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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603801A: <i>Aviation - Adv Dev</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	13.177	8.355	7.107	-	7.107	8.510	8.331	7.736	7.626	Continuing	Continuing
B32: <i>ADV MAINT CONCEPTS/EQ</i>	13.177	8.355	7.107	-	7.107	8.510	8.331	7.736	7.626	Continuing	Continuing

Note

FY 10: \$4,974K for Vectored Thrust Ducted Propeller.

A. Mission Description and Budget Item Justification

This PE provides advanced development aviation support of tactical programs associated with air mobility, advanced maintenance concepts and equipment, and Aircrew Integrated Systems (ACIS). This program demonstrates the feasibility and maturity of new technology and gains understanding in order to evaluate utility of this technology to expedite delivery of new capabilities for Army Aviation rotary wing assets. Additionally, the Aviation Ground Support Equipment (AGSE) assets enhance the functionality of current and future aircraft by improving the effectiveness of maintenance and servicing operations through validating new maintenance concepts to improve man and machine interfaces, improve aircraft maintenance processes, reduce Operation and Support (O&S) cost and insert diagnostics technologies to replace obsolete and unsupportable equipment.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	8.492	8.355	7.704	-	7.704
Current President's Budget	13.177	8.355	7.107	-	7.107
Total Adjustments	4.685	-	-0.597	-	-0.597
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.289	-			
• Adjustments to Budget Years	-	-	-0.597	-	-0.597
• Other Adjustments 1	4.974	-	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Army								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603801A: Aviation - Adv Dev				PROJECT B32: ADV MAINT CONCEPTS/EQ			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
B32: ADV MAINT CONCEPTS/EQ	13.177	8.355	7.107	-	7.107	8.510	8.331	7.736	7.626	Continuing	Continuing
Quantity of RDT&E Articles											
Note Not applicable for this item.											
A. Mission Description and Budget Item Justification This Project provides advanced development aviation support of programs that include advanced maintenance concepts and equipment. The FY 2012 budget request funds Aviation Advanced Development which supports Aviation Ground Support Equipment development prototypes that will enhance the functionality of current and future aircraft by improving the effectiveness of maintenance and servicing operations through validating new maintenance concepts to improve man and machine interfaces, improve aircraft maintenance processes, reduce Operation and Support (O&S) costs, and insert diagnostics technologies to replace obsolete and unsupportable equipment. This program provides for development of rapid battle repair procedures, tools development to speed the return of aircraft to a full mission status, and development of new equipment for aerial recovery of damaged aircraft. Included in this program are projects such as: diagnostics/prognostic monitoring systems, redesign and development of the modular Aviation Ground Power Unit (AGPU), Aviation Light Utility Mobile Maintenance Cart (ALUMMC), Aviation - Sets, Kits, Outfits and Tools (A-SKOT), Battle Damage Assessment and Repair (BDAR), Flexible Engine Diagnostic System (FEDS), Hand Held Fire Extinguisher (HHFE), Non-Destructive Test Equipment System (NDTE), Standard Aircraft Towing Systems (SATS), Unit Maintenance Aerial Recovery Kit (UMARK), and development support for tools needed to provide maintenance support to modernized/future force aircraft.											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2010	FY 2011	FY 2012	
Title: Aviation Ground Power Unit (AGPU) Articles: Description: Aviation Ground Power Units provide the capability of meeting Army helicopter servicing requirements into the next decade. FY 2010 Accomplishments: Hydraulic Module Phase I re-design, completion of manifold block erosion analysis and testing. FY 2011 Plans: Analysis and prototype of hydraulic pump disengage mechanism and hydraulic module re-design. FY 2012 Plans: Complete Hydraulic Module.								0.615	1.395	0.618	
								0	0		
Title: Aviation Light Utility Mobile Maintenance Cart (ALUMMC)								-	0.705	0.536	

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
<div>Articles:</div> <div>Description: Aviation Light Utility Mobile Maintenance Cart will enhance mission performance of current forces by reducing an intensive manpower and logistics burden imposed on Army Aviation Units.</div> <div>FY 2011 Plans: Test and evaluation of products, developmental and operational test plans, test and evaluation master plans; site determination to conduct required test events and procuring product samples.</div> <div>FY 2012 Plans: Finalization of product evaluation and operational test plans.</div>			0	
<div>Title: Aviation - Sets, Kits, Outfits and Tools (A-SKOT)</div> <div>Articles:</div> <div>Description: Aviation - Sets, Kits, Outfits and Tools provides standardized tools, kits and outfits which meet transformation modularity, flexibility and mobility requirements for repair of rotary wing aircraft during combat, contingency and training operations.</div> <div>FY 2010 Accomplishments: Aviation - Sets, Kits, Outfits and Tools provides standardized tools, kits and outfits which meet transformation modularity, flexibility and mobility requirements for repair of rotary wing aircraft during combat, contingency and training operations</div> <div>FY 2011 Plans: Develop Acquisition Strategy, Life Cycle Sustainment Plan, Acquisition Program Baseline, and System Engineering Plans for the Aviation Maintenance Company Capability (AMCC).</div> <div>FY 2012 Plans: Develop Operational Test Plan, Test and Evaluation Master Plan; determine test site, procure production samples, and Environmental, Safety, and Occupational Health (ESOH) testing for the Aviation Maintenance Company Capability (AMCC).</div>		4.974 0	1.117 0	3.360
<div>Title: Battle Damage Assessment and Repair (BDAR) Block II</div> <div>Articles:</div> <div>Description: Battle Damage Assessment Repair Block II provides damage assessment and rapid repair to aviation aircraft.</div> <div>FY 2010 Accomplishments:</div>		0.100 0	0.075 0	0.050

