OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

Date: February 2007

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE
RDT&E/ Defense Wide BA# 7	**0607828D8Z - Joint Integration and Interoperability**

Cost ($ in Millions)	FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total Program Element (PE) Cost	0.000	51.629	53.892	49.490	48.565	48.177	48.810	49.497
P818 Joint Integration and Interoperability	0.000	51.629	53.892	49.490	48.565	48.177	48.810	49.497

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 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)	0.000	66.906	53.270	49.848
Current BES/President's Budget (FY 2008/2009)	0.000	51.629	53.892	49.490
Total Adjustments	0.000	-15.277	0.622	-0.358
Congressional Program Reductions		-15.277		
Congressional Rescissions				
Congressional Increases				
Reprogrammings			2.200	1.000
SBIR/STTR Transfer				
Other			-1.578	-1.358

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.

D. Acquisition Strategy: Not Applicable.

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.

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Cost ($ in Millions)		FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
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B. Accomplishments/Planned Program:

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Joint Airborne Communications Capability (JACC)	0.000	8.600	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 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 existing radios. JACC serves as the relay and makes dissimilar data and voice radios interoperable on the ground, at sea, or in the air. The four-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), the USJFCOM Rapid Attack Information Dissemination Execution Relay/Joint Translator Forwarder (RAIDER/JxF) and DUSD(AS&C) Adaptive Joint C4ISR Node (AJCN) 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 Planned Output:
Integrate JACC capability in existing Service aircraft as an interim platform to perform operational evaluations within CENTCOM, PACOM, and NORTHCOM areas of responsibility. The interim JACC capability will be evaluated in support of ongoing theater operations and exercises. Complete Joint Initial Capability Document (ICD) to support the concept decision and Milestone A. Currently, the USAF way-ahead plans for the leasing and modification of a Gulfstream G550 with JACC technology is scheduled for flight test in 2nd quarter. Additionally, STRATCOM is investigating the feasibility and operational utility of installing JACC on the Navy E-6 Mercury aircraft to provide airborne IP networking and C2 relay for both strategic, conventional and disaster relief missions.

FY 2008 Planned Output:
Conduct system engineering integration of JACC capability on USN and USAF Unmanned Aerial Systems. Conduct prototype unmanned system evaluation in Joint Expeditionary Force Experiment (JEFX-08). Complete Joint Capability Development Document (CDD) to support program initiation at Milestone B.

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.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Joint Blue Force Situational Awareness (JBFSA)	0.000	3.225	8.300	3.700

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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 (JUON) 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 J8 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 Planned Output:
Plan, develop, and integrate Mission Management Center (MMC) and Network Operations Center (NOC) functionality to provide near-term capabilities to resolve validated Combatant Command BFT interoperability shortfalls. Incorporate BFT / JBFSA capability to improve tactical level visibility efficiencies by 50 percent by building an initial capability that integrates a NATO interface through the MMC in March 2007 and enhancement by November 2007. Improve data interoperability through a common data interface capability. Develop common BFT / JBFSA data exchange standard through BFT Community of Interest (COI) with initial demonstration for COI Milestone 2 by March 2007, Milestone 3 by July 2007. Continue to converge systems of records through assessment of key legacy systems to recommend integration or phase out - reduce number of systems by 10 percent. Complete 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). Continue 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 transition 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 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 C2 systems. Transition existing capabilities to Programs of Record (PORs)/SORs. Continue blue force logistics integration into a COP. Begin developing, red, grey, and neutral data dissemination capability. Complete Army - Marine Corps convergence effort and begin developing the fielding solution.

