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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Army									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603639A: Tank and Medium Caliber Ammunition							
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	39.590	33.757	42.183	0.000	42.183	118.548	102.084	51.522	7.778	Continuing	Continuing
652: ADVANCED KINETIC ENERGY (AKE) 120MM CARTRIDGE	0.000	33.757	42.183	0.000	42.183	53.504	42.512	0.000	0.000	Continuing	Continuing
656: FCS Mounted Combat System (MCS) Ammunition	39.590	0.000	0.000	0.000	0.000	65.044	59.572	51.522	7.778	Continuing	Continuing
A. Mission Description and Budget Item Justification											
The Tank and Medium-caliber Ammunition (TMA) Program Element (PE) encompasses a comprehensive program to develop, rapidly transition to production, and field advanced tank, medium caliber, and other munitions. These programs will ensure continued battlefield overmatch and lethality of U.S. maneuver forces despite worldwide development and proliferation of enhanced armored vehicle protection technologies. To achieve this, TMA will identify and develop promising technologies through competitive development and streamlined acquisition procedures. All ammunition development funds within this PE are managed to facilitate transitions between phases, avoid administrative delays, and focus resources on the most promising areas.FY 2011 funding supports the completion of Engineering and Manufacturing Development (EMD) Phase I and Phase II initiation of the Advanced Kinetic Energy (AKE) cartridge, or model number M829E4. The AKE round is an unguided, direct fire, platform-delivered Line of Sight (LOS) munition that will provide fast response lethality to rapidly destroy threat targets with Explosive Reactive Armor (ERA) and Active Protection Systems (APS) in the close fight from 0-2km (T) and to 0-4km (O). The AKE will be compatible with both 120mm Current Force Abrams Main Battle Tank and future 120mm platforms.Funding in FY 2012 on Project 656 supports the initiation of Phase I of Engineering and Maunufacturing Development (EMD) for the Advanced Multi-Purpose (AMP) cartridge program. The AMP is a platform delivered, multi-purpose cartridge that will provide the Abrams Tank and future 120mm platforms with the capability to defeat a multitude of targets throughout the joint battle space. The AMP will be optimized for use in urban environments in direct support of infantry. It will provide a new wall-breaching capability and the ability to engage and defeat dismounted enemy forces such as Anti-Tank Guided Missile teams at ranges from .3-2km (T); 0-4.5km (O). The AMP cartridge is a next generation multi-purpose round that will replace the M830 HEAT-MP-T, M830A1 HEAT MP-T, M1028 Canister, and M908 OR-T cartridges by consolidating the capabilities into a single round. The AMP round will utilize an airbursting, high explosive, fragmenting warhead with enhancements to achieve the multi-purpose capability.In FY 2010, the FCS Mounted Combat System (MCS) Ammunition was terminated due to restructuring of the MGVT portion of the FCS program and the refocusing to spin out FCS technologies faster to the IBCT.											

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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 0603639A: Tank and Medium Caliber Ammunition			
BA 4: Advanced Component Development & Prototypes (ACD&P)					
B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	40.731	33.934	42.426	0.000	42.426
Current President's Budget	39.590	33.757	42.183	0.000	42.183
Total Adjustments	-1.141	-0.177	-0.243	0.000	-0.243
• Congressional General Reductions		-0.177			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-1.141	0.000			
• Adjustments to Budget Years	0.000	0.000	-0.243	0.000	-0.243

