Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

2040: Research, Development, Test & Evaluation, Army

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0203735A: Combat Vehicle Improvement Programs

COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	139.100	196.393	204.481	0.000	204.481	142.105	77.172	55.339	45.659	Continuing	Continuing
330: ABRAMS TANK IMPROVE PROG	39.113	108.296	107.479	0.000	107.479	87.836	77.172	55.339	45.659	Continuing	Continuing
371: BRADLEY BASE SUSTAIN	99.987	88.097	97.002	0.000	97.002	54.269	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element (PE) corrects vehicle deficiencies identified in Army operations; continues technical system upgrades to include the integration of applicable technologies on ground systems; addresses needed evolutionary enhancements to tracked combat vehicles; and, develops technology improvements which have application to or insertion opportunities across multiple Ground Combat Systems vehicles. This PE provides combat effectiveness and Operating and Support (O&S) cost reduction enhancements for the Abrams tanks and Bradley Fighting Vehicles through a series of product improvements. This project funds improvements to the Abrams Family of Vehicles (FOV). The Abrams mission is to provide necessary firepower, mobility and survivability to overmatch all current and emerging enemy threats in achieving decisive dominant maneuver. The M1A2 SEP (current production model) refers to a System Enhancement Package incorporated on the tank in 1998, which upgraded the M1A2's computer systems and its night vision capabilities. Since that time, the M1A2 SEP has virtually reached its upper limits for space, weight, and power (SWaP). The Abrams tank is expected to be in service through 2045 and will be modernized in accordance with a revised capabilities document to: (1) posture the tank infrastructure to enable incremental growth as a hedge against other risks and contingencies, (2) maintain threat overmatch to deter aggression, project power and protect US interests and allies around the globe - especially with regard to the lessons of counterinsurgency learned during the tanks successful campaigns during Operation Iraqi Freedom, and (3) leverage the mature and relevant technology enhancements from the Army Research & Development Technology base. The Abrams tank must embark on a modernization effort in order to remain relevant and maintain threat overmatch capability. The objective is to maintain Survivability, Combat Overmatch and reduce O&S costs through an evolutionary approach with incremental development. The Bradley Fighting Vehicle System (BFVS) improvements will provide the Heavy Brigade Combat Team (HBCT) with an improved capability to effectively fight in current and future environments. The BFVS improvements will buyback the A3 performance to meet Operational Requirements Document standards and maintain combat over match through a combination of enhanced survivability, mobility and situational awareness subsystems. Improved survivability will leverage and build on lessons learned from Operation Iraqi Freedom to ensure protection against current and future threats in both asymmetric and full spectrum warfare. This provides the Bradley fleet the capability to complement the Abrams Tank and Ground Combat Vehicle in the HBCT. This also provides the HBCT commander with the necessary capabilities to employ the Bradley and Abrams in a combined arms approach as well as appropriate mounted and dismounted schemes of maneuver on current and future battlefields.

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Army		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	
2040: Research, Development, Test & Evaluation, Army	PE 0203735A: Combat Vehicle Improvement Programs	
BA 7: Operational Systems Development		

B. Program Change Summary (\$ in Millions)

- 	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	143.041	190.301	205.558	0.000	205.558
Current President's Budget	139.100	196.393	204.481	0.000	204.481
Total Adjustments	-3.941	6.092	-1.077	0.000	-1.077
 Congressional General Reductions 		0.000			
 Congressional Directed Reductions 		0.000			
 Congressional Rescissions 	0.000	0.000			
 Congressional Adds 		7.120			
 Congressional Directed Transfers 		0.000			
 Reprogrammings 	0.000	0.000			
 SBIR/STTR Transfer 	-4.006	-5.299			
• Other Adjustments 1	0.065	4.271	-1.077	0.000	-1.077

Exhibit R-2A, RDT&E Project Justif	Exhibit R-2A, RDT&E Project Justification: PB 2011 Army								DATE: February 2010			
2040: Research, Development, Test & Evaluation, Army							PROJECT 330: ABRAMS TANK IMPROVE PROG					
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
330: ABRAMS TANK IMPROVE PROG	39.113	108.296	107.479	0.000	107.479	87.836	77.172	55.339	45.659	Continuing	Continuing	
Quantity of RDT&E Articles												

