

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

February 2003

BUDGET ACTIVITY

7 - Operational system development

PE NUMBER AND TITLE

0203735A - Combat Vehicle Improvement Programs

COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	159759	82702	24486	16121	12941	13227	8802	6689	0	411427
330 ABRAMS TANK IMPROVE PROG	159439	81747	24486	16121	12941	13227	8802	6689	0	400139
718 GRND COMBAT VEHICLE HTI	224	955	0	0	0	0	0	0	0	8800
C64 DC64	96	0	0	0	0	0	0	0	0	2488

A. Mission Description and Budget Item Justification: This Program Element (PE) responds to vehicle deficiencies identified during Operation Desert Storm, continues technical system upgrades, and addresses needed evolutionary enhancements to tracked combat vehicles. This PE provides combat effectiveness and Operating and Support (O&S) cost reduction enhancements for the Abrams tanks through a series of product improvements, notably the LV100 Engine Program. These systems support the Legacy transition path of the Transformation Campaign Plan (TCP).

B. Program Change Summary	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2003)	166449	54465	23798	16291
Current Budget (FY 2004/2005 PB)	159759	82702	24486	16121
Total Adjustments	-6690	28237	688	-170
Congressional program reductions				
Congressional rescissions		-1905	-414	-279
Congressional increases		3450		
Reprogrammings	-2060			
SBIR/STTR Transfer	-4630	-2383		
Adjustments to Budget Years		29075	1102	109

In FY03, the Abrams program increased to accelerate the LV100 Engine Program.

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BUDGET ACTIVITY 7 - Operational system development				PE NUMBER AND TITLE 0203735A - Combat Vehicle Improvement Programs				PROJECT 330		
COST (In Thousands)	FY 2002 Actual	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
330 ABRAMS TANK IMPROVE PROG	159439	81747	24486	16121	12941	13227	8802	6689	0	400139
<p><u>A. Mission Description and Budget Item Justification:</u> This project funds improvements to the Abrams Main Battle Tank (M1 series). The Abrams mission is to close with and destroy enemy forces on the integrated battlefield using firepower, maneuver, and shock effect. The M1A2 was the Army's first fully digital ground combat system developed under this project. It was succeeded by the M1A2 SEP, which is the current production model. SEP refers to a System Enhancement Package which upgraded the M1A2's computer systems and its night vision capabilities. Post SEP development efforts are focusing on improvements yielding significant life cycle cost reductions or survivability enhancements. The Abrams LV100 engine program is the most significant of these efforts. The LV100 engine program is a critical cornerstone in the Abrams Recapitalization Program. All M1A2 SEP tanks will be equipped with the LV100 engine. The objective is a lighter, more reliable, more fuel efficient, and easier-to-repair engine. The LV100 engine program will yield the greatest return on investment by significantly reducing both the Operations and Support (O&S) burden and the armored forces logistics footprint. The Abrams Project Manager plans to explore a variety of armor package configurations and auxiliary power unit designs to the M1A2 SEP tank that will permit it to become more survivable and to effectively run the tank's on-board computer systems. The auxiliary power unit designs considered will replace previous program efforts on the Under Armor Auxiliary Power Unit (UAAPU); previous efforts on an UAAPU were discontinued when they were found not to meet M1A2 SEP tank operational requirements. This system supports the Legacy transition path of the Army Transformation Campaign Plan (TCP).</p>										
<u>Accomplishments/Planned Program</u>						FY 2002	FY 2003	FY 2004	FY 2005	
LV100 Engine Program						158013	69000	6536	0	
Abrams Legacy Fleet Embedded Diagnostics						1426	2350	0	0	
Parts Obsolescence and System Technical Support						0	4460	1300	2721	
Alternative Armor Solution						0	5937	6650	3200	
Alternative Auxiliary Power Unit						0	0	10000	10200	
Totals						159439	81747	24486	16121	

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PROJECT

330

B. Other Program Funding Summary

	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Compl</u>	<u>Total Cost</u>
Abrams Upgrade Program (GA0750)	587035	369938	92942	0	0	0	0	0	0	0
Abrams Vehicle Modification (GA0700)	80619	176198	268644	499643	342463	364160	275832	102887	460600	2571046
M1A1D Retrofit (GA0720)	11481	0	0	12207	0	0	0	0	0	0
System Enhancement Pgm: SEP M1A2 (GA0730)	98627	120633	0	0	0	0	0	0	0	0
M1A2 Training Devices (GB1302)	11646	11858	0	3633	3718	1074	1073	1072	0	0
Training Device Mod (GA5208)	5466	5411	6252	3652	3763	1074	1073	1072	0	0
Initial Spares (GE0161)	15490	9784	5390	5370	5376	0	0	0	0	0

C. Acquisition Strategy: Honeywell is the prime contractor for the LV100 engine development program. General Dynamics Land Systems Division (GDLS) is the prime contractor for the vehicle integration effort.

ARMY RDT&E COST ANALYSIS(R-3)									February 2003			
BUDGET ACTIVITY 7 - Operational system development					PE NUMBER AND TITLE 0203735A - Combat Vehicle Improvement Programs					PROJECT 330		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Prior Contracts	Various	Various	621329	0		0		0		0	621329	618099
b . LV100 Engine	C-CPAF	Honeywell International Phoenix, AZ	135161	49000	2-3Q	5386	2-3Q	0		0	189547	212349
c . GDLS Integration	SS-CPFF	General Dynamics Sterling Heights, MI	68000	20000	2-3Q	1150	2-3Q	0		0	89150	90747
d . Other Contracts	Various	Various	38025	10397	2-3Q	17950	2-3Q	16121	2-3Q	Continue	82493	0
Subtotal:			862515	79397		24486		16121		Continue	982519	921195
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Embedded Diagnostics	MIPR	Various	16959	2350		0		0		0	19309	0
Subtotal:			16959	2350		0		0		0	19309	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various Test Sites	MIPR	Aberdeen Proving Ground, MD; Yuma Proving Ground, AZ; White Sands Missile Range, NM	56030	0		0		0		0	56030	0
Subtotal:			56030	0		0		0		0	56030	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:			0	0		0		0		0	0	0
Project Total Cost:			935504	81747		24486		16121		Continue	1057858	921195

Schedule Profile Detail (R-4a Exhibit)							February 2003	
BUDGET ACTIVITY 7 - Operational system development				PE NUMBER AND TITLE 0203735A - Combat Vehicle Improvement Programs			PROJECT 330	
<u>Schedule Detail</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
GDLS Integration PDR	1Q							
GDLS Integration CDR	2Q							
LV100 First Engine To Test	3Q							
LV100 Product Support Contract		1Q						
LV100 In Vehicle Testing		2Q						
GDLS ECP Submittal		4Q						
Complete LV100 Phase I Contract			2Q					
LV100 Engine Production			3Q					
GDLS Production S/W Release			3Q					
Complete GDLS Integration Contract				1Q				
Alternative Armor Contract Award		3-4Q						
Alternative Armor PDR			1Q					
Alternative Armor CDR			2Q					
Alternative Armor Material Release (MR)			3Q					
Alternative Auxiliary Power Unit Award			1Q					