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Exhibit R-2, RDT&E Budget Item Justification				Date: May 2009
Appropriation/Budget Activity RDT&E DW/BA #7			R-1 Item Nomenclature: Net Centricity /0305199D8Z	
Cost (\$ in millions)	FY 2008	FY 2009	FY 2010	
GIG Evaluation Facilities (GIG-EF) and GIG Enterprise-Wide Systems Engineering Advisory Activities	9.856	12.647	1.479	
A. Mission Description and Budget Item Justification:				
<p>This program element will support enterprise-wide systems engineering, information management and information technology activities focused on the development, integration, testing and assessment of capabilities and applications in support of joint and coalition warfighter needs. Resources will support net centric collaborative development and operations to improve situational awareness, interoperability and performance and operational planning efforts. This program will instantiate enterprise-wide systems engineering guidance and provide technical solutions to solve enterprise interoperability and performance issues to enable the warfighter, intelligence, and business communities to meet their respective mission requirements. This program is funded under Budget Activity 7, Operational System Development, because it supports engineering development and testing of RDT&E activities.</p> <p>The Global Information Grid Evaluation Facilities (GIG-EF) and Enterprise-Wide Systems Engineering (EW SE) project provides resources needed to test key systems in an end-to-end manner across the enterprise, including providing for system engineers, at the Naval Research Laboratory and several other test locations in the U.S. The evaluation facilities will be used to evaluate interoperability of multiple Transformational Communications programs including but not limited to the Joint Tactical Radio System (JTRS), Global Information Grid Bandwidth Expansion (GIG BE), Teleports, and Transformational Satellite Communications System (TSAT). The funding will also provide the engineering resources necessary for performing the Global Information Grid (GIG) enterprise-wide systems engineering oversight function. Resources will be applied to enterprise-wide systems engineering topics related to the successful integration of several programs that will form the GIG in areas such as information assurance (IA), quality of service (QOS), network management, interface definition and standards selection, and routing protocols. The GIG-EF & EW SE effort provides:</p> <ul style="list-style-type: none"> - Continuous oversight of the GIG's evolution - Maintains a GIG enterprise-wide technical direction - Establishes an enterprise-side analysis capabilities - Establishes a GIG compliance management program - Provides an independent, overarching review of technology and interface standards. - Ensures technical issues are identified early and schedules synchronized to produce a jointly interoperable, timely and cost-effective architecture development. - Prevents costly program reworks and restructuring, and more importantly, avoid delays in providing joint warfighter connectivity. 				

R-1 Line-Item No. 217

Page 1 of 5

UNCLASSIFIED

Note that FY09/10/11 funding disconnect resulted from duplicate cuts to a program titled Horizontal Fusion (HF) formerly part of this PE to support priority net centric transformation.. These cuts not only zeroed out the HF funding but also cut deeply into the GIG Evaluation Facility and GIG End-to-End Systems Engineering Activities in FY2010.

Program Accomplishments and Plans:

FY 2008 Accomplishments (\$9.856 million)

- Developed a cost benefit analysis to migrate to the Black Core.
- Developed a DoD level plan to migrate to the Black Core.
- Developed a service oriented architecture for tactical users.
- Developed interface requirements for tactical network management.
- Developed a HAIPE peer discovery service description.
- Developed approaches to provide a HAIPE peer discovery service at the tactical edge.
- Developed an information sharing environment.
- Developed an IPv6 Addressing plan.
- Gained approval for NCID 3.0.
- Updated and operationalized the GIG Interoperability Compliance Assessment tool.
- Used the GIG performance evaluation tool to support end to end enterprise level analysis.
- Worked with Services and Defense Agencies to identify and address cross-program issues and influence programs to implement compatible designs that maximize end to end performance.
- Established a GIG Technical Foundation compliance process to support existing DoD processes.
- Established GIG Performance Assessment process.
- Developed an approach to integrate cross-organizational compliance processes into a single environment.
- Developed an architecture to allow for voice interoperability between tactical voice nets and the DISN.