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Army								<b>DATE:</b> February 2010			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>				<b>PROJECT</b> 652: <i>ADVANCED KINETIC ENERGY (AKE) 120MM CARTRIDGE</i>			
<b>COST (\$ in Millions)</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Base Estimate</b>	<b>FY 2011 OCO Estimate</b>	<b>FY 2011 Total Estimate</b>	<b>FY 2012 Estimate</b>	<b>FY 2013 Estimate</b>	<b>FY 2014 Estimate</b>	<b>FY 2015 Estimate</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
652: <i>ADVANCED KINETIC ENERGY (AKE) 120MM CARTRIDGE</i>	0.000	33.757	42.183	0.000	42.183	53.504	42.512	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles											
<b>A. Mission Description and Budget Item Justification</b> FY 2011 supports the completion of Phase I and the start of Phase II of the Advanced Kinetic Energy (AKE) cartridge Engineering and Manufacturing Development (EMD).The AKE round is a platform-delivered Line of Sight (LOS) munition that will provide capability for the current force's Heavy Brigade Combat Team's (HBCT) commander to conduct decisive operations and destroy current and future Main Battle Tanks (MBTs) with Explosive Reactive Armor (ERA) and Active Protection Systems (APS) at ranges from 0-2km (T) and 0-4km (O). The AKE will provide the capability to destroy and or neutralize the adversary armor and capabilities, at any given time or place, while minimizing fratricide and noncombatant casualties in a joint environment.The AKE is the next generation premier Kinetic Energy (KE) round and will replace the current Abrams KE round (M829A3). The AKE will provide lethal overmatch against designated threats throughout all combat operations, to include Military Operation in Urbanized Terrain (MOUT), mountain, and non-traditional battlefields. The increased performance against standard armor, ERA, and APS will allow for the use of fewer rounds and will increase survivability of the platform with faster engagement of follow-on targets.AKE will be compatible with both 120mm Current Force Abrams main battle tank and future 120mm platforms.											
<b>B. Accomplishments/Planned Program (\$ in Millions)</b>											
						<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>	
Program #1						0.000	30.542	2.000	0.000	2.000	
Phase I Engineering and Manufacturing Development (EMD)											
FY 2009 Accomplishments:											
FY 2009											
FY 2010 Plans:											
FY 2010											

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603639A: Tank and Medium Caliber Ammunition		PROJECT 652: ADVANCED KINETIC ENERGY (AKE) 120MM CARTRIDGE				
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 #2  Initial Performance Test  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO				0.000	2.270	0.000	0.000	0.000
Program #3  Demonstration Test  FY 2009 Accomplishments: FY 2009				0.000	0.000	3.250	0.000	3.250

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603639A: Tank and Medium Caliber Ammunition		PROJECT 652: ADVANCED KINETIC ENERGY (AKE) 120MM CARTRIDGE			
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 Phase II EMD  FY 2009 Accomplishments: FY 2009  FY 2010 Plans: FY 2010  FY 2011 Base Plans: FY 2011 Base  FY 2011 OCO Plans: FY 2011 OCO			0.000	0.000	36.933	0.000	36.933
Program #5 Small Business Innovative Research/Small Business Technology Transfer Program			0.000	0.945	0.000	0.000	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Army							<b>DATE:</b> February 2010				
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>			<b>R-1 ITEM NOMENCLATURE</b> PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>			<b>PROJECT</b> 652: <i>ADVANCED KINETIC ENERGY (AKE)</i> <i>120MM CARTRIDGE</i>					
<b>B. Accomplishments/Planned Program (\$ in Millions)</b>											
						<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>	
<i>FY 2009 Accomplishments:</i> FY 2009  <i>FY 2010 Plans:</i> FY 2010  <i>FY 2011 Base Plans:</i> FY 2011 Base  <i>FY 2011 OCO Plans:</i> FY 2011 OCO											
Accomplishments/Planned Programs Subtotals						0.000	33.757	42.183	0.000	42.183	
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<u>Line Item</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• Ord. #1: <i>PAA, E88106, MCS, Advanced Kinetic Energy (AKE)</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	30.182	36.788	Continuing	Continuing
<b>D. Acquisition Strategy</b>											
<p>The M829E4, Advanced Kinetic Energy (AKE) cartridge is at Technology Readiness Level 6 (TRL6). The Milestone B Decision was made in 4Q FY 2009, and the program entered Engineering and Manufacturing Development (EMD) in FY 2010. EMD consists of two phases; the Phase I contracts will be awarded in 2Q FY 2010 and the Phase II contract will be awarded in 2Q FY 2011. During Phase I (12-15 months), the Government will award two separate Cost Plus Fixed Fee (CPFF) contracts culminating in a demonstration test and competitive source selection to down-select to one contractor for the 33 month Cost Plus Incentive Fee (CPIF) Phase II. The down-select will be based on the demonstrated performance of the cartridge design, proposed systems engineering and management approach for Phase II, and the total program cost estimate for each contractor at the time of the demonstration test. The selected contractor will be awarded the option to continue EMD Phase II until its conclusion in FY 2013. Upon successful completion of Milestone C, a Low Rate Initial Production (LRIP) option will be awarded to the EMD Phase II contractor in FY 2013. The contract will also contain options for two additional production years. All production options will be Firm Fixed Price (FFP).</p>											

