Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Office of Secretary Of Defense										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604771D8Z: *Common Joint Tactical Information*							
COST ($ in Millions)	**FY 2009 Actual**	**FY 2010 Estimate**	**FY 2011 Base Estimate**	**FY 2011 OCO Estimate**	**FY 2011 Total Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
Total Program Element	19.873	20.466	20.954	0.000	20.954	21.254	21.776	22.071	22.305	Continuing	Continuing
771: *Link-16 Tactical Data Link (TDL) Transformation*	19.873	20.466	20.954	0.000	20.954	21.254	21.776	22.071	22.305	Continuing	Continuing

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 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), Common Data Link (CDL), and Network Enabled Weapons (NEW), to the net centric standards, and to ensure interoperability and seamless integration with Joint communication systems. The implementation of these network capabilities into the data link 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 net centric operations

The funds provided by this budget request were used in 2009 to ensure the timely implementation of net centric goals by incorporating these network-enabling capabilities into the Joint Tactical Data Enterprise Services (TDES) Migration Plan (JTMP). The 2008 JTMP and the 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 Joint Net-Centric Operations Capability Portfolio Management (NC CPM) 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 CPM will work with the Services in this near-term analysis and with our Allied/Coalition partners in future analysis to validate the acquisitions and fielding plans needed for net centric goals. In addition, an Advanced Tactical Data Link (ATDL) assessment was started to evaluate various data link alternatives for contested and anti access airspace scenarios. This study will be expanded in 2010 and 2011 to incorporate the CDL family of tactical Intelligence, Surveillance, and Reconnaissance (ISR) communications systems, 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 added will be to ensure that TDLs systems are properly integrated with the other systems part of the net centric architecture, utilizing a new analysis tool the Integrated Master Schedule (IMS).

The program will continue to fund the development of spectrum management and oversight 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 (FAA) and National

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Office of Secretary Of Defense	DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604771D8Z: *Common Joint Tactical Information*

Telecommunications and Information Administration (NTIA), 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 / 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 (JFCOM) will 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 NET CENTRIC migration will also be looked at in cooperation with the Intelligence agencies.

B. Program Change Summary ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	20.487	20.633	0.000	0.000	0.000
Current President's Budget	19.873	20.466	20.954	0.000	20.954
Total Adjustments	-0.614	-0.167	20.954	0.000	20.954
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Program Adjustment	-0.614	-0.167	20.954	0.000	20.954

Change Summary Explanation

FY 2009: Program adjustment -0.614 million.
FY 2010: FFRDC reductions -0.081 million, Economic Assumptions -0.086 million.
FY 2011: Program adjustment 20.954 million.

C. Accomplishments/Planned Program ($ in Millions)

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Office of Secretary Of Defense	DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604771D8Z: *Common Joint Tactical Information*

C. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Common Joint Tactical Information Initiatives	19.873	20.466	20.954	0.000	20.954
FY 2009 Accomplishments: – Provided Spectrum Support and oversight for TDES systems: provided department subject matter experts and representation to the national an international spectrum management boards and forums to ensure Joint Service access to TDES related spectrum to support worldwide operations and training in CONUS – Data Link Migration Engineering Support: 1) Updated 2008 TDES migration plan 2) developed modeling and simulation capability to support data link technical and operational capability assessments including integration to other components of the GIG – Net centric engineering: 1) conducted an ad hoc mobile net-centric tactical wireless architecture assessments 2) provided oversight, and develop net-centric architectures which will address the wireless and mobility aspects of IP 3) updated Information FSA analysis – GIG Engineering support: Developed analytic tools to support technical and performance analysis including 1) developed initial modeling and simulation tool for integrating TDES with other related network systems 2) updated capabilities of the IMS tool for new systems and host on classified and unclassified server platforms 3) analyzed NC CPM programs and capabilities dependencies and integration points and ensure their adherence to the GIG enterprise-wide technical architecture. – Joint Initiatives: Advanced Tactical Data Link (ATDL) Assessment Update to include: Refined analysis of total aerial network requirements, such as system throughput, single user throughput, performance in a jammed environment, latency, LPI/LPD/LPJ performance for non-low observable aircraft, and security. Incorporating: helicopters, ship /maritime MCO, phase 4 operations (stabilization and reconstruction), and platforms with Link 16 & ATDL into the study; and initiate MIDS JTRS/JTRS migration plan – Joint TDES migration: Technical oversight, planning and coordination of joint TDL interoperability and transformation including: 1)Provided insight of functionalities needed for technical data exchange in a warfighting environment; 2)Planned implementation of tactical information integration and configuration management; 3)Develop an ad hoc mobile net-centric tactical wireless architecture					

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Office of Secretary Of Defense	DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604771D8Z: *Common Joint Tactical Information*

C. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
for 2020; 4)Assessed data link interoperability and networking performance; 5)Lead Joint team with OSD, JCS, DISA, COCOMs, Services, and Agencies for TDES migration to include integration and synchronization of NC CPM capabilities; 6) lead TDES teams to address transformation of the tactical gateways and the JINTACCS process – Joint and international engineering: 1) development of approved standards, protocols and processes incorporating end-to-end implementation and testing across programs 2) Conducted risk assessments and independent Program Assessments for NC Portfolio programs and capabilities 3) conducted risk assessments and Independent Program Assessments for NC programs – Joint Interoperability Enhancement Process (IEP): 1) conducted analytic evaluations to define and plan implementation of TDES technologies to include tactical information integration and configuration management 2) developed policy-based network management preferred system concept and methodology for enterprise situational awareness. *FY 2010 Plans:* – Provide Spectrum Support and oversight for TDES systems: Conduct analysis and provide department subject matter experts and representation to 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 – Data Link Migration engineering support: Publish updated 2010 TDES migration plan including ISR and starting 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. – Net Centric Engineering: Maintain and update 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; – GIG Engineering support: Develop analytic tools to support technical and performance analysis including :1) model and simulate various conflict scenarios, showing network performance when					

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Office of Secretary Of Defense	DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604771D8Z: *Common Joint Tactical Information*

C. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
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) conduct 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 Initiatives: Advanced Tactical Data Link (ATDL) Assessment Updates to include: review of DoD efforts to develop an ATDL with greater system throughput and performance in a jammed environment; determination of which aircraft and other platforms should receive an ATDL; need for gateways to allow aircraft on ATDL to remain interoperable with aircraft that will notbe upgraded, within DoD and among allies – Joint TDES migration: Technical oversight, planning and coordination of joint TDL interoperability and transformation including: Continue 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. – 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 ; oversight for the integration of data link interoperability with Allied systems – Joint Interoperability Enhancement Process (IEP): Update 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 *FY 2011 Base Plans:* – Provide Spectrum Support and oversight for TDES systems: Conduct analysis and provide department subject matter experts and representation to 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					

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Office of Secretary Of Defense	DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604771D8Z: *Common Joint Tactical Information*

C. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
– 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 – Net Centric Engineering: Maintain and update 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; – 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) 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. – 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 oversight, 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. – 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 ; oversight for the integration of data link interoperability with Allied systems – 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					

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Office of Secretary Of Defense	DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604771D8Z: *Common Joint Tactical Information*

C. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
configuration management 2) continue to develop policy-based network management preferred system concept and methodology for enterprise situational awareness *FY 2011 OCO Plans:* N/A					
Accomplishments/Planned Programs Subtotals	19.873	20.466	20.954	0.000	20.954

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