

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2005

BUDGET ACTIVITY

4 - Advanced Component Development and Prototypes

PE NUMBER AND TITLE

0603□2□A - Soldier Systems - Advanced Development

COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	0	10595	10443	18160	14329	15947	16139	0	85613
S51 AIRCREW INTEGRATED SYS AD	0	0	3374	3443	3525	3619	4044	4040	0	22045
S52 SOLDIER SUPPORT EQUIPMENT - AD	0	0	197	202	202	201	407	407	0	1616
S53 CLOTHING AND EQUIPMENT	0	0	7024	6798	9522	9039	6406	6605	0	45394
S54 SMALL ARMS IMPROVEMENT	0	0	0	0	4911	1470	5090	5087	0	16558

A. Mission Description and Budget Item Justification: This is a new Program Element (PE) which manages the soldier as a system in order to increase combat effectiveness, test and deliver tangible products that save soldiers' lives, and improve soldiers' quality of life. Starting in FY06, the following program elements and associated projects will be consolidated in this program element: PE 0603801 (Project DB45 ACIS Advanced Development); PE 0603474 (Project DC09 Soldier Support Equipment and Project D669 Clothing and Equipment); and PE 0603802 (Project AS2 Small Arms Improvements and Project AS3 Objective Individual Combat Weapons). The consolidation complies with the FY05 Appropriation Act provided by Congress. Combining these program elements into one common program element streamlines the management and efficiency of developing and testing soldier systems.

Project S51 (Aircrew Integrated Systems) was created upon transition from PE 0603801 (Project DB45 Aircrew Integrated System) in FY06. This project supports component development and prototyping of critical soldier support systems and other combat service support equipment that will improve unit sustainability and combat effectiveness. This project transitions from PE 0603801A.

Project S52 (Soldier Support Equipment) supports component development and prototyping of critical soldier support systems and other combat service support equipment that will improve unit sustainability and combat effectiveness. This project was created upon transition from PE 0603474 (Project DC09 Soldier Support Equipment) in FY06.

Project S53 (Clothing and Equipment) develops state-of-the-art technology to improve tactical and non-tactical clothing and individual equipment to enhance the lethality, survivability and mobility of the individual Soldier. This project was created upon transition from PE 0603747 (Project 669 Clothing and Equipment) in FY06.

Project S54 (Small Arms Improvement) - Funding profile starts in FY08. This project was created upon transition from PE 0603802 (Project AS2 Small Arms Improvements and Project AS3 Objective Individual Combat Weapon) in FY06.

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<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007
Previous President's Budget (FY 2005)	0	0	0
Current Budget (FY 2006/2007 PB)	0	10595	10443
Total Adjustments	0	10595	10443
Net of Program/Database Changes			
Congressional Program Reductions			
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer			
Adjustments to Budget Years		10595	10443

Adjustments to Budget Years - starting in FY06, several program elements were re-aligned and combined into this program element (PE 0603827 Soldier Systems) to streamline the management and efficiency of developing and testing soldier systems:

PE 0603801 (Project DB45 Aircrew Integrated Systems)

PE 0603474 (Project DC09 Soldier Support Equipment and Project D669 Clothing and Equipment)

PE 0603802 (Project AS2 Small Arms Improvements and Project AS3 Objective Individual Combat Weapon)

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BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes				PE NUMBER AND TITLE 0603□2□A - Soldier Systems - Advanced Development				PROJECT S51		
COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S51 AIRCREW INTEGRATED SYS AD	0	0	3374	3443	3525	3619	4044	4040	0	22045
<p><u>A. Mission Description and Budget Item Justification:</u> This project supports component development and prototyping of critical soldier support systems and other combat service support equipment that will improve unit sustainability and combat effectiveness. This project transitions from 0603801A.</p>										
<u>Accomplishments/Planned Program</u>							<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Concept exploration of pilot situational awareness and cognitive decision aiding tools.							0	0	1274	1050
Explore technology to upgrade environmental control and waste management systems.							0	0	500	500
Concept exploration of helmet technologies and helmet mounted devises.							0	0	1350	1475
Continue advanced component development of Air Warrior preplanned technology improvements.							0	0	250	418
Totals							0	0	3374	3443

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PROJECT

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, A PE 0603801A PROJ DB45 Adv Dev	7101	6176	0	0	0	0	0	0	0	13277
RDTE, A PE 0604801A PROJ DC45-EMD	3256	3239	0	0	0	0	0	0	0	6495
RDTE, A PE 0604601A PROJ S61-EMD	0	0	2248	2291	2523	2620	2706	2805	Continuing	Continuing
Aircraft Procurement, Army SSN AZ3110 - ACIS	32848	29694	29352	34821	42127	38873	56594	42268	Continuing	Continuing