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2010	FY 2011	FY 2012
Composite Kit Development and Demonstration to include systems engineering, logistics support planning and documentation required to design, develop and fabricate a Composite Kit. FY 2011 Plans: Continue Composite Kit Development and Demonstration Testing. FY 2012 Plans: Complete Composite Kit Development and Demonstration Testing.					
Title: Flexible Engine Diagnostics System (FEDS) Description: Flexible Engine Diagnostics System is a Turboshaft Engine Test Stand that verifies flight readiness/safety of engines removed from aircraft for maintenance. This test stand supports the CH-47, AH-64 and UH-60 aviation aircraft. FY 2010 Accomplishments: Reliability analysis, prototype build, testing, software development and modernization. FY 2011 Plans: Completion of the modernization, development and qualification program.			3.176 0	0.400 0	-
Title: Hand Held Fire Extinguisher (HHFE) Description: The Hand Head Fire Extinguisher is being reviewed to find a replacement for the Halon 1301 agent currently fielded on Aviation Rotary Wing aircraft. FY 2010 Accomplishments: Tested four agents to optimize the replacement of the existing Halon 1301. FY 2011 Plans: Test FM-200 mixed with sodium bicarbonate.			1.950 0	0.830 0	-
Title: Non-Destructive Test Equipment (NDTE) Description: Non-Destructive Test Equipment provides Army Aviation Maintenance units with an electronic test instrument to inspect aircraft components and structures without complete disassembly or removal of components from the aircraft. FY 2010 Accomplishments:			0.404 0	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2010	FY 2011	FY 2012
Researched a Computed Radiography Scanning System designed to significantly reduce inspection time and radiation levels associated with film radiography. A Product Item Description, Computed Radiography Technical Capability Assessment Report, X-Ray Source and Ancillary Equipment Technology and Safety Assessment Reports were developed.					
Title: Standard Aircraft Towing System (SATS) Description: Standard Aircraft Towing System fills the need for a standard aircraft towing system that has the capability to reposition all U.S. Army rotary wing aircraft. FY 2010 Accomplishments: Testing to determine if CABS should be included on the existing Standard Aircraft Towing System,			0.120 0	-	-
Title: Shop Equipment Contact Maintenance (SECM) Description: Shop Equipment Contact Maintenance provides the combat maintainer a contact maintenance vehicle with containerized tools/spares/modules for repair capability on aircraft. FY 2010 Accomplishments: Developed and tested two SECM production representative units. FY 2011 Plans: Development and testing of an export power system that will meet Phase II power requirements.			0.026 0	1.130 0	-
Title: Unit Maintenance Aerial Recovery Kit (UMARK) Description: Unit Maintenance Aerial Recovery Kit provides Aviation Support Company and Aviation Maintenance Company units with the ability to quickly rig crash-damaged non-flyable modernized aircraft or aircraft undergoing maintenance for evacuation. FY 2010 Accomplishments: Modeling & Simulation effort for alternative rigging procedures and completion of the development of UH-60M blade sleeve bags. FY 2011 Plans: Develop a test plan that will verify rigging procedures. FY 2012 Plans:			0.548 0	1.398 0	1.199

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011	FY 2012
Conduct ground and flight testing verification.				
Title: Management Support Services Articles: Description: Management Support Services in Support of the Aviation Ground Support Equipment Product Management Office. FY 2010 Accomplishments: Management Support Services. FY 2011 Plans: Management Support Services. FY 2012 Plans: Management Support Services.		0.379 0	0.395 0	0.385
Title: Technical Engineering Services Articles: Description: Technical Engineering Services in support of Aviation Ground Support Equipment Product Management Office. FY 2010 Accomplishments: Technical Engineering Services. FY 2011 Plans: Technical Engineering Services. FY 2012 Plans: Technical Engineering Services.		0.389 0	0.464 0	0.482
Title: RDTE Project Test Support Articles: Description: RDTE Project Test Support for the Aviation Ground Support Equipment Product Management Office FY 2010 Accomplishments: RDTE Project Test Support. FY 2011 Plans:		0.206 0	0.446 0	0.477

