

Exhibit R-2, RDT&E Budget Item Justification				DATE: February 2005				
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07				R-1 ITEM NOMENCLATURE C4I for the Warrior/PE 0303149K				
COST (in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Total Program Element (PE)	34.601	23.526	6.311	6.462	6.569	6.711	6.910	7.162
Information Dissemination Management/IM01 *	9.539	9.244	0	0	0	0	0	0
Command and Control Infrastructure Modernization (C2IM)/T55 **	14.182	4.760	0	0	0	0	0	0
Network Warfare Simulation (NETWARS)/E62 ***	10.880	9.522	6.311	6.462	6.569	6.711	6.910	7.162

A. Mission Description and Budget Item Justification: This program element (PE) is the Chairman of the Joint Chiefs of Staff (CJCS) initiative that promotes joint and coalition C4I interoperability. Through it the DoD seeks to identify, prioritize, and solve C4I interoperability problems. These three overlapping phases lead the Department to global interoperability for US military forces deployed anywhere, on any mission, with maximum flexibility in force composition. Efforts under this PE provide focus and visibility into resolving C4I interoperability issues.

\* Beginning in FY 2006, development efforts for IDM capabilities will be under the Net-Centric Enterprise Services (NCES) Program, PE 0303170K.

\*\* Beginning in FY 2006, Command and Control Infrastructure Modernization will be realigned to the Joint Command and Control Program in PE 0303158K.

\*\*\* NETWARS (formerly Technical Integration Services) is now funded as a separate project in PE 0303149K. The Modeling and Simulation segment of Technical Integration Services has been realigned to PE 0302019K beginning in FY 2006 due to its direct engineering support to that PE.

Information Dissemination Management (IDM) integrates Government-Off-the-Shelf (GOTS) and Commercial-Off-the-Shelf (COTS) advanced information management technology to provide Information Awareness, Access, and Delivery Management to C4ISR (surveillance and reconnaissance) systems to enhance their information dissemination performance. Command and Control Infrastructure Modernization provides the prototyping, development, testing, and deployment of information system based mission capabilities and will use the Net-Centric Enterprise Services (NCES) infrastructure as it becomes available. These information system components will provide an improved situational awareness and analysis set of services, as required within the Global Information Grid (GIG). Messaging capabilities will be

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engineered and implemented to provide continued interoperability between existing legacy systems and pending messaging system interfaces (such as deployed and nuclear user communities and allies). In addition to providing support for the integrated information operations within the SIPRNET (the classified DoD internet), components will be developed for the exchange of information with allies, coalition partners, and the Homeland Defense communities. NETWARS is a state-of-the-art C4 Modeling and Simulation (M&S) tool used by C4 planners and analysts to: (a) assess the effects of full operational combat traffic loading on current and future communications systems and networks in a joint task force, major theater of war scenario, (b) conduct quick turn-around communications planning for contingency operations including small regional conflicts and peacekeeping scenarios, and (c) evaluate the impact of new communications technologies, organizational structures, and operational concepts. This program element is under Budget Activity 07 because it involves efforts supporting operational systems development.

B. Program Change Summary:

Program Change Summary:	FY04	FY05	FY06	FY07
Previous President's Budget	36.489	24.712	30.784	34.100
Current Submission	34.601	23.526	6.311	6.462
Total Adjustments	-1.888	-1.186	-24.473	-27.638

Change Summary Explanation:

FY 2004 change is due to below threshold reprogramming.  
FY 2005 change is due to undistributed Congressional reductions to the Defense-Wide RDT&E appropriation.  
FY 2006 and FY 2007 changes are due to the realignment of Command and Control Infrastructure Modernization to

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<p>the Joint Command and Control Program in PE 0303158K as well as future developmental efforts for IDM moving under the auspices of the Net-Centric Enterprise Services Program in PE 0303170K. Also, the NETWARS (formerly Technical Integration Services) is now a separate project in PE 0303149K. The Technical Integration Services segment has been realigned to PE 0302019K and retitled Modeling and Simulation due to the direct engineering support that this project provides to the GIG infrastructure.</p>								