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Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Joint Command and Control (JC2) Capabililty Portfolio Manager (CPM)	0.000	15.749	23.880	25.368

[Long Title] Joint Command and Control (JC2) Capabililty Portfolio Manager (CPM)/Test & Assessment and Joint Battle Management Command and Control (JBMC2) Joint Mission Thread Development

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 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 QDR, the key role of interoperability is to improve warfighting capability and effectiveness. In FY 2006 and 2007, the Joint Battle Management Command and Control (JBMC2) Program developed a repeatable process for executing that key role. It created a unique partnership between joint warfighters and engineering, policy, acquisition and budget communities that successfully worked together to assess and resolve joint operational capability and interoperability gaps. For example, the initial pilot, the Joint Close Air Support (JCAS) Joint Mission Thread Assessment (JMT), made significant progress in interoperability by baselining the state of digital interoperability in Immediate Close Air Support, and developed potential solutions sets that will save lives, dramatically increase warfighting efficiency and effectiveness, and save an estimated $38M 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 will be assimilated into the JC2 Portfolio in FY 2007. This assimilation will absorb the existing processes of JBMC2 while refining the mission focus areas and expediting the timeline. The initial JBMC2 Joint Mission Thread - Joint Close Air Support (JCAS) will wrap up and bring to maturity the proposed solution products initiated through static and technical assessments to date. The successfully proven methodology used to assess the Joint Close Air Support Mission Thread will be used by the CPM as a basis or model in assessing other C2 programs and associated Mission Threads to determine which functions/systems/applications delivered by portfolio programs of record 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 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 JBMC2/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;
* Fused, precise, and actionable intelligence;
* Coherent, coordinated operations, distributed and dispersed, including forced entry into anti-access or area-denial environments;

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* 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 Output:
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 programmatic decisions. This includes assessment of: digital Joint Close Air Support capability and interoperability from Terminal Attack Controller through Theater Air Ground Network; continued development and assessment of conforming Services digital Joint Close Air Support solution prototypes that have matured out of JCAS Joint Mission Thread Assessment Events 1 and 2; establishment of Joint Systems Engineering Working Group; development of reusable Joint Test Threads in conjunction with the Services; desktop analysis of Joint Task Force (JTF) C2 Joint Mission Thread Assessment, and development of DoD C2 Roadmap called for in DoDD 5100.30 in collaboration with OSD (NII)/DoD CIO and USSTRATCOM. JCAS JMT Assessment will be completed by September 2007.

FY 2008 Output:
JC2 CPM directed studies, analyses and operational assessments for the development of JC2 Portfolio capability solutions necessary to satisfy warfighting requirements and/or strategic direction in the area of C2. Includes 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 FY2010-2015.

FY 2009 Output:
JC2 CPM directed studies, analyses and operational assessments for the development of JC2 Portfolio capability solutions necessary to satisfy warfighting requirements and/or strategic direction in the area of C2. Includes 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.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Coalition Combat Identification (CCID) Advanced Concept Technology Demonstration (ACTD)	0.000	5.500	0.500	0.000

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 2006 DUSD(AS&C), JFCOM 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

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Assessment (CMUA) will focus on the ACTD's NCTI technologies rather than systems that have been previously assessed or fielded.

The extension will leverage 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

JFCOM will assume management responsibility, to include a designated Extension Transition Manager from the JFCOM staff, to coordinate the planning, updating and execution of transition of these Air-Ground technologies. ACC/A8SA will provide the Transition Management (XM) for the NCTI technologies to be assessed. A significant USN role in the USAF-led NCTI transition planning and execution will be required to ensure an effective joint acquisition strategy for strike platforms.

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 CONOPS/TTPs, training package, 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., Blue Tracking Identification (BTID)). 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. CCID ACTD will be completed in 2008.

FY 2007 Planned Output:
Refined CONOPS and operational demonstration of proposed technologies to be concluded during 4th Qtr FY 2007 as the basis for a Coalition Military Utility Assessment.

FY 2008 Planned Output:
Coalition Military Utility Assessment to inform the POM 2010-2015 process regarding the optimal mix of cooperative, non-cooperative and situational awareness systems comprising the Combat Identification capability. Begin transition of proven non-cooperative target identification technologies to designated programs of record.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009

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Net-Enabled Command Capability (NECC) Joint Combat Capability Developer (JCCD)	0.000	1.700	7.602	7.602

Primary OUTCOME (objective) for this effort is to develop the capability needs in support of Net-Enabled Command Capability (NECC) for use in the development of the NECC system of C2 solutions. 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 167-03, 22 August 2003 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 J8 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.

