OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE
RDTE, Defense Wide BA 07	**0607828D8Z - Joint Integration and Interoperability**

COST ($ in Millions)		FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
P818	Joint Integration and Interoperability	53.236	53.425	49.371	48.108	47.705	48.340	49.022

A. Mission Description and Budget Item Justification: The FY 2005 National Defense Authorization Act (NDAA) directed the transfer of USJFCOM RDT&E funding of joint warfare experimentation and training programs from Navy accounts to new Defense Wide RDT&E accounts beginning in FY 2007. Funding to support the Joint Integration and Interoperability (JI&I) Program in FY 2006 and prior were "exploiting discovery" (Customer: OSD) reflected in the Navy's RDT&E Program under PE 0305118N.

The Unified Command Plan 2004 assigned USJFCOM with the mission as the Joint Force Integrator for interoperability and integration of future and fielded capabilities critical to Joint, Multi-National, and Interagency warfighting operations. In addition, Management Initiative Decision (MID) 912, signed by the Deputy Secretary of Defense (DEPSECDEF), 7 January 2003, expanded the USJFCOM JI&I role to increase operational through tactical level joint integration of the following capabilities: Common Operational and Tactical Pictures; Combat Identification; Situational Awareness; Adaptive Mission Planning and Rehearsal; Interoperability among Service/Agency intelligence systems; Interoperable Joint Fires, Maneuver, and Intelligence; and Integrated Joint Battle Management Command and Control. In support of these missions, the outcome of USJFCOM JI&I program is to:

-- identify, assess and develop mission capable solutions for COCOM interoperability and integration capability shortfalls;
-- provide Combatant Commanders with interoperable combat identification and situational awareness capabilities among United States Forces, Interagencies, and Allied and Coalition Forces in support to the Global War on Terrorism operations;
-- develop joint requirements supporting specific joint missions identified in MID 912 (Joint Close Air Support, Joint Fires, etc.);
-- develop joint integrated architectures that guide service capability mapping to achieve joint interoperability; and,
-- establish joint data standards and cross domain solutions to facilitate future system interoperability and integration.

The Quadrennial Defense Review (QDR) and follow-on Strategic Planning Guidance emphasized the need to continue building upon the Department's capability-based planning and management initiatives. To promote this shift and better integrate joint capability development across the Department's requirements, acquisition and resource allocation processes, the Deputy's Advisory Working Group (DAWG) chaired by the DEPSECDEF appointed the CDRUSJFCOM as the designated Joint Command and Control (JC2) Capability Portfolio Manager (CPM). The JC2 CPM has appointed the USJFCOM, J8 as the Command's Joint Capability Developer (JCD), charged with responsibility for day-to-day execution of CPM roles and responsibilities. The outcome of the JCD as the working management arm of the JC2 CPM is to develop courses of action to source, acquire, and develop Doctrine, Organization, Training, Material, Leadership, Personnel, Facilities (DOTMLPF) JC2 capabilities in conjunction and coordination with the Combatant Commanders, Services and Agencies.

The primary outputs include:
-- Orchestrate development and delivery of JC2 capabilities to address Warfighting capability area gaps and shortfalls, and
-- Provide systems engineering expertise (JC2 Communities of Interest (COIs) and appropriate architectures) on JC2 portfolio capabilities development.

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B. Program Change Summary	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008)	51.629	53.892	49.490
Current BES/President's Budget (FY 2009)	53.236	53.425	49.371
Total Adjustments	1.607	-0.467	-0.119
Congressional Program Reductions			
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-0.152		
SBIR/STTR Transfer	-1.055		
Other	2.814	-0.467	-0.119

FY 2007: Congressional reduction ($15.3M) for program growth.

FY 2008/2009: Program increase (FY 2008: $2.2M; FY 2009: $1.0M) provides funding for Recognition of Combat Vehicles (ROC-V) to extend the training tool for visual identification for friendly and enemy vehicles to include air to ground and maritime environment identification.

C. Other Program Funding Summary Not applicable for this item.

D. Acquisition Strategy Not applicable for this item.

E. Performance Metrics:

FY	Strategic Goals Supported	Existing Baseline	Planned Performance Improvement / Requirement Goal	Actual Performance Improvement	Planned Performance Metric / Methods of Measurement	Actual Performance Metric / Methods of Measurement
08						

Comment: Performance of Joint Integration and Interoperable systems is measured by successful delivery of systems solutions to Combatant Commands by required delivery dates.

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

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B. Accomplishments/Planned Program:

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Airborne Communications Capability (JACC)	5.400	9.300	9.400

Primary Outcome (objective) for this effort is to enhance Joint Force Commanders ability to exercise Operational and Tactical Command and Control. JACC was initiated in response to Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) Lessons Learned, COCOM command and control (C2) requirements, joint warfighter urgent operational needs and as a result of USJFCOM Hurricane Katrina disaster assistance.

JACC is programmed to provide Joint Force Commanders with a deployable communications network that connects joint edge users to each other and to the Global Information Grid (GIG) using legacy radios via an airborne gateway. JACC serves as the relay and makes dissimilar data and voice radios interoperable on the ground, at sea, or in the air. The three-year project under sponsorship of USJFCOM and USSTRATCOM will leverage the capabilities developed by the US Air Force sponsored Battle Field Airborne Communications Node (BACN), Rapid Attack Information Dissemination Execution Relay/Joint Translator Forwarder (RAIDER/JxF), Joint Communications Support Element Airborne Communications Suite (JACS) relay technology and Joint and Coalition Operations Support (JCOS) CABLE JCTD initiatives and transform them into a single "joint" capability.

The primary outputs and efficiencies to be realized are: 1) Increased interoperability between tactical data links. 2) Increased access to net-centric functionality for edge users. 3) Expansion of wideband connectivity for the joint warfighter. Objective capability efficiencies are:
-- Establishing 100% connectivity to all tactical data links and voice systems that have access to JACC;
-- Extending the range to 100% of all Line of Sight (LOS)-constrained systems within the 300 nautical miles JACC footprint
-- Including 100% of battlespace nodes through networking capabilities
-- Providing net-centric data storage and on-demand access to JACC users

FY 2007 Accomplishments:
The FY07 activities consisted of responding to the CENTCOM Joint Urgent Operational Needs (JUON) # CC-0174. The end product will be 12 Joint Airborne Communications Systems of the version 2 variant. On 3 July 2007, the C2 Functional Capabilities Board (C2FCB) and Joint Rapid Action Cell (JRAC) validated and endorsed the CENTCOM JUON. The USJFCOM solution provides a communications relay capability that meets the initial intended JACC capability goal of fielding war fighter improved C2 capability. Closing out the remaining FY07 goals will be to embed the capability on a manned aircraft. The Joint Rapid Acquisition Cell (JRAC) directed USAF to pursue this option when it endorsed the JUON on 3 July and report on a selected platform for interim fielding to the CENTCOM Area of Responsibility in response to CENTCOM JUON #CC-0174.

FY 2008 Planned Output:
Complete test and implementation of JACS version 2 capability to CENTCOM. Conduct system engineering integration of JACC capability on an Unmanned Aerial System (UAS). Conduct capability development and evaluation of an unmanned airborne relay system in partnership with Services in support of Regional Combatant Commander C2 requirements. Develop airborne gateway operational analysis via CABLE JCTD in partnership with STRATCOM, Air Force and Navy. Complete Joint Capability Development Document (CDD) to support program initiation in a Service Program of Record.
A new Analysis of Alternatives will be part of FY08 integration process.

FY 2009 Planned Output:
Begin transition to USAF Gateway and Unmanned Aerial Systems programs of record. Complete Joint Capability Production Document to support Milestone C achievement.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Blue Force Situational Awareness (JBFSA)	3.225	8.300	3.700

Primary Outcome (objective) for this effort is to improve overall warfighting effectiveness and to develop solutions that reduce the potential for fratricide. Blue Force Tracking (BFT) Beyond Line-of-Sight/Non-Line-of-Sight Mission Needs Statement (BFT BLOS/NLOS MNS) (Apr 02) and subsequent Joint Requirements Oversight Council Memorandum (JROCM) 128-03, and Combatant Command Joint Urgent Operational Need statements / requirements validated the need for an outcome that produced a joint, integrated, interoperable BFT / JBFSA air / ground / maritime operations capability. JROCM 076-05 endorsed specific approaches and actions identified by US Joint Forces Command (USJFCOM) in response to Operation Iraqi Freedom (OIF) Lessons Learned Report on preventing friendly fire incidents (fratricide prevention). To synchronize disparate and disjointed BFT efforts, the Joint Requirements Oversight Council (JROC) chartered the Combat Identification (CID) - BFT / JBFSA Executive Steering Committee (CID-BFT / JBFSA ESC), co-chaired by USJFCOM Joint Integration and Interoperability (JI&I) and Joint Staff VJ2.

Primary outputs can be characterized by the development and presentation of specific BFT / JBFSA solutions / recommendations that, upon implementation, will improve overall warfighter combat effectiveness and reduce the potential for fratricide (JROCM 276-05). These BFT / JBFSA developmental efforts are key to achieving the necessary milestones that will ultimately lead to the desired outcome of full capability development and integration within the force.

The primary outputs and efficiencies to be realized are: 1) Increased development and integration of common data formats and the modification of supporting software / architectures in order to allow Position Location Information (PLI)/Situational Awareness (SA) data to flow freely among U.S., NATO and coalition forces. 2) Increased capability and capacity for Data Dissemination through the establishment of net-centric integrated services that allows for seamless access to BFT / JBFSA information to prosecute operations in a bandwidth limited environment by all warfighting echelons; 3) Increased / improved Joint Air - Ground Situational Awareness Sharing capacity / capability through technical solutions, Concepts of Operation, Tactics, Techniques and Procedures (TTP) delivery, along with the development, integration, testing, production, and deployment of airborne BFT / JBFSA capabilities; 4) Improved and increased force capability for Battlefield Deconfliction / Fratricide Avoidance, by increasing interoperability of systems through BFT / JBFSA data exchange standardization; and 5) Increased integration and availability of BFT and JBFSA data between tactical and logistics support forces.

FY 2007 Accomplishments:
Planned, developed, and integrated the Mission Management Center (MMC) and Network Operations Center (NOC) functionality to provide near-term capabilities to resolve validated Combatant Command BFT interoperability shortfalls. Incorporated BFT / JBFSA capability to improve tactical level visibility efficiencies by 50 percent by building an initial capability that integrated a NATO interface through the MMC in March 2007 and enhancement by November 2007. Improved data interoperability through a common data interface capability. Developed a common BFT / JBFSA data exchange standard through BFT Community of Interest (COI) with initial demonstration for COI Milestone by 2 March 2007, Milestone three by July 2007. Converged systems of records through assessment of key legacy systems to recommend integration or phase out - reduce number of systems by 10 percent. Completed re-engineering of echelon-shared time-sensitive target data to a web-enabled and net-centric environment, and extension to Coalition Common Operating Picture (COP) / Common Tactical Picture (CTP). Continued friendly force visual / thermal signatures development and supporting training tools to improve overall capability efficiencies by 33 percent through enhancements to small boat, personnel modules, and combat identification (CID) marking systems. Fully transitioned MMC test bed capability into MMC and overarching BFT architecture, to include an initial capability to support coalition architectures.

FY 2008 Planned Output:
Develop Extensible Markup Language (XML) schemas and message translators to permit interoperability and display of blue force tracks on COP/Common Tactical Picture (CTP). Improve disadvantaged user visibility on CTP by 20 percent through airborne BFT reporting and dissemination capability. Migrate net-centric adaptors into the overall architecture. Improve interoperability between air-to-ground Systems of Record (SORs) and data links. Develop and improve Battlefield Visualization tools. Begin blue force logistics integration into COP. Transition BFT COI data standards into 60 percent of applicable SORs.

FY 2009 Planned Output:
Develop deployable light-weight, open-source, low cost hardware/software capability on existing Command and Control (C2) systems. Transition existing capabilities to Programs of Record (PORs)/SORs. Continue blue force logistics integration into a Common Operating Picture (COP). Begin developing, red, grey, and neutral data dissemination capability. Complete Army - Marine Corps convergence effort and begin developing the fielding solution.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Command and Control (JC2) Capabililty Portfolio Manager (CPM)	24.551	11.935	12.782

Primary Outcome (objective) for this effort is to establish an interoperable Joint Command and Control (JC2) environment that creates JC2 capabilities that are "born joint" not "made joint". The CPM outcome is to provide domain-wide visibility of requirements, resources, and capabilities that empower the Department of Defense to make the hard decisions needed to ensure that joint needs are being adequately addressed within fiscal constraints and at an acceptable degree of risk.

According to the Quadrennial Defense Review (QDR), the key role of interoperability is to improve warfighting capability and effectiveness. Building upon foundational work accomplished by the Joint Battle Management Command and Control (JBMC2) Program in FY06-07, the CPM has evolved to execute and fulfill that key role through a unique partnership among the joint warfighting, engineering, policy, acquisition and budget communities to work together in the assessment and resolution of joint operational capability and interoperability gaps. For example, the CPM working with this unique community assessed and delivered a number of warfighting capability enhancement recommendations across the Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities and Policy (DOTMLPF-P) solution spectrum that were acted upon in the FY09-13 Integrated Program/Budget Review cycle; significantly closing many long-standing joint capability gaps in the areas of: Net-Enabled Command Capability, Integrated Joint Fires and Blue Force Tracking, Deployable C2, Machine Foreign Language Translation, Data Link architectures to manage net-enabled weapon systems, and Joint Collaborative Information Environment. These enhancements will save lives, dramatically increase warfighting efficiency and effectiveness, and save millions over the program life of current legacy capability plans.

In accordance with QDR 2006 direction and DEPSECDEF designation of CDRUSJFCOM as the Department's Joint Command and Control (JC2) Capability Portfolio Manager (CPM), JBMC2 was assimilated into the JC2 Portfolio in FY 2007. This assimilation absorbed the JBMC2 processes and warfighting community relationships while refining the mission focus areas and capability delivery timeline. The initial JBMC2 Joint Mission Thread - Joint Close Air Support (JCAS) was completed and brought to maturity the proposed solution products initiated through static and technical assessments. The successfully proven methodology used to assess the Joint Close Air Support Mission Thread remains a useful construct for the CPM in assessing other C2 programs/systems and their linkage from Joint Capability Area(s) to Mission Tasks to Functions, to determine which functions/systems/applications within the JC2 portfolio should be continued, converged or eliminated to improve warfighter capability and interoperability. The CPM will also focus on the identification and resolution of C2 capability gaps and shortfalls.

These processes and relationships in the Joint Capability Area (JCA) of C2 will be leveraged by the JC2 CPM and are instrumental in successfully accomplishing the objectives of portfolio management; balanced, optimized mix of portfolio capabilities given risk and fiscal realities.

The Joint Battle Management Command and Control (JBMC2) program and processes, now part of the JC2 CPM portfolio, have and will continue to produce the following products: capability/interoperability requirements, e.g., turning concept/capability documentation into enforceable technical requirements the Services and/or Agencies like Defense Information Systems Agency (DISA) can design and build to; validated system of system architectures; standards and protocol technical recommendations; cross-Service coordinated and mission-specific tactics, techniques and procedures (TTP); operational assessments and proof of concept demonstrations for Joint solution sets.
The primary outputs and efficiencies to be realized as part of an overall JC2 CPM approach: 1) Improved, integrated, interoperable, and networked joint force; 2) Reduction in duplicative C2 systems/programs across the DoD portfolio; 3) Improved portfolio decisions and recommendations regarding investment strategies and development efforts; 4) Associated benefits to warfighter efficiency and effectiveness:

- Reduced fratricide, increased availability of close air support for troops under fire, more effective coordination of air assets, increased weapon accuracy;
- Common shared situational awareness;
- Coherent, coordinated operations, distributed and dispersed, including forced entry into anti-access or area-denial environments;
- Information superiority enabling more agile, more lethal, and survivable joint operations;
- Real-time offensive and defensive fires while minimizing fratricide;
- Transition from legacy, platform-centric systems to a net-centric environment focused on plug-and-play interoperability and application-independent data flow.

FY 2007 Accomplishments:
The JC2 CPM orchestrated a Focused Integration Team effort in an open and transparent process with full COCOM/Service/Agency and Joint Staff stakeholder engagement and participation over a five-month period and delivered a fiscally balanced program change proposal packet for the Department_s P/BR 09-13 cycle resulting in the movement of $600M and a number of policy related directives across the Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities and Policy (DOTMLPF-P) spectrum to enhance joint warfighting capabilities across the portfolio.

