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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Office of Secretary Of Defense **DATE:** February 2011

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603923D8Z: <i>Coalition Warfare</i>							
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	13.094	13.786	12.743	-	12.743	13.026	13.154	13.293	13.583	Continuing	Continuing
P923: <i>Coalition Warfare</i>	13.094	13.786	12.743	-	12.743	13.026	13.154	13.293	13.583	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Coalition Warfare Program (CWP) is the only Office of the Secretary of Defense (OSD) program dedicated to initiating cooperative research and development (R&D) projects with allies and coalition partners. The goal of the effort is to assist the Combatant Commands, Services, and Agencies with integrating coalition-enabling solutions into existing and planned U.S. programs. This collaborative development of warfighter capabilities contributes to the Department's security cooperation strategy.

Fighting the war on terrorism and coping with the new and emerging threats have made addressing coalition warfare issues a priority for policy makers and senior leaders throughout the U.S. government. Coalitions are, and will continue to be, the standard means for addressing international crises--lending political legitimacy and providing resources that mitigate U.S. financial, materiel, and personnel burdens. Interoperability gaps can compromise operational effectiveness and jeopardize force protection (e.g., cause fratricide). Cooperative efforts with likely coalition partners can help address these interoperability gaps, as well as mitigate capability gaps in areas such as: battlespace awareness, C4ISR, joint fires, intelligence fusion and data sharing, combat identification, logistics, weapon systems, and information sharing.

Additionally, small investments in interoperability early in the R&D process can help avoid larger expenses related to adding coalition capability later in the development cycle. Partner nations participate to the extent permitted by security considerations when such partnering is advantageous to the U.S. government.

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APPROPRIATION/BUDGET ACTIVITY

0400: *Research, Development, Test & Evaluation, Defense-Wide*
 BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0603923D8Z: *Coalition Warfare*

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	13.885	13.786	13.454	-	13.454
Current President's Budget	13.094	13.786	12.743	-	12.743
Total Adjustments	-0.791	-	-0.711	-	-0.711
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-0.400	-			
• SBIR/STTR Transfer	-0.253	-			
• Other Program Adjustments	-0.138	-	-0.139	-	-0.139
• Defense Efficiency – Contractor Staff Support	-	-	-0.234	-	-0.234
• Defense Efficiency – Report, Studies, Boards and Commissions	-	-	-0.338	-	-0.338

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603923D8Z: <i>Coalition Warfare</i>				PROJECT P923: <i>Coalition Warfare</i>			
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
P923: <i>Coalition Warfare</i>	13.094	13.786	12.743	-	12.743	13.026	13.154	13.293	13.583	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Coalition Warfare Program (CWP) is the only Office of the Secretary of Defense (OSD) program dedicated to initiating cooperative research and development (R&D) projects with allies and coalition partners. The goal of the effort is to assist the Combatant Commands, Services, and Agencies with integrating coalition-enabling solutions into existing and planned U.S. programs. This collaborative development of warfighter capabilities contributes to the Department's security cooperation strategy.

Fighting the war on terrorism and coping with the new and emerging threats have made addressing coalition warfare issues a priority for policy makers and senior leaders throughout the U.S. government. Coalitions are, and will continue to be, the standard means for addressing international crises--lending political legitimacy and providing resources that mitigate U.S. financial, materiel, and personnel burdens. Interoperability gaps can compromise operational effectiveness and jeopardize force protection (e.g., cause fratricide). Cooperative efforts with likely coalition partners can help address these interoperability gaps, as well as mitigate capability gaps in areas such as: battlespace awareness, C4ISR, joint fires, intelligence fusion and data sharing, combat identification, logistics, weapon systems, and information sharing.

