

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)

June 2001

BUDGET ACTIVITY
5 - ENG MANUFACTURING DEV

PE NUMBER AND TITLE
0604814A - Artillery Munitions - EMD

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	23490	31513	67258	0	0	0	0	0	0	0
644 GENERIC SADARM ED	23490	0	0	0	0	0	0	0	0	0
708 XM982 PROJECTILE	0	31513	67258	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

The Sense and Destroy Armor (SADARM) program has been terminated. The Army's requirement for a field artillery smart sub-munition is being addressed and evaluated.

Artillery munitions provides for the engineering manufacturing development of intensively managed munitions as assigned by the Army Acquisition Executive. Currently assigned is the Excalibur (XM982) precision guided, extended range 155mm modular artillery projectile with the capability for multiple payloads to include Unitary, Dual Purpose Improved Conventional Munition (DPICM) and a Sensor-Fuzed Munition (SFM). Fielding of Excalibur will provide the maneuver force with improved fire support through a precision-guided, extended range, accuracy enhancing, fratricide reducing, more lethal family of 155mm projectiles, which will reduce the logistical footprint. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP). It also includes the development of the Platform Integration Kit and Enhanced Portable Inductive Fuze Setter (EPIAFS).

Prior to FY 2001, funding for the Excalibur is in Program Element 0604802, Project D695.

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<u>B. Program Change Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	24128	52848	66968	0
Appropriated Value	24366	31805	0	
Adjustments to Appropriated Value		0	0	
a. Congressional General Reductions	0	0	0	
b. SBIR / STTR	-638	0	0	
c. Omnibus and Other Above Threshold Reductions	-98	0	0	
d. Below Threshold Reprogramming	0	0	0	
e. Rescissions	-140	-292	0	
Adjustments to Budget Years Since FY2001 PB		0	290	
New Army Transformation Adjustment		0	0	
Current Budget Submit (FY 2002/2003 PB)	23490	31513	67258	0

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COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
708 XM982 PROJECTILE	0	31513	67258	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: The Excalibur (XM982) is a precision-guided, extended-range 155mm modular artillery projectile with the capability for multiple payloads. Fielding of Excalibur will provide the maneuver force with improved fire support through a precision-guided, extended-range, accuracy-enhancing, fratricide-reducing, more lethal family of 155mm projectiles. Funding in the budget request and Future Years Defense Plan (FYDP) conducts the development of the Excalibur projectile, integration of the Unitary warhead, and begins Excalibur procurement in FY 2004. It also fully funds the development of all platform integration requirements to include the Enhanced Portable Inductive Fuze Setter (EPIAFS). The Excalibur will be compatible with all current and future digitized 155mm cannon artillery systems in the U. S. inventory. The Excalibur will re-establish range parity with the threat by extending the range of the 155mm Paladin (M109A6), and the Joint Lightweight Howitzer to approximately 37 kilometers. Excalibur will establish range overmatch by extending the Crusader range to 47 kilometers with the Modular Artillery Charge System (MACS). The Excalibur will allow greater standoff from threats and faster defeat of potential threats, increasing soldier survivability while reducing the logistics footprint. Excalibur supports multiple Army Modernization Plan initiatives: dominate the maneuver battle, protect the force, and project and sustain. This system supports the Legacy-to-Objective transition path of the Transformation Campaign Plan (TCP). This project also includes funding for a competitive design beginning in FY 2002. Prior to FY 2001, funding for the Excalibur is in Program Element 0604802, Project D695.

FY 2000 Accomplishments

Project funded in Program Element 64802/D695

FY 2001 Planned Program

- 6261 Complete design of projectile assembly including structural and aeroballistic analyses, subsystem laboratory tests and airframe flight tests. Build prototypes for test and evaluation.
- 7371 Continue design of guidance, navigation , control and instrumentation systems. Build prototype subsystems and conduct high-G guidance testing and evaluation.

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708**FY 2001 Planned Program (Continued)**

- 4192 Continue Systems Integration activities to include development of Interface Control Documents (ICD) at subsystem and system level and evaluation/verification of external interfaces with prototype hardware.
- 6347 Initiate development of Platform Integration Kit and EPIAFS
- 3525 Perform structural analysis of payload and internal interfaces in a gun fired environment.
- 2900 Initiate Unitary warhead development.
- 917 Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR)

Total 31513

FY 2002 Planned Program

- 8042 Complete airframe tactical structure and conduct 39 and 56 caliber contractor development testing.
- 26140 Complete guidance unit integration, gun hardening, systems software development, and programmed maneuver flight demonstration.
- 9595 Continue to execute Systems Engineering and Specialty Engineering activity including Cost As An Independent Variable (CAIV), development and tracking of program metrics and effectiveness/aeroballistic simulations.
- 4654 Continue Platform Integration effort including design and build of prototype hardware for Platform Integration Kit and Fuze Setter.
- 11717 Initiate projectile system level testing, and continue analysis.
- 7110 Continue Unitary warhead development.