Technical and operational follow-on assessments in the areas of Deployment Planning, Collaborative Information Environment, Deployable C2 Capability, Common Operational Picture, Situational Awareness / Blue Force Tracking to assess gaps/ redundancies and provide basis for CPM investment recommendations.

The JC2 CPM provided a warfighter_s advocacy for the refinement, migration, acquisition and divestiture of JC2 capabilities by working across the Department_s decision support processes and DOTMLP-F spectrum to coordinate and integrate the efforts of Capability Providers.

FY 2008 Planned Output:
JC2 portfolio capability planning guidance to Components for POM 2010-2015 development; studies, analyses and operational assessments in coordination stakeholder community to support POM development and associated joint programming guidance, assessments, and oversight of execution prior year investment decisions. Refinement of analytic baseline, methodology and portfolio management information to better describe portfolio contents and facilitate cross-portfolio coordination and adjudication of issues related to POM 10 build. Includes JCA Tier II and III refinement; C2 systems and joint architectures mapping; analytic tools and authoritative JC2 CPM data repositories; C2 policy and direction; and DoD C2 Roadmap.

FY 2009 Planned Output: Portfolio capability solutions necessary to satisfy warfighting requirements and/or strategic direction in the area of C2. Includes Joint Capability Area (JCA) Tier II and III development; analytic tools and authoritative JC2 CPM data repositories; C2 policy and direction; DoD C2 Roadmap. Decisions and recommendations regarding investment strategies for FY2011-2015.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Coalition Combat Identification (CCID) Advanced Concept Technology Demonstration (ACTD)	5.600	0.500	4.000

Primary Outcome (objective) for this effort is to enhance Coalition Combat Identification Capabilities. The Coalition Combat Identification Advanced Concept Technology Demonstration (CCID ACTD) assessed the military utility of emerging combat identification technologies in a series of operational demonstrations conducted during 2003-2005. The technologies assessed provide a cooperative target identification capability enabling both ground forces and aircrew to identify friendly forces via query/response. During the course of the ACTD, international participation, with both technologies and forces, grew from an original three nation partnership to a coalition team of nine nations collaborating in the final operational demonstration, Exercise Urgent Quest (September-October 2005, United Kingdom's Salisbury Plain Training Area). Following the conclusion of Exercise Urgent Quest, the Coalition Military Utility Assessment (CMUA) was produced and presented, along with system cost estimates, to U.S. service investment decision-makers. The service authorities accepted the ACTD's conclusions and recommendations and are converged on implementing joint acquisition strategies for two of the ACTD four core technologies, the Battlefield Target Identification Device (BTID) and Radio Based Combat Identification (RBCI).

During April 2007 Joint and Coalition Operations Support (JCOS), USJFCOM and the Services concurred in the extension of the ACTD through FY 2008. The outcome of the Extension of the CCID ACTD is to assess the military utility of the designated non-cooperative target identification (NCTI) technologies for coalition operations and further inform U.S. and allied investment in the optimal combat identification capability. In order to achieve this outcome, the candidate technologies will be demonstrated under conditions designed to replicate coalition operations. The assessment of NCTI technologies will consider, as required, other relevant fielded or emerging devices in the Combat Identification-Blue Force Tracking/Joint Blue Force Situational Awareness (CID-BFT/JBFSA) family of systems. However, the Coalition Military Utility Assessment (CMUA) will focus on the ACTD's NCTI technologies rather than systems that have been previously assessed or fielded. The extension leveraged recent joint and service Air-Ground CID studies in the definition and application of measures of effectiveness and performance to the CMUA process. These metrics include but are not limited to the following as assessed under conditions representative of operations (e.g. daylight, terrain, obscurants, target aspects):

- Effectiveness
- Enemy targets engaged
- Fratricide risk reduction
- Operational tempo (ground and air)
- Operator/staff workload
- Rules of Engagement (ROE) enhancement
- Integration with platforms and other systems
- Performance
- Correctness of ID
- Timeliness of ID
- Range to ID
- Accuracy
- Interoperability

FY 2007 Accomplishments: The CCID ACTD Extension provided an opportunity to assess the military utility of designated non-cooperative target identification (NCTI) technologies and further inform coalition investment in combat identification family of systems. The Bold Quest operational demonstration encompassed advanced technologies, as well as fielded systems and allowed warfighters (to include eight nations and one multi-national force) to demonstrate technologies under conditions designed to represent realistic coalition air and ground operations. The ground maneuver and Close Air Support portion of the demonstration were held at the U.S. Army_s National Training Center (NTC) at Fort Irwin, California and Nellis AFB, Las Vegas, Nevada. Deep Air Interdiction and Time Sensitive Target scenarios were conducted at the Nellis ranges. The results from the demonstration has yielded the data and analysis necessary to publish the Coalition Military Utility Assessment in sufficient time to impact the POM 10-15 investment decision process.

The following technologies and programs were tested during Bold Quest.
- Laser Target Imaging Program (LTIP) _ LTIP provides positive, day/night, timely and reliable stationary ground target detection, cueing and pilot interpreted identification at ranges compatible with advanced weapons (JDAM, JSOW).
- Synthetic Aperture Radar Aided Target Recognition (SAR/ATR) _ SAR/ATR provides positive, all weather, day/night, timely and reliable stationary ground target detection, cueing and aided target recognition at ranges compatible with advanced weapons (JDAM, JSOW)
- Radio Based Combat ID/Situational Awareness (RBCI/SA) _ RBCI is a software only modification to existing combat radios to provide interrogation and reply combat identification capability. During Bold Quest, this proven technology will undergo interoperability testing with the UK Bowman Radio system.

FY 2008 Planned Output:
Transition of the CCID ACTD extension capabilities will be via a two-pronged approach consisting of an Extended User Evaluation (EUE) and follow-on development, production and sustainment efforts. The first prong is the FY 2008 EUE, during which the Operational Manager (OM) will finalize the CCID ACTD extension Concept of Operations and Tactics, Techniques, and Procedures (CONOPS/TTPs), training package, Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) recommendations, and capabilities documentation

via results from ongoing operational use and periodic joint and coalition exercises. Synthetic Aperture Radar/Aided Target Recognition (SAR/ATR) and Laser Target Imaging Program (LTIP) will be the primary capabilities provided during this period. Other cooperative technologies may be included (e.g., Radio Based Situational Awareness). The second prong, which is coincident but separate from the CCID ACTD extension, includes the follow-on System Development and Demonstration (SDD), production and sustainment phases in FY 2008 and beyond. The primary products for transition include the SAR/ATR and the LTIP technologies. The CCID ACTD extension will be completed in 2008. The planning and preparation phases for the Coalition Combat Identification Network Capabilities (CCIN) will begin in FY 2008.

FY 2009 Planned Output:
The outcome is the military utility of the designated Coalition Combat Identification Network Capabilities (CCIN) technologies for coalition operations and further inform U.S. and allied investment in the combat identification networked capability. The CCIN will build upon the recent work of the CCID ACTD Extension, JC2 Network Enabled Weapons Joint Test and Evaluation (JT&E) and the Weapons Data Link Network (WDLN) ACTD. The demonstration will provide a collective venue for the Joint Data Integrated (JDI) JT &E to demonstrate and utilize I-SMART processes and E-SMART toolset to assess platform readiness to operate in a Joint Command & Control of Net Enabled Weapons Joint Test and Evaluation (JT&E) and the Weapons Data Link Network (WDLN) ACTD. The demonstration will provide a collective venue for the Joint Data Integrated (JDI) JT &E to demonstrate and utilize I-SMART processes and E-SMART toolset to assess platform readiness to operate in a Joint Command & Control of Net Enabled Weapons (JC2NEW) operational environment an

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Combat Capability Developer (JCCD)	4.200	7.600	7.600

Primary Outcome (objective) for this effort is to identify and develop the capability needs and essential DOT_LPF and Policy attributes in support of Net-Enabled Command Capability (NECC) for use in the development of the NECC system of Command and Control (C2) capabilities. Strategic Planning Guidance (SPG) directed establishment of a transformation path to achieve a joint command and control capability for DoD - "Strengthening joint operations through ... improved joint command and control is an indispensable step forward in transformation." Unified Command Plan (UCP) 06 assigned USJFCOM as the Joint Force Integrator to lead the development of joint command and control doctrine, concepts, requirements and integrated architectures. Furthermore, DoD Directive O-5100.30 (U), 1/5/2006, "Department of Defense (DoD) Command and Control (C2)" established USJFCOM as the advocate for joint command and control in the Department of Defense. Joint Requirements Oversight Council Memorandum (JROCM) 167-03, 22 August 2003 designated USJFCOM as operational sponsor for Net-Enabled Command Capability (NECC) and further delegated NECC (originally named Joint Command and Control (JC2) Capability) non-Key Performance Parameter (KPP) requirement adjustment approval authority to USJFCOM. NECC Acquisition Decision Memorandum (ADM), 07 March 2006 approved NECC program Milestone (MS) A and authorized entry into the Technology Development (TD) phase. DepSecDef Memorandum of 14 Sep 2006 directed capability portfolio management test-cases and empowered CDR USJFCOM as the C2 Capability Portfolio Manager (C2 CPM). USJFCOM Joint Integration and Interoperability (JI&I) has been designated the Joint Capability Developer (JCD) and execution arm of the C2 CPM portfolio and C2 Capability Integration Board (C2CIB). The JCD takes direction from the CPM and the C2CIB and authority as appropriate and develops courses of action to source, acquire, and develop NECC capabilities in conjunction with the COCOMs and Services. JROCM 173-07, 16 July 2007, approved the NECC Increment I Capablity Development Document (CDD) and Extensions, and validated the Key Performance Parameters (KPPs). The JROCM further states that the JROC will maintain approval authority for all KPP changes, delegates approval authority oversight for changes to key system attributes (KSA) to the Joint Capabilities Board (JCB), and delegates approval authority for all non-KPP changes to USJFCOM (via the JCCD organization). The Assistant Secretary of Defense (ASD) Networks and Information Integration (NII) Terms of Reference for NECC, 26 July 2007, states that the Commander, JFCOM serves as the NECC operational sponsor and as the lead for the JCCD organization and process in conjunction with Service combat development commands, Joint Staff, and materiel developer. Finally, Program Decision Memorandum (PDM) II, 19 Nov 2007, states that the JCCD and material provider (DISA) in consultation with the users (COCOMs and Services) can prioritize the delivery of functionality within already provided funding for the NECC Increment 1 and furthermore that the DOT_LPF-P capability requirements will be defined by the JCCD in consultation with ASD(NII), DISA, COCOMs and Services and identified within existing Service, Joint and Agency funding and infrastructure.

JFCOM has established the JCCD as the action arm of JC2 CPM to execute operational sponsorship and capability development responsibilities for all capability needs aspects of the NECC program. The JCCD provides a dynamic direct coupling of warfighter operational capability requirements to the capability material developer to achieve dedicated and continuous, end-to-end, warfighter engagement (concept development through fielding and sustainment) with Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities and Policy (DOTMLPF-P)

integration focus. JCCD responsibilities include tasking to ensure warfighter needs are met by providing a dynamic capability cradle to grave engagement process for Joint Command and Control (C2) capabilities.

FY2007 Accomplishments:
Technology Development (TD) through Milestone B (System Development and Demonstration) _ Joint Combat Capability Developer (JCCD) completed development and coordination of the Net-Enabled Command Capability (NECC) Increment 1 Capability Development Document (CDD) with approval and validation by the Joint Requirements Oversight Council in June. CDD development included identification of critical KPP and KSA requirements to guide capability development. As the foundational capability needs document for NECC, the CDD is used to decompose requirements into engineering details captured in CDPs. CDPs one thru five have been completed and forwarded to the materiel developers and CDPs six thru nine are currently in various stages of development _ all covering the Shared Situational Awareness and Force Projection mission capability areas. Corresponding CDP DOT_LPF and Policy Packages (1 thru 9) are in various stages of development and will be exercised and refined during capability developmental test and operational test to ensure delivery of holistic C2 Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) capabilities to the warfighter. To support governance of the JCCD, a JCCD Management Plan was developed and staffed to the COCOMs/Services and Agencies to capture roles and responsibilities. The JCCD has also had a major role in developing the test artifacts with the operational test agencies and in development and approval of the NECC Joint System Team (JST) Charter to manage and guide integrated evaluation and test of NECC capabilities. The JST is tri-chaired by the lead Operational Test Agency US Army Test and Evaluation Command (USA ATEC), DISA NECC Joint Program Executive Office (JPEO) and JCCD and will be used for development and validation, interoperability demonstrations, technical evaluations and capability warfighter utility assessments. Initial NECC studies/analysis is underway to capture cross-capability correlation and mapping, identify capability duplication and provide opportunities for capability trades across the NECC mission area. Development of the NECC Requirements Integration Database (NRID) is underway and will be the primary capability needs collection tool for NECC.

FY2008 Planned Output:
Milestone B (System Development and Demonstration) and pre-Milestone C (Production & Deployment). JCCD continues development and mapping of requirements to Capability Definition Package (CDPs), completing the CDPs started in FY07 and developing CDPs focused on continued development of the force projection and force readiness mission areas as well as intelligence support to C2. These CDPs also will include emerging requirements and changes for the GCCS Family of Systems (FoS) as capabilities transition and integration to NECC. JCCD will also continue development of DOT_LPF and Policy Packages for CDPs and exercise and refine these needs in developmental and operational test events.

FY2009 Planned Output:
Milestone C (Production and Deployment). NECC achieves Initial Operating Capability (IOC) in FY09. JCCD continues development & mapping of requirements to additional CDPs, including emerging requirements and engineering changes for the GCCS FoS as capabilities transition & integration to NECC.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Data Integration	0.760	1.088	1.120

Primary Outcome (objective) for this effort is an improved information management process that enhances the Joint Task Force Commander's situational awareness and decision cycle. The Joint Data Integration (JDI) operational concept, endorsed by PACOM's fully deployable joint warfighting staff JTF 519 and based upon OIF/OEF Lessons Learned, directly addresses the challenges of data management in the JTF HQ C2 Joint Mission Thread. The concept of Joint Data Network (JDN) is to combine the data contained within intelligence, data link, ground data, and sensor networks to produce an accurate, timely, complete and unambiguous Common Tactical Picture (CTP) for CJTF use. This common tactical picture becomes the basis for the Commander, Joint Task Force's (CJTF) input to the COCOM's Common Operational Picture (COP), which is distributed via GCCS/NECC to supported/supporting commands and higher authority.
The primary outputs and efficiencies to be realized are: 1) Improved quality of the common tactical picture in order to enhance Joint Task Force Headquarters Command and Control capabilities. 2) Increased standardization of data management tasks in future C2 systems. 3) Improved/increased automation requirements across future C2 systems. 4) Reduced commander's decision cycle and accelerates process for endgame Course of Action selection (Finish portion of the Find-Fix-Finish engagement chain), as a result of an increase in the commander's overall situational awareness.

FY 2007 Accomplishments:
Completed Joint Data Network Operations (JDNO) Concept of Operations (CONOPS) and Functional Area Analysis (FAA) as the building blocks for establishing the C2 Data Management capabilities requirements; embedded these requirements and functionality within future C2 systems (i.e.), Net-Enabled Command Capability _ Capability Production Document (NECC-CPD) and Joint Interface Control Officer (JICO) Support System (JSS).
Provided direct support to USJFCOM's Joint Capabilities Integration Process (JCIP) Joint Mission Thread (JMT) assessments. Provided direct support to USJFCOM's Joint Battle management Command and Control (JBMC2) Roadmap in the evaluation and assessment of Joint Mission Threads. Standardized and institutionalized data management processes in JTF 519 and respective Component Commanders to conduct JDN Operations; coordinated JDN interfaces with USPACOM in order to improve the content of the COCOM_s Common Operational Picture (COP). Defined and developed a draft Joint Operations Tasking (OPTASK) Common Tactical Picture (CTP) incorporating Intelligence, Joint Force Air Component Command and Joint Force Maritime Component Commander data, along with instructions defining configuration control, permission sets, and filter settings. Developed and delivered JDN Training to JTF-519 Staff and JDN Operations Cell ISO STAFFEX, Ex-TERMINAL FURY 2007, Ex-VALIANT SHIELD 2007. Developed JDN Operations watch-team checklist to support JTF-519 JDN Operations Cell personnel. Product included lessons learned and Joint Tactical Techniques & Procedures (JTTPs) leveraged from previous exercise support venues. Developed the Ground Data Network and Joint Data Network ISO the USJFCOM lead Coalition Combat Identification - Advance Concept Technology demonstration (CCID-ACTD) _BOLD QUEST 2007_ (BQ-07). Performed iSMART Link-16 Bit Level Analysis of platforms participating in the BQ-07 mission and demonstrated Military Utility of the USAF Program-of-Record (POR) iSMART processes and eSMART Tool-Set. Resulted in improved understanding of what platforms can/cannot shared on the battlefield in the Air-to-Ground, Ground-to-Air, Ground-to-Ground, and Air-to-Air mission threads. Led the Services in development of the first official _Joint Capabilities and Limitations_ (JC&L) document to support Link Operations during BQ-07 and conducted a Military Utility Assessment of the capability. Led the development of the first-ever JC&L document for C2 Systems architecture, using the JTF-519 core C2 systems architecture as the basis to get this information to the war fighters. Conducted C2 Systems site survey ISO USPACOM and US Forces Korea. Led conduct of the Desk Top Assessment of the JTF-519 C2 systems core architecture. Resulting in potential configuration recommendations to improve systemic interoperability and C2 data/information flow to support the Commanders decision cycle.