Exhibit R-2a, RDT&E Project Justification				DATE: February 2005				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT			PROJECT NAME AND NUMBER			
RDT&E, Defense-Wide/07		Information Dissemination Management /PE 0303149K			IDM/IM01			
COST (in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Information Dissemination Management/IM01	9.539	9.244	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification: Information Dissemination Management (IDM) integrates Government-Off-the-Shelf (GOTS) and Commercial-Off-the-Shelf (COTS) advanced information management technology to provide Information Awareness, Access, Delivery Management, and Support services to C4ISR (surveillance and reconnaissance) systems to enhance their information dissemination performance. The goal is to provide the warfighter three critical capabilities: awareness of the existence of operationally relevant information, access to the relevant information, and delivery of relevant information in an authenticated, secure, and timely manner. The core services are defined by the "Framework for Information Dissemination Management" document distributed in April 1998 as Awareness, Access, Delivery, and Support and satisfy requirements described in the IDM Mission Needs Statement validated by the Joint Requirements Oversight Council (JROC) in July 1999, and the Capstone Requirements Document approved by the JROC in January 2001. Rather than being developed as a "system", IDM is being incrementally developed and fielded as tools and services, providing a rapid insertion of technology capability to the warfighter. IDM directs end-to-end information flows throughout the info-structure in accordance with command policy. It supports information flow across echelons, from national centers to tactical warfighters and coalitions, by improving awareness of information holdings, access to the information, retrieval of information via smart pull, and management of information products via various communications paths.

This RDT&E project continues development and integration of Feature Packs. Capabilities will address such improved and additional functionality as enhanced search and awareness features, alert notifications, message routing enhancements, improved ability to advertise information holdings, enhanced smart pull capabilities for mission information, and other features that support the Combatant Commander. Patches and fixes will be incorporated into maintenance releases as needed. Future requirements for additional or improved functionality will be gathered at regularly scheduled user conferences and evaluated at configuration control boards.

B. Accomplishments/Planned Program:

	FY04	FY05	FY06	FY07
Subtotal Cost	9.539	9.244	0.00	0.00

Content Staging - Continue to establish an initial Content Staging (CS) capability baseline to support information

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sharing of service and agency information products by providing an awareness of and access to that information. Continue fielding IDM feature packs and maintenance releases to the Combatant Commands and to selected forward deployed sites, primarily, but not exclusively in the CENTCOM Area of Responsibility (AOR). By the end of FY 2005, all Combatant Commanders will have initial/pilot IDM capabilities, with at least some presence in their AORs. Continue the integration of information sources into the IDM infrastructure to make their information holdings available to the IDM user community. Provide logistics support and sustainment of operations. Maintain 24X7 Help Desk/Environment. Assist in implementation and operationalizing of new and enhanced IDM capabilities contained in releases 4.x, 5.x, and 6.x and incremental bands of capabilities. Provide reachback, onsite technical engineering assistance, information assurance assistance to establish a local accreditation baseline, refresher training, and Mobile Training Team (MTT) support to the fielded locations. Further, by the end of FY 2005 the initial transition framework from content staging to NCES will be in place.

Development and Integration - Continue development and integration of improved capabilities through feature packs and maintenance releases capabilities. Feature packs will address such improved and additional functionality as enhanced search and awareness features, alert notifications, message routing enhancements, improved ability to advertise information holdings, and enhanced smart pull capabilities for mission information. Incorporate patches and fixes into maintenance releases as needed. Future requirements for additional or improved functionality will be gathered at regularly scheduled IDM User Conferences and evaluated at configuration control boards. Development of enhanced capabilities beyond FY 2005 will be under the auspices of the Net-Centric Enterprise Services (NCES) Program.

Testing - Continue with a comprehensive testing and evaluation program for IDM tools and services to include Independent Verification & Validations (IV&Vs), functional, security, performance, and operational assessments.

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C. Other Program Funding Summary:

	<u>FY04</u>	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>FY08</u>	<u>FY09</u>	<u>To</u> <u>Complete</u>	<u>Total</u> <u>Cost</u>
Operations and Maintenance, DW	1.587	4.622	7.702	2.498	3.801	0.000	0	19.940
Procurement, DW		1.256						1.256

D. Acquisition Strategy: All RDT&E work will be contracted out or funded using MIPRs.

E. Performance Metrics: Information Dissemination Management: Performance criteria consist of bandwidth utilization, accuracy of information delivery and elapsed time for delivery. Measures taken before and after implementation illustrate improvements in delivery of information using IDM. Additional operational metrics are also in place that provide a qualitative assessment of how easy IDM is to operate. Finally, on-site contractor augmentation is being used to continuously gather a wide array of user inputs regarding how well IDM is performing in meeting its functional requirements. To accurately measure customer satisfaction with IDM, a User Feedback capability on the SIPRNet IDM Web site has been established. This is used both to measure acceptance and satisfaction with IDM, but also serve as a conduit for suggestions and new requirements. Regularly scheduled follow-on visits to sites to monitor effectiveness are part of the deployment methodology. Schedule, performance, and customer satisfaction measures will be compiled both as a realtime barometer as to how well IDM is doing in satisfying the needs of present customers, but also to predict success in meeting future IDM objectives. The nature of this compiled data will permit objective assessments and predictions as to the quality and reliability of IDM support to its customers. To demonstrate the utility and benefit of the system, notional information products such as Air Tasking Orders (ATO) and intelligence summaries were used for testing and benchmarks were developed as part of IDM evaluations. In an IDM System Assessment Evaluation Report dated 30 June 2003, for example, ATOs were delivered in 71 minutes using IDM Frontline compared to a benchmark of 307 minutes without IDM. Using IDM Publish/Subscribe the ATOs were delivered in 4 seconds, compared to 307 minutes. The summary stated in part: "...IDM can significantly improve the information distribution and management capabilities of USCENTCOM. These systems satisfied all functional requirements and substantially improved the bandwidth use, timeliness, and accuracy of information distribution..." Some specific performance measures include:

