

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)							February 2005			
BUDGET ACTIVITY 5 - System Development and Demonstration				PE NUMBER AND TITLE 0604□14A - Artillery Munitions - EMD				PROJECT □0□		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
708 XM982 PROJECTILE	119433	133167	113368	99127	61887	76734	42165	1989	Continuing	Continuing
<p><u>A. Mission Description and Budget Item Justification:</u> This project funds two programs, the Excalibur XM982 Projectile and the Spin Stabilized-Sensor Fuzed Munition (SS-SFM).</p> <p>Excalibur provides improved fire support through a Precision Guided Extended Range family of munitions with greatly increased accuracy and reduced collateral damage. The Excalibur will be compatible with the M777A1 Lightweight 155mm howitzer (LW155), the 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 and 10 meter accuracy (Circular Error Probable) at all ranges. Excalibur is also highly resistant to GPS jamming. 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.</p> <p>Funding also supports compliance testing for the SS-SFM in accordance with the Joint Ballistics Memorandum of Understanding (JBMOU). SS-SFM's are advanced "fire and forget" smart artillery projectiles that can be used in all 155mm artillery systems. SS-SFM's use one or more sensors to defeat self-propelled artillery and lightly armored targets in all weather and environmental conditions.</p>										
<u>Accomplishments/Planned Program</u>						FY 2004	FY 2005	FY 2006	FY 2007	
Continue airframe tactical structure and projectile integration efforts to conduct contractor development testing.						29667	27550	23018	20666	
Continue guidance unit integration, gun hardening, tactical telemetry, systems software development, and programmed maneuver flight demonstration.						39088	42021	35160	32231	
Continue to execute 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 requirements analysis to incorporate a tactical telemetry system.						18847	23166	17332	16217	
Continue Unitary warhead development, to include structure penetration, and fragmentation testing						9483	9330	8416	5559	
Continue Platform Integration effort including design and build of prototype hardware for Enhanced Platform Integration Kit and Portable Inductive Artillery Fuze Setter (EPIAFS) and development of Advanced Field Artillery Tactical Direction System (AFATDS) integration.						8234	8474	7722	5274	
Procure and test 22 structure test projectiles, 15 soft recovery Guidance system evaluation test projectiles, 32 full up system rounds, and 90 warhead test projectiles for FY05 Contractor Development Testing.						7390	13520	0	0	

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Accomplishments/Planned Program B(continued)

	FY 2004	FY 2005	FY 2006	FY 2007
Procure and test 18 structure test projectiles, 17 soft recovery Guidance system evaluation test projectiles, 136 full up system rounds for FY06 Contractor Development Testing.	0	0	21720	0
Procure and test 24 structure test projectiles, 30 soft recovery Guidance system evaluation test projectiles, 60 full up system rounds, and 36 warhead test projectiles for FY07 Contractor Development Testing.	0	0	0	19180
SS-SFM JBMOU Testing	6724	9106	0	0
Totals	119433	133167	113368	99127

B. Program Change Summary

	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	133297	114444	115242
Current Budget (FY 2006/2007 PB)	133167	113368	99127
Total Adjustments	-130	-1076	-16115
Net of Program/Database Changes			
Congressional Program Reductions	-2223		
Congressional Rescissions			
Congressional Increases	5900		
Reprogrammings			
SBIR/STTR Transfer	-3807		
Adjustments to Budget Years		-1076	-16115

FY 2005 Adjustments: Received \$5.9M congressional plus-up (\$3.4M for Excalibur and \$2.5M for SS-SFM BONUS program).

FY 2007 Adjustments: Funds from project 709 Advanced Field Artillery Munitions zeroed out (-\$14.8M), and funds realigned (-\$1.3M) to higher priority requirements.