FY 2008 Planned Output:
Validate Joint OPTASK Common Tactical Picture in CENTCOM and EUCOM. Support PACOM in Terminal Fury 08; team with Navy Network Warfare Command/Program Executive Office Integrated Warfare Systems (NETWARCOM/PEO IWS) and USAF Global Cyberspace Integration Center to improve TTP and identify potential service solutions to data management in RIMPAC/Trident Warrior 08. Integration of JDI in Allied Command Transformation. Complete JDI Functional Needs Analysis (FNA) and JCIDS roadmap. Identify candidate C2 fusion devices for interim use as JDI toolsets. Draft a JDN joint test and evaluation nomination to DoD as a means to coordinate JDN integration into Service programs, such as JICO Support System spiral in coordination with USAFC2 Intelligence, Surveillance and Reconnaissance Cell (ISRC) (CAOC X) and Cooperative Engagement Capability (CEC) in coordination with USN Program Executive Office (PEO) Integrated Warfare System (IWS) (DDG 1000). Ongoing JC2 CPM efforts for POM 10.

FY 2009 Planned Output:
Complete a JDI Functional Solutions Analysis (FSA). Implement the test phase of a JDI Joint Test & Evaluation (JT&E), incorporating PACOM and EUCOM objectives, in live and synthetic venues selected by operators. Develop associated Capabilities and Limitations CTP to COP documentation, embed JDI training in a Joint schoolhouse, and draft a JDI DOTMLPF Change Recommendation for JROC approval. Develop courses of action for allied/coalition data sharing operations and cross domain solutions with NATO forces. Begin coordination with NORTHCOM for potential inter-Agency use of JDI capability and procedures.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Turnkey Command and Control C2	0.550	1.700	0.550

Primary Outcome (objective) for this effort is to establish a logical, repeatable methodology to assist designated Joint Task Force (JTF) Headquarters (HQ) in jumpstarting and reducing the ad hoc nature of the manning and equipping portions of their formation process. Enhances and further develops the JTF Enterprise Architecture, consisting of Increment 1 (JTF HQ), Increment 2 (JTF Functional Component Commands), and Increment 3 (Multinational and Interagency) architectures that provide the baseline for this process, and serve as the foundation of the Turnkey (and others)

efforts. Focuses and refines mission-based Command and Control (C2) requirements for JTF HQ in order to increase effectiveness and readiness during the JTF HQ formation process. To assist Allied Command Transformation (ACT) in supporting International Security Assistance Force (ISAF) by developing ISAF HQ Architectures and Mission Template(s).

Turnkey C2 is a USJFCOM-developed repeatable methodology that facilitates and accelerates JTF HQ formation, particularly the Command and Control (C2) manning and equipping capabilities. Turnkey C2 directly supports the Unified Command Plan 2006 task to the CDR USJFCOM for certifying the readiness of assigned HQ Staffs designated to perform as a JTF, by providing a scaleable 6-step process, augmented by Template products for the JTF HQ. Turnkey provides the designated JTF Commander and Staff with JTF HQ Templates complete with a Joint Manning Document (JMD) and C2 Baseline Template and Architectures that lay out the historically required and doctrinally-based capabilities, requirements and manning, in addition to systems, applications, and network requirements, including telecommunications and VTC capabilities, for various types of JTF HQ operations. Current Templates address the range of Military Options from Major Combat Operations (MCO), to Defense Support of Civil Authorities (DSCA) for Disaster Relief and Foreign Humanitarian Assistance/Disaster Relief (HA/DR), to Crisis Response and Limited Contingency Operations (Stability Operations), and provide a starting point for the JTF Commander_s forming and planning process. Turnkey personnel work with the designated JTF HQ to help define required capabilities using the Templates as a tailorable baseline, and then analyze and compare current capabilities to determine existing shortfalls. Turnkey then works with the JTF HQ to identify C2 capabilities and equipping solutions and determines and recommends associated sourcing options for shortfalls. Turnkey employs the Joint Systems Integration Command (JSIC) to replicate selected C2 capabilities in their laboratory to determine, assess, and resolve interoperability issues, as required. JSIC support is especially critical when selecting sourcing solutions. Turnkey has created a web-enabled _Playbook_ on the US SIPRNET that serves as a one stop shop site for the JTF CDR and Staff to access the Turnkey Templates as well as JFCOM and other selected organization and agency-produced information and products. Turnkey leverages the JFCOM JTF Enterprise Architecture repository and tool, known as the JC2 Architectures and Capability Assessment Enterprise (JACAE). Turnkey C2 guides the refinement of JTF HQ Templates and their required capabilities list, which also supports the Joint Manning Document information, all of which is contained in JACAE). JFCOM is currently using Turnkey to successfully support the Commander, Second Fleet (C2F) JTF HQ Certification effort, but has produced a repeatable process for future Service Headquarters or other designated HQ certifications, as prescribed by 2006 United Command Plan. Turnkey has been endorsed by, and is being used to support, NATO Allied Command Transformation (ACT) and their work with the International Security Assistance Force (ISAF) HQ in Afghanistan to develop ISAF architectures and an ISAF Mission Template. The Template would be used to provide ISAF with a baseline of the current capabilities (systems and applications) that are in use in ISAF to assist in future force rotations and to identify C2 shortfalls and interoperability gaps that can be solved using the Turnkey process.

FY 2007 Accomplishments:
Leveraging the work of JTF architectures:
Turnkey successfully supported the Commander, Second Fleet (C2F) JTF HQ certification effort in 2007. Turnkey worked with C2F and provided the Stability Operations Template as the starting point and assisted C2F and their components in developing a Joint Mission Essential Equipment List (JMEEL) for their JTF HQ. Turnkey collaboratively fast-tracked C2 equipping and Joint Manning Document (JMD) requirements for C2F certification, and enhanced mission and planning analysis by rapidly producing an accurate and detailed status of current C2 systems, applications, and communications. This informed analysis provided rapid shortfall identification and documentation, and provided additional lead time for USSOUTHCOM, USJFCOM, Fleet Forces Command, and C2F to collaboratively mitigate and source equipment and manning gaps. C2F is scheduled to execute a culminating training event during USSOUTHCOM_s PANAMAX exercise in August-September 2007.
Turnkey supported a CENTCOM request to assist in developing a CENTCOM C2 Best of Breed list of systems and applications to be authorized for use in the CENTCOM AOR. Turnkey supported the development of an initial list of recommended systems and applications based on the Joint Task Force (JTF) HQ Mission Templates and Desktop Analysis (DTA) of CENTCOM-provided theater data. The CENTCOM Best of Breed list was also provided to the JFCOM Joint Command and Control (JC2) Capability Portfolio Management (CPM) team, and provided a significant portion of the initial JC2 baseline portfolio of systems and applications.
The Turnkey templates provided the C2 equipping portion of the USJFCOM- developed JTF HQ Concept of Operations. Standing Joint Forces HQ (SJFHQ), as the lead, is in the final stages of staffing the CONOPS.
FY 2008 Planned Output:
Turnkey will continue to work with Commander Second Fleet (C2F) Joint Task Force-South (JTF) as they enter the Ready Phase of their JTF HQs certification.
Turnkey will support the next designated JTF HQ (JTF _ E 20TH Support Command) in their preparation phase.
Turnkey will support FORSCOM in its efforts to make the III Corps more JTF HQ Capable.

The Turnkey process, product, and people will also conduct staff assistance visits to other geographic combatant commands in support their JTF HQ Certification Programs.
Turnkey will continue the work with ACT in support of the ISAF HQs to include expanding the architecture views provided in 2007, assist Act in their revision of the ISAF HQ CONOPS, development of an ISAF HQ Template to serve as a baseline for the HQ, and to support the rotation between ISAF X and ISAF XI. Turnkey is also working with NATO to assist in thethe development of an architecture data base similar to JACAE, which is the foundation for the development of the DoD JTF HQ Mission Templates.
Turnkey will continue to develop Turnkey Playbook concept and will work with the USJFCOM J7 to create a _one stop shop_ for the JTF CDR and staff.

FY2009 Planned Output:
Turnkey will support future designated JTF HQ in their preparation phase.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Data Strategy	0.440	1.000	1.000

determine what data exists for their operational use. If they are able to determine what data is available, they experience difficulty in accessing it primarily due to a lack of system or software interoperability. If they are able to access the data, they are not able to determine if the data is actually what they need, still current, or the legitimacy of it_s pedigree. Warfigher producers of data struggle with procedures on how to share their data with the consumers and on how to describe their data so that others understand it.

USJFCOM, Joint Integration & Interoperability (JI&I), has been designated the lead of the C2 Portfolio Data Strategy. As the lead, JI&I will work with COCOMs, Services, and Agencies (C/S/A) to achieve the primary outputs and efficiencies: making C2 data assets visible, accessible, understandable and interoperable by (1) establishing an effective C2 Portfolio Data Strategy Management Construct; (2) establishing a C2 Data Framework and Best Practices; and (3) supporting key data Communities of Interest and other Data Strategy implementation activities in order to increase the Joint Warfighter_s timely access to critical C2 information.

The DoD Net-Centric Data Strategy: A DoD-wide effort to move from privately owned and stored data in disparate networks and within legacy systems/applications to an enterprise information environment where authorized known and authorized unanticipated users can access any information and can post their contributions for enterprise-wide access. If this initiative is not funded, the Warfighter will continue to not know: what data exists for use, how to access available data, if data they accessed is what they really need, how to tell others what data they need, how to share their data with others, and how to describe their data so that others may use it.

FY 2007 Accomplishments:
Established a C2 Capability Portfolio Manager (CPM) Data Strategy Management process which provides a formal process for the JC2 CPM to provide oversight of and guidance to C2-related communities of interest, as needed to support interoperability, integrated architecture and data objectives for the portfolio; established a Warfighter Mission Area Data Strategy Management Process with the Joint Staff; established a JFCOM Cross-Directorate Data Cell which provides a forum for JFCOM directorates to share Joint data initiatives and issues within the command; identified COCOM data sharing needs and priorities as directed by the Global Standards Senior Warfighter_s Forum (SWarF) in order to support rapid exposure of critical warfighter data sources through the use of web services and Net-Centric Enterprise Service (NCES) capabilities; published the charter for C2 Portfolio Data Strategy Management which establishes the C2 Portfolio Data Strategy Management construct to guide and manage C2 data strategy implementation within C2 Portfolio capabilities. Established a configuration management process for core C2 data standards; established a C2 Data Architecture Framework. Co-lead effort to expose C2 Data Assets via the C2 Data Pilot; and promoted, supported, & recommended the development of required core enterprise services, service oriented architectures, and underlying technologies.

FY 2008 Planned Output:
Execution of the C2 CPM Data Strategy Management Process and; publish the memorandum of agreement (MOA) which describes the relationship and cooperation between the JC2 Capability Portfolio Manager and C2-related Communities of Interest (COI) in an effort to achieve the data strategy objectives of the C2 Portfolio by synchronizing and supporting Warfighter needs for visible, accessible, understandable, and secure Command & Control (C2) data; execute the C2 CPM Data Strategy Management Process; support NECC; continue to identify and refine COCOM data sharing

needs and priorities. Identify initial data standards for vocabulary, data models, and Extensible Markup Language (XML) schemas; implement configuration management processes for the core C2 data standards; develop, document, and/or promulgate best practices for C2 Data Strategy implementation. Expose C2 data assets via NECC and C2 Communities of Interest (COIs); register discovery, structural, and semantic metadata in the DoD Metadata Registry; support the Force Management Implementation Project_s data visibility initiative.

FY 2009 Planned Output:
Continued execution of the C2 CPM Data Strategy Management Process and; support NECC; continue to identify and refine COCOM data sharing needs and priorities. Continued implementation of the configuration management process for core C2 data standards. Continued exposure of C2 data assets via NECC and C2 COIs.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Two-Way Iraqi Speech to Speech (2W-S2S)	3.700		

Primary Outcome (objective) for this effort is an improved tactical translation capability in response to an urgent warfighter need. The 2W-S2S voice translation software is a USJFCOM led initiative that began in response to Commander of Multi-National Security Transition Command-Iraq (MNSTC-I) submission of an Urgent Need Memorandum to JFCOM. This capability was urgently needed to augment the limited number of available translators in order for english speaking coalition forces to conduct force protection operations, tactical questioning, training for Iraqi Armed and Police Forces, interactions with Iraqi Civil Affairs officials and to provide medical support.

The 2W-S2S initiative leverages the Language and Speech Exploitation Resources (LASER) ACTD development of speech translation resources, the DARPA TRANSTAC (Tactical Translation) program and the Sequoyah Transition Management Office (STMO). Additionally, JFCOM partnered with the Army and Navy Research Laboratories, Defense Language Institute (DLI), and Combatant Commanders (COCOMs). All technologies developed under this program will transition into the Army SEQUOYAH program of record beginning in FY 2008.

The primary outcome of these speech to speech translation systems is to enable non-linguists to provide basic directions and conduct simple questioning within defined domains. The systems will be provided in a hand portable laptop and PDA devices.

FY 2007 Accomplishments:
The 2W-S2S devices developed and evaluated in FY 2006 have resided in ruggedized laptops. The language library while under development has been focused on civil affairs and training domains. During FY07, the 2W-S2S initiative developed, tested, and initially fielded (x number) miniaturized hands-free personal data assistant (PDA)-sized devices. The expansion of the Iraqi language domains was also completed to include force protection, human intelligence (HUMIT) and medical. Further expansion of native languages in the CENTCOM Area Of Responsibility (AOR) was also completed to include Pashto / Farsi for use in Afghanistan. Complete transition of all foreign language capabilities to the Army SEQUOYAH program of record was not accomplished as planned in 2007. With the Army POM focus on sustaining forces in current theater operations, no "new starts" were allowed in the final Army POM-08 submission.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Recognition of Combat Vehicles (ROC-V)		2.700	1.400

The primary outcome for Recognition of Combat Vehicles (ROC-V) is to enhance Air-to-Ground and Maritime combat identification capabilities, thereby reducing the potential for fratricide. ROC-V is a training aid for ground forces, aircrews and ship crews that perform combat identification (CID) by visual identification of detected entities in the operational battlespace. It standardizes realistic Combat Visual Identification (CVI) training that is critical to both combat effectiveness and fratricide prevention. The program materiel developer for ROC-V is the U.S. Army Night Vision

and Electronics Sensors Directorate (NVESD), Ft. Belvoir, VA, which currently receives approximately $1.5M per year from the Army and Marines to develop, maintain and distribute a Ground-to-Ground version of ROC-V. Resources provided in this Program Element will support the NVESD expansion of the program to facilitate the development of develop Air-to-Ground and Maritime versions of the training program. The funding will be used in general to expand the ROC-V training program database by adding US, Coalition, and Threat-type vehicles, maritime environment/small boat threats, and all aspect/extended range air-to-ground imagery with emphasis on concurrent development of Coalition releasable products. Additionally, the funding will allow development of a standardized air-to-ground, all aspect and range CVI training program for pilots, aircrew, Joint Terminal Attack Controllers (JTACS), and Unmanned Aerial Vehicle (UAV) operators. It will begin creation of a standardized maritime environment small boat threat CVI training program and begin the development of a deployable/portable CVI training capability. It also supports standardization efforts to incorporate these visual signatures into a Sensor Signatures Database Program for non-cooperative target identification.

