Exhibit R-2, PB 2011 Army RDT&E Budget Item Justification											DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 2: *Applied Research*				R-1 ITEM NOMENCLATURE PE 0602782A: *Command, Control, Communications Technology*							
COST ($ in Millions)	**FY 2009 Actual**	**FY 2010 Estimate**	**Base FY 2011 Estimate**	**OCO FY 2011 Estimate**	**Total FY 2011 Estimate**	**FY 2012 Estimate**	**FY 2013 Estimate**	**FY 2014 Estimate**	**FY 2015 Estimate**	**Cost To Complete**	**Total Cost**
Total Program Element	45.350	30.036	25.573	0.000	25.573	26.227	26.795	27.309	27.830	0	234.693
779: *Command, Control and Platform Electronics Tech*	9.441	10.004	10.583	0.000	10.583	10.870	11.112	11.328	11.549	Continuing	Continuing
H92: *Communications Technology*	14.241	14.700	14.990	0.000	14.990	15.357	15.683	15.981	16.281	Continuing	Continuing
TR9: *C3 COMPONENT TECHNOLOGY (CA)*	21.668	5.332	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Efforts in this program element (PE) research and develop communications technologies, command and control (C2), and electronics systems and subsystems that provide the Army with enhanced capabilities for secure, mobile, networked communications, assured information delivery, and presentation of information that enables decision-making. Commercial technologies are continuously investigated and leveraged where possible. This PE researches and develops technologies that; enable management of information across the tactical and strategic battle space; provide automated cognitive reasoning and decision making; and allow timely distribution, display, and use of C2 data on Army platforms (project 779). This PE also supports research in technologies which allow field commanders to communicate on-the-move to/from virtually any location, through a seamless, secure, self-organizing, self-healing, network (project H92). Project TR9 funds congressional special interest efforts. Work in this PE is fully coordinated with PE 0602705A (Electronics and Electronic Devices), PE 0602783A (Computer and Software Technology), PE 0602874A (Advanced Concepts and Simulation), PE 0603008A (Electronic Warfare Advanced Technology), and PE 0603772A (Advanced Tactical Computer Science and Sensor Technology). The cited work is consistent with the Director, Defense Research and Engineering Strategic Plan, the Army Modernization Strategy, and the Army Science and Technology Master Plan. Work in this PE is performed by the Army Research, Development, and Engineering Command (RDECOM), Communications-Electronics Research, Development, and Engineering Center (CERDEC), Fort Monmouth, NJ.

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B. Program Change Summary ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	41.218	24.833	25.510	0.000	25.510
Current President's Budget	45.350	30.036	25.573	0.000	25.573
Total Adjustments	4.132	5.203	0.063	0.000	0.063
• Congressional General Reductions		-0.157			
• Congressional Directed Reductions					
• Congressional Rescissions		0.000			
• Congressional Adds		5.360			
• Congressional Directed Transfers					
• Reprogrammings	4.868	0.000			
• SBIR/STTR Transfer	-0.736	0.000			
• Adjustments to Budget Years	0.000	0.000	0.063	0.000	0.063

Change Summary Explanation

FY09 funding increase due to reprogramming of congressional special interest item for proper execution.FY10 Congressionally directed increases.

Exhibit R-2A, PB 2011 Army RDT&E Project Justification			DATE: February 2010
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COST ($ in Millions)	FY 2009 Actual	FY 2010 Estimate	Base FY 2011 Estimate	OCO FY 2011 Estimate	Total FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
779: *Command, Control and Platform Electronics Tech*	9.441	10.004	10.583	0.000	10.583	10.870	11.112	11.328	11.549	Continuing	Continuing

