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<b>Exhibit R-2, RDT&amp;E Budget Item Justification</b>	<b>DATE:</b> February 2005
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, Defense-Wide/07	<b>R-1 ITEM NOMENCLATURE</b> Defense Information Infrastructure Engineering & Integration / PE 0302019K

COST (in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Total Program Element	2.337	2.437	5.466	5.545	5.765	8.051	9.147	9.458
Global Information Grid Systems Engineering & Support/T62	2.337	2.437	2.608	2.682	2.743	2.817	2.922	3.030
Modeling and Simulation/E65*	0	0	2.858	2.863	3.022	5.234	6.225	6.428

A. Mission Description and Budget Item Justification: This program element funds efforts involving the development and fielding of Global Information Grid (GIG) Enterprise Services, including engineering support for the resolution of critical interoperability and integration issues, and assessment of C4I initiatives that will ensure compatibility, interoperability, and technical integration.

Global Information Grid (GIG) Systems Engineering and Support, Project T62, involves the definition and implementation of various aspects of evolving the GIG. It will strengthen critical GIG foundation technologies and programs through the application of precise, short-term, technical, engineering and integration expertise.

Modeling and Simulation, Project E65, provides architecture, systems engineering, and modeling and simulation functions for DISA and its customers, ensuring integrated capabilities to fulfill warfighter mission requirements. Specifically, it performs a broad spectrum of activities for the DoD communications planning and investment strategy, to include: application assessments; contingency planning; network capacity planning and diagnostics; evaluation of horizontal (cross-cutting) operational and system architectures; and systems-level modeling and simulation. Modeling and Simulation develops across-theater information awareness for Combatant Commands through application solutions for integrated networks, to include DoD's missions in Iraq and Afghanistan and the Defense Information Systems Network (DISN), by: (1) supporting the development and consistency of DoD's GIG architectures and ensuring that critical GIG programs are consistent with them and with each other; (2) developing standardized DISA systems engineering and integration processes to improve systems integration across DISA for all DISA-developed communication systems; and (3) providing the underlying modeling and simulation and analytical support for end-to-end DISA and DoD systems engineering and assessment. These modeling and simulation operations are to provide DoD decision-makers, from the Office of the Secretary of Defense (OSD) level to the warfighter, with services and a suite of tools capable of identifying key points of impact on DoD command and control information systems and recommending tradeoffs within the GIG configuration with regard to prioritized performance, availability, and security.

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<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, Defense-Wide/07	<b>R-1 ITEM NOMENCLATURE</b> Defense Information Infrastructure Engineering & Integration / PE 0302019K

This program element is under Budget Activity 07 because it involves efforts supporting operational systems development.

\* Modeling and Simulation was formerly titled Technical Integration Services and was funded under PE 0303149K. The modeling and simulation portion of Technical Integration Services has been realigned to PE 0302019K due to its direct engineering and integration support to the GIG.

B. Program Change Summary:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>
Previous President's Budget	2.423	2.517	2.581	2.652
Current Submission	2.337	2.437	5.466	5.545
Total Adjustments	-0.086	-0.080	2.885	2.893

Change Summary Explanation:

FY 2004 changes are due to below threshold reprogramming.

FY 2005 changes are due to undistributed Congressional Reductions to the Defense-Wide RDT&E appropriation.

FY 2006 and FY 2007 changes are due to the realignment of the modeling and simulation portion of Technical Integration Services (Project E62) from PE 0303149K.

Exhibit R-2a, RDT&E Budget Item Justification				Date: February 2005				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NAME AND NUMBER			
RDT&E, Defense-Wide/07		DII Engineering & Integration / PE 0302019K			Global Information Grid (GIG) Systems Engineering and Support/ T62			
COST (in millions)	FY04	FY 05	FY 06	FY07	FY08	FY09	FY10	FY11
Project Cost	2.337	2.437	2.608	2.682	2.743	2.817	2.922	3.030

