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

June 2001

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - MANAGEMENT SUPPORT	**0605706A - Materiel Systems Analysis**	**541**

COST (In Thousands)	FY 2000 Actual	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
541 MATERIEL SYS ANALYSIS	10234	8657	8884	0	0	0	0	0	0	0

A. Mission Description and Budget Item Justification:

PLEASE NOTE: This administration has not addressed FY2003-2007 requirements. All FY 2003-2007 budget estimates included in this book are notional only and subject to change.

This program element funds the Army Materiel Systems Analysis Activity's (AMSAA) primary mission of materiel systems analysis. AMSAA is the Army's center for item/system level performance analysis and certified data. In accomplishing its materiel systems analysis mission, AMSAA analyzes the performance and combat effectiveness of conceptual, developmental, and existing systems. Unique models and methodologies have been developed to predict critical performance variables, such as, weapon accuracy, target acquisition, rate of fire, probability of inflicting catastrophic damage, and system reliability. AMSAA is responsible for the generation of these performance and effectiveness measures and for ensuring their standard use across Army and Joint studies. AMSAA conducts and supports various systems analyses, such as: analyses of alternatives (AoAs), system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, and requirements analyses. These analyses are used by Army and Department of Defense (DoD) leadership in making acquisition, procurement, and logistics decisions in order to provide quality equipment and procedures to the soldiers. AMSAA's modeling and simulation (M&S) capabilities support the development, linkage, and accreditation of live, virtual, and constructive simulations, and provide unique tools that support systems analysis of individual systems and the combined-arms environment. AMSAA is the Army's executive agent for the verification, validation, and accreditation (VV&A) of item level performance models. In this role, AMSAA assists model developers with the development and execution of verification and validation (V&V) plans to ensure new models and simulations faithfully represent actual systems. AMSAA also develops reliability, availability, and maintainability methodologies for use across the Army. As the Army's center for materiel systems analysis, AMSAA provides the technical capability to support Army and DoD decision-makers throughout the entire materiel acquisition process in responding to analytic requirements across the full spectrum of materiel system commodity areas. AMSAA's analyses are critical in supporting Army Transformation decisions. This PE/Project funds the salaries of civilian employees assigned to the materiel systems analysis mission.

FY 2000 Accomplishments

FY 2000 Accomplishments (Continued)

- 8734 Developed and certified system performance data for U.S. and foreign systems used to support Army and Joint analysis of alternatives (AoAs), force structure studies, and theater level studies. Examples of programs where decisions were influenced: Initial Brigade Combat Team/Interim Armored Vehicles, Future Scout and Cavalry System (FSCS), Comanche, and Crusader. Analyzed the performance and combat effectiveness of materiel systems and technology base programs in support of HQDA, AMC, PEOs/PMs and R&D Centers. Included are conduct of and support to: AoAs, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, and technology base analyses. Examples of programs where decisions were influenced: Digitization Brigade and Below, Land Warrior, Future Combat System (FCS), FSCS, and Comanche. AMSAA also developed, modified, and maintained item/system level methodologies, models, and simulations to assist in the conduct of systems analysis. Examples include: Ground Wars Model, target acquisition methodology, Active Protection System/Counter Active Protection System (APS/CAPS) methodology and model development, infantry close combat analysis tool, and physics of failure. AMSAA performed verification and validation of item level performance models and methodologies. AMSAA's full spectrum analytic capability supported the Army's thrust of creating/structuring a force that is more lethal and survivable and can be deployed more quickly than today's Army. Funding supported DA civilians to include salary, benefits, and all other support costs (e.g., training, TDY, etc.).
- 1500 Accelerated development of improved active protection system/counter active protection system analytical tools. Current combat models do not provide adequate representations of most other-than-armor survivability systems. These other-than-armor systems are critical in allowing Army systems to weigh less, yet still be survivable. Another analytical void that currently exists is the ability to accurately portray performance and effectiveness of Army materiel and soldiers during Military Operations in Urban Terrain (MOUT). The funds accelerated AMSAA's current methodology and modeling efforts to fill this void. Another effort pursued was "ultra-reliability". This effort begins to provide the analytical underpinnings for determining what is needed to have failure-free periods for deployed equipment. The focus was on electronics and identified high-payoff candidates, considering cost and potential for improvement given the status of various technologies. AMSAA conducted a performance and effectiveness analysis addressing particular lethality and survivability options for various Light Armored Vehicle (LAV) and Armored Gun System (AGS) alternatives. AMSAA also conducted analyses examining the area of logistics footprint reduction. Critical information was provided to key Army decision-makers within DA, TRADOC, and AMC. Funding supported DA civilians to include salary, benefits, and all other support costs (e.g., training, TDY, etc.).

Total 10234

FY 2001 Planned Program

- 8598 Develop and certify system performance data for U.S. and foreign systems to be used to support Army and Joint AoAs, force structure studies, and theater level studies. Examples of programs where decisions will be influenced: FCS, Crusader, and Comanche. Analyze the performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included are conduct of and support to: AoAs, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, and technology base analyses. Examples of programs where decisions will be influenced: FCS, Crusader, and Comanche. Develop, modify, and maintain item level methodologies, models, and simulations to be used in the conduct of systems analysis. Examples include: aviation performance and effectiveness modeling, target acquisition methodology improvements, integrated casualty estimation methodology, and dismounted infantry modeling. Perform verification and validation of item level performance models and methodologies. Funding will support DA civilians to include salary, benefits, and all other support costs (e.g., training, TDY, etc.).
- 59 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) Programs.

Total 8657

FY 2002 Planned Program

- 8884 Develop and certify system performance data for U.S. and foreign systems to be used to support Army and Joint AoAs, force structure studies, and theater level studies. Key decisions relative to major programs will be supported. Analyze the performance and combat effectiveness of materiel systems and tech base programs in support of HQDA, AMC, PEOs/ PMs and R&D Centers. Included are conduct of and support to: AoAs, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion, and technology base analyses. Develop, modify, and maintain item level methodologies, models, and simulations to be used in the conduct of systems analysis. Perform verification and validation of item level performance models and methodologies. Funding will support DA civilians to include salary, benefits, and all other support costs (e.g., training, TDY, etc.).

Total 8884

B. Program Change Summary	FY 2000	FY 2001	FY 2002	FY 2003
Previous President's Budget (FY2001 PB)	8783	8737	6673	0
Appropriated Value	8796	8737	0	0
Adjustments to Appropriated Value	0	0	0	0
a. Congressional General Reductions	0	0	0	0
b. SBIR / STTR	-49	0	0	0
c. Omnibus or Other Above Threshold Reductions	-7	0	0	0
d. Below Threshold Reprogramming	0	0	0	0
e. Rescissions	-6	-80	0	0
Adjustment to support Army Transformation	1500	0	0	0
Adjustments to Budget Years Since FY2001 PB	0	0	2211	0
Current Budget Submit (FY 2002/2003 PB)	10234	8657	8884	0

Change Summary Explanation: Funding - FY 2000: AMSAA was provided an additional 1500 to conduct additional performance and effectiveness analyses in support of the Army Transformation. FY 2002/2003: Funds were realigned in support of pay of people (FY 2002: +2211/FY 2003: +2610).