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- Security Performance Improvement Goal- At IOC provides the necessary interfaces to enable IDM directory, security, and format management operations (Resource, Status, Scheme, Directory, Security, Operations, and Administration). Provide system and user administrative controls. Planned Performance Metric - Does the IDM 4.1 architecture provide the necessary security precautions to protect the military operations and national objectives.

- Search and Retrieval Performance Improvement Goal - Information Advertisement, Search, and retrieval capabilities to the global enterprise at IOC, the results of which are 95% relevant to the user query. Metric: Information Advertisement, Search, and retrieval capabilities to the global enterprise at IOC, the results of which are 95% relevant to the user query.

- Delivery Performance Improvement Goal: At FOC provide the capability to perform seamless, automated, and peer-to-peer information delivery control by tying expanded quality of service parameters to specific heterogeneous communications links. Metrics: (1) Accuracy - Percentage of data accuracy obtained during information access; (2) Timeliness - Time to receive usable information products; (3) Relevancy - Percentage of user success rating for events.

- Integration Performance Improvement Goal: At FOC integrate IDM/CS services with appropriate data guards, PKI, server certificates, and Virtual Private Networks (VPNs). Metric: Does the IDM 4.1 architecture provide the necessary security precautions to protect the military operations and national objectives. IDM has migrated to an enterprise level system and the IDM services developed under this program will be a content staging (CS) service within the Net-Centric Enterprise Services (NCES). At the program level, CS/IDM employs Earned Value Management techniques and participates in DISA's Program Plan Review process quarterly. All contracts deliver monthly status reports on efforts accomplished and planned, deliverables produced, planned and actual schedule/cost/hours expended. Monthly, and in critical cases, bi-monthly or weekly Progress Status Reviews are held. Software deliverables are inspected visually for completeness and adherence to requirements, directory structure and segment identification requirements, and undergo graphical user interface functional testing and regression testing where applicable. Documentation is reviewed and accepted based on adherence to task order requirements, completeness, and technical merit. At a macro level, the IDM Build Plan is the measure for performance as it covers multiple releases and shows at a glance not only current efforts but past accomplishments or difficulties. It provides an extensive historical record, along with future projections. On a micro level, the Milestone Schedule is a measure for performance for

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the most imminent release. The Build Plan states the requirement, the computer platforms targeted, the date for accomplishing the requirement, whether or not this requirement will be retrofitted to earlier releases, and the responsible agent. The Milestone Schedule states the requirement, the computer platforms targeted, the date for accomplishing the requirement, and the responsible agent. Documents are color coded with the traditional red (difficulty with performance or schedule), yellow (warning of potential difficulty), blue (in testing), and green (tested and ready for release). Customer acceptance is the greatest performance measurement tool. All IDM documentation, to include the Build Plan, will be available on the IDM homepage for constant review by the entire customer base, in addition to the people involved in the established structure. Customers know what is included in each release. The two performance measures are adherence to schedule and adherence to approved Build Plan contents. Earned Value is tracked throughout the life of the contract. The customer base is realistic and cooperative when trade-offs must be made in performance or schedule.

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<b>Exhibit R-3 Cost Analysis</b>				<b>DATE:</b> February 2005								
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<u>Cost Category</u>	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total PYs Cost</u>	<u>FY05 Cost</u>	<u>FY05 Award Date</u>	<u>FY06 Cost</u>	<u>FY06 Award Date</u>	<u>FY07 Cost</u>	<u>FY07 Award Date</u>	<u>Cost To Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Product Development	Various	Various	3.512	3.025	Various	0.000	N/A	0.00	N/A	0	6.637	N/A
Product Fielding	Various	Various	5.292	5.180	Various	0.00	N/A	0.00	N/A	0	10.698	N/A
Test & Evaluation	Various	Various	.735	1.039	Various	0.00	N/A	0.00	N/A	0	1.774	N/A
Totals			9.539	9.244		0.00		0.00				