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Army		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	R-1 ITEM NOMENCLATURE PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>	PROJECT 652: <i>ADVANCED KINETIC ENERGY (AKE) 120MM CARTRIDGE</i>

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.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Army										DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603639A: Tank and Medium Caliber Ammunition				PROJECT 652: ADVANCED KINETIC ENERGY (AKE) 120MM CARTRIDGE					
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
TBS (Phase I)	C/CPFF	TBS Location could not be determined.	0.000	12.000		1.000		0.000		1.000	Continuing	Continuing	0
TBS (Phase I) - 2	C/CPFF	TBS Location could not be determined.	0.000	12.000		1.000		0.000		1.000	Continuing	Continuing	0
PM-MAS	C	Picatinny Arsenal NJ	0.000	1.013		0.774		0.000		0.774	Continuing	Continuing	0
TBS (Phase II)	C/CPIF	TBS Location could not be determined.	0.000	0.000		33.000		0.000		33.000	Continuing	Continuing	0
Subtotal			0.000	25.013		35.774		0.000		35.774			0.000
Remarks													
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
ARDEC	C	Picatinny Arsenal NJ	0.000	3.770		2.602		0.000		2.602	Continuing	Continuing	0
Army Research Lab	C	APG MD	0.000	0.500		0.800		0.000		0.800	Continuing	Continuing	0

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2011 Army</b>											<b>DATE:</b> February 2010		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>				<b>PROJECT</b> 652: <i>ADVANCED KINETIC ENERGY (AKE) 120MM CARTRIDGE</i>					
<b>Support (\$ in Millions)</b>													
				<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Miscellaneous	C	TBS Location could not be determined.	0.000	0.409		0.000		0.000		0.000	Continuing	Continuing	0
JMC	C	Rock Island IL	0.000	0.600		0.000		0.000		0.000	Continuing	Continuing	0
Watervliet	C	Troy NY	0.000	0.250		0.000		0.000		0.000	Continuing	Continuing	0
<b>Subtotal</b>			0.000	5.529		3.402		0.000		3.402			0.000
<b>Remarks</b>													
<b>Test and Evaluation (\$ in Millions)</b>													
				<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Yuma Proving Ground	C	Yuma AZ	0.000	1.100		1.100		0.000		1.100	Continuing	Continuing	0
Aberdeen Proving Ground	C	APG MD	0.000	0.550		0.750		0.000		0.750	Continuing	Continuing	0
Army Research Lab	C	APG MD	0.000	0.500		1.157		0.000		1.157	Continuing	Continuing	0
ATEC	C	APG MD	0.000	0.120		0.000		0.000		0.000	Continuing	Continuing	0

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2011 Army</b>											<b>DATE:</b> February 2010		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 2040: <i>Research, Development, Test &amp; Evaluation, Army</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603639A: <i>Tank and Medium Caliber Ammunition</i>				<b>PROJECT</b> 652: <i>ADVANCED KINETIC ENERGY (AKE) 120MM CARTRIDGE</i>					
<b>Test and Evaluation (\$ in Millions)</b>													
				<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Subtotal</b>			0.000	2.270		3.007		0.000		3.007			0.000
<b>Remarks</b>													
<b>Management Services (\$ in Millions)</b>													
				<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
SBIR/STTR	C	Nothing entered for Activity and Location. Location could not be determined.	0.000	0.945		0.000		0.000		0.000	Continuing	Continuing	0
<b>Subtotal</b>			0.000	0.945		0.000		0.000		0.000			0.000
<b>Remarks</b>													
			<b>Total Prior Years Cost</b>	<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			0.000	33.757		42.183		0.000		42.183			0.000
<b>Remarks</b>													