A. Mission Description and Budget Item Justification

The Abrams Fleet Modernization program will utilize an evolutionary acquisition approach with incremental development. This incremental approach will provide upgrades identified as critical from Operation Iraqi Freedom, emerging threats, and operational interoperability within the approved requirement documents. The incremental strategy allows Abrams to continuously modernize the fleet and provide timely performance enhancements. After having conducted a Material Development Decision (MDD), Increment 1 will begin in 2010 in the pre-Milestone B phase. By fall 2010 a Preliminary Design Review will be executed, and a Technology Readiness Level (TRL) 6 will be reached by Milestone B. At the same time Increment 2 will begin in the Material Solution Analysis Phase and reach Milestone A by fall 2010.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Program #1	0.485	22.500	22.500	0.000	22.500
Systems Engineering/project management, to include requirements decomposition & flow down, trade studies, modeling & simulation, risk management					
FY 2009 Accomplishments: FY 2009					
FY 2010 Plans: FY 2010					
FY 2011 Base Plans: FY 2011 Base					

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army	bit R-2A, RDT&E Project Justification: PB 2011 Army		DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0203735A: Combat Vehicle Improv Programs	ement	PROJECT 330: ABRAM	MS TANK IMPROVE PROG			
B. Accomplishments/Planned Program (\$ in Millions)	·						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
FY 2011 OCO Plans: FY 2011 OCO							
Program #2		0.464	14.893	15.529	0.000	15.529	
Vehicle Architecture & Software, to include architecture synthesis subsystem definition, power distribution architecture definition, sp compliance activities							
FY 2009 Accomplishments: FY 2009							
FY 2010 Plans: FY 2010							
FY 2011 Base Plans: FY 2011 Base							
FY 2011 OCO Plans: FY 2011 OCO							
Program #3		0.000	6.900	7.500	0.000	7.500	
Lethality Systems, to include cannon integration & characterization integration, sensor development and integration, specification dev							
FY 2009 Accomplishments: FY 2009							

chibit R-2A, RDT&E Project Justification: PB 2011 Army			DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0203735A: Combat Vehicle Improve	ement	PROJECT 330: ABRAM	S TANK IMP	ROVE PROG	ç	
B. Accomplishments/Planned Program (\$ in Millions)							
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
FY 2010 Plans: FY 2010							
FY 2011 Base Plans: FY 2011 Base							
FY 2011 OCO Plans: FY 2011 OCO							
Program #4		0.000	6.200	7.200	0.000	7.200	
Survivability Systems, to include armor modeling and analysis, system signature management analysis, specification development	design and integration, hit avoidance and						
FY 2009 Accomplishments: FY 2009							
FY 2010 Plans: FY 2010							
FY 2011 Base Plans: FY 2011 Base							
FY 2011 OCO Plans: FY 2011 OCO							
Program #5		0.000	7.700	7.900	0.000	7.900	
Mobility Systems, to include fuel efficiency improvement analysis, relisuspension design, specification development	iability/maintainability analysis, track &						

	UNCLASSIFIED					
Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: Febr	ruary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0203735A: Combat Vehicle Impro-	vement	PROJECT 330: ABRAM	IS TANK IMP	ROVE PROG	;
B. Accomplishments/Planned Program (\$ in Millions)						
•		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #6		0.000	9.000	9.000	0.000	9.000
Auxiliary Systems, to include Auxiliary Power Unit developmen protection technology investigation, specification development	t, Nuclear/ Biological/Chemical detection &					
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
FY 2011 Base Plans:						
FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #7		0.283	3.000	0.500	0.000	0.500

UNCLASSIFIED

R-1 Line Item #157 Page 6 of 28 440 of 897

	UNCLASSIFIED					
Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0203735A: Combat Vehicle Improve Programs	ement	PROJECT 330: ABRAM	S TANK IMP	ROVE PROG	;
B. Accomplishments/Planned Program (\$ in Millions)			1			
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Battle Command/Communication Integration						
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #8		0.000	2.500	2.500	0.000	2.500
Mobility, Survivability, Vetronics and Software Integration						
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						

