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Exhibit R-2, RDT&E Budget Item Justification				Date: May 2009
Appropriation/Budget Activity RDT&E DW/BA #6			R-1 Item Nomenclature: Support to Networks and Information Integration/0605170D8Z	
Cost (\$ in millions)	FY 2008	FY 2009	FY 2010	
Total PE Cost	10.725	14.642	14.916	
Command Information Superiority Architecture	5.363	5.581	5.686	
Defense Architecture Repository	1.231	1.283	1.307	
Integrated Planning and Management	1.955	2.065	2.103	
Support to NII Mission Requirements	2.176	5.713	5.820	

A. Mission Description and Budget Item Justification:

This program element supports studies in the areas of networks, information integration, defense-wide command and control (C2), and communications. This program is funded under Budget Activity 6, RDT&E Management Support because it includes studies and analysis in support of RDT&E efforts.

Support to NII Mission Requirements accomplishments and plans:

Program Accomplishments and Plans:

FY 2008 Accomplishments (\$2.176 million)

- Researched new approaches to military and civil-military command and control suitable for 21st Century coalition operations including stability and reconstruction.
- Continued to fund the Edge Institute at the Navy Post Graduate School (NPS) and selected research efforts at other universities.
- Continued to support the Network Science Center at the USMA at West Point to engage faculty and cadets in network-centric C2 related projects.
- Continued, in collaboration with allies and NATO partners, the development and testing of a maturity model for network-enabled coalition command and control and the development of related metrics.
- Supported DoD organizations in the design and conduct of C2-related experimentation.
- Continued to work with the DoD community and international partners to improve the understanding of Information Age command and control related concepts, technologies, and experiments.
- Conducted 12th International Command and Control Research and Technology Symposium.
- Conducted workshops to explore command and control related issues.
- Continued to develop manuscripts for widely read and respected C2 publications and outreach program.

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- Maintained and expanded C2 research community website
- Continued campaign of experimentation related to information sharing, collaboration, and trust.

FY 2009 Plans (\$5.713 million)

- \$3.500 million transferred from the Air Force for Global Positioning System (GPS) User Equipment Synchronization to conduct OASD/NII oversight of Global Positioning System (GPS) management and planning activities required for the National Space-Based Positioning, Navigation and Timing Executive Committee. During FY 2009 this \$3.5 million will fund the following (in italics):
 - Full time on-site staff support to ASD(NII)/DoD CIO Space Programs and Policy (3 STE)
 - Full time PNT liaison officer for OASD(NII)/DoD CIO at US STRATCOM (1 STE)
 - Update and coordinate the GPS Security Policy DODI 4650.0x
 - Author and coordinate the Navigation Warfare Concept of Operations DODI 4650.0x with US STRATCOM
 - Author and coordinate Next Generation Air Transport System (NextGen) DODI 5030.x in concert with Air Force and Federal Aviation Administration (FAA)
 - Author and coordinate Security Control of Navigation Aids DODI 5030.x in concert with NORAD, NORTHCOM, Department of Homeland Security (DHS), and FAA
 - Author and coordinate DoD/Department of Transportation (DOT)/DHS MOA to define responsibilities for biennially updating the Federal Radio-Navigation Plan (FRP)
 - Draft Red Key Sundown Policy in support of GPS Security Policy DODI 4650.0x
 - Provide staff support, perform research and conduct studies as directed by DEPSECDEF in his role as co-chair of the National Executive Committee for Space-Based PNT and for ASD(NII)/DoD CIO in his role as co-chair of the Executive Steering Group
 - Perform annual update of National Five-year Plan for Space-Based Positioning, Navigation and Timing (PNT)
 - Participate in transition planning for the National PNT Architecture with DOT and the National Space Security Office (NSSO) and prepare a PNT Architecture Transition Plan for use by the DoD and the civil agencies
 - Perform biennial update of the DoD PNT Science and Technology Roadmap using the PNT Architecture recommendations
 - Conduct study to identify and catalog DoD and allied GPS users in support of developing GPS Security Policy DODI and Navigation Warfare DODI
 - Conduct study to explore the plausibility of DoD using civil and foreign PNT services in support of developing a Navigation Warfare Concept of Operations (CONOP) with US STRATCOM and the Joint Navigation Warfare Center (JNWC)

\$2.213 million - Command and Control Research:

- Enhance the tools and instrumented environments that support C2-related research
- Continue to pursue research on new approaches to military and civil-military command and control suitable for 21st Century coalition

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operations including stability and reconstruction.