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Army																				DATE: February 2010					
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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Army			DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603639A: Tank and Medium Caliber Ammunition		PROJECT 652: ADVANCED KINETIC ENERGY (AKE) 120MM CARTRIDGE	
Schedule Details				
	Start		End	
Event	Quarter	Year	Quarter	Year
Milestone B	3	2009	3	2009
Phase I Contract Award	1	2010	1	2010
Engineering and Manufacturing Development (EMD)	1	2010	3	2013
Engineering and Manufacturing Development (EMD) Phase I	1	2010	1	2011
Integrated Baseline Review (IBR)	2	2010	2	2010
System Functional Review (SFR)	2	2010	2	2010
Initial Performance Test	2	2010	3	2010
Preliminary Design Review (PDR)	4	2010	4	2010
Demonstration Testing	3	2010	1	2011
Phase II Contract Award	1	2011	1	2011
Engineering and Manufacturing Development (EMD) Phase II	2	2011	3	2013
Integrated Baseline Review (IBR) - 2	2	2011	2	2011
Design Evaluation Testing	1	2012	3	2012
Developmental Test & Evaluation (DT&E)	3	2012	3	2013
Milestone C	3	2013	3	2013

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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
656: FCS Mounted Combat System (MCS) Ammunition	39.590	0.000	0.000	0.000	0.000	65.044	59.572	51.522	7.778	Continuing	Continuing
Quantity of RDT&E Articles											
A. Mission Description and Budget Item Justification											
In FY 2010, the FCS Mounted Combat System (MCS) Ammunition is terminated due to restructuring of the Manned Ground Vehicle (MGV) portion of the FCS program and the refocusing of spin out FCS technologies faster to the IBCT. The funding is zeroed out starting FY 2010. Funding in FY 2012-FY 2015 will be moved to Project 654, Advanced Multi-Purpose (AMP) program.											
B. Accomplishments/Planned Program (\$ in Millions)											
							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Program #1							18.522	0.000	0.000	0.000	0.000
Mid Range Munition (MRM) Engineering and Manufacturing Development (EMD) activities. Program Management activities consist of risk and Unit Production Price (UPP) management, finance/budgeting efforts, scheduling efforts, configuration management, and supply chain management. Systems Engineering activities consist of systems architecture efforts, functional analysis efforts, requirements allocation, interface definition, system design and performance efforts, system safety, and reliability/availability. Cartridge design activities include overall cartridge development/engineering activities. These are overall design architecture, airframe design, sensor suite design, guidance and electronics, lethality, and software. System Test and Evaluation activities include test architecture development, test facilities development and support, test equipment development/manufacture, engineering lab design, engineering field design, and test support. System Test and Evaluation will include Cartridge Integration Testing and Guided Flight Testing along with testing to include Live Fire Test and Evaluation (LFT&E) and armor/lethality testing. Manufacturing activities include manufacturing architecture development, material management and pilot production line development.											

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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 #2 EMD Initial Cartridge Integration Test units (Qty=3) Leveraged use of S&T hardware.			0.056	0.000	0.000	0.000	0.000
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			0.225	0.000	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Army				DATE: February 2010				
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603639A: Tank and Medium Caliber Ammunition		PROJECT 656: FCS Mounted Combat System (MCS) Ammunition				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
EMD Initial Cartridge Integration Test  <i>FY 2009 Accomplishments:</i> FY 2009  <i>FY 2010 Plans:</i> FY 2010  <i>FY 2011 Base Plans:</i> FY 2011 Base  <i>FY 2011 OCO Plans:</i> FY 2011 OCO								
Program #4  EMD Software Seeker Integration  <i>FY 2009 Accomplishments:</i> FY 2009  <i>FY 2010 Plans:</i> FY 2010  <i>FY 2011 Base Plans:</i> FY 2011 Base  <i>FY 2011 OCO Plans:</i> FY 2011 OCO				8.691	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Program #5		3.099	0.000	0.000	0.000	0.000
EMD Producibility						
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		7.597	0.000	0.000	0.000	0.000
EMD Prototype Manufacture (various components, subsystems, systems and assemblies, inspections)						
FY 2009 Accomplishments:						
FY 2009						
FY 2010 Plans:						
FY 2010						
FY 2011 Base Plans:						
FY 2011 Base						
FY 2011 OCO Plans:						
FY 2011 OCO						