A. Mission Description and Budget Item Justification: Efforts under this project will strengthen critical Global Information Grid (GIG) foundation technologies and programs through application of precise, short-term, technical, engineering and integration expertise. Provides transformational support in the evolution of the major GIG components, which include: GIG Enterprise Services, DoD Data Emporium, Defense Information System Network (DISN), Net-Centric Enterprise Services (NCES), Global Combat Support System (GCSS), Global Command and Control System (GCCS), DoD Directory Services (e.g., global directory services to locate people and equipment across the Department), enterprise management, Information Assurance (IA), and other related components. This project supports the definition and implementation of various aspects of evolving the GIG. The evolution of the GIG requires coordinated implementation of the GIG components to form a coherent global information grid. This project supports definition of the common environments, developing system architecture constructs for the GIG and components, providing engineering design and guidance for component evolution, including incorporation of new technology from industry and implementing the infrastructure capability. Subtasks are assigned based on need to address specific technical problems, mitigate risks, and take advantage of cross-program synergies.

B. Accomplishments/Planned Program:

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>
Subtotal Cost	2.337	2.437	2.608	2.682

GIG Component Support specific tasks include technical research and analysis on wireless technologies, security, IPv6, and application frameworks; quick response on assessments of technology such as persistent technology; identification of new state-of-the-art technologies that have promising applications such as semantic Web. GIG Integration technology enhancement activities include individual tasks such as end-to-end systems engineering for GIG Enterprise Services (ES), developing ES definitions and identifying the integration between services and mission applications; continued technical support to the Chief Engineers Panel (CEP); and providing analysis related to integration within the GIG components and among GIG and Service/Agency-level components. Cross Program Integration Engineering tasks include the continued collaboration with Air Force, Army, and Navy programs to coordinate interoperable solutions; continued support of information exchanges with the Services, OSD, the Combatant Commanders, and the Joint Staff to identify opportunities, issues, and solutions to improve DISA products; and facilitation and harmonization of cross-corporate programs relative to DISA programs and the GIG.

Exhibit R-2a, RDT&E Budget Item Justification				Date: February 2005				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NAME AND NUMBER			
RDT&E, Defense-Wide/07		DII Engineering & Integration / PE 0302019K			Global Information Grid (GIG) Systems Engineering and Support/ T62			
COST (in millions)	FY04	FY 05	FY 06	FY07	FY08	FY09	FY10	FY11
Project Cost	2.337	2.437	2.608	2.682	2.743	2.817	2.922	3.030

C. Other Program Funding Summary: O&M, DW

<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>FY10</u>	<u>FY11</u>
0.820	0.544	0.805	0.809	0.811	0.816	0.817	0.818

D. Acquisition Strategy: MITRE, McLean, VA, This project provides technical, engineering, and integration expertise to the DISA Chief Technology Officer (CTO) in support of the major GIG components, which include: GIG Enterprise Services (GES), GIG Bandwidth Expansion (GIG-BE), Shared Data Engineering (SHADE), Defense Information Systems Network (DISN), Satellite Communications (SATCOM), GIG Directory Service, Global Combat Support System (GCSS), Global Command and Control System (GCCS), Enterprise Services Management (ESM), Information Assurance (IA), Wireless Services, Net-Centric Enterprise Services (NCES), and other related components. Through this project MITRE will support the definition and implementation of various aspects evolving the GIG. MITRE will provide support to DISA in its mission of providing end-to-end systems engineering for the DoD for GIG Enterprise Services. MITRE will ensure that system integration and implementation is coordinated with other major C2 systems via its support to other C2 System Program Executive Offices.

E. Performance Metrics:

The Task Order is composed of multiple short-suspense technology research/exploration components with a concrete deliverable targeted at some facet of the DISA mission.

Each research initiative is produced in collaboration with a designated task subject matter specialist.

These engineering tasks are short term in nature and designed to facilitate bringing high-potential over-the-horizon technology into engineering programs supporting the Agency mission.

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Exhibit R-3 Cost Analysis				DATE: February 2005								
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NAME AND NUMBER							
RDT&E, Defense-Wide/07		DII Engineering & Integration/PE 0302019K			Global Information Grid (GIG) Systems Engineering and Support / T62							
Cost Category	Contract Method & Type	Performing Activity & Location	Total PYS Cost	FY05 Cost	FY05 Award Date	FY06 Cost	FY06 Award Date	FY07 Cost	FY07 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Engineering /Tech Services	Other Than Full & Open CPFF	MITRE McLean, VA	8.558	2.437	Various	2.608	Various	2.682	Various	Contg	Contg	16.285