FY 2009 Plans (\$12.647 million)

- Ensure the GIG end-to-end quality of service framework evolves in accordance with the evolution of commercial products, services and technology
- Refine the GIG IA, routing architecture, and network management framework to be consistent with evolving commercial products, services, and technology
- Evolve the service oriented architecture for tactical users and translate to GIG technical direction
- Evolve the interface requirements for tactical network management and translate to GIG technical direction
- Evolve the HAIPE peer discovery service description and translate to GIG technical direction
- Evolve the HAIPE Peer Discovery Service solution for the tactical edge
- Evolve the NCID 3.0 to the GIG Technical Direction (GTD) and associated GIG Enterprise Service Profiles (GESPs)

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- Update the GIG Interoperability Compliance Assessment tool with enterprise level Information Assurance guidance
- Use the GIG performance evaluation tool to support end to end enterprise level analysis and the NC Portfolio Management process
- Work with Services and Defense Agencies to identify and address cross-program issues and influence programs to implement compatible designs that maximize end to end performance
- Perform end-to-end analysis for encrypting unclassified traffic across the GIG
- Perform end-to-end analysis for converging top secret WANs
- Evaluate vulnerability of IPv6 networks and address issues
- Evaluate cross program technical dependencies of the NECC program and address technical issues

FY 2010 Plans (\$1.479 million)

Due to the reduced funding level only a minimal, skeletal effort will be accomplished. Most of the previously planned technical work required to continue to evolve the GIG to provide the basis for net centricity will need to shift to FY2011.

- This funding will Ensure DoD Policy evolves to support effective governance to implement an interoperable GIG infrastructure
- Work with Services and Defense Agencies to promote net centricity, identify and address cross-program issues and influence programs to implement compatible designs that maximize end to end performance
- Evolve the GIG Technical Direction to include developing GIG Enterprise Service Profiles (GESPs) in the areas of enterprise services and network management at the tactical edge
- Work with Programs to pilot the PET and the GICA to refine the tools
- Interface with Portfolio Managers, DISA, the Services and Joint Staff to promote and co-ordinate GIG EW SE effort

The following efforts were planned but will be deferred due to the funding shortfall:

- Ensure the GIG end-to-end quality of service (QoS) framework evolves in accordance with the evolution of commercial products, services and technology
- Examine the GIG "Black Core" vision and define a plan for evolving to this vision, tracking implementation of the plan, and focusing on the tactical edge
- Develop the Cost Benefit Analysis and Implementation Plan for the Black Core, focusing on the tactical environment, to support future POMs
- Implement the HAIPE Peer Discovery Service based on the previously developed specification that supports fielding of this capability prior to FY12 to allow for the migration to the Black Core
- Develop a specification to support HAIPE Peer Discovery in the tactical environment
- Evolve the GIG Interoperability Compliance Assessment (GICA) tool with new technical guidance, to include enterprise level information assurance guidance
- Evolve the GIG Performance Evaluation Tool (PET) and Performance Assessment Framework (PAF) and use these tools as part of the end-to-end performance analysis process in support of the Capability Portfolio Management decisions

B. Program Change Summary:

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Previous Presidents Budget	10.154	12.716	1.490
Current Presidents Budget	9.856	12.647	1.479
Total Adjustments	-0.298	-0.069	-0.011
Congressional program reductions			
Congressional rescissions			
Congressional increases			
Reprogrammings			
SIBR/STTR Transfer			
Program Adjustment	-0.298	-0.069	-0.011

Program Change Explanation:

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:

- User Activity and Participation. A key measurement of GIG-EF success is the amount of user/program participation and usage of the GIG-EF in support of Joint warfighting requirements.
- Contributions to GIG development and transition. The GIG-EF should also advance the state of the art in support of GIG implementation
- Risk mitigation for the GIG.
- Demonstrations in support of GIG overall goals.
- Number of GIG Enterprise-Wide Systems Engineering Oversight working group requirements addressed.
- Tangible products such as frameworks and design guidance used for program assessments and reviews.
- Streamlined business processes for documenting GIG enterprise-wide technical guidance.
- Prioritized listing on enterprise-wide technical issue.

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- Technical solutions to enterprise interoperability and performance issues.
- Specific modifications to Programs based on the frameworks and guidance that improve program compatibility and end-to-end performance.
- A more collaborative environment where systems engineering organizations of individual GIG programs and the enterprise-wide systems engineering oversight organization mutually identify and solve issues related to maximizing end to end performance.

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