Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Office of Secretary Of Defense										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604771D8Z: *Joint Tactical Information Distribution System (JTIDS)*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	19.856	20.954	17.395	-	17.395	17.296	17.647	17.823	17.965	Continuing	Continuing
771: *Link-16 Tactical Data Link (TDL) Transformation*	19.856	20.954	17.395	-	17.395	17.296	17.647	17.823	17.965	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The P771 program was developed to transform Joint Tactical Data Links (TDLs) (primarily the J Series of Link 16, Link 22, and Variable Message Format (VMF)) to comply with the Department's Net Centric (NC) vision. The program encapsulates the Department's needs for joint and combined network-enabled capabilities for TDLs and is being expanded to assess and transform Joint data link communications, such as the Multifunctional Advanced Data Link (MADL) and Common Data Link (CDL) to the NC standards, and to ensure interoperability and seamless integration with Joint communication systems. The platform integration and implementation of these network capabilities into the operational environment will enhance the decision cycle between sensor-to-shooter; providing information-superiority, shared environment that enhances combat power by increasing speed of command, higher tempo of operations, greater lethality, increased survivability, and self synchronization. This transformation must balance the needs of the warfighters with the requirements for NC operations.

The funds provided by this budget request were used in 2010 to ensure the timely implementation of NC goals by incorporating these network-enabling capabilities into the Joint Tactical Data Enterprise Services (TDES) Migration Plan (JTMP). The JTMP 2010 update will be used as a baseline to support the Office of the Secretary of Defense (OSD) in further analyzing the validated warfighter capability needs for the primary TDL, MADL, and CDL communications across the full set of mission areas in order to identify possible solutions to meet those needs across the range of Doctrine, Organization, Training, Material, Leadership, Personnel and Facilities (DOTMLPF) and assess the synchronization planning and capability delivery management activities to support NC objectives. In addition the funds were used to develop an integrated joint airborne architecture, ensuring adherence to the GIG enterprise wide technical baseline. The NC team will work with the Services in this analysis and with our Allied/Coalition partners in future analysis to validate the acquisitions and fielding plans needed for NC goals. In addition, an Advanced Tactical Data Link (ATDL) assessment was conducted which evaluated data link alternatives for Major Combat Operations and Irregular Warfare/Stability Operations, and to evaluate data link alternatives for contested and anti access airspace scenarios. This study will be expanded in 2011 and 2012 to incorporate the CDL family of tactical Intelligence, Surveillance, and Reconnaissance (ISR) communications, including the systems used with Unmanned Aerial Systems (UAS) and the Integrated Broadcast Service (IBS), with subsequent year's funding being used to expand the JTMP to include the results of this CDL analysis. A final area to be addressed will be to ensure that TDLs systems are properly integrated with the other systems parts of the NC architecture, utilizing a new analysis tool called the Integrated Master Schedule (IMS).

The program will continue to fund the development of spectrum management for the TDES systems, and to fund for the coordination of these development efforts with the Services and other US and International spectrum management agencies, including the Federal Aviation Agency and National Telecommunications and Information Administration, to obtain Link 16 spectrum certification. In addition, funding will continue to be used to support the Defense Information System's Agency's (DISA) and Services' interoperable improvement efforts and processes in the development of common standards and protocols. This effort includes initiating the Joint Interoperability Enhancement Process (IEP) that allows operators, engineers, and program managers to verify capabilities and identify issues in a design with Joint /

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Allied units prior to system fielding, or with fielded systems to identify required systems changes for systems upgrade planning. DISA and Joint Forces Combatant Command lead the effort to transform the current standards and interoperability management tools to a common set of Joint network-enabled standards to ensure adherence to the GIG enterprise wide technical baseline and for implementation of future TDES capabilities. These joint standards, protocols, and processes will be used for implementation and testing to ensure the TDES capabilities are synchronized with the development and integration timelines of other planned network-enabled Global Information Grid (GIG) initiatives. The threats to the networking waveforms and the Joint NC migration will also be looked at in cooperation with the Intelligence agencies.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	20.466	20.954	21.254	-	21.254
Current President's Budget	19.856	20.954	17.395	-	17.395
Total Adjustments	-0.610	-	-3.859	-	-3.859
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustment	-0.610	-	-	-	-
• OSD Studies Contracts Efficiency	-	-	-1.681	-	-1.681
• DoD Service Support Contract Efficiency	-	-	-1.104	-	-1.104
• Economic Assumptions	-	-	-0.024	-	-0.024
• NII Contractor Efficiency	-	-	-1.050	-	-1.050

Change Summary Explanation

FY 2010: Program adjustment -0.610 million.

FY 2011: No change.

FY 2012: Economic Assumptions -0.024 million, OSD Studies Contracts efficiency -1.681 million, NII Contractor efficiencies -1.050 million, DoD Service Support Contracts efficiency -1.104 million.