Primary Outputs and Efficiencies to be demonstrated:
1) Expansion of data Collection / Range Support for additional combat vehicles and Navy littoral watercraft 2) Improved processing, integration, and design of ROC-V modules for a standardized Joint A-to-G training aid 3) Expansion of personnel capable of supporting data field collection 4) Increased collection of mid-wave (3-5 micron), long-wave (8-12 micron) and short-wave (1-2 micron) thermal images 5) Expansion of Thermal and Daylight Visible images by 85-100 tactical vehicles and littoral watercraft for the A-to-G CVI training aid to include 60°, 45°, 25°, and 15° look-down slant angles at select ranges.

FY 2008 Planned Output:
Begin development of Air-to-Ground and Maritime ROC-V training software modules. Collect 85-100 tactical vehicle and 15-20 small boat thermal and daylight visible images in a controlled range environment. Initiate Model & Simulation development efforts to transition already collected images to 3-D models. Field initial CVI training products to the warfighter.

FY 2009 Planned Output:
Continue development and maintenance of Air-to-Ground and Maritime ROC-V training software modules. Collect 20 tactical vehicle and 15-20 small boat thermal and daylight visible images per FY in a controlled range environment. Continue Model & Simulation development efforts to transition already collected images to 3-D models. Continue fielding Air-to-Ground CVI training products to the warfighter.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
System of Systems Engineering (SoSE)		2.000	2.000

Primary outcome (objective) of this effort is to provide System-of-Systems Engineering (SoSE) support to the Joint Command and Control (JC2) Capability Portfolio Manager (CPM) and Joint Combat Capability Developer (JCCD). Leveraging architectural products, data and data relationships residing in the Joint Command and Control Architecture and Capability Assessment Enterprise (JACAE) tool (including authoritative and traceable requirement sources, technical documentation, capability issues, previous analyses and assessments), the SoSE team provides detailed system analysis and end-to-end systems engineering rigor for JC2 CPM decision-making. End-to-end interoperability engineering includes capability mapping and integration, detailed analysis and assessment of CPM issues, executable architecture design and implementation and modeling and simulation analysis.

SoSE for CPM is required by DEPSECDEF Capability Portfolio Management (CPM) MEMO date; 14 Sep 06; DOD 5000-series Directives and Instructions; Defense Acquisition Guidebook - Chapter 4.2.6., Joint Capability Developer Campaign Plan DRAFT v0.8 20 Nov 2007; and CPM Issue Findings and Recommendations. The CPM SoSE effort will follow the Office of the Secretary of Defense (Acquisition, Technology, & Logistics) (OSD AT&L) and Joint Staff core elements of SoSE as presented to Deputies Advisory Working Group (DAWG). Core elements of SoSE provide the context for the application of systems engineering to JC2 CPM processes. Through data collection and mapping efforts SoSE will translate CPM System-of-Systems (SoS) capability objectives into high level requirements and provide the CPM an understanding of the components of the CPM SoS and their relationships over time. Through detailed analysis SoSE will assess the extent to which the CPM SoS meet capability objectives; will develop, evolve, and maintain a design for the CPM SoS; and will monitor and assess potential impacts of changes on CPM SoS

performance. SoSE will address new requirements on CPM SoS and options for addressing these, and finally, orchestrate upgrades to SoS (future funding required for orchestrating these upgrades).

FY 2007 Accomplishments: The current SoSE cell is a remnant of the core Joint Battle Management Command and Control (JBMC2) Engineering Integrated Product Team (EIPT). This team identified the need for CPM Joint System Engineering, bit level analysis, and bit level web registration (Interoperability Enhancement Process). Detailed bit-level system-of-systems analysis in JBMC2 drove testing and assessment design and execution at a level that could not have been accomplished without the depth of analysis provided. The analysis identified cross-Service solutions that included a design to upgrade aircraft situational awareness data transfer which is independent of the Onboard Fight Program (OFP) and the radio, and therefore has the potential result of saving millions of dollars in life cycle costs and reducing fratricide risks while making the Joint Close Air Support (JCAS) process more lethal and effective. Several modifications to USMC, USAF and SOF ground kits were also developed, making them interoperable and resolving gaps in JCAS capability.

The SoSE approach applied in the JCAS Joint Mission Thread demonstrated the power of using architecture as the key language for SoSE, and executable architectures, modeling and simulation in engineering analysis. The team identified the process and means to visualize command and control systems as they exist operationally, and to compare them against requirements, both capability and task driven. The decomposition of JCAS systems within this process led to new insights into root causes of interoperability failures. For example, Joint Close Air Support is currently executed by voice command between forces on the ground (the Joint Tactical Air Controller) and the aircraft providing firepower from above. The analysis showed the Service digital capabilities are not interoperable and are too complicated for the operator. Standards and policy failed to ensure interoperability. The standards were followed differently based on interpretation and funding constraints. Policy was not followed. The analysis identified the need for Joint oversight to enforce consistent application of standards and policy.

The team provided detailed analysis to various JC2 CPM Focus Integration Teams (FIT) in support of the PR-09 cycle. FIT cells supported included the Integrated Fires FIT cell, the Deployable Command and Control FIT Cell, and the Common Tactical Picture (CTP) FIT Cell. The team established the foundation for SoSE analysis of the JC2 CPM portfolio by identifying the means to map a Joint Capability Area (JCA) to mission activities (Universal Joint Task List, Service Tasks, and Conditions), to a Joint Common Systems Function List, to JC2 portfolio systems, and most importantly, to the system technical attributes. This mapping data will all be stored in JFCOM_s Joint Command and Control Architecture and Capability Assessment Enterprise (JACAE).

FY 2008 Planned Output: The SoSE team using architectural products, data, and relationships residing in Joint Command and Control Architectures and Joint Command and Control Architectures and Capability Assessment Enterprise (JACAE), will provide detailed analysis supporting POM -10 CPM functions from managing capability mapping integration, providing executable architecture capable of support modeling and simulation, to supporting issue analysis and assessment. The team will specifically analyze JC2 CPM POM-10 issues to determine analytical complexity, timelines, and resources required; refine issues and gather system(s) data for analysis; task front-end architecture, data standards, & end-state assessment and testing requirements; assess issue-identified systems against capabilities, activities, nodes, system functions and system attributes in the performance of desk top analysis; deliver desk top analysis, executable architectures, reports and objective data to JC2 CPM Issue leads, Joint Systems Integration Center, or other leads for detailed assessment and testing, and deliver implementation/execution plans. In response to needs for additional mapping depth and maturity, the team will manage mapping activity to deliver capability to identify current JC2 baseline, and then analyze changes to that baseline, including system changes, system attribute changes, and more holistic changes (applying Network Centered Enterprise Services, and Network Enabled Command and Control overlays); provide JC2 CPM capability mapping and analysis products for POM issues; mature mapping for all JC2 systems, and continue to build a baseline of JC2 system attributes into a mapping repository.

FY 2009 Planned Output: The SoSE team will continue to support JC2 CPM APOM-09 and POM-10 issues as required. The SoSE team using architectural products, data, and relationships residing in JACAE, will provide detailed analysis supporting APOM-11 CPM functions from managing capability mapping integration, providing executable architecture capable of support modeling and simulation, to supporting issue analysis and assessment. They will continue to provide the detailed system analysis and end-to-end capability engineering rigor for JC2 CPM decision-making.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Integrated Fires Consolidated Activities		3.600	3.600

Primary outcome (objective) for this effort is the integration of Joint Fires Capabilities for US and Coalition Partners that improves combat / mission effectiveness while minimizing fratricide focus is

on the following area: Joint Close Air Support (JCAS), Combat Identification (CID), Blue Force Tracking (BFT) (including Joint Blue Force Situational Awareness), Joint Fires, Fires related Joint Command and Control Capabilities, and Integrated Air and Missile Defense (IAMD).

FY 08 Planned Output:
Execute CID-BFT Action Plan CY08-09
- Lead actions to determine/resolve Service/COCOM PLI (BFT) security policy
- Evaluate the operational demonstration of Patriot Missile unit in a Joint IAMD environment at the Weapons and Tactics Instructor Event in October 2007
- Monitor POM 10 plan for a synchronized Service acquisition and fielding of a Mode 5 Identification, friend or foe capability, with an initial operating capability of 2014 and Full Operating Capability of 2020.
- Monitor and assess the results of the CCID ACTD Extension (Exercise Bold Quest) to evaluate/assess the optimal mix of CID-BFT/JBFSA capabilities, with emphasis on Non-Cooperative Target Identification (NCTI) technologies in the A-G environment that will provide the basis for investment recommendations to inform POM 10.
- Provide an assessment of the reliability and estimated life of alternative BFT communications platforms in order to reduce BFT reliance on National Technical Means through the review and utilization of existing Service, COCOM, Joint Staff, and Joint Requirements Oversight Council (JROC) assessments.
- Maintain a Joint Fratricide Data Base of real world combat fratricide events, and conduct trend analysis.
- Evaluates emerging and promising technologies to identify high pay-off, emerging technologies for CID-BFT/JBFSA that have joint applicability and that are worthy of focused acceleration, including the Joint Sensor Signatures Database (JSSD)
- Conduct operational testing to determine the effectiveness of Joint Combat Identification Marking System (JCIMS) in the Air-to-Ground environment. Address altitude, day and night use, slant ranges, obscuration (dust, fog, smoke, etc), use of EO and Second Generation Forward Looking Infrared sensor (FLIR) capable pods, in order to assess operational and tactical effectiveness.
- Develop CID-BFT Joint Capabilities Document (JCD) (Phase 1 _ SEP 08)
- Develop a CID JCD that incorporates CID-BFT/JBFSA. The Joint Requirement Oversight Council (JROC) has identified these two areas as mutually supporting, related, and inseparable--requiring inclusion in one JCD.
- Complete Concept of Operations (CONOPS)
- Complete Phase 1 Capabilities Based Assessment (FAA & FNA)
Execute JCAS Action Plan
- Evaluate and monitor standardization and maintenance of Joint Terminal Attack Controller (JTAC) training throughout Department of Defense and participating Coalition countries.
JCAS Executive Steering Committee continues to lead in consolidating U.S. input into the NATO standardization processes through engagement with the NATO Standardization Agency in the rewrite of NATO Standardization Agreements.
- Work toward achieving C2 interoperability in the JCAS mission area through establishment of a JCAS digital standard to improve warfighting capability and reduce fratricide.
- Continue to define and evaluate the simulation capabilities required for the JCAS mission area by exploiting existing systems and new technologies; identifying JCAS tasks where simulation can be used to obtain appropriate qualifications, update currency requirements, and maintain proficiency for key JCAS personnel.
- Pursue initiatives that will more closely integrate the services_ and SOCOM_s JCAS training programs and exercises at the tactical level.
- Evaluate and monitor standardization and maintenance of Forward Air Controller (Airborne) training throughout the Department of Defense; invite Coalition countries with evolving FAC(A) programs to participate in the standardization process.
- Develop JCAS JCD (Phase 1 _ SEP 08)
- Complete Concept of Operations (CONOPS)
- Complete Phase 1 Capabilities Based Assessment (FAA & FNA)
- Lead Integration of US & Coalition JTAC Standardization
- Develop Allied/Coalition Joint Fires Capability
- Publish JTF Fires & Targeting Handbook
- Deliver Weapon Data Link Network ACTD

- Develop Integrated Air and Missle Defense (IAMD) JCD (Phase 1 _ SEP 08)
  - Complete Concept of Operations (CONOPS)
  - Complete Phase 1 Capabilities Based Assessment (FAA & FNA)
- Lead JC2-CPM Integrated Fires/BFT Cell POM10 Review
- Support Joint Urban Fires Prototype (JUFP) Experiments (J9 Project Resourced)
- Support JFIIT Activities (Training/Assessment/Analysis) (JFIIT Project Resourced)
- Coordinate Unmanned Aircraft System Center of Excellence Activities w/JFCOM

FY 2009 Planned Output: Continue execution of JCAS and CID-BFT/JBFSA Action Plans. Finish integration of STANAG 3797. Expand coalition participation in the JTAC MOA and JTAC Standardization Teams. Complete development of JCAS JCD, CID JCD and IAMD JCD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Secure but Unclassified (SBU)/Public Key Infrastructure (PKI) Capability for the COCOMs	1.440		

US European Command (EUCOM) and US Pacific Command (PACOM) have identified their inability to securely exchange _sensitive but unclassified (SBU) information with coalition/multinational partners via electronic means._ Furthermore, both EUCOM and PACOM asserted their need to _ensure that exchange of sensitive unclassified information with coalition/multinational partners via email can only be viewed by the intended recipient._ Currently, emailing of sensitive data is performed in the clear, or the data transmission is made through slower and higher effort means. Primary OUTCOME (objective) for this effort is to enhance Joint Force Commanders ability to exercise an in-theater Coalition Root Certificate Authority in order to efficiently interoperate with coalition personnel. With the establishment of a Coalition Root Certificate Authority, individual nations, militaries, and Non-Governmental Organizations (NGOs) will have the option of establishing their own Certificate Authority and subordinating it to the DoD Coalition Root Certificate Authority to establish theater-wide SBU capability which will abide by the appropriate security measures, as outlined in the DoD Coalition PKI Certificate Policy. This project is exercised through the Limited Acquisition Authority (LAA).

The primary outputs and efficiencies to be realized are:
- Reduced cost to coalition entities to obtain strong authentication and encryption capability
- Secure information exchange through commercially available PK-enabled communication tools.

FY 2007 Accomplishments:
Developmental Management Plan and Plan of Action and Milestones describing the technical approach, organizational resources and management controls to be employed to meet the cost, performance and schedule requirements throughout project execution. The development of Coalition Root Certificate Authority Certificate Statement. This contract and initial work on architecture and network development will be in place by end of FY-07.

FY 2008 Planned Output:
Leverage the ongoing activities on both the PKI Increment II Program and the Multi-National Information Sharing (MNIS) program. Appropriate technology activities are programmed in both of these efforts to resolve current problems with identity management, protection of classified and SBU mission data, and the deployment of classified net-centric environments that can deliver the following:
- Enable Coalition information sharing: The ability to rapidly and seamlessly disseminate information to coalition forces.
- Seamless, flexible connectivity worldwide: Seamless, flexible connectivity worldwide is required so that U.S. and multinational forces from any part of the world have the ability to interoperate regardless of location.
- Availability when needed

- Protect User Information: Information that is exchanged must be protected from unauthorized access
- Test in Combined Endeavor or similar Coalition Exercise in May 2008 timeframe

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Architecture Integration and Development		3.702	2.219

Primary Outcome (objective) for this effort is to integrate and develop joint architectures, in direct support of Joint C2 (JC2) Capability Portfolio Management and for cross-portfolio integration and federation efforts with the Warfighter Mission Areas (WMAs), Enterprise Information Environment Mission Area (EIEMA), Defense Intelligence Mission Area (DIMA), and Business Mission Area (BMA) of the Global Information Grid (GIG). The centerpiece of this effort is to develop and sustain a JC2 capabilities mapping repository, in conjunction with a Joint Task Force (JTF) Enterprise Architecture (EA). The JC2 capabilities mapping framework and the JTF EA will provide reusable data and information for objective JC2 capabilities analysis and assessment to inform JC2 CPM decision-making and cross-portfolio analyses, while simultaneously improving JTF performance via more efficient and effective JTF organization, training, equipping, and certification. From FY04-FY08, these efforts were funded from the Joint Integration and Interoperability and Joint Battle Management Command and Control (JBMC2) budget lines. However, due to the expansion of JFCOM responsibilities for joint architecture integration and development, and to leverage successes to-date, a separate funding line needs to be established for this initiative, which provides the foundation for JC2 CPM initiatives, as well as other major JFCOM and JI&I efforts (NECC, Turnkey C2, COCOM Engagement).