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Exhibit R-4 Schedule Profile						Date: February 2005																										
Appropriation/Budget Activity RDT&E, Defense-Wide/07						Program Element Number and Name DII Engineering & Integration/PE 0302019K						Project Number and Name Global Information Grid (GIG) Systems Engineering and Support/T62																				
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	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
Technical Direction Agent (TDA)																																

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<b>Exhibit R-4a Schedule Detail</b>		<b>DATE:</b> February 2005
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, Defense-Wide/07	<b>PROGRAM ELEMENT</b> DII Engineering & Integration/ PE 0302019K	<b>PROJECT NAME AND NUMBER</b> Global Information Grid (GIG) Systems Engineering and Support / T62

<u>Schedule Profile</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
Technical Direction Agent (TDA)	1-4Q							

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<b>Exhibit R-2a, RDT&amp;E Project Justification</b>					<b>DATE:</b> February 2005			
<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>PROGRAM ELEMENT</b>			<b>PROJECT NAME AND NUMBER</b>			
RDT&E, Defense-Wide/07		DII Engineering & Integration /PE 0302019K			Modeling & Simulation / E65			
<b>COST (in Millions)</b>	<b>FY04</b>	<b>FY05</b>	<b>FY06</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>
Project Cost *	0	0	2.858	2.863	3.022	5.234	6.225	6.428

A. Mission Description and Budget Item Justification: This Modeling and Simulation project provides architecture, systems engineering and end-to-end analytical functions for DISA and its customers, ensuring integrated capabilities to fulfill warfighter mission requirements. Specifically, Modeling and Simulation performs a broad spectrum of activities for the DoD communications planning and investment strategy, to include: application assessments; contingency planning; network capacity planning and diagnostics; evaluation of horizontal (cross-cutting) operational and system architectures; setting character-oriented message standards; and systems-level modeling and simulation. Modeling and Simulation develops across-theater information awareness for Combatant Commands through application solutions for integrated networks, to include DoD's missions in Iraq and Afghanistan and the Defense Information Systems Network (DISN), by: (1) supporting the development and consistency of DoD's Global Information Grid (GIG) architectures and ensuring that critical GIG programs are consistent with them and with each other; (2) developing standardized DISA systems engineering and integration processes to improve systems integration across DISA for all DISA developed communication systems and services; and (3) providing the underlying modeling and simulation and analytical support for end-to-end DISA and DoD systems engineering and assessment. These operations are to provide DoD decision makers, from the OSD level to the warfighter, with services and a suite of tools capable of identifying key points of impact on DoD command and control information systems and recommending tradeoffs within the GIG configuration with regard to prioritized performance, availability, and security.

\* Beginning in FY 2006 this project has been realigned from PE 0303149K. Modeling and Simulation was formerly titled Technical Integration Services. The modeling and simulation portion of Technical Integration Services has been realigned to PE 0302019K due to its direct engineering and integration support to the GIG.

B. Accomplishments/Planned Program:

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>
Subtotal Cost	0	0	1.050	1.081

FY 2006 - Horizontal Engineering will explore, identify, and frame key end-to-end issues associated with the ability of the GIG to support the warfighter by improving system engineering decisions of DISA programs, and provide a DoD framework for assuring performance meets mission capability requirements.

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<b>APPROPRIATION/BUDGET ACTIVITY</b>		<b>PROGRAM ELEMENT</b>			<b>PROJECT NAME AND NUMBER</b>				
RDT&E, Defense-Wide/07		DII Engineering & Integration /PE 0302019K			Modeling & Simulation / E65				
<b>COST (in Millions)</b>		<b>FY04</b>	<b>FY05</b>	<b>FY06</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>
Project Cost *		0	0	2.858	2.863	3.022	5.234	6.225	6.428

FY 2007 - Horizontal Engineering will continue the development of a monitoring framework for the GIG to identify and prioritize key end-to-end issues using qualitative and quantitative methods for comparative assessment of alternative architectures in terms of system performance, mission outcome, and potential impact to DoD communication systems together with the assessment of performance management tools to improve application performance.

