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Exhibit R-2, RDT&E Budget Item Justification

Date: February 2005

DEFENSE-WIDE, RDT&E (400) BUDGET ACTIVITY 6					Joint System Architecture Development (JSAD) PE 0604875D8Z			
Cost (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	0.000*	4.900	9.254	9.244	9.544	9.313	9.286	9.297

* Total FY 2004 appropriation (\$9.000 million) and a portion (\$4.000 million) of FY 2005 appropriation is under Defense-Wide, RDT&E (0400) Budget Activity 3, PE0603832D8Z. In FY 2005, the JSAD portion of this appropriation began transition to Budget Activity 6.

A. Mission Description and Budget Item Justification: Transformation calls for top down, national security strategy driven, capabilities-based planning. DoD Instruction (DoDI) 5000.2 and CJCSI 3170.01D promulgate capabilities-based requirements and acquisition processes. This program enables collaborative efforts to achieve these goals. These efforts include providing systems support to conduct warfighting capability-based analyses, and assessments of joint capability area and joint integrating concepts; development and support of needed sets of system and system-related data; development and application of systems engineering methodologies and tools, creating integrated roadmaps to support acquisition investment decisions, and assessment of major defense acquisition programs (MDAPs) and major automated information systems programs in a capability area context. Activities in this project are divided into three areas: capability based analyses, roadmaps, and support tools and guidance. Capability-based analyses consists of efforts that provide systems aspects (views) to analyze technology, functionality, and integration impacts on warfighting capability; this forms the front end of systems engineering. Roadmaps are proscribed by DoDI 5000.2, 3.2.2; initiatives in this project enable roadmap development based on systems engineering and use to guide systems development and associated investment plans. Support tools and guidance initiatives in this project will develop systems engineering methods, systems data, and tools, exploiting the value of modeling and simulation and architecture to improve effectiveness of Systems Engineering, to improve assessment capability, and to field and test integrated systems of systems to achieve joint mission capabilities.

B. Program Change Summary:

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Previous President's Budget	0.000	0.000	0.000	0.000
Current FY 2006 President's Budget Sub.	0.000	4.900	9.254	9.244
Total Adjustments				
Congressional program reductions				
Congressional rescissions				
Congressional increases				
Reprogrammings				
SBIR / STTR Transfer				
Other	0.000	+4.900	+9.254	+9.244

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C. Other Program Funding Summary: N/A

D. Acquisition Strategy: N/A*

E. Performance Metrics:

Develop and update Capability Roadmaps.

Develop and implement a prototype Matrix Mapping Tool

Participate in the capabilities based analyses to ensure they are based on system technical and programmatic performance.

Leverage, co-sponsor, and develop state-of-the-art engineering methodologies, practices, and tools.

Define data standards, and content interchange

Improve tools and guidance for use to conduct system-of-systems modeling analysis

~~**A. Other Program Funding Summary: N/A**~~

~~**B. Acquisition Strategy: N/A***~~

* Not required for Budget Activities 1, 2, 3, and 6

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Exhibit R-2a, RDT&E Project Justification							February 2005											
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(U) FY 2005 Plans:

Perform Capability-based Analyses

- Assessment of joint operational concepts to determine required system capabilities and evaluate them against current system functions
- Perform analysis of materiel solution alternatives to fulfill identified capability needs to support the front end of the systems engineering process
- Support Joint Functional Capability Board Capability Based Analyses:
 - Force Protection (Air and Missile Defense, Electronic Warfare)
 - Force Application (Land, Sea, Air)
 - Command and Control, Intelligence, Net-centric Operations
 - Focused Logistics
- Conduct analysis of Combatant Commander (COCOM) needs, and OIF/OEF lessons learned to determine issues and potential materiel solutions

Development of Capability Roadmaps

- Provide the necessary information to make sound programmatic and budgetary decisions to acquire a warfighting capability based on systems engineering planning and assessments
- Roadmaps will:
 - Highlight a concept of operations, and identify related systems and their associated data (cost, schedule, functionality, performance)
 - Show how these systems relate within this capability area (identify current/future gaps and where redundancies may exist)
 - Form a foundation for defining our system capabilities required for the future
- Roadmaps currently being developed under this project:
 - Joint Battle Management Command and Control (JBMC2)
 - Air and Missile Defense (AMD)
 - Weapons and Munitions
 - Electronic Warfare

Support Tools and Guidance

- Deliver spiral 2 and 3 prototypes of a Matrix Mapping Tool (formally called the Integration Framework) that provides a common baseline of systems and warfighting activities from which to conduct analysis of deficiencies and redundancies. Use this tool to support Joint Integrating Concepts and Roadmaps and frame the systems engineering planning

(U) FY 2006 Plans:

Perform Capability-based Analyses

- Support Joint Functional Capability Board Capability Based Analyses and front end systems engineering planning:

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- Force Protection (Air and Missile Defense, Electronic Warfare)
- Force Application (Land, Sea, Air)
- Command and Control, Intelligence, Net-centric Operations
- Focused Logistics

Development of Capability Roadmaps

- Roadmaps along with supporting systems engineering plans currently being planned under this project:
 - JBMC2/AMD (updating)
 - Global Strike
 - Sea Basing

Support Tools and Guidance

- Update Matrix Mapping Tool for use across the Department to support Capabilities Based Planning
- Conduct systems engineering verification of proposed joint capabilities
- Perform systems of system modeling analysis, using state-of-the-art, industry endorsed, architecture and modeling practices and constructs such as Model Driven Architecture.
- Define data standards, and content interchange to promote M&S sharing across capability areas

(U) FY 2007 Plans:

Perform Capability-based Analyses

- Support Joint Functional Capability Board Capability Based Analyses and front end systems engineering planning::
 - Force Protection (Air and Missile Defense, Electronic Warfare)
 - Force Application (Land, Sea, Air)
 - Command and Control, Intelligence, Net-centric Operations
 - Focused Logistics

Development of Capability Roadmaps

- Roadmaps along with supporting systems engineering plans currently being planned under this project:
 - Continue Roadmap development in support of Warfighting capability based analyses conducted by the Joint Staff and COCOMs.

Support Tools and Guidance

- Update Matrix Mapping Tool for use across the Department to support Capabilities Based Planning
- Conduct systems engineering verification of proposed joint capabilities
- Perform systems of system modeling analysis, using state-of-the-art, industry endorsed, architecture and modeling practices and constructs such as Model Driven Architecture.
- Focus on implementing an engineering environment to achieve systems engineering for capabilities. Cross-cutting architectures, models, tools, and test resources are related and used by acquisition systems.

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E. Other Program Funding Summary: N/A

F. Acquisition Strategy. N/A

G. Major Performers: The following contractors are anticipated to receive 15% or more in funding for support in FY 2005:
MITRE, McLean, Virginia: Support to capability roadmaps.