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Army			DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603639A: Tank and Medium Caliber Ammunition	PROJECT 656: FCS Mounted Combat System (MCS) Ammunition			
B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Program #7	1.400	0.000	0.000	0.000	0.000
Program Termination Costs					
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	0.000	0.000	0.000	0.000
Small Business Innovative Research/Small Business Technology Transfer Programs					
FY 2009 Accomplishments:					
FY 2009					
FY 2010 Plans:					
FY 2010					
FY 2011 Base Plans:					
FY 2011 Base					
FY 2011 OCO Plans:					
FY 2011 OCO					

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Army									DATE: February 2010		
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B. Accomplishments/Planned Program (\$ in Millions)											
							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Accomplishments/Planned Programs Subtotals							39.590	0.000	0.000	0.000	0.000
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• Ord. #1: 0604646A F72 Non Line of Sight - Launch System	208.009	88.660	0.000	0.000	83.402	60.572	28.396	0.000	0.000	0	542.740
• Ord. #2: 0604647A F58 Non Line of Sight - Cannon	89.545	58.216	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	147.761
• Ord. #3: 0604660A FC1 FCS Manned Grd Vehicles & Common Grd Vehicle Components	782.664	368.557	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	1,151.221
• Ord. #4: 0604661A FC2 FCS System of Systems Engr & Program Management	1,414.756	1,067.191	0.000	0.000	783.043	818.606	851.637	881.113	935.200	Continuing	Continuing
• Ord. #5: 0604662A FC3 FCS Reconnaissance (UAV) Platforms	57.190	68.701	0.000	0.000	9.006	4.425	1.292	2.677	0.000	Continuing	Continuing
• Ord. #6: 0604663A FC4 FCS Unmanned Ground Vehicles	102.976	125.616	0.000	0.000	42.517	26.085	3.463	0.000	0.000	Continuing	Continuing
• Ord. #7: 0604664A FC5 FCS Unattended Ground Sensors	17.011	26.919	0.000	0.000	16.337	0.000	0.000	0.000	0.000	Continuing	Continuing
• Ord. #8: 0604665A FC6 FCS Network Hardware & Software	556.301	749.182	0.000	0.000	621.634	587.716	594.304	595.283	597.405	Continuing	Continuing
• Ord. #9: 0604666A FC7 FCS Spin Out Tech/Capability Integ	111.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• Ord. #10: WTCV G86100 Future Combat System	154.127	0.000	0.000	0.000	693.479	2,228.327	6,032.684	7,083.614	9,087.860	0	233.059
	67.268	0.000	0.000	0.000	539.087	851.783	894.734	1,274.240	1,245.538	0	68.638

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Army							DATE: February 2010				
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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• Ord. #11: WTCV G86200 FCS Spin Out											
D. Acquisition Strategy											
The Mid Range Munition (MRM) Program completed the Technology Development phase. MRM achieved Design Requirements in both autonomous and designated firing modes, and transitioned (Milestone B) to Engineering and Manufacturing Development (EMD) at the end of FY 2007. There were two competing technical concepts by Raytheon Inc. and Alliant Tech Systems. A single contractor, Raytheon with one design, was selected based on a full and open competition in the first quarter of FY 2008. The MRM schedule coincides with the Mounted Combat System's development schedule, supporting the Future Combat System (FCS) Initial Operational Capability (IOC) milestone. The EMD effort will integrate MRM into the Mounted Combat System. This strategy will deliver a proven, fully capable multi-mode munition that will meet the FCS MCS requirements and support the FCS IOC milestone.In FY 2010, the MRM is terminated due to restructuring of the MGV portion of the FCS program and the refocusing of spin out FCS technologies faster to the IBCT.											
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.											

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