UNCLASSIFIED

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2010	FY 2011	FY 2012
RDTE Project Test Support.						
FY 2012 Plans: RDTE Project Test Support.						
Title: Small Business Innovative Research (SBIR)/Small Business Technology Transfer Programs (STTR) Description: SBIR/STTR FY 2010 Accomplishments: SBIR/STTR				Articles: 0.290 0	-	-
Accomplishments/Planned Programs Subtotals				13.177	8.355	7.107

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• Aircraft Procurement, Army(APA) SSN: <i>Aviation Ground Support Equipment, SSN AZ3520</i>	116.616	141.756	176.212		176.212		104.975	104.108	215.454	Continuing	Continuing

D. Acquisition Strategy
This project is an aggregate of advanced maintenance concepts related projects. While the detailed acquisition strategy varies from project to project, the general strategy for each individual project is to complete the development effort through Government test (developmental and operational). Program documentation for milestone decision is prepared, as appropriate, concurrently with the development effort.

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 2012 Army										DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603801A: Aviation - Adv Dev				PROJECT B32: ADV MAINT CONCEPTS/EQ					
Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Management Support Services	Various	AGSE, Redstone Arsenal, AL; Science Applications, Intl. Corp.,:San Diego, CA	-	0.395		0.385		-		0.385	Continuing	Continuing	Continuing
SBIR/STTR Reductions	Various	SBIR/STTR:Reductions	-	-		-		-		-	Continuing	Continuing	Continuing
Subtotal			-	0.395		0.385		-		0.385			
Remarks None													
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
AGPU	Various	AMRDEC, Redstone Arsenal, AL; RTTC, Redstone Arsenal, AL; UAH,:Huntsville, AL	10.236	1.395		0.618		-		0.618	Continuing	Continuing	0.000
ALUMMC	TBD	AATD, Ft. Eustis VA, ATC,:Aberdeen Proving Ground, MD	-	0.705		0.536		-		0.536	Continuing	Continuing	0.000
BDAR BLOCK II	Various	AMRDEC,:Redstone Arsenal AL	0.530	0.075		0.050		-		0.050	Continuing	Continuing	0.000
A-SKOT	Various	AMRDEC, Redstone Arsenal, AL; BELZON,:Huntsville, AL	2.203	1.117		3.360		-		3.360	Continuing	Continuing	Continuing
FEDS	Various	AMRDEC, Redstone Arsenal, AL; RTTC, Redstone Arsenal, AL; Gleason Research,:Huntsville, AL	3.379	0.400		-		-		-	Continuing	Continuing	0.000
HHFE	Various		2.255	0.830		-		-		-	Continuing	Continuing	0.000

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army										DATE: February 2011			
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Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
		ATC, Aberdeen Proving Ground, MD; AMCOM, G-4,:Redstone Arsenal, AL												
NDTE	Various	AMRDEC,Redstone Arsenal, AL RTTC,:Redstone Arsenal, AL	-	-		-		-		-		Continuing	Continuing	0.000
SATS	Various	AMCOM, Redstone Arsenal, AL; AATD,:Ft. Eustis, VA	2.646	-		-		-		-		Continuing	Continuing	0.000
SECM	Various	TACOM, Detroit MI; ATEC, Redstone Arsenal, AL; JVYS,:Huntsville, AL	4.709	1.130		-		-		-		Continuing	Continuing	0.000
UMARK	Various	AMRDEC, Redstone Arsenal, AL; UAH, Huntsville, AL; JVYS,:Huntsville, AL	2.063	1.398		1.199		-		1.199		Continuing	Continuing	0.000
Subtotal			28.021	7.050		5.763		-		5.763				

Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
Technical Engineering Services	Various	AATD,:Ft. Eustis, VA	6.088	0.464		0.482		-		0.482		Continuing	Continuing	Continuing
Subtotal			6.088	0.464		0.482		-		0.482				

Remarks None

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army											DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>				PROJECT B32: <i>ADV MAINT CONCEPTS/EQ</i>					

Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 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
RDT&E Project Test Support	Various	AEC,:Aberdeen Proving Ground, MD	0.748	0.446		0.477		-		0.477	Continuing	Continuing	Continuing
Subtotal			0.748	0.446		0.477		-		0.477			

Remarks None													
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	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	34.857	8.355		7.107		-		7.107			

Remarks											
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Army																DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY								R-1 ITEM NOMENCLATURE								PROJECT			
2040: Research, Development, Test & Evaluation, Army BA 4: Advanced Component Development & Prototypes (ACD&P)								PE 0603801A: Aviation - Adv Dev								B32: ADV MAINT CONCEPTS/EQ			

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 2040: <i>Research, Development, Test & Evaluation, Army</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603801A: <i>Aviation - Adv Dev</i>	PROJECT B32: <i>ADV MAINT CONCEPTS/EQ</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Aviation Light Utility Mobile Maintenance Cart	1	2011	3	2012
Non-Destructive Test Equipment	3	2010	3	2010

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