UNCLASSIFIED

R-1 Line Item #157 Page 7 of 28 441 of 897

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: Febr	ruary 2010		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0203735A: Combat Vehicle Improver Programs	ment	PROJECT 330: ABRAM	ROJECT 80: ABRAMS TANK IMPROVE PROG			
B. Accomplishments/Planned Program (\$ in Millions)							
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
Program #9		2.120	19.000	24.000	0.000	24.000	
Improved Lethality (Sensor Integration, Advanced Munitions, Cannon Inte	egration).						
FY 2009 Accomplishments: FY 2009							
FY 2010 Plans: FY 2010							
FY 2011 Base Plans: FY 2011 Base							
FY 2011 OCO Plans: FY 2011 OCO							
Program #10		4.600	6.500	6.500	0.000	6.500	
Government Engineering Support							
FY 2009 Accomplishments: FY 2009							
FY 2010 Plans: FY 2010							
FY 2011 Base Plans: FY 2011 Base							
FY 2011 OCO Plans: FY 2011 OCO							

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0203735A: Combat Vehicle Improve Programs	ement	PROJECT 330: ABRAMS TANK IMPROVE		ROVE PROG	;
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Program #11		0.345	0.000	0.000	0.000	0.000
Improved Situational Awareness/Supportability/Survivability (e.g. Driver's Awareness (SA), Active Protection System (APS), Environmental Systems and Embedded Training).						
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #12		26.165	0.000	0.000	0.000	0.000
Advanced Technology Assessments and Insertion (System Engineering/ Ele Communications)	ectronic Architecture/Battle Command/					
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans:						

UNCLASSIFIED

FY 2010

nibit R-2A, RDT&E Project Justification: PB 2011 Army			DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0203735A: Combat Vehicle Improved Programs	ment	PROJECT 330: ABRAM	MS TANK IMP	PROVE PROG	:	
B. Accomplishments/Planned Program (\$ in Millions)		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
FY 2011 Base Plans: FY 2011 Base FY 2011 OCO Plans: FY 2011 OCO							
Program #13 Transmission - Integral Generator FY 2009 Accomplishments: FY 2009 FY 2010 Plans: FY 2010 FY 2011 Base Plans: FY 2011 Base FY 2011 OCO Plans:		0.000	0.000	4.200	0.000	4.200	
FY 2011 OCO Program #14 Test and Evaluation FY 2009 Accomplishments: FY 2009		0.251	0.150	0.150	0.000	0.150	

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: February 2010							
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0203735A: Combat Vehicle Improv Programs	ement	PROJECT 330: ABRAM	Γ MS TANK IMPROVE PROG							
B. Accomplishments/Planned Program (\$ in Millions)	,		'								
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total					
FY 2010 Plans: FY 2010											
FY 2011 Base Plans: FY 2011 Base											
FY 2011 OCO Plans: FY 2011 OCO											
Program #15		2.400	0.000	0.000	0.000	0.000					
GCS Open Architecture Electronic Enhancements (Engineering a architecture technology opportunities for ground combat systems											
FY 2009 Accomplishments: FY 2009											
FY 2010 Plans: FY 2010											
FY 2011 Base Plans: FY 2011 Base											
FY 2011 OCO Plans: FY 2011 OCO											
Program #16		2.000	1.600	0.000	0.000	0.000					
Current Force Common Active Protection System Radar											

	DATE: I	ebruary 2010					
PROJECT 330: ABRAMS TANK IMPROVE PROG							
FY 2010	FY 201 Y 2010 Base	1 FY 2011 OCO	FY 2011 Total				
0 3.120	3.120 0.0	0.000	0.000				
0 2.400	2.400 0.0	0.000	0.000				
_)	2.400 0.0	2.400 0.000 0.000				

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: Febr	uary 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0203735A: Combat Vehicle Improve Programs	ement	PROJECT 330: ABRAM	S TANK IMP	ROVE PROG	ï
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Vibration Management Enhancement Program						
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						
Program #19		0.000	2.833	0.000	0.000	0.000
Small Business Innovative Research/Small Business Technology Transfer	Programs (SBIR/STTR)					
FY 2009 Accomplishments: FY 2009						
FY 2010 Plans: FY 2010						
FY 2011 Base Plans: FY 2011 Base						
FY 2011 OCO Plans: FY 2011 OCO						