- Continue to fund the Edge Institute at the Navy Post Graduate School (NPS) and selected research efforts at other universities and research centers.
- Continue to support the Network Science Center at the USMA at West Point to engage faculty and cadets in network-centric C2 related projects.
- Continue, in collaboration with allies and NATO partners, the development and testing of a maturity model for network-enabled coalition command and control and the development of related metrics
- Support DoD organizations in the design and conduct of C2-related experimentation
- Continue to work with the DoD community and international partners to improve the understanding of Information Age command and control related concepts, technologies, and experiments.
- Conduct 13th International Command and Control Research and Technology Symposium.
- Conduct workshops to explore command and control related issues.
- Continue to develop manuscripts for widely read and respected C2 publications and outreach program.
- Maintain and expand C2 research community website
- Continue campaign of experimentation related to information sharing, collaboration, and trust.

FY 2010 Plans (\$5.820 million)

- \$3.500 million - Global Positioning System (GPS) User Equipment Synchronization to conduct OASD/NII oversight of Global Positioning System (GPS) management and planning activities required for the National Space-Based Positioning, Navigation and Timing Executive Committee. Funding supports:
 - Full time on-site staff support to ASD(NII)/DoD CIO Space Programs and Policy (3 STE)
 - Full time PNT liaison officer for OASD(NII)/DoD CIO at US STRATCOM (1 STE)
 - Author and coordinate International Supplement to GPS Security Policy DODI 4650.0x
 - Author and coordinate Information Assurance/COMSEC Supplement to GPS Security Policy DODI 4650.0x
 - Finalize and execute the GPS Security Policy DODI 4650.0x
 - Finalize and implement Navigation Warfare Concept of Operations DODI 4650.0x with US STRATCOM
 - Finalize and implement Next Generation Air Transport System (NextGen) DODI 5030.x in concert with Air Force and FAA
 - Finalize Security Control of Navigation Aids DODI 5030.x in concert with NORAD, NORTHCOM, DHS, and FAA
 - Develop NextGen interfaces with the GPS Wing, Joint Program Development Office (JPDO), Air Force, and Policy Board for Federal Aviation (PBFA)
 - Conduct biennial update of the Federal Radio-Navigation Plan (FRP) during CY 2010
 - Coordinate and implement Red Key Sundown Policy

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- Provide staff support, perform research and conduct studies as directed by DEPSECDEF in his role as co-chair of the National Executive Committee for Space-Based PNT and for ASD(NII)/DoD CIO in his role as co-chair of the Executive Steering Group
- Perform annual update of National Five-year Plan for Space-Based Positioning, Navigation and Timing (PNT)
- Author DoD portion, conduct interagency coordination and submit the GPS Biennial Report to Congress for signature by the ASD(NII)/DoD CIO
- Oversee and coordinate execution of U.S National PNT Architecture Transition Plan within DoD and in the interagency forum
- Conduct study to identify and catalog civil/commercial GPS uses, requirements, service benefits and augmentation dependencies to inform implementation and execution of Navwar CONOP, Security Control of Navaids, the National PNT Architecture, and NextGen