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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 Information Dissemination Mgmt /PE 0303149K													Project Number and Name IDM/IM01												
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						
Develop IDM 4.1.3	▲	▲																																				
Test IDM 4.1.3		▲	▲																																			
Deploy IDM 4.1.3			▲	▲																																		
Develop IDM 4.1.3 NCES Transition Messaging Release				▲	▲																																	
Test IDM 4.1.3 NCES Transition Messaging Release					▲																																	
Deploy IDM 4.1.3 NCES Transition Messaging Release						▲																																
Develop IDM 4.1.3 Feature Pack 2 Discovery						▲	▲																															
Test IDM 4.1.3 Feature Pack 2 Discovery							▲																															
Deploy IDM 4.1.3 Feature Pack 2 Discovery								▲																														

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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> Information Dissemination Management /PE 0303149K	<b>PROJECT NAME AND NUMBER/</b> IDM / IM01

<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>
Develop IDM 4.1.3	1-2Q							
Testing of IDM 4.1.3	2-3Q							
Deploy IDM 4.1.3	3-4Q							
Develop IDM 4.1.3 NCES Transition Messaging	4Q	1Q						
Testing of IDM 4.1.3 NCES Transition Messaging Release		1Q						
Deploy IDM 4.1.3 NCES Transition Messase Release		2Q						
Develop IDM 4.1.3 Feature Pack 2 Discovery		2-3Q						
Testing of IDM 4.1.3 Feature Pack2 Discovery		3Q						
Deploy IDM 4.1.3 Feature Pack 2 Discovery		4Q						

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COST (in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Project Cost	14.182	4.760	0	0	0	0	0	0

A. Mission Description and Budget Item Justification: This project provides for the prototyping, development, testing, and deployment of information systems based mission capabilities and will utilize the Net-Centric Enterprise Services (NCES) Core Enterprise Services (CES) and/or NCES Evaluation Capability Modules (ECM) as they become available. These components will support Global Information Grid (GIG) requirements of the Combatant Commanders (COCOM) and the Joint Task Forces (JTF). Based on DoD Transformation objectives, these components will provide for increased real-time execution capability, through an improved situational awareness and analysis set of services, as required within the GIG and its Joint, Service, Allied, and non-DoD components. This project will develop interoperability pilots, demonstrate them in appropriate evaluations or exercises (e.g., JFCOM evaluations, Joint Warrior Interoperability Demonstrations), with transitioning of matured components into a fielded Joint Command and Control (JC2)/next generation C2 and intelligence (C2I) capability. These capabilities will be designed to use the NCES infrastructure and support interoperability and integration across multiple C4I domains. Programs supported include Navy's XTCF Project, the Global Command and Control Family of Systems, and the Family of Interoperable Operational Pictures (FIOP). C2IM capabilities will evolve to support new commercial operating systems (with increased emphasis on security). In addition to supporting integrated information operations within the SIPRNET environment, components will be developed for the exchange of information with allies, coalition partners and the Homeland Defense communities.

During FY 2004 - FY 2005, as net-centric infrastructure services evolved, this project's funds were used to develop and pilot the initial User Defined Operational Picture (UDOP) infrastructure capabilities supporting the Command and Control Community of Interest (C2 COI). Mature UDOP capabilities will provide a tailored, relevant, and correlated operational picture that will enable the edge user to share that view with a collaborative COI. Capabilities will be realized within a Services-Oriented Architecture (SOA) that leverages NCES (e.g., discovery services) and the Global Information Grid-Bandwidth Expansion (GIG-BE) to provide improved timely situational awareness for the next generation of C2I capabilities. Each user or aggregation of users will determine the appropriate operational picture for their particular mission using a producer/consumer or publish/subscribe model that supports raw and processed data for Task, Post, Process and Use (TPPU) paradigm as well as smart push. More flexible and extensible than the currently deployed client-server based Common Operational Picture (COP), the loosely coupled UDOP will provide increased agility for the user by generating a picture on demand as opposed to a hierarchal COP generated by a single command authority.

Initial C2 COI UDOP spirals were demonstrated in late FY 2004 in Horizontal Fusion's Quantum Leap 2, and support the

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<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	14.182	4.760	0	0	0	0	0	0

C2 COI Global Strike and Situational Awareness ECMs to be showcased in early FY 2005 as part of Net-Centric Capability Pilot's (NCCP) Oktoberfest demonstration. C2 COI ECMs are made available to users on the SIPRNET for evaluation, maturation, and limited operational use. Additionally, they will support concept exploration and technical risk reduction for the next generation of C2I (e.g., JC2). In FY 2005, funding requirements for high priority operational activities reduced available funds for this effort. As a result, C2IM's FY 2005 efforts will focus on hardening and maturing previously developed capabilities. Beginning in FY 2006, C2IM will be realigned to the Joint Command and Control Program in PE 0303158K.