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
2040: Research, Development, Test & Evaluation, Army	PE 0203735A: Combat Vehicle Improvement	330: <i>ABRAN</i>	<i>AS TANK IMPROVE PROG</i>
BA 7: Operational Systems Development	Programs		

B. Accomplishments/Planned Program (\$ in Millions)

			FY 2011	FY 2011	FY 2011
	FY 2009	FY 2010	Base	осо	Total
Accomplishments/Planned Programs Subtotals	39.113	108.296	107.479	0.000	107.479

C. Other Program Funding Summary (\$ in Millions)

			FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	Base	<u>oco</u>	Total	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost
• Ord. #1: Abrams Upgrade Program	580.543	185.038	183.000	0.000	183.000	188.823	282.717	280.829	278.599	0	1,979.549
(GA0750) • Ord. #2: Abrams Vehicle	737.057	183.262	230.907	0.000	230.907	160.137	0.000	0.000	0.000	0	1.311.363
Modification (GA0700)				3.000			3.000	2.000	3.000		-,11000

D. Acquisition Strategy

Contractor selection for FY2011 and beyond pending Milestone B decision for Increment 1 and Milestone A decision for Increment 2.

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

2040: Research, Development, Test & Evaluation, Army

PE 0203735A: Combat Vehicle Improvement

330: ABRAMS TANK IMPROVE PROG

BA 7: Operational Systems Development

Programs

Product Development (\$ in Millions)

				FY	2010	FY :	2011 ase	FY 2		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering/ project management	С	TARDEC Location could not be determined.	0.000	22.500		22.500		0.000		22.500	Continuing	Continuing	0
Vehicle Architecture & Software	C/TBD	TBD Location could not be determined.	0.000	14.893		15.529		0.000		15.529	Continuing	Continuing	0
Lethality Systems	C/TBD	TBD Location could not be determined.	0.000	6.900		7.500		0.000		7.500	Continuing	Continuing	0
Survivability Systems	C/TBD	TBD Location could not be determined.	0.000	6.200		7.200		0.000		7.200	Continuing	Continuing	0
Mobility Systems	C/TBD	TBD Location could not be determined.	0.000	7.700		7.900		0.000		7.900	Continuing	Continuing	0
Auxiliary Systems	C/TBD	TBD Location could not be determined.	0.000	11.833		9.000		0.000		9.000	Continuing	Continuing	0
Cannon Integration	С	ARDEC Location could not be determined.	0.000	12.200		17.500		0.000		17.500	Continuing	Continuing	0
Sensor Integration	С	CECOM-NVESD Location could not be determined.	0.000	6.800		6.500		0.000		6.500	Continuing	Continuing	0
Battle Command/ Communication Integration	С	CECOM/PEO C3T Location could not be determined.	0.000	3.000		0.500		0.000		0.500	Continuing	Continuing	0

UNCLASSIFIED

R-1 Line Item #157 Page 15 of 28 449 of 897

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

2040: Research, Development, Test & Evaluation, Army

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0203735A: Combat Vehicle Improvement

Programs

PROJECT

330: ABRAMS TANK IMPROVE PROG

Product Development (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mobility/Survivability/ Vetronics/Software Integration	С	TARDEC Location could not be determined.	0.000	2.500		2.500		0.000		2.500	Continuing	Continuing	0
Improved Situational Awareness/Supportability/ Survivability	C/TBD	General Dynamics Sterling Heights, MI	18.500	0.000		0.000		0.000		0.000	Continuing	Continuing	0
Improved Lethality	С	PM MAS	1.430	0.000		0.000		0.000		0.000	Continuing	Continuing	0
Advance Technology Insertion/ Systems Enginering, Electronic Architecture, Battle Command/Comms	C/TBD	General Dynamics Sterling Heights, MI/To Be Determined	12.020	0.000		0.000		0.000		0.000	Continuing	Continuing	0
Transmission - Integral Generator	C/TBD	Allison Transmission Indianapolis, IN	0.000	0.000		4.200		0.000		4.200	Continuing	Continuing	0
Ground Combat Systems (GCS) Open Architecture Electronic Enhancements	С	Curtis Wright Roseland NJ	0.000	0.000		0.000		0.000		0.000	Continuing	Continuing	0
Current Force Common Active Protection System Radar	C/TBD	TBD Location could not be determined.	0.000	1.600		0.000		0.000		0.000	Continuing	Continuing	0
Combat Vehicle Elctrrical Power - 21st Century (CVEP-21)	C/CPFF	Allison Transmission Indianapolis, IN	0.000	3.120		0.000		0.000		0.000	Continuing	Continuing	0
Vibration Management Enhancement Program	C/TBD	TBD	0.000	2.400		0.000		0.000		0.000	Continuing	Continuing	0