Description of Joint Architecture Integration and Development - Both DoD Directive 5100.30 and the 2006 Unified Command Plan (UCP) directs USJFCOM to lead the development of joint warfighting, C2 architectures and joint integrated architectures to ensure integration and interoperability of end-to-end command and control from the global through the tactical levels. Architectures are a linked mapping of the operational organizations, the tasks/sub-tasks they performs, as well as the personnel billets, systems functions, and system of systems (platforms, applications, networks, and standards) that are required to sustain mission operations. Without development of this detailed mapping and linkages, it is impossible to objectively assess the consequences of JC2 CPM decision-making across the entire DOMTLPF spectrum, especially second and third order affects which can lead to unintended consequences (fixing a portion of one capability at the accidental detriment of another). Additionally, the development of the JTF Enterprise Architecture (EA), intertwined with the JC2 CPM capability mapping framework, will provide the basis for a fundamental and overdue paradigm shift. Instead of creating capabilities within COCOM, Service, Agency, Coalition, and Interagency stovepipes and then re-engineering them to be interoperable in the JTF environment, joint architectures will provide a collaborative point of convergence to ensure all military capabilities are _born joint_ and are integrated into joint warfighting processes from their inception, potentially saving hundreds of millions of dollars and many lives.

FY 2007 Accomplishments: - Transitioned the JBMC2 Capability Mapping Environment (JCME) to the Joint Command and Control (JC2) Architecture and Capability Assessment Enterprise (JACAE), providing a web-enabled, user-friendly (seamless interface with the Microsoft Office Professional suite), and centralized systems engineering repository and collaborative joint architecture integration and development tool for both the JC2 CPM mapping information and the JTF Enterprise Architecture. JACAE contains 18 million re-usable data objects that will ensure that JFCOM can rapidly attain Stage 5 (Leveraging the EA to Manage Change) of the Government Accounting Office (GAO-03-584G) Enterprise Architecture Management Maturity Framework (EAMMF). Provided capability mapping strategy used to underpin JFCOM_s Joint System Integration Command_s (JSIC_s) JC2 mapping tasks, and JC2 CPM PR 09 FIT Cell issue development.
- Directly integrated architecture data with the Joint Net-Centric Operations (JNO) CPM and USSTRATCOM to synchronize JC2 with Global C2 efforts.
- Completed JC2 capability mapping project, re-using the Joint Staff J-7 Joint Capability Areas (JCAs) mappings to the Universal Joint Task Lists (UJTLs) at the top level. Capabilities-to-activities high-level set was enriched with further mappings to the Service Mission Essential Task Lists (METLs) and to the JTF Headquarters (HQ) activities. These common, joint activities sets were linked to the operational nodes performing the mapped joint warfighting activities. Operational nodes were extended to include detailed billeting information for each warfighter assigned to each JTF board, bureau, center, or cell. Complete organization information was then mapped to the Joint Common System Function List (JCSFL). Systems/network services functions were further linked to the platforms and systems sub-components (applications, networks, and standards) for almost 200 _JC2 core_ systems, identified by JC2 CPM analysis.
-JCSFL itself was a key accomplishment, developed from synthesizing the Service_s Common Systems Functions Lists, and enriched with the Net-Centric Enterprise Services (NCES). JCSFL enables the assessment of any capabilities_ (platform, system, application, network, service) impact on the functionality that directly supports joint warfighting activities and personnel. JCSFL also provides a key component in developing a framework for comparative analyses between capabilities, to expose gaps, redundancies, and interdependencies.

FY 2008 Planned Output:
- Enrich and expand current information and refine JC2 Capability Mapping processes and procedures to accommodate capabilities under review for POM 10 and beyond. Support JC2 Functional Integration Team (FIT) Cells, JSIC, and other analytical and assessment entities.
- Establish roles and responsibilities and develop a repeatable process to overlay new/emergent _to be_ capabilities against the _as is_ JTF Enterprise Architecture and JC2 CPM baselines.
- Expand JACAE to accommodate 24-hour, 7-days-per-week service to 420 concurrent COCOM, Service, and Agency users. Requires database federation and net-centric standards implementation procedures that have not yet been widely implemented successfully in DoD.
- Enable JACAE to publish and subscribe to JC2 Registry, other key DoD repositories and registries, including the DoD Architecture Registry System (DARS), and the DoD Metadata Registry. Requires metadata tagging of JTF and JC2 taxonomies and associated data dictionaries.
- Provide rigorous configuration management (CM) of JACAE information, particularly at the enterprise level for re-use by various projects. Develop and refine peer review process for architectures in development to ensure horizontal analysis of capabilities for JC2 CPM and JTF performance improvement.
- Develop, review, and baseline JTF Enterprise Architecture_s Increment two (Functional Component Command) and Increment three (Multinational and Interagency) to establish complete JTF Enterprise Architecture.

FY 2009 Planned Output:
- Refine JC2 Capability Mapping processes and procedures, to instantly accommodate capabilities_ reviews & issue development. Develop templates for Doctrine, Organization, Training, Materiel, Leadership & Education, Personnel, and Facilities (DOTMLPF) Change Recommendation.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Biometrics Capabilities Based Assessment	3.370		

The September 2006 Quick-Look Capabilities Based Assessment (CBA) validated near-term requirements and capabilities-based needs for biometrics, as well as acknowledged the requirement for a more in-depth assessment to address future-year biometrics requirements. In response, the Director of Defense Research and Engineering (DDRE), requested Joint Forces Command to prepare a biometrics CBA.

The CBA will identify biometric capability requirements in the 2009-2015 timeframe. The CBA will assess biometric capabilities, tasks, conditions and standards and use that assessment to determine gaps, shortfalls, and redundancies. This assessment will use the analysis performed by previous Biometrics Task Force (BTF) efforts to define the functional area for biometrics and Vice Chairman, Joint Chiefs of Staff (CCJCS) directed Quick-Turn CBA which addressed near-term warfighter needs. The specific objectives of this CBA effort:
--Identify a high-level plan of action to organize, staff, and apply resources which deliver identity management products and services to the Department of Defense (DoD), intra-agency and interagency customers on demand.
--Define requirements and investigative research parameters which aid the scientific and technical community in the creation, discovery, and exploration of new technologies, or improved application of existing technologies, for evolving DoD operational needs.
--Establish the framework for communication between the Science & Technology (S&T) and operational communities.
--Identify the major Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) products and services, consumers, and producers needed to facilitate, manage, store, collect, transmit, and disseminate Identity Management information.
--Identify partnerships and agreements with other government and industry shareholders in the business and user domains in order to maintain a common operating environment to support end users of biometric and identity management products and services.
--Identify drivers and barriers to the effective use, development, improvement, application implementation and management of biometric-specific information

The primary outputs include:

Functional Area Analysis
Functional Needs Analysis
Joint Capabilities Document
Program Review FY 09 Wedge

C. Other Program Funding Summary Not applicable for this item.

D. Acquisition Strategy Not applicable for this item.

E. Major Performers Not applicable for this item.

OSD RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY
7 - Operational System Development

PE NUMBER AND TITLE
0607828D8Z - Joint Integration and Interoperability

PROJECT
P818

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Analyses	Analyses			1184		-13601		-13800			-26217	
Subtotal:				1184		-13601		-13800			-26217	

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Support	C-CPFF	MITRE		423	1Q	586	1Q	586	1Q		1595	
Systems Engineering Support	MIPR	SPAWAR, Charleston (JACC)		5400		8365					13765	
Systems Engineering Support	MIPR	Sequoyah TMO (S2S)		3700			1Q				3700	
Systems Engineering Support	MIPR	Space & Missile Defense Battlelab, Peterson AFB (JBFSA)		2280		8300		3700			14280	
Systems Engineering Support	MIPR	Various (JBMC2/JMT)		4751		14536		23081			42368	
Systems Engineering Support	T&M	Science Application International Corp.		2557	1-3Q	3000	1-3Q	3000	1-3Q		8557	
Systems Engineering Support	CPFF	Old Dominion University Research Foundation		1200	1-3Q	885	1-3Q	950	1-3Q		3035	
Systems Engineering Support	MIPR	SPAWAR/NAVSEA (Alliance)		3640		2600		1800			8040	
Systems Engineering Support	MIPR	Various		12801		28154		25954			66909	
Subtotal:				36752		66426		59071			162249	

III. Test And Evaluation	Contract Method &	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award	FY 2008 Cost	FY 2008 Award	FY 2009 Cost	FY 2009 Award	Cost To Complete	Total Cost	Target Value of

OSD RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational System Development	**0607828D8Z - Joint Integration and Interoperability**	**P818**

	Type				Date		Date		Date			Contract
Test & Evaluation Support	MIPR	Various (JAVELIN)		9600							9600	
Test & Evaluation Support	MIPR	Various		5600		500		4000			10100	
Subtotal:				15200		500		4000			19700	

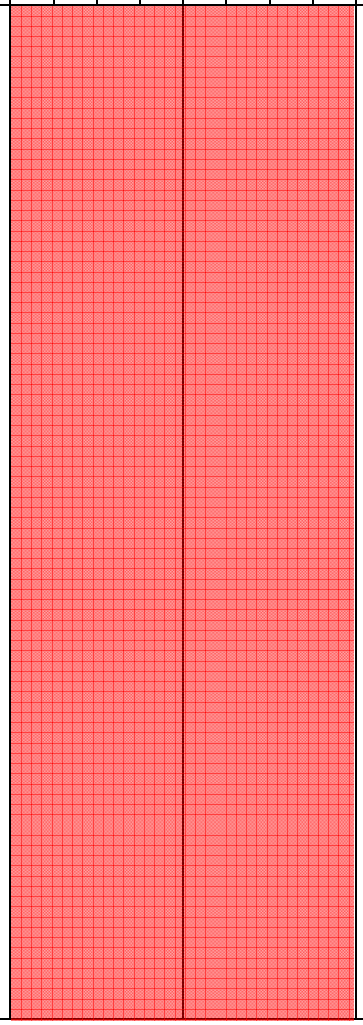
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Travel				100		100		100			300	
		Various DoD & Internal										
Subtotal:				100		100		100			300	
Project Total Cost:				**53236**		**53425**		**49371**			**156032**	

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational System Development	**0607828D8Z - Joint Integration and Interoperability**	**P818**

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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



Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational System Development	**0607828D8Z - Joint Integration and Interoperability**	**P818**

Schedule Detail	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Requirements Validation							
Implementation / Transition							
Campaign Plan Development							
Event Assessments							

Exhibit R-2, RDT&E Budget Item Justification						Date: February 2008	
Appropriation/Budget Activity RDT&E, Dw BA 07			R-1 Item Nomenclature: Information Systems Security Program, 0303140D8Z				
Cost ($ in millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	18.204	15.524	13.459	13.579	14.066	14.287	14.508
Information Systems Security Program, P140	18.204	15.524	13.459	13.579	14.066	14.287	14.508

A. Mission Description and Budget Item Justification:

The NII Information Systems Security Program (ISSP) provides focused research, development, testing and integration of technology and technical solutions critical to the Defense Information Assurance Program (10 USC 2224) through pilot programs and technology demonstration; investment in high leverage, near-term programs that offer immediate Information Assurance (IA) benefit; federal and multi-national initiatives; and short-term studies and research critical to protecting and defending information systems by ensuring their availability, integrity, authentication, confidentiality, and non-repudiation. These efforts focus on Computer Network Defense (CND) and the restoration of information systems by incorporating protection, detection, analysis and reaction and response capabilities; emerging cryptographic technologies; technology transition and IA research capabilities. This program is designed to meet the requirements of 10 USC 2224 (Defense Information Assurance Program), 44 USC 3544, (Federal Information Security Management Act of 2002), OMB Circular A-130, and DoD Directives 8500.1, and 0-8530.1. This program is funded under Budget activity 7, Operational System Development because it integrates technology and technical solutions to the Defense Information Assurance Program.

FY 2007 Accomplishments: ($18.204 million)

- $2.900 million Congressional Add, Code Assessment & Methodology Project (CAMP) - Reprogramming to NSA.
- Converted eMASS into a Core Enterprise Service information assurance management tool.
- Continued refinement of IA architecture, policy and IA capabilities necessary to support and “end-to-end” IA capability for the GIG – including enterprise services such as discovery, collaboration, messaging, mediation, data tagging, etc. Support technology demonstration, development and pilots focusing functions required in mid-term (2009-2012) increment of the IA Component of the GIG Architecture. Examined technical approaches to improving data at rest protection and addressing data aggregation issues.

Exhibit R-2, RDT&E Budget Item Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	R-1 Item Nomenclature: Information Systems Security Program, 0303140D8Z

- Continued experimentation, technology demonstration, prototype and test evolving CND/situational awareness, vulnerability management, attribution, anomaly detection, trace back and response tools. Piloted the CNDSP Measure of Effectiveness Program through evaluation of five Components and their CNDSP and upon validation transition the program to the DOD Blue/Red Teams.

- CND Architecture: Expanded the System View (SV-1, SV4) to include emerging CND tools and capabilities (e.g. Host Based Security Suite, TRICKLER, Insider Threat tools): expand the Architecture Views to include the [SV10C (Systems Event-Trace), the SV-3 (Systems-Systems Matrix, the OV -6C (Operational Event-Trace), TV-1, TV-2 (Technical Standards Profile and Forecast)

- Conducted a DoD CND COI Pilot to demonstrate net-centric data sharing in a Service Oriented Enterprise Architecture. The pilot included DISA, NSA, Army, and AF participation evaluating net-centric sharing and correlation of sensor data (limited platforms in 07), vulnerability data, asset data, patch management data, and incident data. Incorporated the TRICKLER data strategy to integrate TRICKLER into the CND User Defined Operational Picture in order to have real-time situational awareness through visual tools to defend DoD networks.

- Began implementation of the DoD Software Assurance Strategy by piloting key aspects of the Engineering Support Program to manage software assurance risk, e.g., develop the ability to identify critical subsystems for supplier assurance, determine the key elements of engineering-in-depth. The Software Assurance Strategy is composed of five elements: prioritization of systems, engineering-in-depth, supplier assurance, science and technology for vulnerability detection and industry outreach. The Engineering-in-depth oversight effort will embed a System Assurance Working Integrated Product Team (WIPT) within the most important acquisition programs of the Department to (1) assist the program manager in performing EID (review principal systems engineering documents, designs, etc.); (2) ensure that critical subsystems are identified for supplier assurance and enhanced vulnerability detection; and (3) assist the program manager and Milestone Decision Authority in making risk management decisions involving supplier threat and vulnerability mitigation.

Exhibit R-2, RDT&E Budget Item Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	R-1 Item Nomenclature: Information Systems Security Program, 0303140D8Z

FY 2008 Plans: ($15.524 million)

- $2.400 million Congressional Add for Security for Critical Communications Networks (SCCN). This program entails the systematic network embedding of hardware monitoring units optimized for security activities and partnering with the existing network components to achieve "built-in" network security for DoD applications.

- Convert eMASS into a Core Enterprise Service information assurance management tool.

- Continue refinement of IA architecture, policy and IA capabilities necessary to support and “end-to-end” IA capability for the GIG – including enterprise services such as discovery, collaboration, messaging, mediation, data tagging, etc. Support technology demonstration, development and pilots focusing functions required in mid-term (2009-2012) increment of the IA Component of the GIG Architecture.

- Further develop and refine engineering-in-depth and vulnerability detection to support the DoD Software Assurance Strategy.

- Continue experimentation, technology demonstration, prototype and test evolving CND/situational awareness, vulnerability management, attribution, anomaly detection, trace back and response tools.

FY 2009 Plans: ($13.459 million)

- Continue refinement of IA architecture, policy and IA capabilities necessary to support and “end-to-end” IA capability for the GIG – including enterprise services such as discovery, collaboration, messaging, mediation, data tagging, etc. Support technology demonstration, development and pilots focusing functions required in mid-term (2009-2012) increment of the IA Component of the GIG Architecture.
- Further develop and refine engineering-in-depth and vulnerability detection to support the DoD Software Assurance Strategy.

- Continue experimentation, technology demonstration, prototype and test evolving CND/situational awareness, vulnerability management, attribution, anomaly detection, trace back and response tools.

Exhibit R-2, RDT&E Budget Item Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	R-1 Item Nomenclature: Information Systems Security Program, 0303140D8Z

B. Program Change Summary:

	FY 2007	FY 2008	FY 2009
Previous President's Budget	17.654	13.256	13.491
Current Budget Estimates Submission	18.204	15.524	13.459
Total Adjustments	0.550	2.268	-0.032
Congressional decreases	0	-0.132	0
Congressional increases	0	2.400	0
Reprogrammings	0	0	0
SIBR/STTR Transfer	0	0	0
Other	0.550	0	-0.032

Change Summary Explanation: N/A

FY 2007: Rounding adjustments at the Department level .550 million.
FY 2008: Congressional Add $2.400 million, FFRDC -$0.036 million, Contractor Efficiencies -$0.025 million, Economic Assumptions $-0.071 million.
FY 2009: Program adjustments of -$0.032 million.