Studies contract Efficiencies will be realized by reducing the number of studies that we participate in while still supporting enterprise-wide information technology goals critical to DoD Mission.

Service Support Contract efficiencies will be realized by reducing the reliance on DoD Service Support Contractors by utilizing in-house government support in a constrained personnel and resource environment.

NII reduction to contractor staff efficiencies will be realized by continuing to provide policy, guidance, program oversight, and resource management for command and control (C2), communications, spectrum, information assurance, and Information Technology programs with significantly less contractor support.

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Economic Assumptions will be realized by reducing our reliance on contractors while still achieving OASD(NII)/DoD CIO goals and objectives while in a constrained personnel and resource environment.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: Common Joint Tactical Information Initiatives	19.856	20.954	17.395
FY 2010 Accomplishments: – Data Link Migration engineering support: Published updated 2010 TDES migration plan including ISR and started to include selected Allied data; using modeling and simulation capability to assess advanced data link capability integration to the GIG and the technical capabilities and the operational benefits of the advanced technologies. – Joint Initiatives: Advanced Tactical Data Link (ATDL) Assessment Updates to include: Conducted DoD wide ATDL Assessment of data link requirements for Major Combat Operations (Contested Environment) and Stability Operations/Irregular Warfare (Un-contested). Identified specific capability gaps and ATDL options for closing the gaps. Assessed costs of integrating candidate ATDLs to various levels on service platforms. Identified promising areas to focus R&D for next generation ATDLs. – Joint TDES migration: Technical assement, planning and coordination of joint TDL interoperability and transformation including: Continued the expansion of the TDES community participation including the incorporation of the ISR and UAS communities, and beginning the incorporation of Allied partners into the JTMP process. – High Data Rate Airborne Terminal (HDRAT) Analysis: Initiated HDRAT analysis. Conducted SATCOM loading Analysis and ISR Effectiveness Analysis; assessed cost and performance of Technical Alternatives. – Joint and International engineering: modeled and simulated various coalition aerial networks, showing interoperability between US aircraft in US-only nets, US aircraft in coalition networks, and allied aircraft ; solution creation for the integration of data link interoperability with Allied systems – Net Centric Engineering: Build the necessary Net Centric architecture and capabilities definition documents to include the following: 1) updated Net Centric Architectures to reflect developments in waveform, enterprise services, information assurance, and knowledge management; 2) verified proper network performance; 3) Completed Information FSA analysis; – GIG Engineering support: Developed analytic tools to support technical and performance analysis including :1) modeled and simulated various conflict scenarios, showing network performance when transitioning between aerial layer of network and GIG; 2)Updated the IMS to reflect all airborne both manned and UAV) platforms as well as ground mobile networking systems; 3) conducted analysis to verify development of CDL backbone and Information Assurance (IA) technologies permit rapid, seamless exchange of large ISR data files from tactical edge to GIG and back. – Joint Interoperability Enhancement Process (IEP): Updated policy, directives and the analytic evaluation process to define and plan : 1) implementation of TDES technologies to include tactical information integration and configuration management 2) continues to develop policy-based network management preferred system concept and methodology for enterprise situational awareness			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
– Provided Spectrum Support for TDES systems: Conducted analysis for the national and international spectrum management boards and forums to ensure Joint Service access to TDES related spectrum to support worldwide operations and training in CONUS ***FY 2011 Plans:*** – Joint Initiatives: Advanced Tactical Data Link (ATDL) Assessment Updates to include: review of DoD efforts to develop and test an ATDL with greater system throughput and performance in a jammed environment; assessments of Service plans to field aircraft and other platforms with an ATDL; assess the plan to field gateways to allow aircraft on ATDL to remain interoperable with aircraft that won't be upgraded, within DoD and Allies; and assess Allied participation alternatives for ATDL networks. – Joint TDES migration: Technical assessment, planning and coordination of joint TDL interoperability and transformation including: Continue the expansion of the TDES community participation including the incorporation of the ATDL with the associated gateway efforts and the enhanced Joint and Allied partnership within the JTMP process. – Net Centric Engineering: Create the necessary Net Centric architecture and capabilities definition documents to include the following: 1) update Net Centric Architectures to reflect developments in waveform, enterprise services, information assurance, and knowledge management; 2) verify proper network performance; 3) Complete Information FSA analysis; – High Data Rate Airborne Terminal (HDRAT) Analysis: Complete HDRAT analysis. Conduct SATCOM loading Analysis and ISR Effectiveness Analysis; assess cost and performance of Technical Alternatives. Synthesize findings. – Systems Engineering: Use the Net-Centric Integrated Architecture and modeling and simulation to provide Net Centric input to the Future Force Development Guidance and provide a dynamic behavior of the architecture. Refine, develop, analyze future capabilities for advanced waveforms and data links for terrestrials (line-of-sight) and satellite (beyond line-of-sight) systems. This includes detailed engineering