B. Accomplishments/Planned Program:

The major products delivered under C2IM/C2 COI UDOP are Architecture Products and Pilot/Demo Services Products. Cost detail, broken out by services (capabilities), is as follows:

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>
Subtotal Cost	4.020	1.198	0	0

Runtime Services for Net-Centric Computing:

C2IM runtime services enable the discovery and integration of information published within the net-centric computing environment. These services are used to dynamically build tailored presentations of real-time situational awareness information, the C2 COI UDOP, according to user preferences and operational requirements of the Combatant Commands and JTFs. FY 2005 funding will be used to harden and mature UDOP and associated interfaces to the NCCP ECMs/services developed in FY 2004 and FY 2005.

FY 2004 and FY 2005 funds are used for:

- Common situation awareness and situation analysis support services
- Runtime search and discovery of network resources
- Network resource metadata collection, storage, management and vending
- Common Horizontal Fusion services (Horizontal Fusion provides toolsets that will enable smart pull and rapid integration of data by users.)
- Network publication service for "community spaces"
- Integrated collaborative planning supporting C2, Combat Support (CS) and Intelligence

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- Net-centric Joint Warfighter portal supporting integration of C2, CS, and Intel information repositories

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>
Subtotal Cost	3.112	1.444	0	0

Common Edge Services and Warfighter Visualizations:

Common Edge Services enable the tailored and secure user access to NCES infrastructure services and the intelligent pull of all information available within the net-centric environment. Users will be able to establish their context and seamlessly gather appropriate information for their particular mission and functions. In addition to user authentication mechanisms and the integration of NCES information discovery services, Common Edge Services will enable the integration of real-time situational awareness information from multiple sensors and data sources. FY 2005 funding will be used to harden and mature the common Edge User pilot services developed during FY 2004 and FY 2005.

FY 2004 and FY 2005 funds are used to:

- Integrate information, displays, and decision aids, shared across a joint force, for collaborative situation development, crisis assessment, courses of action development/selection planning and execution.
- Provide mission-tailored JTF displays of real-time combat information to support operational and tactical decision-making across the JTF.
- Provide access to NCES user authentication and authorization services.

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>
Subtotal Cost	1.973	0.706	0	0

Web Enabling Legacy Applications:

This effort supports the integration of existing information system components into the next generation C2I capability. FY 2005 funds will be used to integrate web-enabled legacy applications with the Net-Centric pilot services developed in FY 2004 and FY 2005.

FY 2004 and FY 2005 funds are used to:

- Integrate functionality from GCCS, GCSS, and relevant Advanced Concept Technology Demonstrations (ACTDs) into JTF headquarters capability.

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<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, Defense-Wide/07			<b>PROGRAM ELEMENT</b> C4I for the Warrior/PE 0303149K			<b>PROJECT NAME AND NUMBER</b> Command and Control Infrastructure Modernization (C2IM)/T55		
<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	14.182	4.760	0	0	0	0	0	0

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>
Subtotal Cost	3.216	0.952	0	0

**System Engineering for Tailorable C2 Capability Suites:**

Provides the architecture supporting the deployment of net-centric services and the integration of capabilities into multiple end-user applications. Enables multiple channel distribution and integration of capabilities through the web, wireless, and handheld platforms and clients. FY 2005 funding will provide engineering support for the piloting of net-centric services developed during FY 2003 and FY 2004.

FY 2004 and FY 2005 funds will be used for:

- Common JTF HQ architecture with architectural compliance guidelines and validation mechanisms
- Software capabilities that require nominal hardware/software platforms
- Piloting tailored C2 capability suites

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>
Subtotal Cost	1.861	0.460	0	0

**Information Interoperability and Security for Homeland Defense and Coalition Partners:**

This effort provides the tools needed for the integration of information between security domains and supports the secure transfer of information between SIPRNET and other external networks as required by the JTFs. FY 2005 funding will be used to provide assessments of effectiveness and military utility of the security and information exchange pilot services developed during FY 2003 and FY 2004.

FY 2004 and FY 2005 funds will be used for:

- C2 capability to coordinate force protection and homeland defense operations
- Prototype coalition communication mechanisms (includes provisions for intermittent network access)
- Extensible Mark up Language (XML) based message transformation and translation into common formats and vocabularies
- Assessment of effectiveness and military utility for security services and information exchange services

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<b>Exhibit R-2a, RDT&amp;E Project Justification</b>				<b>DATE:</b> February 2005				
<b>APPROPRIATION/BUDGET ACTIVITY</b> RDT&E, Defense-Wide/07			<b>PROGRAM ELEMENT</b> C4I for the Warrior/PE 0303149K			<b>PROJECT NAME AND NUMBER</b> Command and Control Infrastructure Modernization (C2IM)/T55		
<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	14.182	4.760	0	0	0	0	0	0

C. Other Program Funding Summary: N/A

D. Acquisition Strategy:

Will make use of MITRE support.  
DISA Next Generation Contractual vehicle will be used.

