Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Office of Secretary Of Defense											Date: March 2014	
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0305199D8Z / *Net Centricity*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	14.528	18.849	16.490	23.984	-	23.984	17.446	18.060	18.992	20.174	Continuing	Continuing
199: *GIG Evaluation Facilities (GIG-EF) and GIG Enterprise-Wide Systems Engineering Advisory Activities*	14.528	18.849	16.490	23.984	-	23.984	17.446	18.060	18.992	20.174	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

A. Mission Description and Budget Item Justification

Funds will be used to provide technical analysis, systems engineering and capability management oversight of programs, projects, initiatives and activities to maximize the Department's return on investment in information technology resources and affect a comprehensive approach for assessing and procuring critical information systems from initial design, through development to capability delivery in support of improved systems performance and military operations. Emphasis is placed on the information transport, information assurance, network and spectrum management, command and control (C2) applications, systems and services, information sharing capabilities, and enterprise services activities focused on the development, integration, testing and technical assessment of capabilities and applications in joint and coalition warfighter support environments. Resources support collaborative efforts to demonstrate the interoperability and performance requirements of command, control, communication, computing network, and Information Infrastructure (C4II) capabilities and programs. This program is funded under Budget Activity 7, Operational System Development.

This project provides the resources necessary to implement net centric processes and authoritative analytic methods that provide the capability to synchronize interdependent C4II capabilities across all layers (ground, air, space) of the joint information environment architecture, to forecast and achieve a balance in supply and demand for network capacity, and field effective capabilities more rapidly and efficiently as an enabler for C4&II capabilities applications and services. Resources are required to transform current networks and information infrastructure into an operationally unified and architecturally diverse joint information environment that will provide end-to-end communications transport layer, computing networks, and mission application capabilities that are optimized and integrated with all other joint capability areas with a focus on the tactical edge faced with disconnected, intermittent, and latency (DIL) environments. There will be technical assessments, modeling and simulation, and analysis of the Joint space communications layer, Joint aerial network layer, contested communications on the move, Position Navigation and Timing (PNT), C2 mission application, and information sharing capabilities. These funds provide the capability for the warfighter to manage and deconflict radio frequencies through ground, air, and space communication networks. The funds will be used to develop and synchronize information assurance capabilities with other joint information environment capabilities to provide secure access to information and services (e.g. Cryptographic Modernization Management plan).
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 the Joint Forces Combatant Command lead the effort to transform the current standards

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and interoperability management tools to a common set of Joint network-enabled standards to ensure adherence to the Global Information Grid (GIG) enterprise-wide technical baseline and for implementation of future Tactical Data Link (TDL) capabilities. These joint standards, protocols, and processes will be used for implementation and testing to ensure the TDL 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 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	21.190	21.602	21.610	-	21.610
Current President's Budget	18.849	16.490	23.984	-	23.984
Total Adjustments	-2.341	-5.112	2.374	-	2.374
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.045	-			
• SBIR/STTR Transfer	-	-			
• Sequestration Reduction	-1.756	-	-	-	-
• Efficiency Reduction	-	-	-2.626	-	-2.626
• SIBR/STTR Reduction	-0.532	-	-	-	-
• Program Adjustment	-0.008	-	-	-	-
• Congressional Reduction	-	-5.000	-	-	-
• FFRDC Reduction	-	-0.112	-	-	-
• Department Increase Classified Program	-	-	5.000	-	5.000

Change Summary Explanation

Program Change Explanation:

FY 2013: Sequestration Reduction -1.756 million, Reprogramming -0.045 million, SIBR/STTR reduction -0.532 million, Program Adjustment -0.008 million .

FY 2014: Congressional Reduction -5.000 million, FFRDC Reduction -0.112 million.