C. Acquisition Strategy: Technologies developed under the System Integrator contract will integrate the Air Warrior (AW) Block 1 and 2 features with additional Block 3 capabilities. Specifically these Block 3 capabilities will include a fully compliant Modular Integrated Helmet and Display System (MIHDS), Chemical, Biological, Radiological, and Nuclear (CBRN) waste disposal system and upgrades to AW block 1 and 2 components as emerging technologies become available. The MIHDS helmet will provide a day heads up display, nuclear flash protection, external audio, don in flight CBRN protection and Agile laser eye protection. The System Integrator contract is a 5 year delivery order cost plus fixed fee and was awarded in August 2004. The Virtual Cockpit Optimization project is Congressionally funded for development of technologies to increase pilots' situational awareness and provide cognitive decision aiding tools.

ARMY RDT&E COST ANALYSIS(R3)									February 2005			
BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes					PE NUMBER AND TITLE 0603□2□A - Soldier Systems - Advanced Development					PROJECT S51		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Air Warrior Block Improvements Concept Development	C - CPFF	TBD	0	0		2436	1Q	2469	1Q	0	4905	0
Subtotal:			0	0		2436		2469		0	4905	0
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Matrix Support	MIPR	Various Government	0	0		444	1-4Q	465	1-4Q	0	909	0
Subtotal:			0	0		444		465		0	909	0

ARMY RDT&E COST ANALYSIS(R3)									February 2005				
BUDGET ACTIVITY					PE NUMBER AND TITLE					PROJECT			
4 - Advanced Component Development and Prototypes					0603□2□A - Soldier Systems - Advanced Development					S51			
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
			0	0		0		0		0	0	0	
Subtotal:													
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a . PM Administration	Allotment	Various Government	0	0		494	1-4Q	509	1-4Q	0	1003	0	
			0	0		494		509		0	1003	0	
Subtotal:													
Project Total Cost:			0	0		3374		3443		0	6817	0	

Schedule Profile (R4 Exhibit)

February 2005

BUDGET ACTIVITY

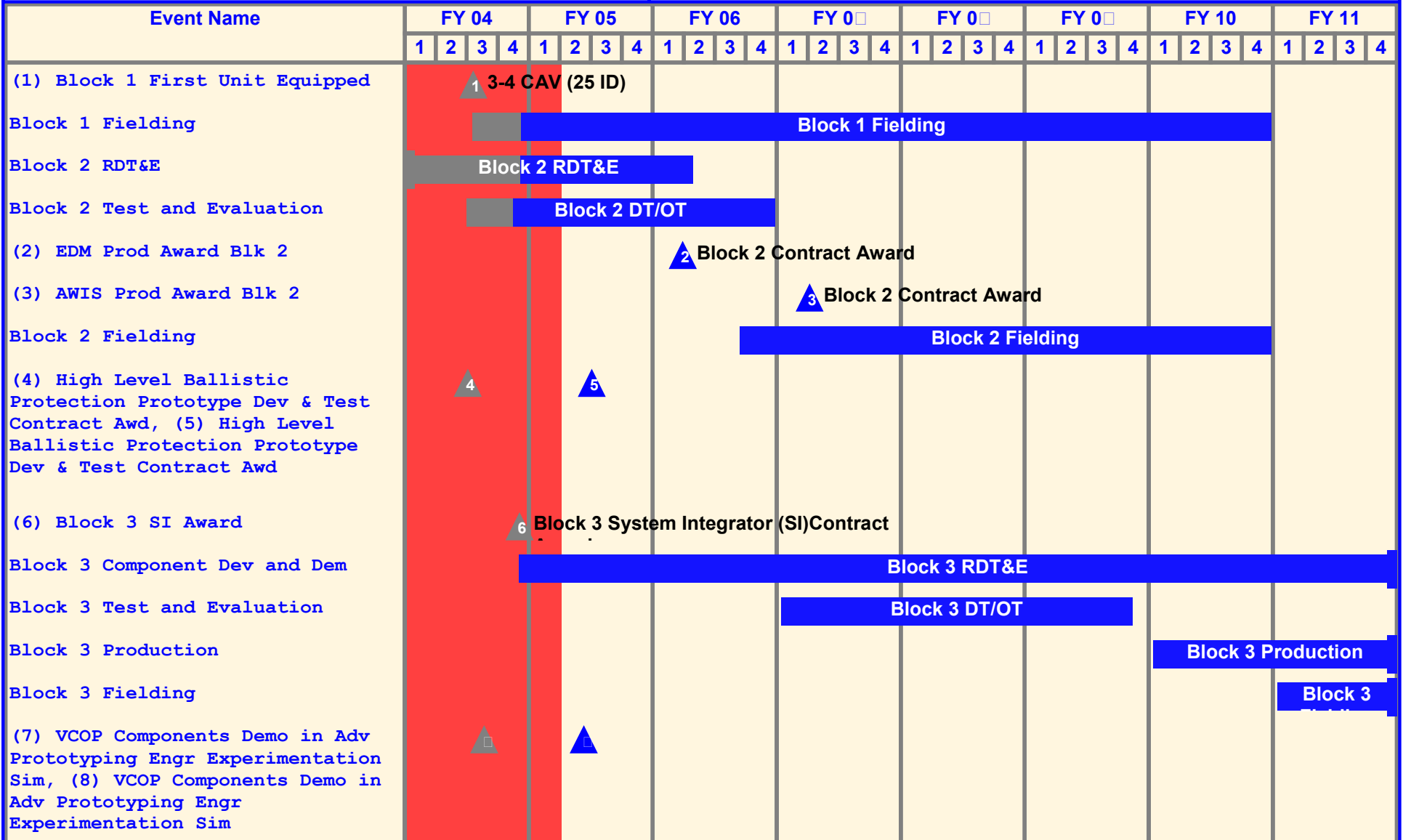
4 - Advanced Component Development and Prototypes