E. Performance Metrics: The performance metrics for the software include capacity (number of messages communicated), portability, extensibility, and architectural scalability (number of clients and number of track objects).

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<b>Exhibit R-3 Cost Analysis</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			C4I for the Warrior / PE 0303149K			Command and Control Infrastructure Modernization (C2IM) / T55						
<u>Cost Category</u>	<u>Contract Method &amp; Type</u>	<u>Performing Activity &amp; Location</u>	<u>Total PYs Cost</u>	<u>FY 05 Cost</u>	<u>FY 05 Award Date</u>	<u>FY 06 Cost</u>	<u>FY 06 Award Date</u>	<u>FY 07 Cost</u>	<u>FY 07 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
System Engineering	OTF&O	MITRE, FFRDC McLean, VA	1.548	0.700	Oct-04	0	N/A	0	N/A	0	2.248	2.248
Engineering Support	MOA	JPL, FFRDC San Diego, CA	1.450	0.300	Jan-05	0	N/A	0	N/A	0	1.750	1.750
NCCP / (UDOP) Pilot Integration	TBD	TBD Norfolk, Va	0.200	0.650	Mar-05	0	N/A	0	N/A	0	0.850	0.850
C2IM UDOP JDEP Testing	MOA	SSC-SD GOVT San Diego, CA	0.650	0.240	Feb-05	0	N/A	0	N/A	0	0.890	0.890
UDOP SW Dev & Tech Suppt	F&O	NGMS, FGM, Polexis Reston, VA	12.197	1.594	Oct-04	0	N/A	0	N/A	0	13.791	13.947
UDOP Visualization/Portal SW	F&O	NGMS, FGM, Polexis Reston, VA	3.000	0.425	Oct-04	0	N/A	0	N/A	0	3.425	3.425
UDOP Engineering Support	F&O	NextGen/TBD	2.500	0.450	Mar-05	0	N/A	0	N/A	0	2.950	2.950
UDOP Architecture/Engineering	F&O	S&T Assoc. Reston, Va	3.799	0.401	Mar-05	0	N/A	0	N/A	0	4.200	4.200
Engineering/Tech Svcs	Various	Various	2.650	0.000	N/A	0	N/A	0	N/A	0	2.650	2.650
	Total		27.994	4.760								

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Exhibit R-4 Schedule Profile													Date: February 2005																									
Appropriation/Budget Activity RDT&E, Defense-Wide/07													C4I for the Warrior/PE 0303149K													Command and Control Infrastructure Modernization(C2IM)/T55												
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						
<b>Architecture/Integ/ Dev.</b>																																						
UDOP/NCCP Integration &Test	△	△	△	△	△																																	
UDOP SW Dev V2		△	△	△	△																																	
UDOP Portlet Dev v2		△	△	△	△																																	
<b>Pilots / Demonstrations</b>																																						
NCCP/UDOP Spring Demonstration			△	△	△																																	
NCCP/UDOP Fall Demonstration				△	△	△	△	△																														

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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> C41 for the Warrior/PE 0303149K	<b>PROJECT NAME AND NUMBER</b> Command and Control Infrastructure Modernization (C2IM)/T55

<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>
Architecture / Integr / Development UDOP/NCCP Integration Test	1Q-4Q	1Q						
UDOP SW Development V2	2Q-4Q	1Q						
UDOP Portlet Development V2 Pilots / Demonstrations	2Q-4Q	1Q						
NCCP/UDOP Spring Demonstration	3Q-4Q	1Q						
NCCP/UDOP Fall Demonstration Architecture, Development, Integration & Test Demo/Pilot Exercise	4Q	1Q-3Q						

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Exhibit R-2a, RDT&E Project Justification					DATE: February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07			PROGRAM ELEMENT C4IFTW/PE 0303149K			PROJECT NAME AND NUMBER NETWARS (Formerly Technical Integration Services) /E62		
COST (in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Project Cost	10.880	9.522	6.311	6.462	6.569	6.711	6.910	7.162

A. Mission Description and Budget Item Justification: The mission of the DISA Technical Integration Services effort is to support the successful deployment of DoD information systems by performing a broad spectrum of activities in support of C4I programs. DISA supports the development of C4I programs and systems through analytical and technical integration activities including application performance assessments; cross-domain network solutions; contingency planning; network capacity planning and diagnostics; system architecture development and evaluation; technical and operational assessment of emerging technologies; and systems-level modeling and simulation. DISA provides systems engineering and technical integration support dedicated to solving problems for, and meeting the unique engineering, integration and analysis needs of its customers (Combatant Commands (COCOMs), Services, Defense Agencies, Office of the Secretary of Defense, and the Joint Staff).