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C. Other Program Funding Summary

	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
Procurement Ammunition Army: Proj 155mm Extended Range: XM982-U Excalibur: E80103	0	16895	25098	22548	28921	34431	64263	61431	1327443	1581030
OPA2: Enhanced Portable Inductive Fuze Setter (E-PIAFS): AD3260	0	1945	6763	7342	7458	2557	0	0	0	26065

D. Acquisition Strategy: Excalibur is a family of 155mm Precision Guided Extended Range Munitions. A competitive source selection awarded an Engineering and Manufacturing Development (E&MD) contract for the initial variant, with options for the other variant's development and all Low Rate Initial Production quantities (LRIPs). The Product Management Office (PMO) merged the Trajectory Correctable Munitions (TCM) and Excalibur programs to satisfy the common guided extended range requirement. This merger reduced program risk through incorporation of TCM technology. The PMO awarded a single, merged contract for the balance of System Development and Demonstration (SDD) with options for LRIP. In coordination with the Defense Acquisition Executive, the Army has implemented a block development process to provide for early fielding of projectiles to the Stryker Brigade Combat Team #5. The first block (Ia-1) will meet the most critical Operational Requirement Document (ORD) Block Ia Key Performance Parameter (KPP) requirements and will be ready for fielding by the fourth quarter fiscal year (FY) 2006. The second block (Ia-2) will meet all of the ORD Block Ia KPP requirements and will field to Paladin and the Future Combat System's Non-Line of Sight Cannon (NLOS-C) in addition to JLW by the fourth quarter FY08. The third block (Ib-1) will meet all of the ORD Block Ib KPP requirements and will be fielded to Paladin, NLOS-C & JLW by the fourth quarter FY11.

SS-SFM JBMOU compliance testing includes safety certification and firing table development. This strategy includes funding for compliance testing only. It does not fund procurement of projectiles for the stockpile.

ARMY RDT&E COST ANALYSIS(R3)

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Excalibur Development	C/CPAF	Raytheon Missile System, Tucson, AZ	227981	75693	1-4Q	65394	1-4Q	59636	1-4Q	Continue	Continue	439221
b . Award Fee on Excalibur Development Contract	N/A	Raytheon Missile System, Tucson, AZ	11083	14594	2-4Q	7062	2-4Q	3006	2-4Q	Continue	Continue	37287
c . TCM Merger Assessment	FP	Bofors Defence, Karlskoga, Sweden	14430	0		0		0		0	14430	14430
d . Platform Integration-Systems Contractor	CPAF	TBS	150	0	1Q	600	1Q	0		0	750	0
e . Misc Support Contracts	Various	Various	1397	200	1-2Q	200	1-2Q	200	1-2Q	Continue	Continue	0
f . Platform Integration/Fire Control	SS/CPIF	Raytheon AFATDS, Ft Wayne, IN	588	3458	1Q	1600	1-2Q	2100	1-2Q	Continue	Continue	0
g . Platform Integration Firing Tables Development	MIPR	ARDEC, Firing Tables Branch, Picatinny, NJ/Aberdeen, MD	820	441	1Q	463	1Q	116	1Q	Continue	Continue	0
h . Platform Integration	CPIF	BAE, Burlington Vt.	3739	4000	2Q	4000	1-2Q	2000	1-2Q	0	13739	0
i . SS-SFM Test Projectiles	C/FFP		5084	5731	2Q	0		0		0	10815	0

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I. Product Development (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			265272	104117		79319		67058		Continue	Continue	490938
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Program Management	In House	Excalibur PM, Picatinny NJ	12077	3337	1-4Q	3705	1-4Q	3879	1-4Q	Continue	Continue	0
b . Government IPT Support-Excalibur XM982	MIPR	ARDEC, Picatinny, NJ	22015	10860	1-4Q	12195	1-4Q	11181	1-4Q	Continue	Continue	0
c . Government TCM Support	MIPR	ARDEC, Picatinny, NJ	910	0		0		0		0	910	0
d . Goverment Support- Ft Sill	MIPR	Ft. Sill, OK	2254	348	1Q	365	1-2Q	384	1-2Q	Continue	Continue	0
e . Paladin Platform Integration	MIPR	PM Paladin/ARDEC, Picatinny, NJ	650	0		0		0		0	650	0
f . Modeling and Structural Development	MIPR	Army Research Labs, Adelphi, MD	3521	850	1-2Q	1353	1-4Q	950	1-4Q	Continue	Continue	0
g . Govt IPT Support Platform Integration	MIPR	ARDEC, Picatinny, NJ	5591	1120	1-4Q	1930	1-4Q	1930	1-4Q	Continue	Continue	0

