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ARMY RDT&E BUDGET ITEM JUSTIFICATION (R-2 Exhibit)	DATE February 1999
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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604609A Smoke, Obscurant and Target Defeating System - Engineering Development
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COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	701	918	2480	4654	7993	6980	11578	Continuing	Continuing
D198 Target Defeating System	0	0	0	0	0	0	0	8434	Continuing	Continuing
D200 Smoke/Obscurant System	0	701	918	2480	4654	7993	6980	3144	Continuing	Continuing

A. Mission Description and Budget Item Justification: This program element supports the conduct of Engineering and Manufacturing Development (EMD) of logistically supportable, high performance smoke and obscurant agents, munitions and devices to improve the survivability of the combined arms force and complement combined weapons systems. 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.

B. Program Change Summary	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
Previous President's Budget (FY 1999 PB)	0	706	947	2593
Appropriated Value		706		
Adjustments to Appropriated Value				
a. Congressional General Reductions		-5		
b. SBIR / STTR				
c. Omnibus or Other Above Threshold Reductions				
d. Below Threshold Reprogramming				
e. Rescissions				
Adjustments to Budget Years Since FY 1999 PB			-29	-113
Current Budget Submit (FY 2000 / 2001 PB)	0	701	918	2480

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BUDGET ACTIVITY 5 - Engineering and Manufacturing Development	PE NUMBER AND TITLE 0604609A Smoke, Obscurant and Target Defeating System - Engineering Development	PROJECT D200
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COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
D200 Smoke/Obscurant System	0	701	918	2480	4654	7993	6980	3144	Continuing	Continuing

A. Mission Description and Budget Item Justification: This project supports the conduct of Engineering and Manufacturing Development (EMD) in smoke and obscurant agents, munitions, and devices to improve survivability of the combined arms force, complement combined weapons systems, and enhance force effectiveness and combat power. Funding supports (1) Motorized Dual Purpose Mechanical Smoke Generator, M56 mounted on the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) to provide large area visual, infrared (IR) and millimeter wavelength (MMW) radar obscurant; and (2) Vehicle Engine Exhaust Smoke System (VEESS) which provides on-board obscurant of heavy armor systems.

FY 1998 Accomplishments: Program not funded in FY 1998

FY 1999 Planned Program:

- 100 VEES - Integrate M6 Grenade Dischargers and Vehicle Integrated Defense System
 - 300 VEES - Design and construct two test articles for initial evaluation of function and fit
 - 282 VEES - Initiate engineering study/proof of principle and modification work order
 - 19 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs
- Total 701

FY 2000 Planned Program:

- 306 VEES - Complete development and conduct milestone review
 - 512 VEES - Conduct customer test, safety of use and pre-production qualification tests using two FY99 test articles
 - 100 VEES - Prepare contract plan for modification work order
- Total 918

FY 2001 Planned Program:

- 700 MMW - Initiate engineering study/proof of principle and modification work order
 - 1780 MMW - Contract for engineering, design and prototype system construction
- Total 2480

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B. Other Program Funding Summary	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	To <u>Compl</u>	Total <u>Cost</u>
RDTE,A Budget Activity 2, PE 0602622A, Project A552 Smoke/Novel Effects Munitions	3500	5078	3996	4042	4068	4110	4600	4845	Cont'd	Cont'd
RDTE,A Budget Activity 4, PE 063627A, Project DE79 Smoke, Obscurant and Equipment Defeating Systems	0	0	0	0	0	0	2918	13597	Cont'd	Cont'd
RDTE,A Budget Activity 4, PE 0603627A, Project DE78 Target Defeating Systems	0	0	0	0	0	4877	9442	5930	Cont'd	Cont'd
Other Procurement Army, Activity 3, (OPA-3)										
M99103, M56 Smoke Generator	12099	15069	6286	3798	20877	18651	26574	26752	Cont'd	Cont'd
M99107 M58 Smoke Generator	8415	10594	3420	5625	10781	9190	12060	12349	Cont'd	Cont'd

C. Acquisition Strategy: Project D200 – Smoke/Obscurants: The Vehicle Engine Exhaust Smoke System (VEESS) will be developed in-house and will be applied to systems via modification work order. Beginning in FY 2001, the Millimeter Wave smoke generation system will be developed with the assistance of a full and open competitive contract for engineering design and construction of prototype systems.

D. Schedule Profile	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
VEESS – Milestone I/II Letter Decision				1Q						
VEESS – Construct RDTE test articles				4Q						
VEESS – Combined DT/OT and other tests					3-4Q					
VEESS – System Acceptance (Milestone III)					4Q					
MMW – Milestone I/II Program initiation						1Q				
MMW – Initiate RDT&E contract						3Q				
MMW – System acceptance (Milestone III)									4Q	

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ARMY RDT&E COST ANALYSIS (R-3)										DATE February 1999		
BUDGET ACTIVITY 5 - Engineering and Manufacturing Development					PE NUMBER AND TITLE 0604609A Smoke, Obscurant and Target Defeating System - Engineering Development					PROJECT D200		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. VEES -Development	In-House	SBCCOM; APG, MD		701	2Q	406	1Q			1107	2214	
b. MMW -Hardware Dev	CPFF	To Be Determined						1780	3Q	Cont'd	1780	Cont'd
Subtotal Product Development:				701		406		1780		1107	3994	
Remark: The FY2001 contract effort for MMW will include training development, ILS and technical data.												
II. Support Costs: None												
III. Test and Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. VEES -User, technical and PPQT	In-house	SBCCOM; APG, MD				512	3Q				512	
Subtotal Test and Evaluation:						512					512	
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost To Complete	Total Cost	Target Value of Contract
a. MMW - Prog Mgt Personnel	In-House	SBCCOM; APG, MD						650			650	
b. MMW -Program Mgt Support	CPFF	To Be Determined						50			50	
Subtotal Management Services:								700			700	
Project Total Cost:				701		918		2480		1107	5206	
Project D200												