A. Mission Description and Budget Item Justification

Efforts in this project research technologies that enable commanders at all echelons to have better and more timely information and allows them to command from anywhere on the battlefield. Emphasis is on data management and automated analysis to provide course of action determination, mission planning and rehearsal, mission execution monitoring and re-planning, and precision positioning and navigation. This project researches technologies that support multi-modal man-machine interactive technology, battle space visualization, positioning and navigation in degraded environments, automated cognitive decision aids, real-time collaborative tactical planning tools, data transfer, distributed data bases, open system architectures, and integration concepts which contribute to more mobile operations. The cited work is consistent with the Director, Defense Research and Engineering Strategic Plan, the Army Modernization Strategy, and the Army Science and Technology Master Plan. Work in this project is performed by the Army Research, Development, and Engineering Command (RDECOM), Communications-Electronics Research, Development, and Engineering Center (CERDEC), Fort Monmouth, NJ and Aberdeen Proving Ground, MD.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Program #1	1.721	1.776	1.800	0.000	1.800
Battle Space Awareness and Positioning: This effort investigates positioning, navigation and tracking sensor/ integration technologies to provide position, velocity, and time information to support operational and training requirements, especially in hostile electro-magnetic interference and other radio frequency (RF) degraded/denied environments. In FY09, identified candidate position/navigation sensors, and developed integration techniques to incorporate radio network algorithms and processes to enable robust position information for enhanced situation awareness in Global Positioning System (GPS) denied, urban, and other complex environments. In FY10, continue development of identified position/navigation sensors, especially those that exploit the synergy between communications and position such as RF ranging and network assisted navigation. In FY11, will test position/ navigation and attitude sensors and evaluate integration techniques and radio technologies for enhanced urban and indoor position/navigation performance. Work on this effort is also being accomplished under PE 0603772A/ project 101.					

Exhibit R-2A, PB 2011 Army RDT&E Project Justification		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2009 Accomplishments: FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #2 Command and Control (C2) On-The-Move (OTM) Enabling Technologies: This effort investigates and develops technologies to improve the Warfighters ability to access, use, present and understand relevant battle command information. In FY09, investigated digital Operational Order (OPORD) representations to enable software agent based services; researched baseline human cognitive limits for understanding while performing C2 workflows; completed work with Space and Missile Defense Command (SMDC) to further the development of intelligent software agent services with the addition of automatic discovery which enables the software agents to reduce the need for user intervention by automatically searching and retrieving data from other software agent services; applied automatic discovery intelligent software agent technology to help optimize data initialization and information management in all domains; developed, integrated, and evaluated machine language translation tools for the purpose of text-to-text and speech-to-speech translation to provide enhanced communication among Joint coalition forces. *FY 2009 Accomplishments:* FY 2009	7.720	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2010 Plans: FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #3 C2 OTM Enabling Technologies (continued FY10): In FY10, develop speech and optical character recognition translation services within a Service Oriented Architecture (SOA) framework to allow Coalition forces the benefit of communicating more efficiently and securely, while providing additional translation options; develop text-to-text machine translation algorithms for low density languages to enable translation capabilities for languages currently not widely used, but are on the Defense Language Agency prioritized language list; investigate unmanned ground vehicle/unmanned aerial system (UGV/UAS) platform behaviors and C2 info knowledge management of unmanned systems to provide capability to manage large numbers of air and ground robots over extended urban areas at scales beyond current robotic inventories; develop benchmarks for decision-making and identify emerging patterns of interaction between individuals, intelligent agents, and teams of agents and humans; based on approved scenarios, develop work flow analyses to identify and assess cognitive processes in decision-making. In FY11, will expand machine translation services to include speech-to-speech translation capabilities; will integrate additional translation engines for increased language coverage; will investigate enhancement of unmanned collaboration and coordination between multiple assets and sensors, more complex UGV/UAS platform behaviors, and urban mission planning to produce technologies capable of accounting for multiple missions and multiple robotic assets temporally and spatially spread over large urban terrain; will investigate workflow analyses to identify and assess human cognitive bottlenecks and evaluate methods to improve info sharing, decision-making, and collaboration in network-enabled operations; will investigate techniques to enable	0.000	8.148	8.783	0.000	8.783

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
users to share Warfighter composed software via a web-based gallery. Work on this effort transitions to PE 0603772A/project 101. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #4 Small Business Innovative Research/Small Business Technology Transfer Programs *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO	0.000	0.080	0.000	0.000	0.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Accomplishments/Planned Programs Subtotals	9.441	10.004	10.583	0.000	10.583