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II. Support Cost (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
h . Milestone Support	SS/FP	Camber, Alexandria, VA	820	220	2Q	220	2Q	142	2Q	Continue	Continue	0
i . Technical Spt Contract for Platform Integration	SS/FP	Camber, Dallas, TX	449	122	1-2Q	125	1-2Q	128	1-2Q	Continue	Continue	0
j . Fire Control development support	MIPR	Ft Monmouth, NJ/Ft Sill, OK	410	221	1-2Q	272	1-2Q	87	1-2Q	Continue	Continue	0
k . Miscellaneous Support	MIPR	Various	625	250	1-4Q	500	1-4Q	500	1-4Q	Continue	Continue	0
l . Platform Integration Software Support	MIPR	Navy Surface Warfare Center, MD	390	80	1-4Q	80	2Q	0		0	550	0
m . PM CAS SS-SFM	In-House	PM CAS, Picatinny, NJ	250	450	1-4Q	0		0		0	700	0
n . Government IPT Support - SS-SFM	MIPR	ARDEC, Picatinny, NJ	0	1625	1-3Q	0		0		0	1625	0
Subtotal:			49962	19483		20745		19181		Continue	Continue	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TECOM Test Range	MIPR	YPG, Yuma, AZ	8575	3574	1-4Q	3884	1-4Q	3338	1-4Q	Continue	Continue	0
b . Test Instrumentation and Analysis	MIPR	Army Research Labs, Adelphi, MD	2502	200	1-4Q	450	1-4Q	450	1-4Q	Continue	Continue	0
c . Telemetry Support	SS/FF	Physical Science Laboratories (PSL), Las Cruces, NM	1496	150	1Q	350	2Q	350	2Q	Continue	Continue	0
d . Telemetry Support	MIPR	ARDEC, Picatinny, NJ	5041	3644	1-4Q	5200	1-4Q	5500	1-4Q	Continue	Continue	0
e . Telemetry Cryptographic Support	MIPR	Ft. Huachuca, AZ	138	0	1Q	0		0		0	138	0
f . Tri-Service Software Assessment	MIPR	OSD, Wash, DC	61	0		0		0		0	61	0
g . Operational Test Support	MIPR	ATEC, Alexandria, VA	320	239	2Q	420	2Q	550	2Q	Continue	Continue	0
h . Target Replacement, Definition, Maintenance and Repair and Threat Assessment	MIPR	Target Management Office, Huntsville, AL.	300	370	1-2Q	1200	1-2Q	900	1-2Q	Continue	Continue	0
i . ARDEC Testing	MIPR	ARDEC, Picatinny, NJ	1075	90	1-4Q	1300	1-4Q	1300	1-4Q	Continue	Continue	0

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III. Test and Evaluation (continued)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
j . Test Gun Equipment	MIPR	Watervliet Arsenal, NY	3376	0	1-2Q	500	1-2Q	500	1-2Q	0	4376	0
k . SS-SFM Testing	MIPR	Yuma Proving Grounds, Yuma, AZ	1000	1300	1-3Q	0		0		0	2300	0
Subtotal:			23884	9567		13304		12888		Continue	Continue	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Remarks: Not Applicable												
Project Total Cost:			339118	133167		113368		99127		Continue	Continue	490938