- \$2.320 million - Command and Control Research:
 - Continue to enhance the tools and instrumented environments that support C2-related research
 - Continue to pursue research on new approaches to military and civil-military command and control suitable for 21st Century coalition operations including stability and reconstruction.
 - Continue to fund the Edge Institute at the Navy Post Graduate School (NPS) and selected research efforts at other universities and research centers.
 - Continue to support the Network Science Center at the USMA at West Point to engage faculty and cadets in network-centric C2 related projects.
 - Continue, in collaboration with allies and NATO partners, the development and testing of a maturity model for network-enabled coalition command and control and the development of related metrics
 - Support DoD organizations in the design and conduct of C2-related experimentation
 - Continue to work with the DoD community and international partners to improve the understanding of Information Age command and control related concepts, technologies, and experiments.
 - Conduct 14th International Command and Control Research and Technology Symposium.
 - Conduct workshops to explore command and control related issues.
 - Continue to develop manuscripts for widely read and respected C2 publications and outreach program.
 - Maintain and expand C2 research community website
 - Continue campaign of experimentation related to information sharing, collaboration, and trust.

B. Program Change Summary:

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Previous Presidents Budget	11.055	14.723	15.024
Current Presidents Budget	10.725	14.642	14.916
Total Adjustments	-0.330	-0.081	-0.108

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Congressional program reductions			
Congressional rescissions			
Congressional increases			
Reprogrammings			
SIBR/STTR Transfer			
Program Adjustment	-0.330	-0.081	-0.108
PBD Adjustment			
Transfer			

Program Change Summary:

- FY 2008: Program adjustment.
- FY 2009: Program adjustment.
- FY 2010: Program adjustment.

C. Other Program Funding Summary: N/A

D. Acquisition Strategy: N/A

E. Performance Metrics:

- Community participation in command and control research program (CCRP) events.
- Number of requests for / downloads of CCRP publications.
- Number of international countries engaged in net centric discussions and collaborative research and analysis efforts.
- Number of researchers using CCRP-developed models, metrics, and experimental environments and tools.
- Successfully sponsored symposia/workshops to discuss command and control research initiatives.

CISA Performance is based on the number of initiatives that transition to the net-centric environment to support operations.

Measures include:

- Timely development and issuance of policy, guidance, processes, and technologies to build, populate, govern, operate, and protect the Network.
- Policies developed and issued for GIG design, architecture content management, implementation, and operations.

DARS Performance Metrics:

- Timely development and issuance of policy, guidance, processes, and technologies to build, populate, govern, operate, and protect the

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Network.

- Policies developed and issued for GIG design, architecture content management, implementation, and operations.

C2 Integrated Planning & Management Performance Metrics:

- Successfully develop, coordinate, and publish DOD C2 policies and operational concepts.
- Establishment of an information integration and decision portfolio of C2 services and applications to demonstrate selected capabilities.
- Development of Dynamic Operational Communities of Interest services based on the capabilities provided by the NCES Program.

Establishment of an ontological framework and XML data model to permit the meta-tagging of information integration decision portfolio data at the strategic and national C2 level in a manner consistent with other DoD data strategies and modeling efforts.