C. Other Program Funding Summary: N/A

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
O&M, DW (PE0303140D8Z)	17.718	16.356	17.851	18.133	17.208	17.526	17.841	Continuing	122.633

D. Acquisition Strategy: N/A

Exhibit R-2, RDT&E Budget Item Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	R-1 Item Nomenclature: Information Systems Security Program, 0303140D8Z

E. Performance Metrics:

- eMASS fielded and provides data support for FISMA;
- eMASS available as a Core Enterprise Service capability;
- IA Architecture incorporated into supported program plans;
- CND Architecture incorporated into IA Architecture;
- IA Portal prototype fielded and used by DoD IA Community;
- Pilots/technology demonstrations effect IA product development, concepts of operations development, or enterprise license decisions;
- Enterprise licenses for vulnerability patching and operating system wrappers awarded;
- DoD sensors integrated into an Enterprise Sensor Grid;
- Secure data tagging technology advanced;
- CND Response Action tools tested.

Exhibit R-2, RDT&E Budget Item Justification						Date: February 2008	
Appropriation/Budget Activity RDT&E - DW/BA 07			R-1 Item Nomenclature: Cyber Security Initiative, 0305103D8Z				
Cost ($ in millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	0.000	0.000	1.000	1.000	0.500	0.500	0.500
Project Name							

A. Mission Description and Budget Item Justification:

This initiative supports a family of Program Elements within this Program Element number that will properly align DoD-wide activities associated with Cyber Security. Activities include development/implementation of Cyber Security plans, assessments and strategies and procurement of associated hardware/software technologies. This program is funded under Budget Activity 7, Operational System Development.

Program Accomplishments and Plans:

FY 2007 Accomplishments: ($0.000 million)

FY 2008 Plans: ($0.000 million)

FY 2009 Plans: ($1.000 million)

- Details provided at higher classification under separate cover.

B. Program Change Summary:

	FY 2007	FY 2008	FY 2009
Previous Presidents Budget	0.000	0.000	0.000
Current Presidents Budget	0.000	0.000	1.000
Total Adjustments	0.000	0.000	1.000
Congressional program reductions			
Congressional rescissions			
Congressional increases			
Reprogrammings			
SIBR/STTR Transfer			
Program Adjustment			1.000

Exhibit R-2, RDT&E Budget Item Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 06	R-1 Item Nomenclature: Support to Networks and Information Integration, 0605170D8Z

Change Summary Explanation:
FY 2007: No change.
FY 2008: No change.
FY 2009: Cyber Security 1.000 million.

C. Other Program Funding Summary:

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
O&M, DW (PE0305103D8Z)	0	0	13.700	19.400	16.700	17.600	18.200	Continuing	85.600

D. Acquisition Strategy:

- Details provided at higher classification under separate cover.

E. Performance Metrics:

- Details provided at higher classification under separate cover

Exhibit R-2, RDT&E Budget Item Justification						Date: February 2008	
Appropriation/Budget Activity RDT&E, Dw BA 07			R-1 Item Nomenclature: Critical Infrastructure Protection (CIP), 0305125D8Z				
Cost ($ in millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	14.068	12.587	12.700	12.892	13.033	13.238	13.433
Critical Infrastructure Protection (CIP), P125	14.068	12.587	12.700	12.892	13.033	13.238	13.433

A. Mission Description and Budget Item Justification:

Homeland Security Presidential Directive 7 (HSPD-7), *Critical Infrastructure Identification, Prioritization, and Protection*, December 17, 2003, assigns two sets of responsibilities to the Department of Defense (DoD). First, as a Federal Department and related specifically to DoD mission critical infrastructure, DoD has the responsibility to "identify, prioritize, and coordinate the protection of critical infrastructure and key resources in order to prevent, deter, and mitigate the effects of deliberate efforts to destroy, incapacitate, or exploit them." Second, HSPD-7 designates DoD as the Sector Specific Agency (SSA) for the Defense Industrial Base (DIB). The Defense Industrial Base (DIB) is the DoD, the U.S. Government, and private sector worldwide industrial complex with capabilities to perform research and development, design, produce, and maintain military weapon systems, subsystems, components, or parts to meet military requirements. As the SSA for the DIB, DoD is responsible for collaborating with all relevant organizations, conducting or facilitating vulnerability assessments, and encouraging risk management strategies to protect against attacks on the DIB.

HSPD-7 focuses on the national plan to secure critical infrastructure. Subsequent documents and strategies issued by DoD have expanded on this baseline to detail DoD critical infrastructure protection (CIP) efforts. The June 2005 *Strategy for Homeland Defense and Civil Support* identifies preparedness and protection of Defense Critical Infrastructure as one of the core capabilities to achieve mission assurance.

The cornerstone of DoD's approach to CIP is DoD Directive (DoDD) 3020.40, *Defense Critical Infrastructure Program (DCIP)*, signed by the Deputy Secretary of Defense in August 2005, which assigns the roles and responsibilities for implementing the DCIP. The Defense Critical Infrastructure Program (DCIP), as defined in DoDD 3020.40, is a DoD risk management program that seeks to ensure the availability of networked assets critical to DoD missions. Activities include the identification, assessment, and security enhancement of assets essential for executing the National Military Strategy.

Exhibit R-2, RDT&E Budget Item Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	R-1 Item Nomenclature: Critical Infrastructure Protection (CIP), 0305125D8Z

The DCIP is a DoD-wide effort, involving components from the Office of the Secretary of Defense (OSD), the Joint Staff, the Combatant Commands (COCOMs), the Military Departments and Services, the Defense Agencies and Field Activities, the National Guard Bureau, and the Defense Infrastructure Sector Leads. These DoD components and officials must work together, form partnerships, and integrate activities in order to accomplish the DCIP responsibilities identified in DoDD 3020.40.

The immense scope of infrastructures and the interdependent nature of their environment necessitate a comprehensive risk management effort. Providing complete assurance of every Defense Critical Infrastructure Asset in an all-hazards environment from all conceivable hazards is not feasible. Therefore, DoD will apply risk management practices on Defense Critical Infrastructure.

Risk management practices are applied by first performing a risk assessment to understand (1) what assets are critical to DoD missions, (2) identifying vulnerabilities to those assets, and (3) identifying threats and hazards to those assets.

Decision makers use the results of the risk assessments to determine a risk response. This response may include applying resources to fix identified vulnerabilities, change tactics or procedures, provide asset redundancy, or accept the identified risk. The risk management approach will support the prioritization of scarce resources across DoD and focus resources on these assets critical to DoD missions. From an infrastructure protection perspective, this approach enables the achievement of warfighter operational goals through assured continuity of combat support and core Defense business processes, and assists in the restoration of capabilities should a disruption occur.

Exhibit R-2, RDT&E Budget Item Justification	Date: February 2008

Appropriation/Budget Activity	R-1 Item Nomenclature:
RDT&E, Dw BA 07	Critical Infrastructure Protection (CIP), 0305125D8Z

B. Program Change Summary:

	FY 2007	FY 2008	FY 2009
Previous President's Budget	13.643	12.667	12.731
Current Budget Estimates Submission	14.068	12.587	12.700
Total Adjustments	0.425	-0.080	-0.031
Congressional program reductions	-0.027	-0.080	0
Congressional increases	0	0	0
Reprogrammings	0	0	0
SIBR/STTR Transfer	0	0	0
Other	0.452		-0.031

Change Summary Explanation:

1. FY 2007 funding total does not include $15.7 million received in GWOT supplemental. The $15.700 million GWOT supplemental is currently displayed in PE 0603225D8Z ($0.144 million), PE 0603923D8Z ($0.163 million), PE 0605799D8Z ($3.409 million), and PE 1001018D8Z ($11.449 million).
2. FY 2008 funding totals do not include $9.0 million in pending request for current FY2008 GWOT requirements.

C. Other Program Funding Summary: N/A

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
O&M, DW (PE0902198D8Z)	29.867	18.997	18.853	19.022	18.629	19.033	19.335	Continues	Continues

D. Acquisition Strategy: N/A

E. Performance Metrics: N/A

Exhibit R-2a, RDT&E Project Justification	Date: February 2008
Appropriation/Budget Activity	Project Name and Number

RDT&E, Dw BA 07				Critical Infrastructure Protection (CIP), P125			
Cost ($ in millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Critical Infrastructure Protection (CIP), P125	14.068	12.587	12.700	12.892	13.033	13.238	13.433
RDT&E Articles Quantity	N/A	N/A	N/A	N/A	N/A	N/A	N/A

A. Mission Description and Budget Item Justification:

The Defense Critical Infrastructure Program (DCIP) is a Department of Defense (DOD) risk management program that seeks to ensure the availability of networked assets critical to DOD missions, to include DOD and non-DOD, domestic and foreign infrastructures essential to planning, mobilizing, deploying, executing, and sustaining United States military operations on a global basis. Through identifying Defense Critical Assets, assessing them to determine vulnerabilities, incorporating specific threat and hazard information and analysis, and visually displaying relevant infrastructure data and analysis, DOD will be positioned to make risk management decisions to ensure the appropriate infrastructure is available, when needed, to support DOD missions.

Specifically, Combatant Commands (COCOMs) are responsible for identifying the mission capability requirements and coordinating with the Military Departments, Defense Agencies, DOD Field Activities, and Defense Sector Lead Agents to identify and assess Defense Critical Assets. As asset owners and capability providers, the Secretaries of the Military Departments and the Directors of Defense Agencies and DOD Field Activities, coordinate with the COCOMs to identify and prioritize the assets required to support mission-essential functions. Asset owners will also assess identified Defense Critical Assets to identify vulnerabilities and apply appropriate remediation and mitigation measures. The Defense Sector Lead Agents are responsible for identifying the specific functions, systems, assets (DOD and non-DOD owned), and interdependencies within the Defense Sector infrastructure networks supporting the identified critical missions.

Each Defense Sector Lead Agent, as identified in DODD3020.40.DOD, represents one of ten (10) functional areas that provide support to the Combatant Commanders and asset owners. These functional areas are as follows: defense industrial base (DIB); financial services; global information grid (GIG); health affairs; intelligence, surveillance, and reconnaissance (ISR); logistics; personnel; public works; space; and transportation.

Exhibit R-2a, RDT&E Project Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	Project Name and Number Critical Infrastructure Protection (CIP), P125

In addition, DCIP manages specific analytic efforts in the identification and maintenance of specific inter- and intra-dependencies DoD has on the foundational commercial infrastructure networks supporting the identified critical missions. Specific analytic efforts are focused within six (6) commercial infrastructure areas: energy (electric power, natural gas); chemicals; transportation; telecommunications; water; and petroleum, oil, lubricants (POL).

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Accomplishment/Effort/Subtotal Cost	2.956	1.542	1.500
RDT&E Articles Quantity	0	0	0

DCIP Strategic Partnerships and Enabling Technologies

FY2007: The program has:

- Established web services for remaining Defense Sector databases, Combatant Command, and Military Service databases for visualization of assets in KDAS/Palanterra visualization tool to create a DCIP COP.
- Ingested information from National Labs on consequence assessment and predictive analysis tool suites to support pre-planning and positioning of defense assets.
- Developed capabilities to identify and provide risk management for critical infrastructure system vulnerabilities as a result of cyber based attacks

FY 2008: The program will:

- Develop, leverage, maintain, and enhance tools and data sets based on requirements derived from the DCIP community and the output of assessments performed on Defense Industrial Base (DIB) assets.
- Develop protocols and standards to ensure interoperability of Homeland Security Information Network Components and DCIP COP for a HLS/HLD COP and situational awareness.

FY 2009: The program will:

- Develop, leverage, maintain, and enhance tools and data sets based on requirements derived from the DCIP community and the output of assessments performed on Defense Industrial Base (DIB) assets.

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Accomplishment/Effort/Subtotal Cost	11.112	11.125	11.231
RDT&E Articles Quantity	0	0	0

DCIP Strategic Partnerships and Enabling Technologies

FY2007: The program has:

- Coordinated a DCIP DOD Instruction (DODI), leveraging the DCIP DODI IPT, and previously published IIG and lessons learned as the baseline (currently in 106 process)
- Published the DOD criticality methodology to identify defense critical assets
- Conducted and maintained commercial infrastructure intra- and inter-dependency analysis on 20 DOD critical assets contained on the COCOM Integrated Priority List (IPL)
- The DCIP Risk Assessment Handbook was broken down in to 3 component parts for individual distribution. The Infrastructure Resiliency Guide (published), the Critical Asset Identification Process (in formal staff coordination), and the Remediation Planning Guide (in formal staff coordination)

FY 2008: The program will:

- Conduct and maintain commercial infrastructure intra- and inter-dependency analysis on a minimum of 25 DOD critical assets contained on the COCOM Integrated Priority List (IPL)
- Incorporate DOD DCIP assessment training curriculum into established DOD education and training programs
- Apply risk management methodology to all identified critical assets

- Develop a prioritization methodology to substantiate investment in risk management recommendations
- Perform trend analysis and develop remediation and mitigation options for addressing risks identified as part of the assessment process.
- Develop a prioritization methodology to substantiate investment in risk management recommendations
- Provide technical analysis and recommendations on infrastructure networks, points of service, interdependencies, and priority restoration for pre-event and post-event analysis for manmade or natural disaster incidents, and intelligence relating to possible terrorist threats.

FY 2009: The program will:

- Provide technical analysis and recommendations on infrastructure networks, points of service, interdependencies, and priority restoration for pre-event and post-event analysis for manmade or natural disaster incidents, and intelligence relating to possible terrorist threats.
- Conduct and maintain commercial infrastructure intra- and inter-dependency analysis on a minimum of 20 DOD critical assets contained on the COCOM Integrated Priority List (IPL)
- Apply risk management methodology to all identified critical assets
- Perform trend analysis and develop remediation and mitigation options for addressing risks identified as part of the assessment process.

C. Other Program Funding Summary: DCIP O&M funding is allocated to the Military Services, the Defense Sectors/Defense Agencies, and to OSD DCIP as the Sector Specific Agency (SSA) for the Defense Industrial Base (DIB). O&M funding will be used by these organizations to identify critical assets supporting DoD missions using the standard methodology developed through DCIP, assessing these identified critical assets to identify critical infrastructure support, and the performance of risk management activities associated with these assessed assets.

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
O&M, DW (PE0902198D8Z)	20.567	18.997	20.053	20.322	19.829	20.233	20.635	Continuing	140.636

D. Acquisition Strategy: N/A

E. Major Performers: N/A

Exhibit R-2, RDT&E Budget Item Justification						Date: February 2008	
Appropriation/Budget Activity RDT&E, Dw BA 07			R-1 Item Nomenclature: Policy R&D Programs, PE 0305186D8Z				
Cost ($ in millions)	FY 2007*	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	0.000	10.560	8.210	5.089	5.176	5.258	5.338
Policy R&D Programs, P186	0.000	10.560	8.210	5.089	5.176	5.258	5.338

* Funding under PE 0603942D8Z and PE 0603832D8Z

A. Mission Description and Budget Item Justification:

Continues Congressionally directed technology transfer program to consolidate and coordinate various military endeavors that pass technology and equipment to the private sector.

Continues the development of military tools to overcome global security issues. Since the global environment is dynamic, research is necessary to continue understanding military structures, foreign cultures, and ethnic issues. Examines demographic data, investigates information awareness concerning catastrophic events, and develops links to information and data warehouses. Continues analytical projects that counter organizational warfare and develops infrastructure and sanctuary denial options. Blends several disciplines including surveillance, operations, policy, information, training and technology.

Defense Planning Scenarios (DPS) are used for force planning, joint studies, concept development activities; combat development, test and evaluation, and joint/interagency war games. Information derived from DPS analysis settings of key analytic parameters, models, assumptions and variations in key factors, threat descriptions by the intelligence community, Blue and Red force characteristics, and outlines of concepts of operations.

The Pacific Disaster Center (PDC) leveraged its achievements in agile Information and Communication Technologies (ICT) and enterprise data management practices with its established network of disaster managers—resulting in an effective response to unprecedented natural disasters and the execution of wide spectrum of projects.

Exhibit R-2, RDT&E Budget Item Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	R-1 Item Nomenclature: Policy R&D Programs, PE 0305186D8Z

B. Program Change Summary: FY08 Congressional increase is continuing Pacific Disaster Center previously added in PE 0605170D8Z. Reprogrammings include $3.3M consolidation of Defense Planning Scenario funding from year of execution funds and a $37K reduction for inflation. Consolidates technology transfer funds from PE 0603942D8Z in each fiscal year. Justification includes better clarification to DoD leadership and Congress.