JFCOM has established the NECC Joint Combat Capability Developer (JCCD) as the organization responsible for all capability needs aspects of the NECC program. These 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. Determine, assess, prioritize, document, and communicate joint C2 capability requirements relative to the NECC mission space.

NECC is the Department's new principal command and control program providing C2 capabilities to support the National Military Command Center (NMCC), Joint Force Commanders (JFC), and Service/Functional Components to unit level commanders. NECC is to replace the current Global Command and Control System-Joint (GCCS-J) (to include GCCS Integrated Imagery & Intelligence (GCCS-I3), Service GCCS Family of Systems (FoS) [GCCS-Army (GCCS-A), GCCS-Maritime (GCCS-M), and GCCS-Air Force (GCCS-AF) (to include Theater Battle Management Core System (TBMCS), and other C2 capabilities (Combatant Commanders Integrated Command and Control System (CCIC2S) and adaptive planning tools, etc) on an incremental basis.

The JCCD mission provides a stable and repeatable joint capability needs process. The JCCD Capability Definition Package (CDP) development process, in collaboration with the Combatant Commands, Services, Communities of Interest and Defense Agencies, translates warfighter needs into measurable/testable/"constructable" engineering detail to provide full integration of DOT_LPF aspects of joint C2 capability to deliver complete capabilities to the joint warfighter. As noted in the Analysis of Alternatives (AoA), May 2005, this joint warfighting advocate is critical and must be focused on joint requirements and joint capabilities provisioning (cradle to grave and strategic to tactical levels) to ensure new C2 capabilities are "born joint" from inception and to only transition existing C2 capabilities into NECC that genuinely enhance joint warfighting.

Via the JCCD, NECC evaluations and assessments will be conducted in five categories: operational, system of systems, technical, software, and procedural. These evaluations and assessments are intended to provide supporting metrics for continued development of an NECC capability within the acquisition system.

FY2007 Plans: Technology Development (TD) through Milestone B (System Development and Demonstration) - JCCD develops mapping of Capability Development Document (CDD) (Key Performance Parameters (KPPs)/requirements to CDPs; begins DOT_LPF development and validation; and interoperability demonstrations, technical evaluations and capability warfighter utility assessments. NECC studies/analysis will provide cross-capability correlation, identify capability duplication and provide opportunities for capability trades across the NECC mission area. Begin development and management of the NECC Requirements Integration Document (NRID) and conduct active interface and analysis of COCOM and Service requirements submissions and NECC integration processes. Provides capability prioritization and mid-course realignment recommendations for the pilot (pre-Milestone B/C) capability modules to maximize warfighter utility and programmatic considerations. Develops and validates DOT_LPF products across the NECC spectrum. Begins JCCD evaluations and assessments. Develops, assesses, implements metrics for NECC capability within the acquisition system.

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FY2008 Plans: Milestone B (System Development and Demonstration) and pre-Milestone C (Production & Deployment). JCCD continues development and mapping of requirements to Capability Definition Package (CDPs), including emerging requirements and changes for the GCCS Family of Systems (FoS)as capabilities transition and integration to NECC. JCCD will continue development and validation of new and previously delivered DOT_LPF products across the NECC spectrum. Continue NECC evaluations and assessments to provide supporting metrics for continued development of an NECC capability within the acquisition system.

FY2009 Plans: Milestone B (System Development and Demonstration), Milestone C (Production and Deployment). JCCD continues development and mapping of requirements to CDPs, including emerging requirements and engineering changes for the GCCS FoS as capabilities transition and integration to NECC; continues development and management of the NECC Requirements Integration Document (NRID); continues DOT_LPF development and validation; and interoperability demonstrations, technical evaluations and capability warfighter utility assessments. Continues NECC evaluations and assessments to provide supporting metrics for continued development of an NECC capability within the acquisition system. Early assessment of the pilot capabilities modules will be conducted to track and determine if there is a decrease in the number of interoperability fixes required to operationally employ the developed system.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Joint Data Network (JDN)	0.000	1.500	1.090	1.120

