

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)						February 2006			
BUDGET ACTIVITY 6 - Management support			PE NUMBER AND TITLE 0605706A - MATERIEL SYSTEMS ANALYSIS				PROJECT 541		
COST (In Thousands)			FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
541	MATERIEL SYS ANALYSIS		15908	15296	16526	17151	17531	17804	15975
<p><u>A. Mission Description and Budget Item Justification:</u> This program element funds Department of the Army (DA) civilians at the Army Materiel Systems Analysis Activity (AMSAA) to conduct its mission of materiel systems analysis.</p> <p>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 major 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.</p> <p>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 has resident and maintains a significant number of models and simulations, most of which were developed in-house to address specific analytical voids. This M&S infrastructure provides a hierarchical modeling process that is unique to AMSAA and allows for a comprehensive performance and effectiveness prediction capability that can be utilized to make trade-off and investment decisions prior to extensive and expensive hardware testing. AMSAA is the Army's executive agent for the verification, validation, and accreditation (VV&A) of item/system 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.</p> <p>AMSAA serves as the Army's Executive Agent for reliability and maintainability standardization improvement by developing and implementing reliability and maintainability acquisition reform initiatives. AMSAA develops and applies reliability-engineering approaches that assess the reliability of Army materiel and recommends ways to improve reliability, thereby reducing the logistics footprint, reducing life cycle costs, and extending failure free periods for deployed equipment. AMSAA's electronic and mechanical Physics of Failure (PoF) program pioneered the Army's involvement in utilizing computer-aided engineering tools in the analysis of root-cause failure mechanisms at the component level during the system design process.</p> <p>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. It is critical that the Army have access to AMSAA's integrated analytical capability that provides timely, reliable, and high quality analysis on which Army leadership can base the complex decisions required to shape the Future Army. AMSAA has developed an integrated set of skills and tools focused on its core competencies to be responsive to the breadth and depth of systems analysis requirements critical in supporting Army Transformation decisions.</p> <p>This Project funds the salaries of civilian employees assigned to the materiel systems analysis mission.</p>									

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<u>Accomplishments/Planned Program</u>		<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Funding directly pays DA civilians at AMSAA who are responsible for developing and certifying system performance and effectiveness data for U.S. and foreign systems to be used during Army and Joint AoAs, force structure studies, and theater level studies. Analyses of performance and combat effectiveness of materiel systems and technology base programs are conducted in support of DA, the Army Materiel Command, the Research, Development and Engineering Command, Program Executive Officers/Program Managers, the Training and Doctrine Command, and the Army Test and Evaluation Command. Included in these analyses are conduct of and support to: AoAs, system cost/performance tradeoffs, early technology tradeoffs, weapons mix analyses, requirements analyses, technology insertion studies, reliability growth studies, and PoF analyses. Examples of programs supported with critical analyses: Future Combat System (FCS), Stryker, Objective Individual Combat Weapon (OICW), Objective Crew Served Weapon (OCSW), Land Warrior, Unmanned Aerial Vehicles, Kinetic Energy (KE) Active Protection System (APS), Joint Non-Lethal Weapons Program (JNLWP), Intelligent Munitions System (IMS), and Precision Guided Mortar Munitions (PGMM). AMSAA develops and modifies system level methodologies, models, and simulations to be used in the conduct of analyses. Examples of efforts include modeling of military operations in urban terrain (MOUT), several aviation modeling improvements, search and target acquisition methodology improvements, sensor fusion modeling, expansion of mechanical and electronic PoF modeling, individual combat evaluation model, synthetic aperture radar methodology, vehicle performance methodology, active protection system performance, and non-lethal weapons performance and effectiveness estimation methodology.		15908	15296	16526
Total		15908	15296	16526

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<u>B. Program Change Summary</u>	FY 2005	FY 2006	FY 2007	
Previous President's Budget (FY 2006)	17675	15517	15904	
Current BES/President's Budget (FY 2007)	15908	15296	16526	
Total Adjustments	-1767	-221	622	
Congressional Program Reductions		-67		
Congressional Rescissions	-14	-154		
Congressional Increases				
Reprogrammings	-1753			
SBIR/STTR Transfer				
Adjustments to Budget Years			622	
FY 2005: Funds realigned to higher priority requirements.				