	FY 2007	FY 2008	FY 2009
Previous President's Budget	0.000	4.627	4.947
Current Program and Budget Review	0.000	10.560	8.210
Total Adjustments		5.933	3.481
Congressional Reductions		-0.067	0
Congressional Increases		6.000	0
Other Adjustments		0	3.263

Change Summary Explanation:
FY 2007: N/A
FY 2008: Contractor Efficiencies -$0.017 million; Economic Assumptions -$0.053 million;
FY 2009: Program adjustments of $3.263 million due to inflation.

Exhibit R-2a, RDT&E Project Justification						Date: February 2008	
Appropriation/Budget Activity RDT&E, Dw BA 07			R-1 Item Nomenclature: Policy R&D Programs, PE 0305186D8Z				
Cost ($ in millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Policy R&D Programs, P186	0.000	10.560	8.210	5.089	5.176	5.258	5.338
RDT&E Articles Quantity	0	0	0	0	0	0	0

* Funding under PE 0603942D8Z and PE 0603832D8Z

A. Mission Description and Budget Item Justification:

Continues Congressionally directed technology transfer program to consolidate and coordinate various military endeavors that pass technology and equipment to the private sector.

Continues the development of military tools to overcome global security issues. Since the global environment is dynamic, research is necessary to continue understanding military structures, foreign cultures, and ethnic issues. Examines demographic data, investigates information awareness concerning catastrophic events, and develops links to information and data warehouses. Continues analytical projects that counter organizational warfare and develops infrastructure and sanctuary denial options. Blends several disciplines including surveillance, operations, policy, information, training and technology.

Defense Planning Scenarios (DPS) are used for force planning, joint studies, concept development activities; combat development, test and evaluation, and joint/interagency war games. Information derived from DPS analysis settings of key analytic parameters, models, assumptions and variations in key factors, threat descriptions by the intelligence community, Blue and Red force characteristics, and outlines of concepts of operations.

The Pacific Disaster Center (PDC) leveraged its achievements in agile Information and Communication Technologies (ICT) and enterprise data management practices with its established network of disaster managers—resulting in an effective response to unprecedented natural disasters and the execution of wide spectrum of projects.

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Accomplishment/Effort/Subtotal Cost	0.000	1.700	1.800
RDT&E Articles Quantity	0	0	0

* $1.1M in PE 0603942D8Z

In conjunction with outreach program, ensures a successful and balanced transfer of equipment and technology without impeding military readiness. Manages what first responders receive, achieves a balance between first responders and military equipment, and transfers technology through a transitional effort that has dual utility to enhance military readiness. Meets the Congressional intent of the FY 2003 National Defense Authorization Act, Section 1401.

FY2007: The program will:

- Prepares the transition of technology transfer programs toward a consolidated environment.

FY 2008: The program will:

- Conduct the technology transfer program in a consolidated environment.
- Develop draft metrics for use in measuring program success.
- Initiate a consortium of subject matter expertise from across the Department and select, Inter-agency organizations.
- Expand program outreach programs to include greater emphasis on defense activities and national labs.

FY 2009: The program will:

- Continue conducting the technology transfer program in a consolidated environment.
- Finalize metrics for continued use in program success.
- Use a consortium of subject matter experts to prioritize technology transfer requirements.
- Continue program outreach programs, identifying potential opportunities for expansion

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Accomplishment/Effort/Subtotal Cost	0.000	2.150	3.847
RDT&E Articles Quantity	0	0	0

Identifies international technologies and provide program management oversight and technical support for projects cooperating with international partners. Anticipates exploitation of technology, including available and advanced capabilities, and works through the international commercial sector and academia concerning adversary's application of technology. Explores processes and policy to integrate international capabilities across the spectrum of international security issues.

FY 2007: The program will: Work developed in other program elements.

FY2008: The program will:

- Develops software tools in conjunction with the US Pacific Combatant Command to more fully understand nation turmoil. Adapts the culture and political environment within the Asia/Pacific area to various scenarios.
- Examines information and training technologies to explore better surveillance efforts and operational policy, particularly in coordination with Combatant Commanders.

FY 2009: The program will:

- Expands the development of software tools into a broader focus within the Asia/Pacific area.
- Examines information and training technologies to explore better surveillance efforts and operational policy, particularly in coordination with Combatant Commanders.
- Funds researchers who will integrate process tools within the military and to promote homeland defense initiatives.
- Further develops ongoing irregular warfare research efforts within the Services to better analyze, modify, design, and demonstrate enduring counterinsurgency technical and operational capabilities.

Exhibit R-2a, RDT&E Project Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	R-1 Item Nomenclature: Policy R&D Programs, PE 0305186D8Z

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Accomplishment/Effort/Subtotal Cost	0.000	2.150	3.847
RDT&E Articles Quantity	0	0	0

*5M in PE 0603832D8Z

Defense Planning Scenario (DPS) illustrates and depict a challenge and a US/allied strategic approach for engaging in future operations. DPSs are used to push the Department toward transformation through their strategic concepts and are developed in cooperation with the Joint Staff. Other key participants are the Military Services, the Combatant Commanders, and the Defense Agencies. Guidance and approval are provided by the Deputy's Advisory Working Group (DAWG).

These scenarios are used for force planning, joint studies, concept development activities; combat development, test and evaluation, and joint/interagency war games. Information derived from DPS analysis settings of key analytic parameters, models, assumptions and variations in key factors, threat descriptions by the intelligence community, Blue and Red force characteristics, and outlines of concepts of operations. The DAWG approved eleven DPSs since January 2008.

FY 2007: The program will:

- Develops problem descriptions for individual scenarios, assumptions and variations of key parameters, threat descriptions from the intelligence community, and strategic concepts at the military level.
- Replaces older scenarios that have aged out according to existing policy on scenario lifespans, with new, superior scenarios.

FY2008: The program will:

- Continues the development of a Marketplace of Ideas by which a much broader community of thinkers and contributors can frame the challenges posed by the scenarios and create transformational solutions to them.

FY 2009: The program will:

- Continues the development of a Marketplace of Ideas by which a much broader community of thinkers and contributors can frame the challenges posed by the scenarios and create transformational solutions to them.
- Conducts seminars, and other activities toward these goals.
- Develops problem descriptions for individual scenarios, assumptions and variations of key parameters, threat descriptions from the intelligence community, and strategic concepts at the military level.

- Replaces older scenarios that have aged out according to existing policy on scenario lifespans, with new, superior scenarios.Replaces older scenarios that have aged out according to existing policy on scenario lifespans, with new, superior scenarios.

	FY 2007	FY 2008	FY 2009
Accomplishment/Effort/Subtotal Cost	0.000	6.000	0
RDT&E Articles Quantity	0	0	0

The Pacific Disaster Center (PDC) leveraged its achievements in agile Information and Communication Technologies (ICT) and enterprise data management practices with its established network of disaster managers—resulting in an effective response to unprecedented natural disasters and the execution of wide spectrum of projects. The devastation caused by the Great Sumatra Earthquake and Indian Ocean tsunami and Hurricane Katrina increased the recognition of the ever-increasing value of ICT at national and regional levels around the globe. These events also showcased the specialized applications developed by the PDC—and their proven civilian-military applications—in developing both "situational awareness" and for communicating in crisis and post-crisis situations.

FY 2007: The program will: Funding previously in PE 0605170D8Z.

FY2008: The program will: This is a Congressional add for the Pacific Disaster Center

- 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.
- Continue, in collaboration with allies and NATO partners, the development and testing of metrics and a conceptual framework suitable for assessing network-centric coalition operations.
- Support JFCOM and other DoD organizations in the design and conduct of exercises

- 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 12th International Command and Control Research and Technology Symposia.
- 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 2009: The program will: No funding available.

C. Other Program Funding Summary: None

D. Acquisition Strategy: Not applicable

E. Major Performers: Not applicable

Exhibit R-2, RDT&E Budget Item Justification						Date: February 2008	
Appropriation/Budget Activity RDT&E, Dw BA 07			R-1 Item Nomenclature: Net Centricity, 0305199D8Z				
Cost ($ in millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	8.967	10.154	12.716	1.490	29.808	30.279	30.747
Horizontal Fusion, P199	0.000	0.000	0.00	0.000	19.099	19.570	19.913
GIG Evaluation Facilities (GIG-EF) and GIG End-to-End Systems Engineering Advisory Activities, P199	8.967	10.154	12.716	1.490	10.709	10.709	10.834

A. Mission Description and Budget Item Justification:

This program element will support 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 operational planning efforts. This program is funded under Budget Activity 7, Operational System Development, because it supports engineering development and testing of RDT&E activities.

The Horizontal Fusion Project funding was realigned by the Department to support priority net centric transformation efforts such as information assurance, Multinational Information Sharing and Internet Protocol (IP) based capability into military communications satellites.

	FY 2007	FY 2008	FY 2009
Previous President's Budget	8.696	10.243	12.747
Current Budget Estimates Submission	8.967	10.154	12.716
Total Adjustments	0.271		
Congressional program reductions			
Congressional increases			
Reprogrammings			
SIBR/STTR Transfer			
Program Adjustments	0.271	-0.089	-0.031

Exhibit R-2, RDT&E Budget Item Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	R-1 Item Nomenclature: Net Centricity, 0305199D8Z

Program Change Explanation:
FY 2007: Rounding adjustment at the Department level 0.271 million.
FY 2008: FFRDC -$0.024 million, Contractor efficiencies -$0.016 million, Economic assumptions -$0.049 million.
FY 2009: Program adjustments of -$0.031 million due to inflation.

Exhibit R-2, RDT&E Budget Item Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	R-1 Item Nomenclature: Net Centricity, 0305199D8Z

- Tangible products such as frameworks and design guidance used for program assessments and reviews.
- 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 end to end systems engineering oversight organization mutually identify and solve issues related to maximizing end to end performance

Exhibit R-2a, RDT&E Project Justification						Date: February 2008	
Appropriation/Budget Activity RDT&E, Dw BA 07			Project Name and Number: GIG Evaluation Facilities (GIG-EF) & GIG End-to-End SE Advisory Activities – P199				
Cost ($ in millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
GIG Evaluation Facilities (GIG-EF) & GIG End-to-End SE Advisory Activities – P199	8.967	10.154	12.716	1.490	10.709	10.709	10.834

A. **Mission Description and Budget Item Justification:** The Global Information Grid (GIG) Evaluation Facilities and E2E Systems Engineering (SE) Advisory Activities project provides resources needed to test key systems in an end-to-end manner, including providing for system engineers, test-bed hardware, software and fiber optic connectivity at the Naval Research Laboratory and several other test locations in the U.S. The evaluation facilities will be used to demonstrate 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). For these systems GIG-EF & SE would:

- Perform tests that physically demonstrate technical performance.
- Provide an independent, overarching review of technology and interface standards.
- Ensure technical issues are identified early and schedules synchronized to produce a jointly interoperable, timely and cost-effective architecture development.
- Prevent costly program reworks and restructuring, and more importantly, avoid delays in providing joint warfighter connectivity.

The effort also provides engineering, integration and hardware and fiber optic connectivity necessary to validate the performance for key transformational communication programs. The funding will also provide the engineering resources necessary for performing the Global Information Grid (GIG) end-to-end systems engineering oversight function. Resources will be applied to end-to-end 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. These resources will work in conjunction with systems engineers from key GIG programs such as the Joint Tactical Radio System (JTRS), Transformational Satellite Communications System (TSAT), Teleport, GIG Bandwidth Expansion (GIG-BE), Warfighters Internet-Tactical (WIN-T), Net-Centric Enterprise Services (NCES) and Automated Digital Networking System (ADNS) to identify and address technical issues resulting from engineering decisions made without the end- to-end perspective.

Exhibit R-2a, RDT&E Project Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	Project Name and Number: GIG Evaluation Facilities (GIG-EF) & GIG End-to-End SE Advisory Activities – P199

B. Accomplishments/Planned Program

	FY 2007	FY 2008	FY 2009
Accomplishment/Effort/Subtotal Cost	8.967	10.154	12.716
RDT&E Articles Quantity	0	0	0

FY 2007 Accomplishments ($8.967 million)

- Applied systems engineering best practices to policy and configuration management requirements
- Developed concepts for GIG Enterprise Documentation Framework Phase I
- Reviewed JTRS Cluster AMF, TSAT and NCES for compliance to end to end GIG frameworks, architectures, and design guidance
- Analyzed end to end architecture and systems engineering issues by reviewing technical documentation, working with the systems engineering organizations of each of the programs, employing modeling and simulation, and using the results of end to end systems engineering testing and influence design changes to programs to assure compatibility and to maximize end to end performance
- Worked with Services and DoD Agencies to identify and address cross-program issues and influence programs to implement compatible designs that maximize end to end performance
- Continued support of GIG-EF capabilities and enhancements.
- Connected East and West coast GIG-EF hubs via 10Gbps service
- Performed End-to-End testing and experimentation in support of GIG developer and user requirements including, but not limited to:
  - HAIPE Discovery (DNS vs. BGP vs. LDAP) starting with emulators.
  - HAIPE Routing/QoS experiments
  - End-to-End QoS testing
    - End-to-End Routing and Multicast testing
  - JTRS JVL-N Testing
  - Moonv6 IPv6 participation
  - IPsec Control Plane segregation

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Exhibit R-2a, RDT&E Project Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	Project Name and Number: GIG Evaluation Facilities (GIG-EF) & GIG End-to-End SE Advisory Activities – P199

Quality of Protection and Anomaly Detection
Application Interoperability
IPv6-HAIPE Interoperability and Performance starting with emulators.

FY 2008 Plans ($10.154 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
- 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
- Establish a GIG Technical Foundation compliance process to support existing DoD processes
- Develop an approach to integrate cross-organizational compliance processes into a single environment
- Establish a Configuration Management process to ensure EW SE inputs are incorporated into DoDD 8010
- Perform testing in support of GIG developer and user requirements to include but not be limited to:
  Data gathering and analysis of the net-centric test and evaluation infrastructure to identify gaps and issues
  GIG Technical Foundation Compliance Assessment
  Overlaps and shortfalls of the GIG E2E test infrastructure
  Interface across communities to instantiate GIG technical guidance through standards and product implementation
  IPv6 transition final testing
  JTRS WNW end-to-end testing in support of Cluster 5 (spiral 2), AMF.
  IPv6/MPLS experimentation and testing including early HAIPE concept development
  Support NCES spiral development
  Continued support of end-to-end warfighter interoperability experimentation via JRAE tests in coordination with USJFCOM JBMC2 activities
  Joint C2 applications and platform testing activities such as JITC
  HAIPE Discovery (DNS vs. BGP vs. LDAP) with HAIPIS v3 devices
  Mobile Routing testing

Exhibit R-2a, RDT&E Project Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	Project Name and Number: GIG Evaluation Facilities (GIG-EF) & GIG End-to-End SE Advisory Activities – P199

HAIPE Routing/QoS experiments with mobile networks
End-to-End QoS testing with mobile networks
End-to-End Routing and Multicast testing with mobile networks
IPv6-HAIPE Interoperability and Performance starting with HAIPIS v3 devices
- Provide systems engineering and technical analyses and assessments to develop DoD Global Positioning System (GPS), Positioning, Navigation and Timing (PNT) and Navigation Warfare modernization systems
- Provide systems engineering and technical analyses and assessments for Space Control, Operations and Surveillance efforts as well as for AEHF, WGS and TSAT integration and connectivity to the GIG

FY 2009 Plans ($12.716 million)
- Ensure the GIG end to end quality of service framework evolves in accordance with the evolution of commercial products, services, and technology
- 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
- Continue to provide critical technology validation for GIG WGs, Components and Services/Users
- Finalize 40 Gb connectivity among DoD testing components (GIG-BE, TSAT, Teleports) and inter-connectivity to key GIG development sites including capability to support Inter-agency end-to-end testing with DoD, Intelligence Community, Allied and Coalition activities.
- Perform testing in support of GIG developer and user requirements including but not limited to:
  Data gathering and analysis of the net-centric test and evaluation infrastructure to identify gaps and issues
  GIG Technical Foundation Compliance Assessment
  Overlaps and shortfalls of the GIG E2E test infrastructure
  Interface across communities to instantiate GIG technical guidance through standards and product implementation
  IPv6 transition final testing
  JTRS WNW end-to-end testing in support of Cluster 5 (spiral 2), AMF.
  IPv6/MPLS experimentation and testing including early HAIPE concept development
  Support NCES spiral development
  Continued support of end-to-end warfighter interoperability experimentation via JRAE tests in coordination with USJFCOM

Exhibit R-2a, RDT&E Project Justification	Date: February 2008
Appropriation/Budget Activity RDT&E, Dw BA 07	Project Name and Number: GIG Evaluation Facilities (GIG-EF) & GIG End-to-End SE Advisory Activities – P199

JBMC2 activities

Joint C2 applications and platform testing activities such as JITC
HAIPE Discovery (DNS vs. BGP vs. LDAP) with HAIPIS v3 devices
Mobile Routing testing
HAIPE Routing/QoS experiments with mobile networks
End-to-End QoS testing with mobile networks
End-to-End Routing and Multicast testing with mobile networks
IPv6-HAIPE Interoperability and Performance starting with HAIPIS v3 devices

- Provide systems engineering and technical analyses and assessments to develop DoD Global Positioning System (GPS), Positioning,
Navigation and Timing (PNT) and Navigation Warfare modernization systems
- Provide systems engineering and technical analyses and assessments for Space Control, Operations and Surveillance efforts as well as for AEHF, WGS and TSAT integration and connectivity to the GIG

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 participation and usage of the GIG-EF in support of Joint warfighting requirements. Performance metrics in this area would include:
  - Number of events, tests and experiments scheduled
  - Percentage of GIG-EF time active vs. idle
  - Total amount of in-kind funding from GIG developers and activities
  - Aggregate funding per test
  - Number of service and user participants in tests (jointness)

Exhibit R-2a, RDT&E Project Justification	Date: February 2008
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- Contributions to GIG development and transition. The GIG-EF should also advance the state of the art in support of GIG implementation.
  - Number of independent test reports and limited objective experiments support major GIG architectural issues (IA, IPv6/MPLS, Routing, etc.)
  - Number of demonstrations in support of major GIG architectural issues (IA, IPv6, Routing, etc.)