Primary OUTCOME (objective) for this effort is an improved information management process that enhances the Commander's decision cycle. The Joint Data Network operational concept, endorsed by PACOM's fully deployable joint warfighting staff JTF 519 and OIF/OEF Lessons Learned, directly addresses the challenges of data management in the JTF HQ C2 Joint Mission Thread. The concept of JDN is to combine the data contained within intelligence, data link, and ground 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 CJTF's input to the COCOM's Common Operational Picture (COP), which is distributed via GCCS 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 Planned Output:
Assist CENTCOM's COMUSNAVCENT with developing a Joint Data Network (JDN) Operations Cell data and network management capability within COMUSNAVCENT Fusion Center to assist them in providing a means to share timely and accurate tactical and operational data with coalition forces. Complete JDN CONOPS and Functional Solutions Analysis (FSA) in establishing the C2 Data Management capabilities requirements and embed 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). Provide direct support to USJFCOM's Joint Capabilities Integration Process (JCIP) Joint Mission Thread (JMT) assessments. Provide direct support to USJFCOM's Joint Battle management Command and Control (JBMC2) Roadmap in the evaluation and assessment of Joint Mission Threads. Standardize and institutionalize data management processes throughout COCOM's CONPLANs and their respective Components to conduct JDN Operations in order to improve the COCOM Common Operational Picture (COP) situational awareness tool. Define and develop a Joint OPTASK Common Tactical Picture (CTP) to incorporate Intelligence, Joint Force Land Component Command and Joint Special Operations Component Command data.

FY 2008 Planned Output:
Validate Joint OPTASK Common Tactical Picture in CENTCOM and EUCOM. Begin integration of JDN in Allied Command Transformation. Complete JDN Functional Needs Analysis (FNA). Identify candidate C2 fusion devices for interim use as JDN toolsets. 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).

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FY 2009 Planned Output:
Complete incorporation JDN operations capability with NATO forces. Begin coordination with NORTHCOM for potential inter-Agency use of JDN Operations Capability and procedures.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Multinational Information Sharing (MNIS) & Cross Domain Solutions (CDS)	0.000	1.200	1.020	1.300

Primary OUTCOME (objective) for this effort is to provide information transparency across multi-national and multi-domain architectures.

The DoD Instruction 8110.1, Multinational Information Networks Implementation; JROCM 131-04, Multinational Information Sharing (MNIS) Transformation Change Package (TCP); JROCM 018-05, MNIS Initial Capabilities Document (ICD); JROCM 042-06 MNIS Way ahead; the DoD & Intelligence Community Unified Cross Domain Management Office (CDMO) Memorandum; and the Unified Command Plan (UCP) 06, all validated the capability need for MNIS and Cross Domain Solutions (CDS).

These efforts combined with the previously established Assured Information Sharing (AIS) Infrastructure team, previously funded by the National Security Agency, have but one overall mission, to enable an information sharing environment where information can be shared with authorized recipients while denying information to users not authorized. USJFCOM will work with the MNIS Executive Agent (EA), the Joint Program Office (JPO) and the new Cross Domain Management Office (CDMO) to establish the standards for information sharing services and applications for the future Global Information Grid enterprise information environment. The MNIS EA (Navy N71) and JPO (DISA) are the leads for MNIS. The CDMO is led by the Director of National Security Agency (DIRNSA); the Office of the Director of National Intelligence (DNI) will serve as the Deputy Director with the Technical Director being the Director of the Intelligence Agency (DIA).

The MNIS/CDS multi-year project under sponsorship of the US Joint Forces Command Joint Integration and Interoperability Board (JIIB) will be conducted in coordination with all MNIS/CDS/AIS efforts of the unified DNI and DOD NII Chief Information Offices.

The primary outputs and efficiencies are: 1) Increased participation in DoD level multi-national forums. 2) Improved prioritization, formulization, and documentation of COCOM Joint Command and Control capability gaps and requirements. 3) Improved technology, prototyping and integration efforts. 4) Expanded to global coverage of coalition C2 solution development. 4) Increased opportunities and venues for information exchange between traditional and non-traditional partners. 5) Reduced time required to obtain certification and accreditation of Information Assurance components in support of controlled information sharing.