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

2040: Research, Development, Test & Evaluation, Army

PE 0203735A: Combat Vehicle Improvement

330: ABRAMS TANK IMPROVE PROG

BA 7: Operational Systems Development

Programs

Product Development (\$ in Millions)

				FY	2010	FY Ba	2011 ase	FY 2	2011 CO	FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Location could not be determined.											
		Subtotal	31.950	101.646		100.829		0.000		100.829			0.000

Remarks

Contractor, award date and type of contract is to be determined (TBD) due to ongoing development of acquisition strategy.

Support (\$ in Millions)

,													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	С	Various Location could not be determined.	5.068	6.500		6.500		0.000		6.500	Continuing	Continuing	0
		Subtotal	5.068	6.500		6.500		0.000		6.500			0.000

Remarks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army **DATE:** February 2010 APPROPRIATION/BUDGET ACTIVITY **R-1 ITEM NOMENCLATURE** PROJECT 2040: Research, Development, Test & Evaluation, Army PE 0203735A: Combat Vehicle Improvement 330: ABRAMS TANK IMPROVE PROG

BA 7: Operational Systems Development

Programs

Test and Evaluation (\$ in Millions)

				FY 2010			FY 2011 Base		FY 2011 OCO				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advance Technology Preparation and Testing	С	Aberdeen Proving Ground MD; Yuma Proving Ground, AZ; White Sands Missile	7.000	0.150		0.150		0.000		0.150	Continuing	Continuing	0
		Subtotal	7.000	0.150		0.150		0.000		0.150			0.000

Remarks

	Total Prior Years Cost	FY 2010	FY 2	FY 2	-	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	44.018	108.296	107.479	0.000		107.479			0.000

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

2040: Research, Development, Test & Evaluation, Army

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0203735A: Combat Vehicle Improvement

Programs

PROJECT

330: ABRAMS TANK IMPROVE PROG

]	FY	2009	9	F	TY 2	2010	0]	FY 2	201	1]	FY 2	201	2	F	Y 2	201	3	I	FY	201	4	I	7 Y 2	201	5
	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
Material Development Decision						#																						
Increment 1						#																						
Preliminary Design Review							#																					
Milestone B							#																					
Critical Design Review										#																		
Prototype Testing								#	#	#	#	#	#	#	#	#												
Milestone C																	#											
First Unit Equipped																											#	
Increment 2																				#								
Milestone A							#																					
Preliminary Design Review - 2																#												
Milestone B - 2																	#											
Critical Design Review - 2																						#						

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Army	DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
2040: Research, Development, Test & Evaluation, Army	PE 0203735A: Combat Vehicle Improvement	330: <i>ABRAM</i>	AS TANK IMPROVE PROG
BA 7: Operational Systems Development	Programs		

Schedule Details

	St	art	En	d
Event	Quarter	Year	Quarter	Year
Material Development Decision	2	2010	2	2010
Increment 1	2	2010	2	2010
Preliminary Design Review	3	2010	3	2010
Milestone B	3	2010	3	2010
Critical Design Review	2	2011	2	2011
Prototype Testing	4	2010	4	2012
Milestone C	1	2013	1	2013
First Unit Equipped	3	2015	3	2015
Increment 2	4	2013	4	2013
Milestone A	3	2010	3	2010
Preliminary Design Review - 2	4	2012	4	2012
Milestone B - 2	1	2013	1	2013
Critical Design Review - 2	2	2014	2	2014