The Network Warfare Simulation (NETWARS) is a state-of-the-art C4 modeling and simulation (M&S) tool that can be used by C4 planners and analysts to: (a) assess the effects of full operational combat traffic loading on current and future communications systems and networks in a joint task force major theater of war scenario, (b) conduct quick turn-around communications planning for contingency operations including small regional conflicts and peacekeeping scenarios, and (c) evaluate the impact of new communications technologies, organizational structures, and operational concepts. NETWARS supports the acquisition process by conducting end-to-end analyses of networks with new C4 systems and C2 applications applied, reducing new system testing costs and risks, and providing empirical support for C4 acquisition decisions. NETWARS also provides C4 measures of performance to the Joint Warfare Simulation (JWARS) tool and fulfills the M&S requirements of the Joint Network Management System (JNMS). Ultimately, NETWARS makes it possible for communications planners and analysts to validate their C4 support plans and assess their ability to execute them, thus enabling the warfighter to achieve network-centric warfare operations.

\* Beginning in FY 2006, only the NETWARS part of this project will remain in PE 0303149K. The other portion has been realigned to Modeling and Simulation/Project E65 under PE 0302019K because it directly supports DISA's Engineering and Integration tasks under that program element.

B. Accomplishments/Planned Program:

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>
Subtotal Cost	1.657	0	0	0

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Exhibit R-2a, RDT&E Project Justification					DATE: February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07			PROGRAM ELEMENT C4IFTW/PE 0303149K			PROJECT NAME AND NUMBER NETWARS (Formerly Technical Integration Services) /E62		
COST (in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Project Cost	10.880	9.522	6.311	6.462	6.569	6.711	6.910	7.162

FY 2004 - Support to DISA Network Operations continued to improve operational effectiveness, assess performance management tools, and end-to-end visibility through network instrumentation, near-real-time prediction capability, capacity planning, and visualization tools.

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>
Subtotal Cost	.861	1.900	0	0

FY 2004 - Warfighter & Combatant Commands Support provided: (a) wartime performance and vulnerability assessments of the DoD networks for the Combatant Commands (COCOMs) through instrumentation, visualization, and troubleshooting (b) assessments of the impact of new technology programs on existing or planned DoD networks, and (c) assessments of operations and technical impact of the Combatant Commands' ability to support communications during peacetime and wartime escalations.

FY 2005 - Warfighter & Combatant Commands Support will provide network traffic analysis for warfighter architecture capable of analyzing end-to-end system engineering issues.

	<u>FY 04</u>	<u>FY 05</u>	<u>FY 06</u>	<u>FY 07</u>
Subtotal Cost	6.035	4.779	6.311	6.462

FY 2004 - C3 Community Support will provide assessments of impact on C4ISR (surveillance and reconnaissance) networks during combat for use by the Joint Staff, the Office of the Secretary of Defense (OSD), and the Combatant Commands, by: (1) Enhancing M&S capability, (2) Developing an integrated M&S tool based on COTS products end-to-end, (3) Providing modeling for the JWARS for design of "Blue" communication scenarios and (4) Continuing configuration management support, and verification and validation review of the NETWARS.

FY 2005 - C3 Community Support will continue to provide the C3 Community M&S tools to evaluate software development of communication and related systems for OSD and COCOMs to determine communications effects on combat outcome.

FY 2006 - Enhance the NETWARS program by establishing communication plans for tactical networks, based on traffic generated by Net-Centric Enterprise Services (NCES) Core Enterprise Services.

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Exhibit R-2a, RDT&E Project Justification					DATE: February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07			PROGRAM ELEMENT C4IFTW/PE 0303149K			PROJECT NAME AND NUMBER NETWARS (Formerly Technical Integration Services) /E62		
COST (in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Project Cost	10.880	9.522	6.311	6.462	6.569	6.711	6.910	7.162

FY 2007 - Provide DoD decision makers with the impact of NCES services prior to conflict or war.

	<u>FY 04</u>		<u>FY 05</u>		<u>FY 06</u>		<u>FY 07</u>
Subtotal Cost	1.377		1.646		0		0

FY 2004 - DISA Program Support: (1) Continued Defense Information System Network (DISN) performance assessments for existing and transitioning networks, applications, technology, and develop recommendations for network performance improvements; (2) Conducted end-to-end system performance assessment for DISN and GCCS, and built new capability into models/tools to support these assessments; (3) Performed modeling and traffic engineering to support DISN/GIG network; (4) Performed topological design in support of the GIG Bandwidth Expansion Initiative; (5) Supported modeling and design of the NCES; and (6) Lead the Telecommunication Services Management (TSM) initiative to improve the DISA telecommunications service process. The TSM is an end-to-end improvement for accurate and timely customer billing, improved services delivery time, enhanced customer service and satisfaction, and a timelier cost recovery period. FY 2005 - DISA Program Support will continue to provide performance assessments for existing and transitioning networks, applications, and technology; and develop recommendations for network performance improvement, survivability and reliability.

