increment Ia-2 SDD	1Q							
LRIP Ia-2 Award	3Q							
Guided Gunfire Demo-C	4Q	1Q						
Increment Ia-2 IOT&E		4Q	1Q					
Increment Ia-2 IOC			4Q					
Increment Ia-2 Prod. Deliveries		4Q	1Q - 4Q					
Increment Ib development	4Q	1Q - 4Q	1Q - 4Q					

Termination Liability Funding For Major Defense Acquisition Programs, RDT&E Funding (R5)		May 2009	
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5 - System Development and Demonstration	0604814A - Artillery Munitions - EMD	708	
Funding in \$000			
Program	FY 2008	FY 2009	FY 2010
XM982 Excalibur		16830	19760
Total Termination Liability Funding:		16830	19760
Remarks: Increment Ia XM982 Excalibur Engineering and Manufacturing Development (EMD) contract completed. Increment Ib EMD contract awarded September 2008 as a Firm Fixed Price.			