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	

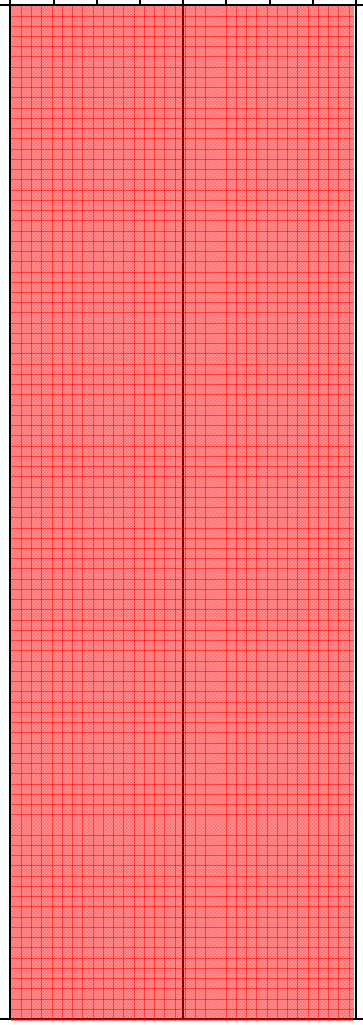
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Travel				100		100		100			300	
		Various DoD & Internal										
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							