Exhibit R-2a, RDT&E Budget Item Justification				Date: May 2009
Appropriation/Budget Activity RDT&E DW/BA #6			Project Name and Number Command Information Superiority Architecture (CISA) – P170	
Cost (\$ in millions)	FY 2008	FY 2009	FY 2010	
Command Information Superiority Architectures	5.363	5.581	5.686	
<p>A. Mission Description and Budget Item Justification: The CISA program provides a structured planning process based on Information Technology (IT) best business practices to define current and objective capabilities for IT support to assigned missions in a net-centric environment. CISA is the DoD program that provides architectures in compliance with the Clinger-Cohen Act, OMB Circular A-130, E-Gov Act and other related higher level guidance from the Federal CIO Council and the Federal Enterprise Architecture Program Management Office, which mandates the development and use of architectures as validation for IT investment decisions. The CISA program develops and maintains the Global Information Grid Enterprise Architecture, the Department’s enterprise architecture as directed by Title 40. It supports the development of the framework, processes, and standards for developing and maintaining a DoD federated enterprise architecture. CISA is the leading developer for the net-centric reference model, the standard evaluation guide used by DoD Program Managers at all echelons of command for transitioning DoD programs to the net-centric environment. The CISA program supports the development of architectural standard tools and systems, including the DoD Architectural Framework manual and artifacts as well as facilitating the effective use of architectures in IT portfolio management. Develop and maintain key GIG policy and guidance documents that drive the acquisition, transition to and operation of a net-centric GIG; the implementation of policy/guidance through a set of critical supporting activities such as IT standards management, and DoD transition to Internet Protocol version 6 (IPv6); Real Time Service and IP convergence and enforcing policy through key enterprise governance mechanisms. Review and assess Command and Control, Computers, Communications and Intelligence Support Plans / Information Support Plans for the DoD CIO, identifying interoperability, supportability, net-centric and integration issues.</p>				
B. Accomplishments/Planned Program				
	FY 2008	FY 2009	FY 2010	
Accomplishment/ Effort/Subtotal Cost	5.363	5.581	5.686	
RDT&E Articles Quantity *(as applicable)				
<p>FY 2008 Accomplishments (\$5.363 million) - Reviewed and revised GIG related policies to support net-centric operations. Provided additional guidance, where needed. Deconflicted and managed GIG policies and guidance and provided tools so they can be easily accessible and understandable by users.</p>				

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- Continued to support the evolution of GIG NetOps and configuration management concepts to improve IA, information sharing and interoperability. Incorporated, as appropriate, portfolio management into these mechanisms.
- Continued to refine overall governance paradigm. Monitored and assessed Component compliance with GIG policy and guidance. Evaluated and helped resolve issues
- Continued develop the Federated Enterprise Architecture Framework.
- Continued the update of Defense Architecture Framework (DoDAF).
- Continued development of GIG NCOW Reference Models.
- Continued updates to the Core Architecture Data Model (CADM).
- Continued development and provided an integrated set of COCOM Net-Centric assessment capabilities for implementing transition plans.
- Continued development of the International Defence Enterprise Architecture Specification (IDEAS) Data Model.
- Continued the support of the ISP tools analysis development.
- Developed the DoD Information Enterprise Architecture (DIEA).

FY 2009 Plans (\$5.581 million)

Continue to review and revise GIG related policies to support net-centric operations.

- Continue to support the evolution of GIG NetOps and configuration management concepts to improve IA, information sharing and interoperability. Incorporate, as appropriate, portfolio management into these mechanisms.
- Continue to refine overall governance paradigm. Monitor and assess Component compliance with GIG policy and guidance.
- Continue progression of development of Net Centric DoD Architecture Framework
- Continue support of GIG NCOW Reference Models
- Continue support to the CADM
- Evolve the DIEA in support of net-centric objectives, interoperable infrastructure, and investment management.
- Develop and publish Defense Information Enterprise Transition Plan (DIETP) the enterprise-wide progress toward achieving net-centric information sharing

FY 2010 Plans (\$5.686 million)

- Continue to provide strategy, policy, oversight, and guidance for NetOps across the DoD Enterprise.

- Develop and issue additional NetOps policies as required.
- Oversee the execution of NetOps Implementation Plan, Strategy and policy.
- Work with CC/S/As to ensure that DIE Architecture principles, rules, constraints and best practices are applied.
- Continue to work with CC/S/As to ensure capabilities for operating and defending the GIG are acquired, managed, integrated and synchronized.
 - Continue to provide guidance to NetOps and improve GIG situational awareness and GIG command and control.
 - Continue to work with CC/S/As to improve NetOps information sharing.

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- Continue to partnership with CPM office to implement NetOps capabilities based on the Net Management Functional Solution Analysis (NM FSA)
- Support the Development of formal NetOps training and certification for NetOps personnel across DoD.
- Develop Implementation plans to support new revised GIG Related Policies. Lead DoD-wide working groups to address implementation initiatives status, issues and best practices.
- Continue to refine governance structures to address new policies and oversight requirements.
- Continue to monitor and assess component compliance regarding new policies and guidance.
- Conduct reviews to monitor Component implementation plans for the Defense Information Enterprise Transition Plan (DIETP) outline goals and initiatives.
- Continue refinement of the Net Centric DoD Architecture Framework to address new demands technologies and IA requirements.