FY 2015: Efficiency Reduction -2.626 million, Department increase classified program 5.000 million - This Department is one piece of the classified program other funding associated with this effort can be found under PE 0605170D8Z, BA 4, 12.5 million, and PE 0605170D8Z, BA6, 22.5 million.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Net Centricity Plans and Accomplishments	18.849	16.490	23.984
FY 2013 Accomplishments:			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Determined strengths, weaknesses, and uses of waveforms; identified gaps not satisfied by currently planned waveforms; investigated how new technologies will result in improved waveforms; and supported Waveform Roadmap effort; - Supported technical analysis, architecture development, and systems engineering to support understanding the maturity of cloud computing standards and cloud computing best practices to ensure resiliency of the cloud computing environment to support operations; identified how cloud services can be extended to the mission networks; - Assessed tactical communications systems' ability to support IPv6. - Conducted analyses and performed modeling and simulation to address issues with communications systems and networks; - Conducted cyber vulnerability analyses of communications systems and networks; - Conducted analyses and performed modeling and simulation to address SATCOM issues; - Conducted analyses of technical insertion options to support refresh and migration of Defense Information Systems Network services. - Supported analysis of security architectures and provided recommendations on policy for commercial mobile devices in the DoD to include support for secret and top secret data and voice communications, addressed interim solutions, route to final architecture, and technical options for integration - Conducted analysis and developed the initial Radio and Communications Security (COMSEC) modernization strategy; leveraged the radio strategy working group with the Military Services to facilitate POM development and Component planning for FY15 and out years. - Updated existing SATCOM synch matrices to reflect changes in POM 14 funding, emerging systems/technology, and JALN AOA recommendations. - Analyzed PACOM gateway system requirements and proposed equipment suites including the number and types of equipment needed to meet the operational requirements. - Analyzed DoD tactical radios to determine which radios are suitable for Suite B implementation - Conducted technical studies to investigate the feasibility of implementing legacy narrowband SATCOM solutions on the MUOS payload - Developed implementation guidance to support crypto modernization initiatives and address crypto modernization integration issues - Developed transition plans for the Military Services and NSA to support migration from the Electronic Key Management System (EKMS) to Key Management Infrastructure (KMI) - Provided analysis and oversight for Crypto-solution management, policy development, and enforcement, and Crypto modernization for the general force. - Supported development of the Terms of Reference to guide and inform the Protected SATCOM AoA. - Developed and coordinated JIPM evolution and deployment strategy to support video dissemination and two-way GBS capabilities to inform follow on implementation across the Department.			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Conducted technical analysis and policy support with emphasis on Coalition C2 and Multi-National Information Sharing (MNIS), including technical analysis of Coalition C2 functional requirements, strategic policy development and capability strategies addressed by the international community (inclusive of multilateral and bi-lateral engagements) - Conducted technical analysis of selected joint and military Service C2 programs and initiatives to promote net-centric approaches for data, services and enterprise deployments and support integrated sustainment and modernization planning. - Provided technical analysis and support for C4II related policies, plans, studies, governance and management, roadmaps, assessment reports, capabilities and numerous other initiatives. - Provided technical assessments to inform and influence Mission Partner Environment (MPE) development and implementation activities. - Provided technical analysis and support for the development of Common Mission Network Transport (CMNT) capability. - Conducted Joint Network modeling and Network design applicable to tactical US Army and USMC units. - Provided analysis of the SATCOM systems in support of the RBSC effort - Conducted a MUOS alternative study to determine a technical solution for getting the most out of the MUOS payload side of the satellite; investigated plausible Radio Access Facility (RAF) modifications, ground terminal modifications, waveform options, cost, and schedule impacts - Conducted analysis to determine requirements and feasibility of hand held MUOS terminals. - Provided technical analysis on network management to include cyber and spectrum issues. - Conducted wireless architecture and advanced technologies analysis. Developed recommendations and reports to inform updates to Department-wide communications policies applicable to commercial mobile devices - Conducted technical analysis to support waveform policy development and oversight - Conducted spectrum technology radar analysis to support implementation of the Spectrum Technology Radar Roadmap - Provided technical development and analysis to support the evolution of Multi-National Information Sharing programs, related acquisition strategies, and functional requirements to enable continued development of C2 Information Sharing metrics and mechanisms to enhance capability strategies. - Conducted follow-on JALN analysis with Joint Service JALN Council, oversaw Service implementation efforts, and initiated JALN capability Non-Recurring Engineering (NRE) development. - Expanded IEP beyond Link 16 to incorporate VMF, MADL, and CDL - Finalized Joint TDL Migration Plan (JTMP) and initiated development of DoD policy instruction to