DATE: February 2010

-		<u> </u>								•		
APPROPRIATION/BUDGET ACT 2040: Research, Development, Test &		NOMENCLA A: Combat Ve		ement	PROJECT 371: BRADL	PROJECT 371: BRADLEY BASE SUSTAIN						
BA 7: Operational Systems Development						•						
COST (\$ in Millions)	FY 2011					FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
371: BRADLEY BASE SUSTAIN	97.002	0.000	97.002	54.269	0.000	0.000	0.000	Continuing	Continuing			
Quantity of RDT&E Articles												

A. Mission Description and Budget Item Justification

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army

The Bradley Fighting Vehicle System (BFVS) improvements will provide the Heavy Brigade Combat Team (HBCT) with an improved capability to effectively fight in current and future environments. The BFVS improvements will buyback the A3 performance to meet Operational Requirements Document standards and maintain combat over match through a combination of enhanced survivability, mobility and situational awareness subsystems. Improved survivability will leverage and build on lessons learned from Operation Iraqi Freedom to ensure protection against current and future threats in both asymmetric and full spectrum warfare. This provides the Bradley fleet the capability to complement the Abrams Tank and Ground Combat Vehicle in the HBCT. This also provides the HBCT commander with the necessary capabilities to employ the Bradley and Abrams in a combined arms approach as well as appropriate mounted and dismounted schemes of maneuver on current and future battlefields.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Program #1	62.500	34.800	77.102	0.000	77.102
Bradley A3 Block 2					
FY 2009 Accomplishments: FY 2009					
FY 2010 Plans: FY 2010					
FY 2011 Base Plans: FY 2011 Base					

APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development B. Accomplishments/Planned Program (\$ in Millions)	ovement	PROJECT 371: BRADL			
B. Accomplishments/Planned Program (\$ in Millions)			EY BASE SUS	STAIN	
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 OCO Plans: FY 2011 OCO					
Program #2 Support Costs FY 2009 Accomplishments: FY 2010 Plans: FY 2010 Base Plans: FY 2011 Base FY 2011 OCO Plans: FY 2011 OCO	37.487	50.831	19.900	0.000	19.900
Program #3 Test Support FY 2009 Accomplishments: FY 2009 FY 2010 Plans: FY 2010	0.000	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army							DATE: Febr	uary 2010				
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 7: Operational Systems Development		R-1 ITEM NO PE 0203735A Programs			PROJECT 371: BRADLEY BASE SUSTAIN							
B. Accomplishments/Planned Program (\$ in Millions)												
•					FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total			
FY 2011 Base Plans: FY 2011 Base												
FY 2011 OCO Plans: FY 2011 OCO												
Program #4					0.000	2.466	0.000	0.000	0.000			
Small Business Innovative Research/Small Business Technol	ogy Transfer Pr	ograms (SBIF	R/STTR)									
FY 2009 Accomplishments: FY 2009												
FY 2010 Plans: FY 2010												
FY 2011 Base Plans: FY 2011 Base												
FY 2011 OCO Plans: FY 2011 OCO												
	Accomp	olishments/Pla	nned Progran	ns Subtotals	99.987	88.097	97.002	0.000	97.002			
C. Other Program Funding Summary (\$ in Millions)												
Line Item FY 2009 FY 2010 • Ord. #1: G80718 Bradley Program 394.800 0.000 • Ord. #2: GZ2400 Bradley Program 1,095.588 768.332 (MOD) (MOD) (MOD) (MOD)	0.000	FY 2011 OCO 0.000 0.000	FY 2011 <u>Total</u> 0.000 215.133	FY 2012 0.000 0.000	FY 2013 0.000 44.292	0.000	FY 2015 0.000 46.433	Cost To Complete 0 122.800	Total Cost 394.800 2,339.383			

Exhibit R-2A, RDT&E Project Justification: PB 2011 Army	DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT	
2040: Research, Development, Test & Evaluation, Army	PE 0203735A: Combat Vehicle Improvement	371: <i>BRADL</i>	LEY BASE SUSTAIN
BA 7: Operational Systems Development	Programs		