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>
Subtotal Cost	0	0	1.808	1.782

FY 2006 - Modeling and Simulation Applications will provide final net-centric transitional designs for the seamless convergence of all DISN customers/services onto the new GIG Bandwidth Expansion (GIG-BE) project, which will provide a ubiquitous, secure, and robust network, scheduled to be fully operational by early FY 2006. These designs will provide the detailed roadmap for DISN customers to transition to the GIG-BE by providing "power to the edge" capabilities and capacity that far exceed the existing DISN.

FY 2007 - Modeling and Simulation Applications will provide predictive modeling capability and net-centric support for the ongoing and planned major Internet Protocol (IP) services and Net-centric Enterprise Services (NCES) applications in the converged IP Services, which will improve quality of service and the ability to evaluate Service Level Agreements (SLAs) with the warfighter.

C. Other Program Funding Summary: (\$M)

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>	<u>FY 08</u>	<u>FY 09</u>	<u>FY 10</u>	<u>FY11</u>	<u>To Complete</u>	<u>Total Cost</u>
RDT&E, DW (PE0303149K)	10.880	9.522	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.402
O&M, DW	20.575	25.805	33.235	35.298	36.399	45.394	46.172	47.110	Contg	Contg

D. Acquisition Strategy: Uses a number of contractors for modeling support with Booz, Allen Hamilton, Inc. and OPNET Technologies being the two main providers of these services. The level of support includes network model development; software installation and maintenance; software revisions or patches; and software upgrades. These companies are

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RDT&E, Defense-Wide/07		DII Engineering & Integration /PE 0302019K			Modeling & Simulation / E65			
<b>COST (in Millions)</b>	<b>FY04</b>	<b>FY05</b>	<b>FY06</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>
Project Cost *	0	0	2.858	2.863	3.022	5.234	6.225	6.428

uniquely qualified to provide the necessary level of technical support and services to ensure DISA uses the leading edge communication technologies.

**E. Performance Metrics:**

Modeling and Simulation's systems engineering is measured by its impact on the DoD communications planning and investment strategy, with criteria based on performance of a broad spectrum of technical activities. These include application assessments; contingency planning; network capacity planning and diagnostics; system architecture evaluation; technical and operational assessments of emerging technologies; and systems-level modeling and simulation.

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Exhibit R-3 Cost Analysis							DATE: February 2005					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
RDT&E, Defense-Wide/07			DII Engineering & Integration / PE 0302019K				Modeling & Simulation / E65					
Cost Category	Contract Method & Type	Performing Activity & Location	Total PYS Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Modeling and Simulation Systems Engineering and Integration	CPFF	Verizon/BBNT McLean, Va	0	0	N/A	0.725	02/06	0.729	02/07	Contg	Contg	1.454
Com modeling and simulation	CPFF	OPNET Tech, Inc. Bethesda, MD	0	0	N/A	0.457	01/06	0.460	01/07	Contg	Contg	0.917
	CPFF	Pragmatics, McLean, Va	0	0	N/A	0.675	01/06	0.679	01/07	Contg	Contg	1.354
	CPFF/8A	CNS, Inc Springfield, Va	0	0	N/A	0.400	01/06	0.400	01/07	Contg	Contg	0.800
	CPFF	Booz, Allen & Hamilton, McLean, VA	0	0	N/A	0.501	03/06	0.495	03/07	Contg	Contg	0.996
		Various Contracts	0	0	N/A	0.100	Various	0.100	Various	Contg	Contg	0.200
TOTAL			0	0		2.858		2.863				5.721

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Exhibit R-4 Schedule Profile													Date: February 2005																									
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07													PROGRAM ELEMENT DII Engineering & Integration / PE 0302019K													Project Number and Name Modeling a& Simulation/E65												
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011									
	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						
Horizontal Engineering									△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△				△	△	△	△	△	△	△	△		
Modeling and Simulation Applications									△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△	△				△	△	△	△	△	△	△	△		

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<b>Exhibit R-4a Schedule Detail</b>		<b>DATE:</b> February 2005						
<b>APPROPRIATION/BUDGET ACTIVITY</b>	<b>PROGRAM ELEMENT</b>						<b>PROJECT NAME AND NUMBER</b>	
RDT&E, Defense-Wide/07	DII Engineering & Integration / PE 0302019K						Modeling and Simulation / E65	
<u>Schedule Profile</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
Horizontal Engineering			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Modeling and Simulation			1-4Q	1-4Q	1-4Q	1-4Q	1-4Q	1-4Q
Applications								