guide TDL migration across the Department - Drafted MIL-STDs for MADL and CDL to enhance interoperability and oversight of the communication systems - Conducted Advanced Ground / Air / Space assessments for: Generation 4 to Generation 5 Fighter/bomber waveform modification analysis (Multifunction Advanced Data Link (MADL); Advanced tactical data link modeling; Developed a MADL waveform standard specification; analyze MADL and Link-16 gateway capabilities			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Conducted technical analysis to inform updates to Joint C2 technical and architectural artifacts to guide transition of Global Command and Control Family of Systems to a network enabled, joint information enterprise. Analyzed Component approaches, potential costs and schedules to establish net-centric C2 capabilities consistent with Department objectives. - Provided technical analysis to support the Joint Technology Synchronization Office (JTSO) Integrated Design Team (IDT) efforts to establish technical artifacts for Joint Information Enterprise (JIE) Increment 1 implementation. - Developed initial technical architectures to promote efficiency in network dissemination of Intelligence, Surveillance and Reconnaissance (ISR) data captured Airborne ISR (AISR) requirements in a draft Initial Capabilities Document (ICD), and documented existing systems/capabilities to support follow-on material/non-material recommendations. - Established the SATCOM Systems Engineering Group (SSEG) to address SATCOM end-to-end issues in the Narrowband, Wideband, and Protected domains - Developed an alternative approach for closing out the Joint Tactical Networking Center (JTNC) and worked with the Army and external key stakeholders to develop the transition plan.			
FY 2014 Plans: Continue efforts to determine strengths, weaknesses, and uses of waveforms; identify gaps not satisfied by currently planned waveforms; consider how new technologies will result in improved waveforms to support waveform roadmap efforts; - Continue technical analysis, architecture development, and systems engineering to support understanding the maturity of cloud computing standards and cloud computing best practices to ensure resiliency of the cloud computing environment to support C2 and mobile solution capabilities; identify how cloud services can be extended to the mission networks; - Develop policy guidance and implementation strategies to promote IPV6 use in tactical systems. - Conduct follow-on analyses and perform modeling and simulation to address capability and interoperability issues with command and control systems, communications systems and networks - Continue cyber vulnerability analyses of communications systems and networks - Conduct analyses to address SATCOM synchronization issues, consistent with SATCOM Synchronization Engineering Group (SSEG) objectives - Conduct analyses to address DoD organizational messaging modernization as a candidate enterprise service for the Joint Information Enterprise (JIE). - Continue analysis of security architectures and provide recommendations to enable implementation of DoD-wide policies for commercial mobile devices to in clude support for secret and top secret data and voice communications, address interim solutions, route to final architecture, and technical options for integration of mission applications - Refine the DoD radio and communications security strategy implementation plans to facilitate Component planning and POM development for POM 16 (FY16-20).			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Update existing SATCOM synch matrices to reflect changes in POM 15 funding, emerging systems/technologies, and implementation of JALN AOA recommendations to promote synchronized development and delivery of end-to-end communications capabilities. - Refine PACOM gateway system requirements and proposed equipment suites including the number and types of equipment needed to meet the operational requirements to support implementation in the PACOM area of operations. - Conduct technical analysis to identify network gaps and address implementation of command and control capabilities and associated communications networks needed to control and provide information support (e.g., intelligence, logistics, other mission data) for cluster basing related to adversary anti-access/area-denial (A2/AD). - Continue analysis of tactical radios to determine which radios are suitable for Suite B implementation - Provide analysis and oversight for continued development and implementation of Crypto-solution management, policy guidance and enforcement, and Crypto modernization for the general force. - Conduct technical analysis and modeling and simulation to support for the Protected SATCOM AoA - Conduct follow-on analysis to formalize JIPM evolution and deployment strategies to support video dissemination and two-way GBS capabilities to inform follow on implementation across the Department. - Continue technical analysis on Coalition C2 and Multi-National Information Sharing (MNIS), including technical analysis of Coalition C2 functional requirements, strategic policy development and capability strategies addressed by the international community (inclusive of multilateral and bi-lateral engagements) to inform and guide Mission Partner Environment (MPE) development and implementation. - Conduct technical analysis of selected joint and military Service C2 programs and initiatives to promote net-centric approaches for data, services and enterprise deployments, consistent with joint C2 sustainment and modernization plans. - Provide technical analysis and support for C4II related policies, plans, studies, governance and management, roadmaps, assessment reports, capabilities and numerous other initiatives. - Provide technical analysis and support for the development and implementation of the Common Mission Network Transport (CMNT) capability. - Continue joint network modeling and network design applicable to Army Brigade Combat Team (BCT), USMC Expeditionary Brigade (MEB), and USAF Wing. - Provide analysis of the SATCOM systems in support of the SATCOM Synchronization Engineering Group (SSEG) objectives. - Continue analysis efforts to address the feasibility of implementing legacy narrowband SATCOM solutions on the MUOS End to End consistent with multi-service operational test and evaluation configuration. - Continue follow-on analysis of the MUOS alternative study to refine technical solutions for getting the most out of the MUOS WCDMA payload side of the satellite considering RAF modifications, ground terminal modifications, waveform options. Assessment to include cost, and schedule impacts. - Continue analysis to refine requirements, feasibility to develop hand held terminals for MUOS.			