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

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COST ($ in Millions)	FY 2009 Actual	FY 2010 Estimate	Base FY 2011 Estimate	OCO FY 2011 Estimate	Total FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
H92: *Communications Technology*	14.241	14.700	14.990	0.000	14.990	15.357	15.683	15.981	16.281	Continuing	Continuing

A. Mission Description and Budget Item Justification

Efforts in this project investigate, develop and apply advanced communications and network technologies; the strategy is based on leveraging and adapting commercial technology to the maximum extent possible and focusing research efforts on emerging technology areas (e.g., mobile radio based infrastructures, information assurance, security in narrowband environments, multiband on-the-move (OTM) transmit and receive antennas, adaptive protocols, and low probability of interception/low probability of detection waveforms). The cited work is consistent with the Director, Defense Research and Engineering Strategic Plan, the Army Modernization Strategy, and the Army Science and Technology Master Plan. Work in this project is performed by the Army Research, Development, and Engineering Command (RDECOM), Communications-Electronics Research, Development, and Engineering Center (CERDEC), Fort Monmouth, NJ and Aberdeen Proving Ground, MD.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Program #1	6.793	4.142	5.703	0.000	5.703
Antenna Technologies: This effort develops low cost, power efficient, directional antenna technologies for terrestrial, airborne, and tactical satellite ground terminals to enable them to operate on the move over multiple frequency bands. In FY09, developed and demonstrated multi-beam low profile electronically steered on-the-move (OTM) satellite communications (SATCOM) antenna components that functions in two frequency bands (Ka/Q); developed and demonstrated Ka and Q band high efficiency power amplifier; developed C/Ku affordable directional antenna brass-board. In FY10, evaluate C/Ku directional antenna and integrate platform feed and evolutionary aperture design to reduce antenna profile and cost; develop multi-beam low profile electronically steered Ka/Q band SATCOM OTM antenna components. In FY11, will complete multi-beam low profile electronically steered SATCOM aperture development; will integrate the SATCOM aperture with a drive and tracking system and Ka and Q band high efficiency power amplifiers for a multi-beam OTM SATCOM terminal; will develop a blue force tracking SATCOM antenna with integrated modem; will investigate meta-materials for miniaturized antennas technologies; will develop conformal antenna systems for ground and air platforms Work on this effort is also being accomplished under PE 0603008A/project TR1.					

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2009 Accomplishments: FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #2 Encryption Technologies: This effort is a Jointly funded effort with US Navy, Air Force, Marine Corps, to develop high speed, 4-channel, remotely manageable, programmable, embeddable crypto device. In FY09, conducted lab evaluation; conducted the security certification process, and completed the program effort with Certified Engineering Development Module (EDM) delivery. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base	1.501	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
OCO FY 2011 Plans: FY 2011 OCO					
Program #3 Network Designs: This effort investigates and develops technologies to design the next generation mobile ad hoc wireless networks enabling wireless networks to sense network and spectrum conditions and automatically adapt for more efficient use. In FY09, extended the basic network design tool to include distributed reasoning/learning in a mobile Ad Hoc Network environment; developed a comprehensive representation of the internal operation and performance of network data dissemination mechanisms; improved the network traffic characterization model. In FY10, enhance the basic design and perform evaluation on a number of typical military maneuver and network traffic scenarios. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO	3.399	3.209	0.000	0.000	0.000
Program #4 Wireless Information Assurance (IA): This effort investigates and develops technologies to protect wireless tactical networks against computer network attacks. In FY09, developed a suite of IA technologies to enable tactical battlefield information sharing across multiple security classification domains (i.e., TS/SCI to	2.548	2.670	2.489	0.000	2.489