C. Other Program Funding Summary (\$ in Millions)

			FY 2011	FY 2011	FY 2011					Cost To	
<u>Line Item</u>	FY 2009	FY 2010	Base	<u>oco</u>	<u>Total</u>	FY 2012	FY 2013	FY 2014	FY 2015	Complete	Total Cost
• Ord. #3: GZ2500 Bradley Training	10.954	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	15.606

Devices (MOD)

D. Acquisition Strategy

The Acquisition Strategy for the Bradley A3 Block 2 Program will be addressed as part of the Materiel Development Decision in 3rd quarter FY2010

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

R-1 ITEM NOMENCLATURE

PROJECT

2040: Research, Development, Test & Evaluation, Army

PE 0203735A: Combat Vehicle Improvement

371: BRADLEY BASE SUSTAIN

BA 7: Operational Systems Development

Programs

Product Development (\$ in Millions)

				FY	2010	FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Bradley A3 Block 2 Program	С	To be determined Location could not be determined.	0.000	34.800		77.102		0.000		77.102	Continuing	Continuing	0
Electronic System Modeling	SS/FFP	Curtiss Wright Santa Clarita, CA	1.408	0.000		0.000		0.000		0.000	Continuing	Continuing	0
Vehicle Health Management	SS/FFP	DRS TEM Huntsville, AL	4.000	0.000		0.000		0.000		0.000	Continuing	Continuing	0
		Subtotal	5.408	34.800		77.102		0.000		77.102			0.000

Remarks

Support (\$ in Millions)

11 \.	*												
				FY	2010	FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO	С	PMO Warren, MI	0.000	6.500		6.500		0.000		6.500	Continuing	Continuing	0
Contractor Engineering Support	SS/FFP	BAE San Jose, CA	0.000	40.597		0.000		0.000		0.000	Continuing	Continuing	0
Government Engineering Support	С	Various sites Location could not be determined.	0.000	6.200		13.400		0.000		13.400	Continuing	Continuing	0
		Subtotal	0.000	53.297		19.900		0.000		19.900			0.000

					UNCL	ASSILI	E D						
Exhibit R-3, RDT&E	Project Cos	t Analysis: PB 20	11 Army							DA	TE: Februa	ıry 2010	
APPROPRIATION/B 2040: Research, Develo BA 7: Operational Syst	opment, Test	& Evaluation, Arr	ny			35A: <i>Com</i>	NCLATURE bat Vehicle Im	provement		OJECT : BRADLEY	BASE SUST	`AIN	
Support (\$ in Millions	s)		Г				T			T	1		
				FY	Z 2010		Y 2011 Base		2011 CO	FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date		Cost To Complete	Total Cost	Target Value of Contract
Remarks													
			Total Prior Years Cost	FY	Z 2010		Y 2011 Base		2011 CO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Project Cost Totals	5.408	88.097	7	97.00	2	0.000		97.002			0.000
Remarks													

Exhibit R-4, RDT&E Schedule Profile: PB 2011 Army

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

2040: Research, Development, Test & Evaluation, Army

BA 7: Operational Systems Development

R-1 ITEM NOMENCLATURE

PE 0203735A: Combat Vehicle Improvement

Programs

PROJECT

371: BRADLEY BASE SUSTAIN

	FY 2009			FY 2010			FY 2011			FY 2012			FY 2013			FY 2014			FY 2015									
	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
Bradley A3 Block 2 Program			#	#	#	#	#	#	#	#	#	#	#	#	#													
Materiel Development Decision						#																						
Milestone A							#																					
Technical Development								#	#	#	#	#	#	#	#													
System Requirements Review									#																			
System Functional Review												#																
Milestone B																#												

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Army	DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT		
2040: Research, Development, Test & Evaluation, Army	PE 0203735A: Combat Vehicle Improvement	371: <i>BRADL</i>	EY BASE SUSTAIN	
BA 7: Operational Systems Development	Programs			

Schedule Details

	Start			ıd
Event	Quarter	Year	Quarter	Year
Bradley A3 Block 2 Program	3	2009	3	2012
Materiel Development Decision	2	2010	2	2010
Milestone A	3	2010	3	2010
Technical Development	4	2010	3	2012
System Requirements Review	1	2011	1	2011
System Functional Review	4	2011	4	2011
Milestone B	4	2012	4	2012