FY 2007 Output:
Develop protocol standards for XML schemas that support cross domain and guarding solutions. Plan and coordinate strategy sessions within the Command to facilitate information exchange. Align the MNIS/CDS initiatives to the JTF C2 JMT project to create a nomination, selection, and funding process for MNIS/CDS systems to participate in the JBMC2 Roadmap. Provide multinational perspectives, requirements, and advocacy for the alignment of allied standards, processes, and procedures, to be incorporated into the Joint Close Air Support (JCAS) Joint Mission Thread (JMT) architecture, Network Enabled Command and Control (NECC), and Global Command and Control System Integrated Imagery and Intelligence (GCCS-I3).

FY 2008 Planned Output:
Integration of the Collaborative Information Environment (CIE) chat tool into the Joint Warfighter tool kit for cross domain exchange of textual chat. Planning and execution of cross domain XML and XMPP standards for use within a Joint Warfighter environment. Align the MNIS/CDS initiatives to the JTF C2 JMT project to create a nomination, selection, and funding process for MNIS/CDS systems to participate in the JBMC2 Roadmap. Provide multinational perspectives, requirements, and advocacy for the alignment of allied standards, processes, and procedures, to be incorporated into the Joint Close Air Support (JCAS) Joint Mission Thread (JMT) architecture, Network Enabled Command and Control (NECC), and Global Command and Control System Integrated Imagery and Intelligence (GCCS-I3).

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FY 2009 Planned Output:
Begin transition of MNIS and CDS standards for Information Sharing to the Bi-Strategic Command Automated Information System, as well as integration in the U.S. Global Information Grid Architecture. Align the MNIS/CDS initiatives to the JTF C2 JMT project to create a nomination, selection, and funding process for MNIS/CDS systems to participate in the JBMC2 Roadmap. Provide multinational perspectives, requirements, and advocacy for the alignment of allied standards, processes, and procedures, to be incorporated into the Joint Close Air Support (JCAS) Joint Mission Thread (JMT) architecture, Network Enabled Command and Control (NECC), and Global Command and Control System Integrated Imagery and Intelligence (GCCS-I3).

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Joint Awareness Vital Enhancements and Linked Information Network (JAVELIN)	0.000	9.500	0.000	0.000

Primary OUTCOME (objective) for this effort is enhanced and accelerated Joint Fires kill chain. The JAVELIN operational capabilities evolved from Operation Enduring Freedom and Iraq Freedom (OEF) / (OIF) Lessons Learned, Combatant Commander surveys and joint exercises that identified command and control (C2) gaps in Joint Warfighting. Combatant Commands require capability for machine-to-machine transfer of targeting data/engagement orders in the joint fires arena in order to shorten the kill chain and eliminate man-in-the-loop errors associated with manual transmission of targeting assignments.

JAVELIN is a JFCOM J8 initiative designed to enhance Combatant Commander information sharing, management and flow of operational and tactical data between theater command and control (C2) nodes and edge users, using a complete machine-to-machine (M2M) process. JAVELIN's primary outcome is to improve the situational awareness (SA) of Joint Warfighting decision makers during dynamic targeting missions in order to 1) decrease the dynamic targeting timeline, and 2) reduce the potential for fratricide. The following is a brief description for each of the different technologies that JAVELIN incorporates.

RAIDER
Rapid Attack Information Dissemination Execution Relay (RAIDER) is a combination of hardware and software that can disseminate data link messages from C2 nodes to tactical aircraft and other C2 nodes. RAIDER is mounted in a HMMWV or in hardened transit cases so that it can be easily transported and set-up at forward operating bases as necessary.

JADOCS
Joint Automated Deep Operations Coordination System (JADOCS) is a software management tool that allows operators to efficiently coordinate and approve for dynamic targeting missions.

TPG
Target Package Generator (TPG) is a GCCS-J software segment that can process digital target data messages from JADOCS and with minimal human intervention, create and format a digital target package that can be transmitted over various data links to strike aircraft. Additionally, TPG is capable of receiving and compiling digital imagery from a Link-16 network. TPG functionality resides within each RAIDER system.