Exhibit R-2A, PB 2011 Army RDT&E Project Justification		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Unclassified), (technologies included cross domain boundary services with trusted labeling and data sanitization to enforce data release restrictions from higher to lower classified domains, smart pull information requests from higher domains, and trusted software (SW) partitioning and kernel technology with controlled interface filtering to enforce push/pull of information across security domains for severely resourced constrained environments); developed and assessed operating system agnostic malicious code detection technology to find vulnerabilities and software flaws via source code analysis and reverse engineering. In FY10, investigate distributed key management concepts that allow mobile users to automatically affiliate, de-affiliate, and re-key the network to respond to a change or a compromise without requiring pre-placed keys; evaluate SW cross domain security services providing SW separation of kernel that protect and establish separation of classification levels; investigate adaptive middleware and conduct lab testing. In FY11, will develop tactical intrusion detection system (IDS) to accommodate the small tactical bandwidth environment along with a common operational picture that provides a homogenous view of the IDS activity on the network. Work on this effort is also being accomplished under PE 0603008A/project TR1. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #5	0.000	1.502	3.791	0.000	3.791

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Cognitive Networking: This effort develops technologies enabling wireless networks to sense network and spectrum conditions and automatically adapt for more efficient use. In FY10, begin the design and development of cognitive network tools for mobile ad hoc networks that take into consideration network connectivity, end-to-end user requirements (bandwidth), survivability and optimality (goodness of design), provide knowledge oriented representation of radio frequency (RF) connectivity, network operations/behaviors, and effectiveness of learning/ prediction techniques in dynamic environment. In FY11 will develop and refine a cognitive network design tool set; will design and develop initial protocol function and capability for cognitive networking; will conduct modeling and simulation on small scale networks to evaluate protocol functionality. Work on this effort is also being accomplished under PE 0603008A/project TR1. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #6 Dynamic Spectrum and Network Technologies: This effort develops and investigates technology for radios and network management systems to enable access to spectrum currently unavailable because of current spectrum management methods. In FY10, investigate and develop software policy agents for integration into software defined radios to allow the radios to accept Dynamic Spectrum Access (DSA) from the network management system over the air, adapt the DARPA Disruption Tolerant Networking (DTN) technology for	0.000	2.984	3.007	0.000	3.007

Exhibit R-2A, PB 2011 Army RDT&E Project Justification		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
military communications systems to improve reliability and transportability. In FY11, will expand the DSA policy generation design to include parameters for co-existence operations of DSA enabled radios with tactical communications and Intelligence, Surveillance and Reconnaissance (ISR) systems; will integrate the DSA policy generation tool with existing spectrum database. Work on this effort is also being accomplished under PE 0603008A/project TR1. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #7 Small Business Innovative Research/Small Business Technology Transfer Programs *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010	0.000	0.193	0.000	0.000	0.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Base FY 2011 Plans: FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Accomplishments/Planned Programs Subtotals	14.241	14.700	14.990	0.000	14.990

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.

Exhibit R-2A, PB 2011 Army RDT&E Project Justification			DATE: February 2010
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COST ($ in Millions)	FY 2009 Actual	FY 2010 Estimate	Base FY 2011 Estimate	OCO FY 2011 Estimate	Total FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
TR9: *C3 COMPONENT TECHNOLOGY (CA)*	21.668	5.332	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

Congressional Interest Item funding for C3 Component Technology applied research.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Program #1	1.196	0.000	0.000	0.000	0.000
Dynamically Managed Data Dissemination: In FY09, this Congressional Interest Item developed technologies that will enable net-centric capabilities including bandwidth mediation services and image recognition adaptation evaluation. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #2	2.392	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Intelligent Distributed Command & Control (IDC2): In FY09, this Congressional Interest Item researched a comprehensive force protection security system equipped with the capability to share relevant, tailored information to multiple geographically separated operation centers. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #3 Ruggedized Cylinders for Expandable Mobile Shelters: In FY09, this Congressional Interest Item researched a turnkey motion control system that is fully integrated, compact, reliable, easy to use, quick to deploy, and facilitates mobile and deployable Command Post (CP) operation. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010	2.392	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Base FY 2011 Plans: FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #4 Innovative Wireless Technologies for Sensor Networks: In FY09, this Congressional Interest Item conducted field testing and performance verification of multi-wave form radio. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO	0.697	0.000	0.000	0.000	0.000
Program #5 Tactical Booster for Mobile Network Centric Warfare: In FY09, this Congressional Interest Item researched a device that translates traditional protocols into new advanced protocols designed for tactical networks. *FY 2009 Accomplishments:* FY 2009	1.595	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2010 Plans: FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #6 Portable Non-Magnetic Compass/Positioning/Timing Device: In FY09, this Congressional Interest Item provided heading information from a non-magnetic source. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO	1.595	0.000	0.000	0.000	0.000
Program #7 21st Century Command, Control, and Communications Technology. In FY09, this Congressional Interest Item investigated advanced C3 technologies.	0.637	0.000	0.000	0.000	0.000