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Conduct assessments to investigate feasibility, and availability of COTS high efficiency WCDMA power amplifiers to ramp up production of MUOS radios. - Develop an implementation plan and process for MUOS specific Test and interoperability Certification test bed capability to support COTS vendor terminals to support MUOS system. - Provide technical analysis on network management to include cyber and spectrum issues. - Continue wireless architecture and advanced technologies analysis to inform Department-wide policies and implementation of mobility solutions. - Conduct technical analysis to support compliance oversight of waveform policies and technical profile specifications - Conduct spectrum technology radar analysis to support implementation of the Spectrum Technology Radar Roadmap - Provide technical analysis of Multi-National Information Sharing programs and initiatives, related acquisition and implementation strategies, and functional requirements to ensure continued development of C2 information sharing metrics and mechanisms consistent with capability strategies - Continue follow-on JALN analysis with Joint Service JALN Council, oversee Service implementation efforts, and continue JALN capability Non-Recurring Engineering (NRE) development. - Continue technical efforts to expand IEP beyond Link 16 to incorporate VMF, MADL, and CDL - Conduct technical and policy assessments to enable TDL migration - Conduct Advanced Ground / Air / Space assessments for: Generation 4 to Generation 5 Fighter/bomber waveform modification analysis (Multifunction Advanced Data Link (MADL); Advanced tactical data link modeling; develop MADL waveform standard specification; analyze MADL and Link-16 gateway capabilities - Conduct analysis to refine the joint C2 technical and architectural artifacts and inform transition of Global Command and Control Family of Systems to a network enabled, joint information enterprise - Provide studies and analysis of the C2 capability gaps to inform investment strategies to inform Component planning and POM development for POM16 (FY16-20). Analyze approaches, potential costs and schedules to establish net-centric C2 capabilities. - Conduct technical analysis to support the Joint Technology Synchronization Office (JTSO) Integrated Design Team (IDT) efforts related to implementation of Joint Information Enterprise (JIE) Increment 1 capability upgrades, and support JIE Increment 2 technical planning. - Continue development and refine technical architectures to support implementation of networking capabilities that enable efficient dissemination of Intelligence, Surveillance and Reconnaissance (ISR) data. Provide analysis to facilitate material and non-material recommendations in support of the USSOCOM-sponsored AISR ICD, and the Joint Requirements Oversight Council (JROC) process. - Conduct comprehensive analysis on the Narrowband SATCOM environment to help inform the pending AoA that will likely begin in late FY14			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Complete the extensive Commercial SATCOM (COMSAT) analysis in conjunction with USD AT&L and DISA to answer the Defense Business Board (DBB) recommendations on how to better acquire, manage, and use commercial SATCOM ***FY 2015 Plans:*** $5.000 supports classified program, Details provided at a higher classification under separate cover. This is one piece of this classified program, other funding can be found under PE 0605170D8Z, BA 4, 12.5 million, and PE 0605170D8Z, BA6, 22.5 million. $18,984 supports: Continue efforts to determine strengths, weaknesses, and uses of waveforms; identify gaps not satisfied by currently planned waveforms; consider how new technologies will result in improved waveforms to support waveform roadmap implementation efforts; - Continue technical analysis, architecture development, and systems engineering to support understanding the maturity of cloud computing standards and cloud computing best practices to ensure resiliency of the cloud computing environment to support C2 and mobile solution capabilities; identify how cloud services can be extended to the mission networks; - Refine policy guidance and strategies to address technical IPV6 implementation issues in tactical systems. - Conduct follow-on analyses and perform modeling and simulation to address capability and interoperability issues with command and control systems, communications systems and networks - Continue cyber vulnerability analyses of communications systems and networks - Conduct analyses and perform modeling and simulation to address SATCOM synchronization issues, consistent with SATCOM Synchronization Engineering Group (SSEG) objectives - Conduct analyses and perform modeling and simulation to address implementation issues for DoD organizational messaging capabilities in the Joint Information Enterprise (JIE). - Continue analysis of security architectures and provide recommendations to enable expanded implementation of DoD-wide policies for commercial mobile devices to include support for secret and top secret data and voice communications, address interim solutions, refine technical architectures and technical options for integration of additional mission applications - Refine the DoD radio and communications security strategy implementation plans to facilitate Component planning and POM development for POM17 (FY17-21). - Update existing SATCOM synch matrices to reflect changes in POM16 funding, emerging systems/technologies, and implementation of JALN AOA recommendations to promote synchronized development and delivery of end-to-end communications capabilities. - Refine PACOM gateway system requirements and proposed equipment suites including the number and types of equipment needed to meet the operational requirements to support implementation in the PACOM area of operations. - Continue analysis of tactical radios to determine which radios are suitable for Suite B implementation			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Provide analysis and oversight for continued development and implementation of Crypto-solution management, policy guidance and enforcement, and Crypto modernization for the general force. - Conduct follow-on technical analysis and modeling and simulation to support implementation of Protected SATCOM AoA recommendations - Conduct follow-on analysis to finalize JIPM evolution and deployment strategies to support video dissemination and two-way GBS capabilities to drive implementation across the Department. - Continue technical analysis on Coalition C2 and Multi-National Information Sharing (MNIS), including technical analysis of Coalition C2 functional requirements, strategic policy development and capability strategies addressed by the international community (inclusive of multilateral and bi-lateral engagements) to guide Mission Partner Environment (MPE) development and implementation. - Conduct technical analysis of selected joint and military Service C2 programs and initiatives to promote net-centric approaches for data, services and enterprise deployments, consistent with joint C2 sustainment and modernization plans. - Provide technical analysis and support for C4II related policies, plans, studies, governance and management, roadmaps, assessment reports, capabilities and numerous other initiatives. - Provide technical analysis and support for the implementation of the Common Mission Network Transport (CMNT) capability. - Continue joint network modeling and network design applicable to Army Brigade Combat Team (BCT), USMC Expeditionary Brigade (MEB), and USAF Wing. - Provide analysis of the SATCOM systems in support of the SATCOM Synchronization Engineering Group (SSEG) objectives. - Continue analysis efforts to address the feasibility of implementing coalition wave form modifications on the MUOS payload for NATO interoperability. - Conduct assessments to shape Future Narrow band satellite communication system to replace MUOS constellation in 2025-2030 time frame. - Continue follow-on analysis of the MUOS alternative study to refine technical solutions for getting the most out of the MUOS payload side of the satellite, RAF modifications, ground terminal modifications, waveform options, cost, and schedule impacts - Continue analysis to refine requirements, feasibility, and availability of hand held MUOS terminals. - Conduct assessments to investigate feasibility, and availability of COTS high efficiency WCDMA power amplifiers for MUOS hand held radios. - Develop an implementation plan for MUOS specific Test and Certification test bed capability to support COTS vendor terminals to support MUOS system. - Provide technical analysis on network management to include cyber and spectrum issues. - Continue wireless architecture and advanced technologies analysis to inform Department-wide policies and implementation of mobility solutions. - Conduct technical analysis to support compliance oversight of waveform policies and implementation of technical profile specifications			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Conduct spectrum technology radar analysis support implementation of Spectrum Technology Radar Roadmap - Provide technical analysis of Multi-National Information Sharing programs and initiatives, related acquisition and implementation strategies, and functional requirements to ensure continued development of C2 information sharing metrics and mechanisms that support implementation of capability strategies - Continue follow-on JALN analysis with Joint Service JALN Council, oversee Service implementation efforts, and implementation of JALN capability Non-Recurring Engineering (NRE) development. - Continue technical efforts to expand IEP beyond Link 16 to incorporate VMF, MADL, and CDL - Conduct technical and policy assessments to enable TDL migration - Conduct Advanced Ground / Air / Space assessments for: Generation 4 to Generation 5 Fighter/bomber waveform modification analysis (Multifunction Advanced Data Link (MADL); Advanced tactical data link modeling; develop MADL waveform standard specification; analyze MADL and Link-16 gateway capabilities - Conduct analysis to update joint C2 technical and architectural artifacts to support continued migration of Global Command and Control Family of Systems to a network enabled, joint information enterprise - Provide studies and analysis of the C2 capability gaps to inform investment strategies to inform Component planning and POM development for POM17 (FY17-21). Analyze approaches, potential costs and schedules to establish net-centric C2 capabilities. - Conduct technical analysis to support the Joint Technology Synchronization Office (JTSO) Integrated Design Team (IDT) efforts to implement Joint Information Enterprise (JIE) Increment 1 capability upgrades, and support initial JIE Increment 2 implementation. - Continue development and refine technical architectures to support implementation of networking capabilities that enable efficient dissemination of Intelligence, Surveillance and Reconnaissance (ISR) data.			
Accomplishments/Planned Programs Subtotals	18.849	16.490	23.984

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A

F. Performance Metrics

– PPBE related issue development and approval
– Successful technical development and analysis of the CIO and DCIO C4IIC portfolio of programs and activities
– Develop comprehensive risk assessment and mitigation approaches of the CIO and DCIO C4IIC portfolio of programs and activities