	<u>FY 04</u>		<u>FY 05</u>		<u>FY 06</u>		<u>FY 07</u>
Subtotal Cost	.950		1.197		0		0

FY 2004 - Key Interface Point Architectures established the architecture baselines for key DISA communication interfaces for the convergence of network services and capabilities to support warfighter needs in net-centric warfare environment and aiding in the achievement of information superiority in emerging, complex military scenarios.

FY 2005 - Key Interface Point Architectures will continue to provide architecture baselines for key DISA communication interfaces to satisfy joint information flow requirements.

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Exhibit R-2a, RDT&E Project Justification					DATE: February 2005			
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-Wide/07			PROGRAM ELEMENT C4IFTW/PE 0303149K			PROJECT NAME AND NUMBER NETWARS (Formerly Technical Integration Services) /E62		
COST (in millions)	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Project Cost	10.880	9.522	6.311	6.462	6.569	6.711	6.910	7.162

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>FY 11</u>	<u>Total Complete</u>	<u>Total Cost</u>
RDT&E, DW (PE0302019K)	0	0	2.858	2.863	3.022	5.234	6.225	6.428	Contg	Contg
O&M, DW	11.399	1.095	0.327	0.724	0.857	0.911	0.933	0.953	Contg	Contg

D. Acquisition Strategy: Uses a number of contractors for modeling support with SAIC 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 uniquely qualified to provide the necessary level of technical support and services to ensure DISA uses leading edge communication technologies.

E. Performance Metrics:

This project is measured by its impact on the DoD communications planning and investment strategy, with criteria based on the 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. In FY 2006 and thereafter, NETWARS will be evaluated based on its ability to provide DoD decision makers with the impact on Net-Centric Enterprise Services prior to conflict.

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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			C4IFTW /PE 0303149K				NETWARS (Formerly Technical Integration Services) /E62					
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
Technical Integration Services System Engineering and Integration	CPFF	OPNET Tech, Inc. Bethesda, MD	4.070	3.319	01/05	3.551	01/06	3.635	01/07	Contg	Contg	Contg
Com modeling and simulation	FFRDC	RAND Tyson Corner, VA	.555	0	N/A	0	N/A	0	N/A	N/A	.555	.555
	CPFF/	Northrop Comp Grumman Reston, VA	.950	.800	11/04	0	N/A	0	N/A	N/A	1.750	1.750
	CPFF/Comp	SAIC Seven Corners, VA	1.444	.160	11/04	0	N/A	0	N/A	N/A	1.604	1.604
	FFRDC	MITRE Seven Corners, VA	0	.397	12/04	0	N/A	0	N/A	N/A	.397	.397
	CPFF/Comp	Verizon/BBNT McLean, Va	0	.753	2/05	0	N/A	0	N/A	N/A	.753	.753
	CPFF/8A	CNS, Inc Springfield, Va	.400	.400	1/05	0	N/A	0	N/A	N/A	.800	.800
	CPFF/Comp	Pragmatics, McLean, Va	0	.633	11/04	0	N/A	0	N/A	N/A	.633	.633
	CPFF/Comp	Booz, Allen & Hamilton, McLean, Va	3.082	2.840	12/04	2.760	12/05	2.827	12/06	Contg	Contg	Contg
		Various Contracts	.379	.220	N/A	0	N/A	0	N/A	N/A	.599	.599
Subtotal Product Development			10.880	9.522		6.311		6.462				
TOTAL			10.880	9.522		6.311		6.462				

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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 C4IFTW / PE 0303149K								Project Number and Name NETWARS (Formerly Technical Integration Services)/E62																
Fiscal Year	2004				2005				2006				2007				2008				2008				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
Support to DISA Ops	△	△	△	△	△	△	△	△																								
Warfighter Support	△	△	△	△	△	△	△	△																								
C3 Community Support	△	△	△	△	△	△	△	△		△				△				△				△				△				△		
DISA Program Support	△	△	△	△	△	△	△	△																								
KIP architectures			△			△																										

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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> C4IFTW /PE 0303149K	<b>PROJECT NAME AND NUMBER</b> NETWARS (Formerly Technical Integration Services) /E62

<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>
Support to DISA Ops	1-4Q	1-4Q						
Warfighter Support	1-4Q	1-4Q						
C3 Community Support	1-4Q	1-4Q	2Q	2Q	2Q	2Q	2Q	2Q
DISA Program Support	1-4Q	1-4Q						
KIP architectures	3Q	1Q						