Exhibit R-2A, PB 2011 Army RDT&E Project Justification		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2009 Accomplishments: FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #8 Automated Language and Cultural Analysis for National Security: In FY09, this Congressional Interest Item focused on the development of automated language translation capabilities and the application of cultural analysis that improves the utilization of collected information in the tactical environment. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO	1.994	0.000	0.000	0.000	0.000

Exhibit R-2A, PB 2011 Army RDT&E Project Justification		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Program #9	2.392	0.000	0.000	0.000	0.000
On-the-Move Telescoping Mast: In FY09, this Congressional Interest Item developed On-The-Move mast technologies and product concepts for elevating optic and radar sensors, communication, and electronic warfare payloads on ground vehicles while traveling over rough terrain. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #10	2.392	0.000	0.000	0.000	0.000
Modular Universal TOC Packages for Vehicles and Shelters: In FY09, this Congressional Interest Item developed modular, reconfigurable TOC mission and support equipment. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010					

Exhibit R-2A, PB 2011 Army RDT&E Project Justification		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 2: *Applied Research*	R-1 ITEM NOMENCLATURE PE 0602782A: *Command, Control, Communications Technology*	PROJECT TR9: *C3 COMPONENT TECHNOLOGY (CA)*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Base FY 2011 Plans: FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #11 Command, Control, Communications Technology. This is a Congressional Interest Item. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO	0.000	1.592	0.000	0.000	0.000
Program #12 Mobile Mesh Network Node. This is a Congressional Interest Item. *FY 2009 Accomplishments:* FY 2009	0.000	1.751	0.000	0.000	0.000

Exhibit R-2A, PB 2011 Army RDT&E Project Justification		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 2: *Applied Research*	R-1 ITEM NOMENCLATURE PE 0602782A: *Command, Control, Communications Technology*	PROJECT TR9: *C3 COMPONENT TECHNOLOGY (CA)*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2010 Plans: FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #13 Lightweight 10-Meter Antenna Mast. This is a Congressional Interest Item. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO	0.000	1.989	0.000	0.000	0.000
Program #14 Command, Control, Communications and Computer Module. This is a Congressional Interest Item.	1.196	0.000	0.000	0.000	0.000

Exhibit R-2A, PB 2011 Army RDT&E Project Justification		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 2: *Applied Research*	R-1 ITEM NOMENCLATURE PE 0602782A: *Command, Control, Communications Technology*	PROJECT TR9: *C3 COMPONENT TECHNOLOGY (CA)*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
FY 2009 Accomplishments: FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Program #15 Nanophotonic Device Development. This is a Congressional Interest Item. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO	1.595	0.000	0.000	0.000	0.000
Program #16	1.595	0.000	0.000	0.000	0.000

Exhibit R-2A, PB 2011 Army RDT&E Project Justification		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 2: *Applied Research*	R-1 ITEM NOMENCLATURE PE 0602782A: *Command, Control, Communications Technology*	PROJECT TR9: *C3 COMPONENT TECHNOLOGY (CA)*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	Base FY 2011	OCO FY 2011	Total FY 2011
Integrated Lightweight Tracker System. This is a Congressional Interest Item. *FY 2009 Accomplishments:* FY 2009 *FY 2010 Plans:* FY 2010 *Base FY 2011 Plans:* FY 2011 Base *OCO FY 2011 Plans:* FY 2011 OCO					
Accomplishments/Planned Programs Subtotals	21.668	5.332	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Performance metrics used in the preparation of this justification material may be found in the FY 2010 Army Performance Budget Justification Book, dated May 2010.