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PROJECT

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Schedule Detail (R4a Exhibit)

February 2005

BUDGET ACTIVITY

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<u>Schedule Detail</u>	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Advanced Component Development of Air Warrior Block 2 and 3 improvements.	1-4Q	1-4Q	1-3Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
System Development and Demonstration of Air Warrior Block 2 and 3 improvements.	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-3Q	1-4Q
VCOP components demonstration in Adv. Prototyping Engr. Experimentation (APEX) simulator.	3Q	2Q						
Block 1 Air Warrior First Unit Equipped.	3Q							
Block 3 Prime Integrator Award.	4Q							
Block 2 Production Contract Award - EDM.			1Q					
Block 2 Production Contract Award - AWIS.				2Q				
Block 2 Fielding.			3-4Q	1-4Q	1-4Q	1-4Q	1-4Q	
Block 3 Production Contract Award.							1Q	
Block 3 Fielding								1-4Q

Note: Virtual Cockpit Optimization Project (VCOP) is not a funded project. Funds have been appropriated by Congress and are available only in the year of execution.

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PROJECT

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COST (In Thousands)	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	Cost to Complete	Total Cost
S53 CLOTHING AND EQUIPMENT	0	0	7024	6798	9522	9039	6406	6605	0	45394

A. Mission Description and Budget Item Justification: The project develops state-of-the-art technology to improve tactical and non-tactical clothing and individual equipment to enhance the lethality, survivability and mobility of the individual Soldier. This project transitioned from PE 0603747 (Project 669 Clothing and Equipment) in FY06.

<u>Accomplishments/Planned Program</u>	FY 2004	FY 2005	FY 2006	FY 2007
Army Combat Uniform (ACU) II: Conduct technical research and perform laboratory evaluation of enhancements to the ACU that may incorporate permetherin, fire retardant, water repellent and antimicrobial protection.	0	0	1146	900
Fully Integrated Combat Helmet (FICH): Continue Product Improvement of helmet components in support of fielding and developmental efforts. Research technologies to mitigate the effects of high-speed ballistic blunt trama and low-rate impact (crash) protection. Integrate communications headset technologies into the helmet, incorporating both hearing protection and radio/intercom and face-to-face communication.	0	0	777	700
Modular Lightweight Load Carrying Equipment (MOLLE): Continue design improvements to existing fielded systems as a result of constantly evolving tactics, techniques and procedures for the loadbearing system.	0	0	548	0
Modular Boot System: Complete Technical testing initiated in FY05 (under 603747.669) to downselect to one boot that will replace multiple Organizational Clothing and Individual Equipment (OCIE) boots. Complete User test.	0	0	1191	700
Soldier Body Armor (SBA) Enhancements: Initiate efforts to investigate technologies that will verify structural integrity of existing ballistic plates and collaborate with industry to mature non-ceramic ballistic materials.	0	0	747	1800
Organizational Clothing and Individual Equipment (OCIE) Modernization/Moisture Management: Initiate efforts to explore fabric blends, weaves and treatments to assess water repellency, breathability, wearable sensors, mechanical stretch, comfort and durability impact. Conduct market surveys.	0	0	373	0
Combat Eye Protection (CEP): Initiate efforts to leverage and incorporate laser eye protection technology advancements (i.e., scratch and fog resistance) into ballistic goggles and spectacles and assess capability improvements.	0	0	547	1000

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Accomplishments/Planned Program (continued)

	FY 2004	FY 2005	FY 2006	FY 2007
Chemical Protective Ensemble: Initiate development to reduce bulk/weight of current level A/B suit (STEPO/ITAP), increase cooling and improve movement capabilities. Build test samples and perform physical testing and chemical agent testing.	0	0	483	0
Self Regulating Thermal Systems(Cold Weather Clothing System/Sleeping System/Medical Blanket): Initiate effort for a Non-layered ensemble that is capable of providing comfort in a wide temperate range. Develop an adaptive material and system design feature combined with the capability of thermostatic control of the heat/insulation properties of the item by the wearer.	0	0	667	0
Army Combat Environmental Clothing System (ACECS): Continue to identify new fabrics, treatments and constuction methods to increase the performance of the Cold Wet Weather Clothing System. Construct garments for initial technical testing.	0	0	299	0
Nuclear, Biological, and Chemical (NBC) Hydration System: Complete User test evaluation on Hydration on the Move initiated in FY05 (under 0603747.669). Initiate NBC Hydration Block II to provide the capability to hydrate hands free while in an NBC environment using Commerical off the shelf (COTS) on the move hydration concept of operation. Complete user test evaluation on hydration on the move. Build samples and perform physical properties and chemical agent testing.	0	0	246	0
Simultaneous Delivery of Jumpers/Door Bundles/Packages: Initiate advance development for simultaneous door bundle delivery system/method/device to develop an easily movable container that 1 jumpmaster can deploy.	0	0	0	400
Moisture Management Shelter System: Initiate development of moisture management materials with capability to minimize/eliminate humidity within shelters and the buildup of water condensation on the inner surface while providing environmental protection.	0	0	0	700
Quick Strike Individual Shelter: Initiate evaluation of new concepts of individual, environmental protective shelters possessing the capabilities of easy set-up and striking, low profile and rapid egress.	0	0	0	598
Totals	0	0	7024	6798

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PROJECT

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B. Other Program Funding Summary	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Compl	Total Cost
RDTE, 0604713.DL40, Clothing and Equipment	2960	5116	0	0	0	0	0	0	0	8076
RDTE, 0603747.669, Clothing and Equipment	8323	9196	0	0	0	0	0	0	0	17519
RDTE, 06004601A.S60, Clothing and Eq	0	0	7918	9082	9323	9239	5901	5999	Continuing	Continuing
OMA, 121017, Central Funding and Fielding	93707	159554	145411	152787	116876	100600	102701	52960	Continuing	Continuing

C. Acquisition Strategy: Programs will pursue normal transition to System Development and Demonstration (SDD) and production. This Project will continue to exercise competitively awarded contracts using best value source selection procedures.

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BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes					PE NUMBER AND TITLE 0603□2□A - Soldier Systems - Advanced Development					PROJECT S53		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Various	MIPRS	Natick Soldier Center, Natick, MA	0	0		2000	1-2Q	1808	1-2Q	0	3808	0
b . Various	Contracts	Various	0	0		2168	1-2Q	1900	1-2Q	0	4068	0
Subtotal:			0	0		4168		3708		0	7876	0
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . Misc Support Costs	MIPR	Various	0	0		1000	1-2Q	1000	1-2Q	0	2000	0
Subtotal:			0	0		1000		1000		0	2000	0

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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a . Various	MIPRS	Various	0	0		500	1-4Q	550	1-4Q	0	1050	0	
Subtotal:			0	0		500		550		0	1050	0	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
a . In-House Support		PM CIE Ft Belvoir, VA	0	0		1356	1-4Q	1540	1-4Q	0	2896	0	
Subtotal:			0	0		1356		1540		0	2896	0	
Project Total Cost:			0	0		7024		6798		0	13822	0	

Schedule Profile (R4 Exhibit)	
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February 2005

BUDGET ACTIVITY

PE NUMBER AND TITLE	PROJECT
0603020A - Soldier Systems - Advanced	S53

Development

S53

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Schedule Detail (R4a Exhibit)						February 2005				
BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes			PE NUMBER AND TITLE 0603□2□A - Soldier Systems - Advanced Development				PROJECT S53			
<u>Schedule Detail</u>			FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Army Combat Uniform User Evaluation Test					1-4Q	1-2Q				
NBC Hydration System User Evaluation Test					1Q					
Modular Boot System Technical Test					1-2Q					