- Risk mitigation for the GIG.
  - Demonstrations in support of GIG overall goals (ex: IPv6 by FY 2008, 10 Gb Optical HAIPE by FY 2007, etc.)
  - Number of GIG E2E Systems Engineering Oversight working group requirements addressed via GIG-EF demonstration, experimentation and testing.

- Tangible products such as frameworks and design guidance used for program assessments and reviews.
- 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 end to end systems engineering oversight organization mutually identify and solve issues related to maximizing end to end performance.

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE
RDTE, Defense Wide BA 07	**1001018D8Z - NATO Alliance Ground Surveillance (AGS)**

COST ($ in Millions)		FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
P018	NATO Alliance Ground Surveillance (AGS)	42.702	31.194	27.756	75.925	95.379	85.183	85.873

A. Mission Description and Budget Item Justification: (U) This project supports the U.S. share of the cost for NATO to acquire a ground surveillance capability similar to what the NATO owned and operated Airborne Warning and Control System (AWACS) provides for air surveillance.

(U) The North Atlantic Council (NAC) validated the requirement in 1995 for a NATO-owned and operated core air-to-ground surveillance capability supplemented by interoperable national assets. Since then, the Major NATO Commanders have consistently made Alliance Ground Surveillance (AGS) their number one equipment acquisition priority.

- October 1997, NATO Conference of National Armaments Directors (CNAD) approved AGS NATO Staff Requirement (NSR).
- April 1999, NATO Washington Summit Defense Capabilities Initiatives (DCI) included need for a NATO-owned and operated core system for ground surveillance
- September 2001, Reinforced NAC (RNAC) re-affirmed need for a NATO-owned and operated AGS capability by 2010 and to move forward with the program.

November 2002, NATO Prague Summit approved Prague Capabilities Commitment (PCC) that includes an airborne ground surveillance capability.

- December 2003, AGS Steering Committee approved in principle the merger of NATO AGS and the Trans-Atlantic Cooperative AGS Radar (TCAR) sensor projects.
- May 2004, Following a competitive Project Definition Study, CNAD endorsed the Trans-Atlantic Industrial Proposed Solution (TIPS) consortium's selection as the program of record to enter the Design and Development Phase and directed that the TCAR sensor development project be integrated into the AGS program.
- May 2004, AGS Steering Committee approved an updated Master Schedule supporting a 2010 Initial Operating Capability (IOC) with Full Operational Capability (FOC) by 2013.
- November 2005, Risk Reduction Study (RRS) was completed providing the Nations a higher degree of confidence in six areas of concern: program management; harmonization with other pending NATO aircraft programs; interoperability with existing national systems; compatibility with the NATO intelligence, surveillance and reconnaissance architecture; integration of the TCAR sensor; and affordability.
- April 2006, CNAD approved release of a Request for Proposal (RFP) to industry for the Design and Development (D&D) phase, including a mixed fleet (manned and unmanned) and development of at least one radar for either, with a total procurement Not to Exceed of ¬3.3B (Base Year euros equivalent to $5.4B Then Year dollars).
- October 2006, AGS Industries (AGSI, former TIPS consortium) formally submitted a proposal compliant with the RFP. CNAD agreed that the proposal, as submitted by AGSI, would form the basis for negotiations of the D&D contract and tasked the AGS Support Staff (AGS3) to begin negotiations with AGSI.
- November 2006, Heads of State at NATO Riga Summit endorsed the progress on NATO AGS, with a view to achieving real capabilities, as one of a set of initiatives to increase the capacity of NATO forces to address contemporary threats and challenges.
- May 2007, Contract negotiations with AGSI were completed. Total value of the D&D contract was ¬545M (Then Year euros equivalent to $763M Then Year dollars) for the system design activity (to be funded by all participating nations) plus ¬385M (Then Year euros equivalent to $539M Then Year dollars) for the radar development activity (to be funded by six nations, including the U.S.). The period of performance was 31 months after award and the contract prices were valid until December 1, 2007.

June 2007, The AGS Funding Documents (Program Memorandum of Understanding (PMOU), Design & Development Supplement, and the TCAR Implementing Arrangement (IA)) were released to nations for final staffing, leading to their approval and signature. Target completion date was the Fall CNAD meeting in October 2007.

- July 2007, At an Extra-ordinary CSC meeting, Canada, France, Germany, and The Netherlands indicated they could not support the Program of Record for various reasons, primarily affordability, and that they would probably not participate if carried forward. This lack of key national support caused many other nations concern and the CSC

recommended ceasing work on the Program of Record and to go forward with an alternate UAV only capability based on an Off-The-Shelf Global Hawk (OTS-GH) equipped with the U.S. Multi-Platform Radar Insertion Program (MP-RTIP) sensor. This capability was previously endorsed by the user, Supreme Headquarters Allied Command Europe (SHAPE,).
- August 2007, CNAD endorses the CSC recommendation to officially notify AGS Industries to close the Program of Record. AGS3 will be directed to revise the procurement strategy and update the funding documents and the NATO Management Organization Charter for presentation at an Extra-ordinary CSC meeting on September 6, 2007.

B. Program Change Summary	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008)	41.412	41.466	42.858
Current BES/President's Budget (FY 2009)	42.702	31.194	27.756
Total Adjustments	1.290	-10.272	-15.102
Congressional Program Reductions		-10.000	
Congressional Rescissions			
Congressional Increases			
Reprogrammings	-9.000		-15.000
SBIR/STTR Transfer	-1.159	-0.847	
Other	11.449	0.575	-0.102

Change Summary Explanation: In FY 2007, GWOT supplemental funding ($11.449 million) has been displayed although it is actually for PE 0305125D8Z.

C. Other Program Funding Summary Not applicable for this item.

D. Acquisition Strategy Not applicable for this item.

E. Performance Metrics: Not Applicable.

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDTE, Defense Wide BA 07	**1001018D8Z - NATO Alliance Ground Surveillance (AGS)**	**P018**

COST ($ in Millions)		FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
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- August 2007, CNAD endorses the CSC recommendation to officially notify AGS Industries to close the Program of Record. AGS3 will be directed to revise the procurement strategy and update the funding documents and the NATO Management Organization Charter for presentation at an Extra-ordinary CSC meeting on September 6, 2007..

B. Accomplishments/Planned Program:

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
(U) FY 2007/2008/2009 Plans:	42.702	31.194	27.756

(U) FY 2007 Accomplishments:
- Receive a formal proposal from industry that was compliant with the Request For Proposal (RFP), the Statement Of Objectives, and within the established cost ceiling. [COMPLETE]
- Evaluate the contractor proposal and negotiate contract with AGS Industries (AGSI). [COMPLETE]
- Submit contract and Program Memorandum of Understanding (PMOU) for national staffing. [COMPLETE]
- Revise the Acquisition Strategy, Program Memorandum of Understanding, and NATO Management Organization Charter to reflect CNAD decision to NOT pursue the Mixed Fleet Program of Record, because of insurmountable affordability issues, and to instead move forward with a UAV-only solution based on an Off-The-Shelf Global Hawk (OTS-GH)equipped with the Multi-Platform Radar Technology Insertion Program (MP-RTIP) sensor. [COMPLETE]

U) FY 2008 Plans:
-Prepare a RFP for a single, 2-phase contract consisting of a Design, Development, and Demonstration (DD&D) Phase and a Production Phase for a two-orbit, UAV-only, ground surveillance capability and present it to the CNAD for approval.
- Submit revised PMOU for national staffing.
- Secure Congressional approval to sign the PMOU.
- Release RFP to industry.
- Develop and implement plans to transition the NATO AGS CSC to a NATO AGS Management Organization (NAGSMO) upon contract award.
- Recruit and nominate a qualified U.S. candidate for the NAGSMA Deputy General Manager/Program Manager position [COMPLETE]
- Receive a formal proposal from industry that is compliant with the RFP.
- Evaluate the contractor proposal, and complete formal negotiations.

(U) FY 2009 Plans:
- Award contract and stand-up NATO AGS Management Organization.
- Establish and staff a NATO AGS Management Agency (NAGSMA).
- Provide personnel to the NAGSMA.
- Designate U.S. Representative to the NAGSMO Board of Directors (BOD).

- Participate in technical and operational Working Groups.
- Provide for a professional user interface to the NATO AGS program office (NAGSMA).
- Improve and expand industry and professional association with NATO allies.
- Address Congressional, GAO, IG Actions regarding program issues as they arise.
- Ensure effective oversight of the program is provided by continuing to participate in the NAGSMA and BOD.

C. Other Program Funding Summary Not applicable for this item.

D. Acquisition Strategy Pending Department and Congressional approval by late FY 2008, the U.S. will sign a multi-national Program Memorandum of Understanding (PMOU) committing the U.S. government to NATO-derived shares of the approximately 72-month procurement contract consisting of a Design, Development & Demonstration Phase and a Production Phase. The PMOU will support the procurement strategy developed by the NATO AGS Support Staff (AGS3) in Brussels.

E. Major Performers Not applicable for this item.

OSD RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY
7 - Operational System Development

PE NUMBER AND TITLE
1001018D8Z - NATO Alliance Ground Surveillance (AGS)

PROJECT
P018

I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
NATO AGS Prime Contract						18386	4Q	26256			44642	
NATO AGS Mission Security				29010		12000	4Q	1000			42010	
NATO AGS Study				8000			2Q				8000	
ESC/JSX JAIP				1056	1-3Q	208	1-4Q				1264	
Army JAIP-AGS Interoperability and ESC/JSX TCAR				378	1-3Q	100	1-4Q				478	
Subtotal:				38444		30694		27256			96394	

II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
NATO AGS Support				4258	1-4Q	500	1-4Q	500	1-4Q		5258	
Subtotal:				4258		500		500			5258	

III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal:												

IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract

OSD RDT&E COST ANALYSIS (R3)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational System Development	**1001018D8Z - NATO Alliance Ground Surveillance (AGS)**	**P018**

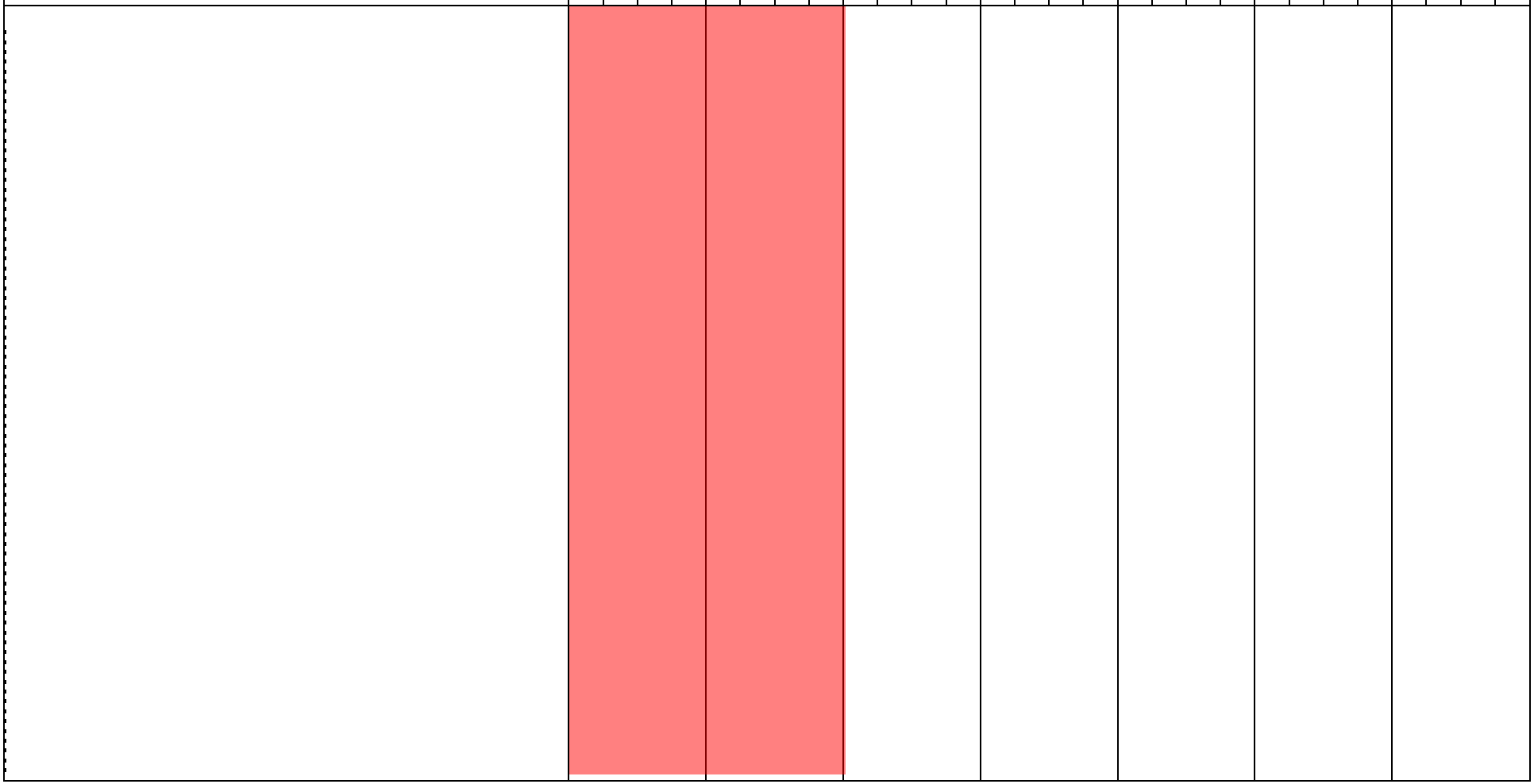
NATO AGS						1-4Q		1-4Q		1-4Q			
Subtotal:													
Project Total Cost:				**42702**		**31194**		**27756**				**101652**	

Schedule Profile (R4 Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational System Development	**1001018D8Z - NATO Alliance Ground Surveillance (AGS)**	**P018**

Event Name	FY 07				FY 08				FY 09				FY 10				FY 11				FY 12				FY 13			
	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



Schedule Detail (R4a Exhibit)

February 2008

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
7 - Operational System Development	**1001018D8Z - NATO Alliance Ground Surveillance (AGS)**	**P018**

Schedule Detail	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Restructure Program, revise acquisition strategy, update NATO funding documents	4Q	1Q - 4Q					
Notify AGS Industries of Change in Direction, Terminate Program of Record	4Q						
Contract Award			1Q				
Design, Development and Demonstration Phase			1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q	1Q - 4Q