C. Other Program Funding Summary:

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
O&M, DW (PE0902198D8Z)	4.372	4.806	4.551

D. Acquisition Strategy: N/A

Exhibit R-2a, RDT&E Budget Item Justification				Date: May 2009
Appropriation/Budget Activity RDT&E DW/BA #6			Project Name and Number Defense Architecture Repository Systems (DARS) – P170	
Cost (\$ in millions)	FY 2008	FY 2009	FY 2010	
DARS	1.231	1.283	1.307	
<p>A. Mission Description and Budget Item Justification: DARS is the Department’s enterprise registry, catalog and navigation map for enterprise architecture. It serves as the Department’s primary catalog of architecture data holdings and provides users the ability to register holdings metadata and search, retrieve, and use DoD architecture data in federated architecture data repositories across DoD. DARS provides a key component of the Department’s net-centric data management capability by federating enterprise architecture data across the Department. It enables alignment of program architecture components with the Federal Enterprise Architecture Business Reference Model - consistent with OMB directives for exhibit 300s - via the DoD Business Reference Model. DARS implements a federated search capability and metadata catalog that will interoperate with the Department’s Net-Centric Enterprise Discovery Service and enterprise content metadata catalog. Architecture metadata is searchable using the DARS federated discovery web service. The discovery search results provide links to architecture data that is retrievable based on user roles and access permissions. Implementations are accessible on both the NIPRNET (unclassified) and SIPRNET (Collateral Classified). Key features of the DARS program focus on: (1) Making architecture data visible, accessible, trusted, understandable, and interoperable (2) enabling reuse of validated architecture data to build “composite” integrated architectures; (3) enabling architecture analysis; and, (4) integrating architecture data into the DoD mainstream decision-making processes. The Department of the Air Force, Army, and Navy CIO’s are collaborating in the development of DARS federation web services via the Federated Joint Architecture Working Group under the auspices of the DoD Enterprise Architecture Summit to ensure DoD-wide access to and usability of all components of the composite DoD enterprise architecture model.</p>				
B. Accomplishments/Planned Program				
	FY 2008	FY 2009	FY 2010	
Accomplishment/ Effort/Subtotal Cost	1.231	1.283	1.307	
RDT&E Articles Quantity *(as applicable)				
<p>FY 2008 Accomplishments (\$1.231 million)</p> <p>- Continued to implement capabilities required to meet changes to the DoD Architecture Framework (DoDAF) that will include capabilities to expand the “dynamic” assembly of architectures based on mission or process requirements or “tailorable packages” based on architecture data for assistance in decision making (DARS 7.0).</p>				

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- Continued integration of DARS data services into “Core Enterprise Services”.
- Fully integrated DARS data harvesting capabilities into a Federated Data-Centric environment.

FY 2009 Plans (\$1.283 million)

- Continue Operation and Maintenance of DARS
- Continue to implement capabilities required to meet changes to the DoD Architecture Framework (DoDAF)
- Continue integration of DARS data services into “Core Enterprise Services”
- Continue integration of DARS data harvesting capabilities into a Federated Data-Centric environment

FY 2010 Plans (\$1.307 million)

- Provide for and continue enterprise-level operational support for the DoD Architecture Registry System.
- Continue the development of the Core Architecture Data Model (CADM) providing common vocabulary for architecture information.
- Enforce transition to a complete services web-based application by expanding the current net-centric services based security and compliant met-data discovery with a collaborate environment that ensures end-to-end information assurance of validated architecture data.
- Work with DoD Component to refine requirements and processes to effectively expose existing architectures for reuse.
- Continue to expand and refine DARS to accommodate registration /federation requirements as defined by the Federated Joint Architectures Working Group.
- Continue integration of DARS data services into the “Core Enterprise Services”.