analysis of technology. Alternatives and interoperability. – Joint and International engineering: model and simulate various coalition aerial networks, showing interoperability between US aircraft in US-only nets, US aircraft in coalition networks, and allied aircraft. – Joint Interoperability Enhancement Process (IEP): Implement in the Joint community and standardize within Service processes the policy, directives and the analytic evaluation process to define and plan : 1) expansion of TDES technologies to include tactical information integration and configuration management 2) continue to develop policy-based network management preferred system concept and methodology for enterprise situational awareness – Data Link Migration Engineering Support: 1) Update 2010 TDES migration plan 2) develop modeling and simulation capability to support data link technical and operational capability assessments including integration to other components of the GIG – GIG Engineering support: Develop analytic tools to support technical and performance analysis including :1) model and simulate various conflict scenarios, showing network performance when transitioning between aerial layer of network and GIG; 2)Update the IMS to reflect all airborne both manned and UAV platforms as well as ground mobile networking systems; 3)			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
conduct analysis to verify development of CDL backbone and IA technologies permit rapid, seamless exchange of large ISR data files from tactical edge to GIG and back. – Provide Spectrum Support for TDES systems: Conduct analysis for the national and international spectrum management boards and forums to ensure Joint Service access to aerial networking and TDES related spectrum to support worldwide operations and training in CONUS ***FY 2012 Plans:*** – Joint Initiatives: Advanced Tactical Data Link (ATDL) Assessment Updates to include: Direct DoD efforts to develop and test an ATDL with greater system throughput and performance in future operational environments; assessments of current Service plans to field aircraft and other platforms with an ATDL; and assess any additional Allied participation alternatives for ATDL networks. – Joint TDES migration: Technical assessment, planning and coordination of joint TDL interoperability and transformation including: Continue the expansion of the TDES community participation including the incorporation of the ATDL with the associated gateway efforts and the enhanced Joint and Allied partnership within the JTMP process – Advanced Waveforms: Further refine, develop, analyze future capabilities for advanced waveforms and data links for terrestrial (line-of-sight) and satellite (beyond line-of-sight) systems. This includes detailed engineering analysis of new technologies, alternatives, and interoperability. – Joint and International engineering: continue to model and simulate various coalition aerial networks, showing interoperability between US aircraft in US-only nets, US aircraft in coalition networks, and allied aircraft. – Joint Interoperability Enhancement Process (IEP): Implement in the Joint community and standardize within Service processes the policy, directives and the analytic evaluation process to define and plan : 1) expansion of TDES technologies to include tactical information integration and configuration management with Link 16, VMF, CDL, and MADL 2) continue to develop policy-based network management preferred system concept and methodology for enterprise situational awareness – Data Link Migration Engineering Support: 1) Final 2012 TDES migration plan 2) Enhance modeling and simulation capability to support data link technical and operational capability assessments including integration to other components of the GIG – Net Centric Engineering: Define the necessary NC architecture and capabilities definition documents to include the following: 1) update NC Architectures to reflect developments in waveform, enterprise services, information assurance, and knowledge management; 2) verify proper network performance; 3) refine Information FSA analysis; – GIG Engineering support: Enhance analytic tools to support technical and performance analysis including :1) continue to model and simulate various conflict scenarios, showing network performance when transitioning between aerial layer of network and GIG; 2)Update the IMS as programs mature through the acquisition cycle to reflect all airborne both manned and UAV platforms as well as ground mobile networking systems; 3) conduct additional analysis to validate the development of CDL backbone and IA technologies			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
– System Engineering and Integration Assessment: Continue to use the NC Integrated Architecture and modeling and simulation to provide NC input to the Future Force Development Guidance and provide a dynamic behavior of the architecture. This assessment will support aerial layer studies and support to related AoAs. – Provide Spectrum Support for TDES systems: Continue to conduct analysis for the national and international spectrum management boards and forums to ensure Joint Service access to aerial networking and TDES related spectrum to support worldwide operations and training in CONUS			
Accomplishments/Planned Programs Subtotals	19.856	20.954	17.395

D. Other Program Funding Summary ($ in Millions)

N/A

E. Acquisition Strategy

In executing JTDL tasking, existing cost-plus contracts will be utilized.
-driven reviews in support of the JCIDS, acquisition and PPBE processes

F. Performance Metrics

Enterprise-Wide Alignment: Accelerate DoD information age transformation to increase the effectiveness and efficiency of the warfighting, intelligence and business missions.
Measures:
- Timely development and issuance of policy and guidance
- Instantiation of enterprise-wide system engineering for the Global Information Grid across DoD

Portfolio Management: Provide for the timely and effective delivery of key Net-Centric capabilities through portfolio management
Measures:
- Key milestones completed for major net-centric acquisitions
- Number of major systems through net-centric event