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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 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-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	5.607	2.425	9.501	-	9.501	4.589	3.828	-	-	0.000	25.950
E79: <i>SMOKE/OBSCURANT SYSTEM</i>	5.607	2.425	9.501	-	9.501	4.589	3.828	-	-	0.000	25.950

Note

Change Summary Explanation: Funding - FY 10: Funds realigned to higher priority Army programs.

A. Mission Description and Budget Item Justification

Project supports Screening Obscuration Module (SOM), Projected and Generated Obscuration System (PGOC), and Screening Obscuration Devices (SOD) efforts in the development and improvement of an array of obscurant agents, smoke grenade munitions, and devices to improve survivability of the combined armed forces, support extended range capability, complement combined weapon systems, and enhance force effectiveness and combat power. This program element supports critical management studies and analyses that are conducted on a continuing basis to ensure that Technology Development efforts are targeted against the emerging threat. US Forces must be able to effectively neutralize and degrade energy weapon systems and electro-optical systems/smart weapons that operate in the full range of the electromagnetic spectrum. Improvements are sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection using generated and launched smoke systems.

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>
Previous President's Budget	4.894	2.425	4.436	-	4.436
Current President's Budget	5.607	2.425	9.501	-	9.501
Total Adjustments	0.713	-	5.065	-	5.065
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Adjustments to Budget Years	0.713	-	5.065	-	5.065

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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 0603627A: Smoke, Obscurant and Target Defeating Sys-Adv Dev				PROJECT E79: SMOKE/OBSCURANT SYSTEM			
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
E79: SMOKE/OBSCURANT SYSTEM	5.607	2.425	9.501	-	9.501	4.589	3.828	-	-	0.000	25.950
Quantity of RDT&E Articles											
A. Mission Description and Budget Item Justification											
<p>Project supports Screening Obscuration Module (SOM), Projected and Generated Obscuration System (PGOC), and Screening Obscuration Devices (SOD) efforts in the development and improvement of an array of obscurant agents, smoke grenade munitions, and devices to improve survivability of the combined armed forces, support extended range capability, complement combined weapon systems, and enhance force effectiveness and combat power. SOM is a small smoke generator that degrades the visual through near infrared portion of the Electro-Magnetic Spectrum. PGOC will integrate an obscuration generator and grenade launcher(s) onto an unmanned platform to provide the capability of obscuring the Visual/IR spectrum. SOD-Visual-Restricted is a handheld bursting grenade, similar in size to the fielded smoke hand grenades. It creates a nearly instantaneous cloud, when the fuze initiates a burster that ruptures the grenade body disbursing the obscurant.</p> <p>This program element supports critical management studies and analyses that are conducted on a continuing basis to ensure that Technology Development efforts are targeted against the emerging threat. US Forces must be able to effectively neutralize and degrade energy weapon systems and electro-optical systems/smart weapons that operate in the full range of the electromagnetic spectrum. Improvements are sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection using generated and launched smoke systems.</p> <p>FY2010 and FY2011 funds to be executed in line with acquisition strategy. PGOC Milestone A approved 2Q FY2011. Milestone B scheduled for 4Q FY2012.</p>											
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)								FY 2010	FY 2011	FY 2012	
Title: Engineering, Modeling and Environmental Studies for SOD and SOM systems. Articles: Description: Engineering, Modeling and Environmental Studies for SOD and SOM systems. FY 2010 Accomplishments: Engineering, Modeling and Environmental Studies for SOD and SOM systems. FY 2011 Plans: Engineering, Modeling and Environmental Studies for SOD and SOM systems. FY 2012 Plans: Engineering, Modeling and Environmental Studies for SOM systems.								0.937	0.450	0.450	
								0	0		
Title: Engineering, Modeling and Environmental Studies for PGOC systems.								-	-	0.200	

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Exhibit R-2A, RDT&E Project Justification: 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 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>	PROJECT E79: <i>SMOKE/OBSCURANT SYSTEM</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2010	FY 2011
Description: Engineering, Modeling and Environmental Studies for PGOC systems.			
FY 2012 Plans: Engineering, Modeling and Environmental Studies for PGOC systems.			
Title: SOM Development.		2.972	1.575
Articles:		0	0
Description: SOM Development.			
FY 2010 Accomplishments: SOM Development.			
FY 2011 Plans: SOM Development.			
FY 2012 Plans: SOM Development.			
Title: Test and Evaluation of SOD and SOM systems.		0.985	0.400
Articles:		0	0
Description: Test and Evaluation of SOD and SOM systems.			
FY 2010 Accomplishments: Test and Evaluation of SOD and SOM systems.			
FY 2011 Plans: Test and Evaluation of SOD and SOM systems.			
FY 2012 Plans: Test and Evaluation of SOM systems.			
Title: PGOC Development		-	-
Description: Funding is provided for the following effort			2.636
FY 2012 Plans:			

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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 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>			PROJECT E79: <i>SMOKE/OBSCURANT SYSTEM</i>					
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)											
							FY 2010	FY 2011	FY 2012		
PGOC Prototype Technology Development.											
Title: Test and Evaluation of PGOC systems. Description: Test and Evaluation of PGOC systems. FY 2010 Accomplishments: Test and Evaluation of PGOC systems. FY 2012 Plans: Test and Evaluation of PGOC systems.							Articles: 0.713 0	-	1.600		
Accomplishments/Planned Programs Subtotals							5.607	2.425	9.501		
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
• RDT&E, BA5, PE 0604609A: <i>Project 200 Smoke, Obscurant and Target Defeating Sys - Eng Dev</i>	0.973	2.910								0.000	3.883
• BA5, PE 0604609A.: <i>Project 198 Smoke, Obscurant and Target Defeating Sys - Eng Dev</i>										0.000	2.425
D. Acquisition Strategy Acquisition Strategy: Development of SOD, PGOC and SOM systems to include design, construction, modeling and testing of prototypes. SOD acquisition strategy follows an evolutionary strategy with two increments. The first increment, SOD-Visual-restricted, provides visual only screening in a restricted environment, such as the inside of a building. The second increment, SOD-Bi-Spectral, will provide visual through far-infrared screening in all environments. PGOC acquisition strategy follows an evolutionary strategy with two increments. The first increment will integrate an obscuration generator and grenade launcher(s) onto an unmanned platform to provide the capability of obscuring the Visual/IR spectrum. The second increment will add the capability of obscuring the Millimeter Wave (MMW) spectrum to the obscuration generator. PGOC Milestone A was approved 2Q FY2011. PGOC Milestone B is scheduled for 4Q FY2012. PGOC Milestone C is scheduled for 4Q FY2014.											

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Exhibit R-2A, RDT&E Project Justification: 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 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>	PROJECT E79: <i>SMOKE/OBSCURANT SYSTEM</i>
SOM acquisition strategy is to develop a small smoke generator that degrades the visual through near infrared portion of the Electro-Magnetic Spectrum. SOM Milestone B is scheduled for 4Q FY2012. SOM Milestone C is scheduled for 4Q FY2015.		
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 0603627A: Smoke, Obscurant and Target Defeating Sys-Adv Dev				PROJECT E79: SMOKE/OBSCURANT SYSTEM						
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	
Project Management Personnel	Various	JPM:NBCCA	0.690	0.387		0.600		-		0.600	Continuing	Continuing	Continuing	
Subtotal			0.690	0.387		0.600		-		0.600				
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	
SOM Hardware Development	TBD	TBD:TBD	-	1.188		3.013		-		3.013	Continuing	Continuing	Continuing	
Hardware Development (SOD)	TBD	Various OGAs:Various	0.915	-		-		-		-	Continuing	Continuing	Continuing	
Hardware Development (SOM)	TBD	TBD:TBD	1.259	-		-		-		-	Continuing	Continuing	Continuing	
Hardware Development (PGOC)	TBD	TBD:TBD	-	-		2.336		-		2.336	0.000	2.336	0.000	
Subtotal			2.174	1.188		5.349		-		5.349				
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	
M&S Development/ Environmental Tox Studies	TBD	Various OGAs:Various	0.065	0.150		0.450		-		0.450	Continuing	Continuing	Continuing	
Engineering Studies	TBD	Edgewood Chemical Biological Center:Edgewood, Md	0.304	0.300		0.200		-		0.200	Continuing	Continuing	Continuing	
Subtotal			0.369	0.450		0.650		-		0.650				

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Army										DATE: February 2011			
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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
SOD Test & Evaluation	Various	OGA Various:Various	0.252	-		-		-		-	Continuing	Continuing	Continuing
SOM Test & Evaluation	Various	OGA Various:Various	0.236	0.400		1.602		-		1.602	Continuing	Continuing	Continuing
PGOC Test & Evaluation	Various	Various OGAs:Various	-	-		1.300		-		1.300	0.000	1.300	0.000
Subtotal			0.488	0.400		2.902		-		2.902			

	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		3.721	2.425		9.501		-	9.501			

Remarks

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Exhibit R-4, RDT&E Schedule Profile: 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 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>		PROJECT E79: <i>SMOKE/OBSCURANT SYSTEM</i>	

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	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
SOM Schedule																												
SOM Developmental Testing #1																												
SOM Milestone B																												
SOM Contract Award																												
SOM Design and Fabrication																												
SOM Engineering and Design Test																												
SOM Redesign																												
SOM Fabrication																												
SOM Developmental Testing #2																												
SOM Operational Assessment																												
SOM Milestone C																												
Modeling and Simulation XXXXXXXXXXXXXXXXXXXXXXXXXXXX																												
Technology Feasibility Test XXXXXXXXXXXXXXXXXXXXXXXXXXXX																												
PGOC Schedule																												
PGOC Material Development Decision (MDD)																												
PGOC Milestone A																												
PGOC Contract Award																												
PGOC Design and Fabrication																												
PGOC Modeling and Simulation Effort																												
PGOC Developmental Testing #1																												
PGOC Operational Assessment #1																												
PGOC Milestone B																												

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Exhibit R-4, RDT&E Schedule Profile: 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 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>					PROJECT E79: <i>SMOKE/OBSCURANT SYSTEM</i>			

	FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015				FY 2016			
	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
PGOC MS B Contract Award																												
PGOC Engineering Design Tests																												
PGOC Developmental Testing #2																												
PGOC Operational Assessment																												
PGOC Milestone C																												
PGOC MS C Contract Award																												

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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 0603627A: <i>Smoke, Obscurant and Target Defeating Sys-Adv Dev</i>	PROJECT E79: <i>SMOKE/OBSCURANT SYSTEM</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SOM Schedule	1	2010	3	2015
SOM Developmental Testing #1	1	2010	2	2011
SOM Milestone B	3	2013	3	2013
SOM Contract Award	4	2013	4	2013
SOM Design and Fabrication	4	2013	3	2014
SOM Engineering and Design Test	4	2014	1	2015
SOM Redesign	1	2015	2	2015
SOM Fabrication	3	2015	3	2015
SOM Developmental Testing #2	4	2015	1	2016
SOM Operational Assessment	2	2016	2	2016
SOM Milestone C	3	2016	3	2016
Modeling and Simulation XXXXXXXXXXXXXXXXXXXXXXXX	4	2010	3	2011
Technology Feasibility Test XXXXXXXXXXXXXXXXXXXXXXXX	4	2011	2	2012
PGOC Schedule	4	2010	3	2015
PGOC Material Development Decision (MDD)	4	2010	4	2010
PGOC Milestone A	4	2010	4	2010
PGOC Contract Award	1	2011	1	2011
PGOC Design and Fabrication	4	2013	4	2014
PGOC Modeling and Simulation Effort	1	2011	2	2013
PGOC Developmental Testing #1	4	2012	1	2013
PGOC Operational Assessment #1	2	2013	2	2013
PGOC Milestone B	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Army			DATE: February 2011
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Events	Start		End	
	Quarter	Year	Quarter	Year
PGOC MS B Contract Award	4	2014	4	2014
PGOC Engineering Design Tests	3	2014	4	2014
PGOC Developmental Testing #2	4	2014	1	2015
PGOC Operational Assessment	2	2015	2	2015
PGOC Milestone C	4	2014	4	2014
PGOC MS C Contract Award	4	2014	4	2014

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