C. Other Program Funding Summary: N/A

D. Acquisition Strategy: N/A

Exhibit R-2a, RDT&E Budget Item Justification				Date: May 2009
Appropriation/Budget Activity RDT&E DW/BA #6			Project Name and Number Integrated Planning and Management – P170	
Cost (\$ in millions)	FY 2008	FY 2009	FY 2010	
Integrated Planning and Management	1.955	2.065	2.103	
A. Mission Description and Budget Item Justification:				
<p>The Integrated Planning and Management Project encompasses the National Leadership Command Capability (NLCC) Management Office's (NMO) responsibilities for establishing overall DoD policy with respect to the capability development, interoperability, standards, and architecture for Defense and National Leadership. The NMO serves as the single point of contact within the Department for policy, long-range plans, programs, integrated mission advocacy, and management of decision-maker capabilities. The objective of the NMO is to ensure capabilities are in place to provide complete and timely situational awareness and decision tools for senior decision-makers. Additionally, the NMO assists the ASD NII/DoD CIO as the Executive Agent and primary OSD advocate for the White House Military Office with oversight of a wide range of DoD command and control (C2) and communications assets and oversees the efforts of the Services and Agencies in the design, integration and deployment of critical and sensitive C2 capabilities. Specific areas of focus include nuclear and non-nuclear strategic strike, integrated missile defense, Continuity of Government (COG), and Senior Leadership Communications.</p>				
B. Accomplishments/Planned Program				
	FY 2008	FY 2009	FY 2010	
Accomplishment/ Effort/Subtotal Cost	1.955	2.065	2.103	
RDT&E Articles Quantity *(as applicable)				
<p>FY 2008 Accomplishments (\$1.955 million) Determined, in coordination with USD(P)/HD, the ability of the Gold network to support DoD's Continuity of Operations (COOP), Continuity of Government (COG), and Enduring Constitutional Government (ECG) missions directed by National Security Presidential Directive(HSPD) 51/Homeland Security Presidential Directive (HSPD) 20. Conducted a robust evaluation of the network in a realistically viable operational environment. - Investigated the development of emerging technologies that can be integrated to form advanced command capability concepts.</p> <p>FY 2009 Planned (\$2.065 million) Initiate the automation and integration of data into a DISA-developed management tool that facilitates informed decision making for NLCC capability management</p>				

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- Initiate the development of a Continuity of Government Communications architecture to enable compliance with Sec 18 of NSPD 51/HSPD 20
- Initiate the development of an integrated command and communications architecture, informed with on-going technology advancements for senior leadership support
- Work with Defense Laboratories and industry partners to fast-track promising technologies and to posture requirements for the long-term
- Initiate the identification and measurement of metrics for systems and technologies considered of primary importance to defense and national leadership capabilities
- Draft a comprehensive plan for developing capabilities to support information and mission assurance capabilities
- Conduct an initial analysis to frame experimentation concepts, design experiments and prototype tests for candidate or representative command systems and technologies
- Investigate shortfalls or deficiencies in programs that support White House and DoD senior leaders

FY 2010 Planned (\$2.103 million)

Manage to minimize or eliminate shortfalls or deficiencies in programs that support White House and DoD senior leaders

- Continue the automation and integration of data into a capability management tool that facilitates informed decision making for NLCC capability management
- Continue efforts with Defense Laboratories and industry partners to fast-track promising technologies and to posture requirements for the long-term
- Finalize a comprehensive plan for developing capabilities to support information and mission assurance capabilities
- Investigate performance and capabilities of candidate or representative command systems and technologies through focused experimentation
- Conduct experimentation and identify appropriate technologies that will advance the capabilities needed to support COOP/COG/ECG requirements
- Develop prototype applications and services to fully populate the national leader capabilities experiment
- Continue the development and refinement of capability-based metrics; conduct experimentation and analysis to validate

C. Other Program Funding Summary: N/A

D. Acquisition Strategy: N/A

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