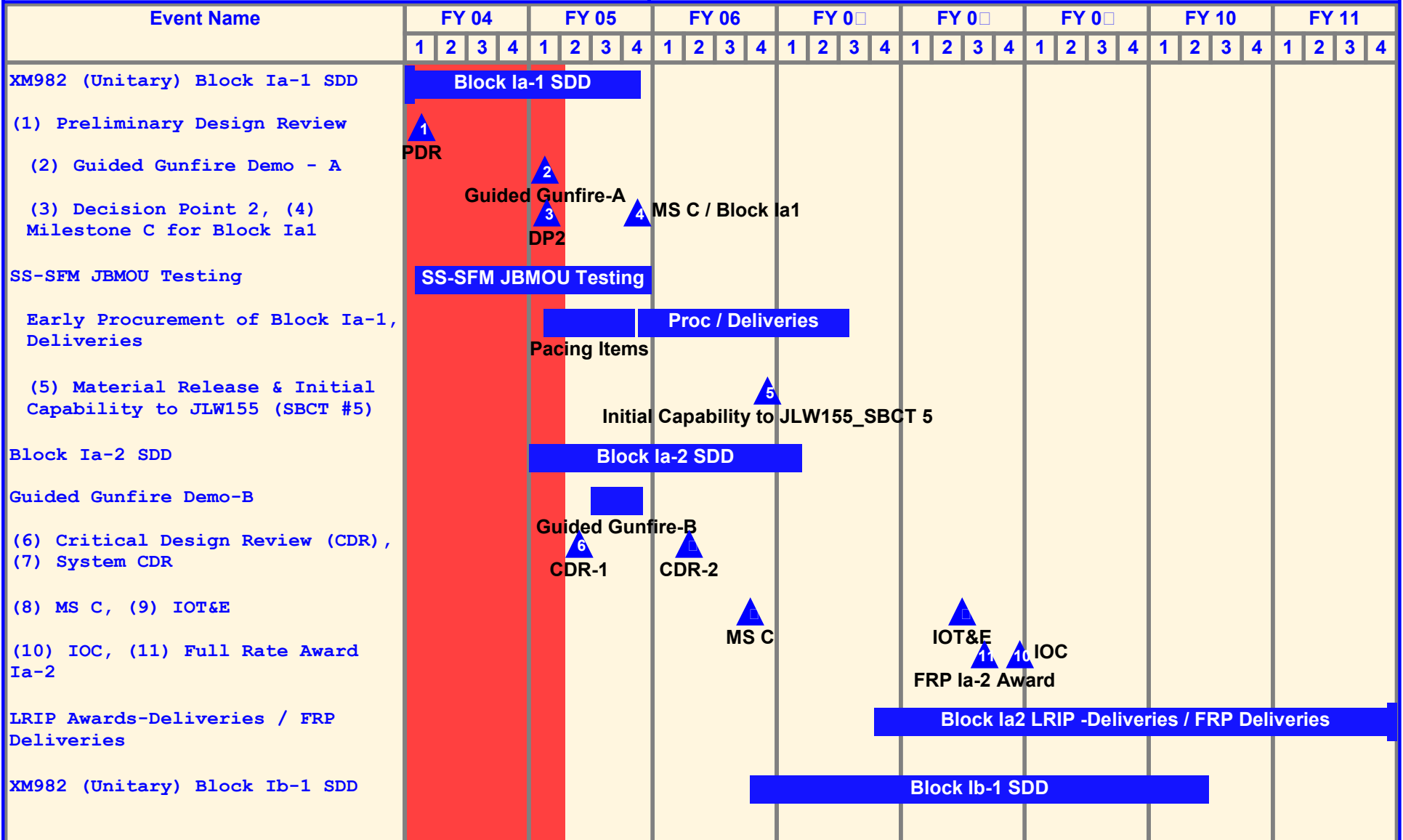
Schedule Profile (R4 Exhibit)

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Schedule Detail (R4a Exhibit)

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Warhead Contractor Development Test Firing	1-4Q	1-3Q						
Guidance Soft Recovery Testing/Sys. Reliability Growth	1-4Q	1-4Q	1-4Q	1-3Q				
Guided Gunfire A (Tactical Guidance System Testing)	4Q							
Milestone C for Block 1a-1		4Q						
Guided Gunfire B (Initial Full System Test Firing)		3Q						
System Critical Design Review (CDR) -1		2Q						
System Final CDR -2			2Q					
Inductive Fuze Setter Preliminary Design Review (PDR)	2Q							
Inductive Fuze Setter CDR		3Q						
Start Developmental Technical (DT) Test, Evaluation & Qualification			1Q					
Milestone C			3Q					
Initial Capability to JLW155			4Q					
Complete Developmental Technical Test and Evaluation				2Q				
Award LRIP II Contract				2Q				
System IOT&E					2Q			
System IOC					4Q			
Block 1b-1 IPR			3Q					
SS-SFM JBMOU Testing		1-4Q						