JXF Gateway
Joint Translator Forwarder (JXF) Gateway is a combination of hardware (servers, and routers) and software that can transmit and receive messages over various data links. Whereas the TPG creates and formats messages for the data links, JXF Gateway physically routes and forwards the messages. Additionally, the
Gateway can remotely control radios.

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JBFSA
JAVELIN manages the method by which COCOMs receive Joint Blue Force Situational Awareness (JBFSA) data from the Mission Management Center (MMC) in Colorado. COCOMs are able to receive information from Blue Force Tracking (BFT) devices.

EQUIS-G
Enhanced Quality Imagery Search for GCCS (EQUIS-G) is a GCCS-J software segment that allows users to more easily access, view, and manipulate digital imagery. EQUIS-G automates the imagery search, retrieval and display processes.

SORSER
Special Operations Reconnaissance Software Enhanced Relay (SORSER) is a government-off-the-shelf (GOTS) software executable. SORSER allows the user to convert a standard image file from a digital camera to a National Imagery Transfer Format (NITF) file. The NITF format makes imagery more readily interoperable with DoD imagery handling services including GCCS-J.

FY 2007 Output:
The integrated JAVELIN capabilities are scheduled to be operational in EUCOM in the second quarter of FY 2007 with follow-on fieldings/upgrades to the full JAVELIN capability scheduled for CENTCOM, PACOM, and STRATCOM. The JAVELIN integrated enhancements will complete previous year efforts that delivered the initial capabilities to these Combatant Commanders. During FY 2007 certification/ accreditation, mission thread refinement focused on theater specific CONOPS/TTPs. The JAVELIN capabilities are planned to transition to the GCCS Family of Systems beginning in FY 2008.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Two-Way Iraqi Speech to Speech (2W-S2S)	0.000	4.655	0.000	0.000

Primary OUTCOME (objective) for this effort is an improved tactical translation capability in response to an urgent warfighter need. The 2-Way Free-Form Speech-to-Speech 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 Output:
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 FY 2007, the 2W-S2S initiative will focus on developing, testing, and initially fielding miniaturized hands-free personal data assistant (PDA)-sized devices. The expansion of the IRAQI language domains is also planned to include force protection, human intelligence (HUMIT) and medical. Further expansion of native languages in the CENTCOM AOR is also planned to include Pashto / Farsi for use in Afghanistan. Complete transition of all foreign language capabilities to the Army SEQUOYAH program of record will begin in 2007.

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Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Recognition of Combat Vehicles (ROC-V)	0.000	0.000	2.200	1.000

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. Recognition of Combat Vehicles (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 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 expand the program to facilitate the development of develop Air-to-Ground and Maritime versions of the training program.

The additional 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:
Maintain development 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 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.

C. Other Program Funding Summary: Not Applicable.

D. Acquisition Strategy: Not Applicable.

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E. Major Performers Not Applicable.

OSD RDT&E COST ANALYSIS (R3)

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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
Subtotal:			0									

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	0	391	1Q	423	1Q	423	1Q	0	1237	0
Subtotal:			0	391		423		423		0	1237	0

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
Test & Evaluation Support	MIPR	Various	0	7969	1-4Q	16257	1-4Q	17745	1-4Q	0	41971	0
Subtotal:			0	7969		16257		17745		0	41971	0

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
Management Support	MIPR	Various	0	41519	1-4Q	35012	1-4Q	29122	1-4Q	0	105653	0
Management Support	C-CPFF	Various	0	1700	1-4Q	2150	1-4Q	2150	1-4Q	0	6000	0
Travel	MIPR	Various DoD	0	50	1-4Q	50	1-4Q	50	1-4Q	0	150	0
Subtotal:			0	43269		37212		31322		0	111803	0

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Project Total Cost:	**0**	**51629**		**53892**		**49490**		**0**	**155011**	**0**

Schedule Detail (R4a Exhibit)

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Schedule Detail	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Requirements Validation	1-4Q	1-4Q	1-4Q	1-4Q				
Implementation / Transition	1-4Q	1-4Q	1-4Q	1-4Q				
Campaign Plan Development	1-4Q	1-4Q	1-4Q	1-4Q				
Event Assessments	1-4Q	1-4Q	1-4Q	1-4Q				

Comment: