

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

## BUDGET ACTIVITY

### 5 - System Development and Demonstration

## PE NUMBER AND TITLE

**0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev**

COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	7521	11968	3798	0	5156	19712	26962	Continuing	Continuing
198 TARGET DEFEATING SYSTEM	328	340	0	0	5156	7078	15583	0	14319
200 SMOKE/OBSCURANT SYSTEM	7193	11628	3798	0	0	12634	11379	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This program element supports the conduct of System Development and Demonstration (SDD) of logistically supportable, high performance smoke and obscurant agents, munitions, and devices to improve the survivability of the combined armed force and complement combined weapons systems. The program supports critical management studies and analyses that are conducted on a continuing basis to ensure that engineering and manufacturing development efforts are targeted against the emerging threat. Program supports the conduct of SDD in smoke and obscurant agents, munitions, and devices to improve the survivability of the combined armed forces, complement combined weapon systems, and enhance force effectiveness and combat power.

U.S. 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 large area and projected smoke systems. The smoke obscuration technologies supported by this program element enhance smoke systems as force multipliers.

Systems developed in this PE primarily support the Current-to-Future transition path of the Transformation Campaign Plan (TCP).

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	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004)	7654	12094	4223
Current Budget (FY 2005 PB)	7521	11968	3798
Total Adjustments	-133	-126	-425
Congressional program reductions		-114	
Congressional rescissions			
Congressional increases			
Reprogrammings	-133	-12	
SBIR/STTR Transfer			
Adjustments to Budget Years			-425

# ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2A Exhibit)

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BUDGET ACTIVITY

**5 - System Development and Demonstration**

PE NUMBER AND TITLE

**0604609A - Smoke, Obscurant and Target  
Defeating Sys-Eng Dev**

PROJECT

**200**

COST (In Thousands)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total Cost
200 SMOKE/OBSCURANT SYSTEM	7193	11628	3798	0	0	12634	11379	Continuing	Continuing

**A. Mission Description and Budget Item Justification:** This project supports the conduct of System Development and Demonstration (SDD) in smoke and obscurant agents, munitions, and devices to improve survivability of the combined armed forces, complement combined weapon systems, and enhance force effectiveness and combat power. Funding supports the development of millimeter wavelength (MMW) radar obscuration for installation on the M56 and any other required vehicle platforms. The MMW obscuration can obscure a target from emerging threat systems which use x-band, Ku-band, Ka-band, and W-band radar sensors. It can also create decoy signals to confuse these threat systems.

This developmental effort supports the Current-to-Future transition path of the Transformation Campaign Plan (TCP).

<u>Accomplishments/Planned Program</u>	FY 2003	FY 2004	FY 2005
MMW - Fabricated and installed two MMW systems on two M56 Smoke Systems for conducting engineering design tests (Estimated value \$150K each MMW prototype).	6520	0	0
MMW - Conduct engineering design tests.	400	400	0
MMW - Continue engineering design program including any necessary redesign following engineering design test, logistics program evaluation, and material evaluation.	0	2000	0
MMW - Fabricate and install MMW systems on six M56s for production qualification and initial operational tests. (Estimated value \$150K each MMW prototype system).	0	4490	0
MMW - Procure necessary MMW material for contractor and Government tests.	173	1200	0
MMW - Conduct production qualification and initial operational test and evaluation.	0	2000	1500
MMW - Conduct toxicological and environmental studies.	100	1200	700
MMW - Conduct redesign effort for integration of MMW into candidate robotic systems and conduct Milestone C.	0	0	1598
Small Business Innovative Research/Small Business Technology Transfer Programs.	0	338	0
<b>Totals</b>	<b>7193</b>	<b>11628</b>	<b>3798</b>

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## **B. Other Program Funding Summary**

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
RDTE, A Budget Activity 2, PE 0602622A, Project 552 Smoke/Novel Munitions	3238	3424	3476	3633	3661	3716	3798	Continuing	Continuing
RDTE,A Budget Activity 4, PE 0603627A, Smoke. Obscurant and Target Defeat	2324	10147	6249	6199	8140	15060	8817	Continuing	Continuing
Other Procurement Army, OPA3, M99103, M56 Smoke Generator	22345	23170	26	0	27483	46185	1474	0	144067
Other Procurement Army, OPA3,G71300, Light Vehicle Obscuration Smoke System	2906	13820	3837	2885	962	0	0	0	24410

**C. Acquisition Strategy:** This project supports Millimeter Wave smoke generation system that began engineer development in FY 2000 with a full and open competitive contract for engineering design, construction, and test of prototype systems mounted on the M56 Smoke System.

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>					PE NUMBER AND TITLE <b>0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev</b>					PROJECT <b>200</b>		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Conducts M56 hardware development	C/CPFF	Titan Industries, Deland, FL	6749	5720	1Q	5438	1Q	1000		0	18907	0
b . MMW - Evaluates and designs robotic system integration planning	In house	SBCCOM, APG, MD	400	400	1Q	728	1Q	300	1Q	0	1828	0
Subtotal:			7149	6120		6166		1300		0	20735	0
II. Support Cost	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Environmental and Toxicological studies	In house effort	SBCCOM, APG, MD	899	100	1Q	1155	1Q	700	1Q	0	2854	0
b . MMW - Human factors design efforts	In house effort	SBCCOM, APG, MD	60	100	1Q	100	1Q	50	1Q	0	310	0
Subtotal:			959	200		1255		750		0	3164	0

ARMY RDT&E COST ANALYSIS(R3)									February 2004			
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III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Prototype evaluation (PPQT & IOTE)	In house	SBCCOM, APG, MD	233	0		2802	1Q	1200	1Q	0	4235	0
b . MMW - Engineering design testing - Contractor	C/CPFF	Titan Industries, Deland, FL	1300	400	1Q	400	1Q	0		0	2100	0
Subtotal:			1533	400		3202		1200		0	6335	0
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a . MMW - Project Management Personnel	In house	SBCCOM, Edgewood, MD	1884	237	1Q	705	1Q	348	1Q	0	3174	0
b . MMW - Project Management Personnel	C/CPFF	Titan Industries, Deland, FL	300	236	1Q	300	1Q	200	1Q	0	1036	0
Subtotal:			2184	473		1005		548		0	4210	0
Project Total Cost:			11825	7193		11628		3798		0	34444	0

Schedule Profile (R4 Exhibit)																				February 2004												
BUDGET ACTIVITY 5 - System Development and Demonstration										PE NUMBER AND TITLE 0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev																		PROJECT 200				
Event Name	FY 02				FY 03				FY 04				FY 05				FY 06				FY 07				FY 08				FY 09			
	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	1	2	3	4
Design and construct engineering design test systems																																
Conduct engineering design tests																																
Construct prototype systems for PQT/IOTE																																
Conduct PPQT																																
IOT&E																																
(1) MS C																																

Schedule Detail (R4a Exhibit)						February 2004	
BUDGET ACTIVITY <b>5 - System Development and Demonstration</b>			PE NUMBER AND TITLE <b>0604609A - Smoke, Obscurant and Target Defeating Sys-Eng Dev</b>			PROJECT <b>200</b>	
<u>Schedule Detail</u>	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
MMW - Design and construct engineering design test systems	1-4Q						
MMW - Conduct engineering design tests	4Q	1Q					
MMW - Construct prototype systems for PQT/IOTE		1-3Q					
MMW - Conduct Production Qualification Test (PPQT)		4Q	1-3Q				
MMW - Conduct Initial Operational Test and Evaluation (IOTE)			1-3Q				
MMW - Conduct Milestone C and system acceptance			4Q				