Total 67258

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<u>B. Other Program Funding Summary</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Compl	Total Cost
RDT&E: PE 0604802A.D695	14481	0	0	0	0	0	0	0	0	0
Procurement Ammunition Army: E80100	0	0	0	0	0	0	0	0	0	0

C. Acquisition Strategy: The approved Acquisition Strategy was to award the Engineering and Manufacturing Development (EMD) contract (FY98-01) to a systems contractor through full and open competition using formal source selection. As a result of this strategy, a contract was awarded to Raytheon-TI Systems, Inc., Lewisville, TX on 23 January 1998 for the design, development, fabrication, and engineering services in support of the development and testing of the 155MM ER DPICM XM982 Projectile, with options for the development of a Sensor Fuzed Munition and a Unitary variant. Two low rate production fixed price ceiling price options were also included in the award for the first year's buy of 3,400 each and the second year's buy of 4,900 each. The User, TSM-Cannon, has provided direction to PM Excalibur in a letter dated 8 January 2001 to replace the DPICM payload development with the Unitary payload development. A letter instructing the Contractor to stop work on the DPICM payload unique tasks was issued on 12 February 2001. Firm Option Prices for the Unitary CLINs, System Development and Demonstration (SD&D) and Low Rate Production (LRP), are no longer valid under contract DAAE30-98-C-1032. The Unitary option prices were based on completion of the DPICM and Sensored Munition development efforts. As a result of this change, the Unitary payload development must be repriced to include LRP. An Undefined Contract Action (UCA) was issued February 2001 to allow for an immediate start of the Unitary payload development with definitization planned for FY2001.

<u>D. Schedule Profile</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Initiate Platform Integration & EPIAFS Systems Development		3Q		0	0	0	0	0
Initiate Guidance System Test Firings		3Q		0	0	0	0	0
Unitary Warhead Contract Development Test Firing			2Q	0	0	0	0	0
Extended Range Demonstration				0	0	0	0	0
Contractor Pre-Qualification Tests				0	0	0	0	0
EPIAFS Product Development Review (PDR)			2Q	0	0	0	0	0
EPIAFS Critical Design Review (CDR)				0	0	0	0	0
Excalibur Critical Design Review (CDR)				0	0	0	0	0
Start Developmental Technical (DT) Test ,Evaluation and Qualification				0	0	0	0	0
Independent Program Review (IPR) for LRIP Initiation				0	0	0	0	0
Award LRIP 1 Contract				0	0	0	0	0

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<u>D. Schedule Profile (continued)</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Complete Developmental Technical Test and Evaluation				0	0	0	0	0
First Article Test				0	0	0	0	0
Award LRIP II Contract				0	0	0	0	0
Independent Operational Test and Evaluation (IOTE)				0	0	0	0	0

ARMY RDT&E COST ANALYSIS(R-3)

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I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Excalibur-XM982 Development	C/CPIF	Raytheon Systems, Tucson, AZ	0	17536	1Q	40891	1Q	0	0	0	0	0
b . Award Fee on Excalibur Development Contract		Raytheon Systems, Tucson, AZ	0	77	4Q	409	4Q	0	0	0	0	0
c . Competitive Design Developmet	C/CPIF	TBD	0	0		4700	1Q	0	0	0	0	0
d . Platform Integration Systems Contractor	C/CPIF	PM Paladin Support Contract, TRW	0	0		1850	1Q	0	0	0	0	0
e . EPIAFS Systems Contractor	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		1850	1Q	0	0	0	0	0
f . Misc Contracts	SS/FP	TBD	0	167	3Q	200		0	0	0	0	0
Subtotal:			0	17780		49900		0		0	0	0

Remarks: Program funding for FY 1999 and 2000 resides in 604802.D695.
Contracted activity also includes \$21.2M Raytheon Cost share which is not included in Army Product Development funding profile. The restructured contract includes an award fee provision for schedule and performance.

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II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Product Manager's Office	Allot	Excalibur PM	0	1305		3000		0	0	0	0	0
b . Gov't IPT Support- Excalibur XM982	MIPR	ARDEC, Picatinny Arsenal, NJ	0	5937	1-3Q	4800	1Q	0	0	0	0	0
c . Gov't Support- Ft Sill	MIPR	Ft. Sill, OK	0	225	1Q	25	1Q	0	0	0	0	0
d . Platform Intergration	MIPR	PM Paladin	0	200	2Q	0		0	0	0	0	0
e . Gov't IPT Support- Excalibur Platform Integration	MIPR	ARDEC, Picatinny Arsenal, NJ	0	3854	1-3Q	4600	1Q	0	0	0	0	0
f . Milestone Support	SS/FP	Camber, Alexandria, Va	0	150	3Q	150	1Q	0	0	0	0	0
g . Technical Spt Contract for Platform Integration	SS/FP	Camber, Dallas, TX	0	82	1Q	0		0	0	0	0	0
h . Miscellaneous Suport			0	0		0		0	0	0	0	0
Subtotal:			0	11753		12575		0		0	0	0

Remarks: *Program funding for FY 1999 and 2000 resides in 604802.D695.

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . TECOM Testing	MIPR	YPG, Yuma, AZ	0	563	1Q	3583	1-4Q	0	0	0	0	0
b . Army Research Labs	MIPR	ARL, Adelphia, MD	0	887	1Q	0		0	0	0	0	0
c . Telemetry Support	SS/CPIF	L3 Corporation	0	400	2Q	1200	1Q	0	0	0	0	0
d . Telemetry Crypto Hardware	MIPR	Ft. Huachua, AZ	0	70	2Q	0		0	0	0	0	0
e . Tri-Service Software Assessment	MIPR	OSD, Wash, DC	0	60	2Q	0		0	0	0	0	0
f . Operational Test Support	MIPR	ARDEC, Picatinny Arsenal, NJ	0	0		0		0	0	0	0	0
Subtotal:			0	1980		4783		0		0	0	0

Remarks: *Program funding for FY 1999 and 2000 resides in 604802.D695.

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IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2001 Cost	FY 2001 Award Date	FY 2002 Cost	FY 2002 Award Date	FY 2003 Cost	FY 2003 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:			0	31513		67258		0		0	0	0
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