Additionally, small investments in interoperability early in the R&D process can help avoid larger expenses related to adding coalition capability later in the development cycle. Partner nations participate to the extent permitted by security considerations when such partnering is advantageous to the U.S. government.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2010	FY 2011	FY 2012
Title: FY08 Continuing Projects Description: Program provided additional funding to projects that began in FY08. FY 2010 Accomplishments: Some FY08 projects received FY10 funding. Among the capabilities that these projects will deliver are a fieldable fluxgate magnetometer that will have force protection applications and a tactile stimulation capability for pilots operating in degraded visual environments.	0.760	-	-
Title: FY09 Continuing Projects Description: Program selected 14 projects in the FY09 nomination cycle. FY 2010 Accomplishments:	5.352	0.100	-

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011
<p>FY09 projects began to wrap up their efforts. Among the capabilities that these projects will deliver are: an interoperable, manageable, and secure coalition network based on existing and emerging standards; software solutions to enable shared situational awareness and command and control messages with coalition partners; an enhanced capability for coalition warfare partners to interdict smuggled nuclear devices and materials; and an imagery processing capability for inclusion in the Army ground-based platform trainer.</p> <p>FY 2011 Plans: One FY09 project will receive FY11 funding. Project will deliver a software defined radio waveform specification that will support waveform porting to the participants' national radios.</p>			
<p>Title: FY10 Continuing Projects</p> <p>Description: Program selected 10 projects in the FY10 nomination cycle.</p> <p>FY 2010 Accomplishments: Projects began efforts that will result in better nighttime vision capabilities, laser protection for MWIR detectors, improved joint and coalition execution of pre-deployment mission rehearsals, and improved adaptive planning and mission rehearsal execution for emerging threats.</p> <p>FY 2011 Plans: Projects will wrap up efforts that will deliver: a maritime and land-based sensor/communication/common operating picture system capable of monitoring and detecting activity in the riverine and inland near-water environments; a multilateral information exchange capability that will maximize sharing of quality information; and the technical capability within the fire support community to update fire control input data without the need to completely retest and reissue new software.</p> <p>FY 2012 Plans: Projects selected in FY10 will wrap up.</p>		5.892	5.235
<p>Title: Coalition Data Control Software (CDCS)</p> <p>Description: Through multinational experimentation, project will research and adapt existing data control software technology. Capability will provide a cost effective approach to achieve network interoperability with certain allies in operations at Brigade and below through a secret enclave without the use of guards.</p> <p>FY 2011 Plans: Begin research and development. Plan and execute capability testing at MNE 5.0 (Multinational Experiment) series experiments.</p> <p>FY 2012 Plans:</p>		-	1.000

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012
Evaluate and identify requirements. Conduct test in MNE 6.0 events				
Title: Counter-Tunneling Initiative Description: Computational modeling results will be used to produce a physics-based mission planning tool (MPT) that will direct the selection and placement of electromagnetic (EM) sensors. This will increase the probability of tunnel detection by providing the tactical warfighter with the optimal EM sensor, sensor placement information, and sensor orientation information based on the local operating environment. FY 2011 Plans: Develop EM modeling and simulations (M&S) using knowledge gained through technical exchange, previous testing, and testing regimes. Document and share the results of the M&S. Acquire further data to compare the actual results to the models to determine required modifications for enhanced performance. FY 2012 Plans: Conduct necessary modifications to the sensor software and mission planning tool. Conduct a second iteration of M&S using parameters from the modifications. Provide recommendations for modifications to the sensor.		-	0.500	0.500
Title: Collaborative Software Initiative (CSI) Description: Collaborative research and development of Norwegian and U.S. Navy combat system enhancements to address current shortfalls in high Northern situational awareness. FY 2010 Accomplishments: 0 FY 2011 Plans: Negotiate software baselines, data sharing and collaborative process. FY 2012 Plans: Develop CONOPS, test plan, ASW and maritime situational awareness software modules. Conduct a technical demonstration of software of northern waters situational awareness system. Conduct operational demonstration of northern waters situational awareness system and platform ASW system and software.		-	0.230	0.470
Title: Coalition Antennas and Spectrum Management Interoperability Description: This effort will enhance coalition communications interoperability through two major tasks: 1) The investigation and development of a spectrum data message exchange mechanism to enhance spectrum planning between the U.S. and Republic of		-	0.190	0.160

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012
Korea (ROK), and 2) The modeling, design, fabrication, test and demonstration of a novel, conformal, beam steered antenna array on a small, surrogate UAV platform. FY 2011 Plans: Conduct information exchange, scenario definition, and simulation and validation testing activities with partners. Complete the modeling and design for the antenna and begin antenna fabrication. FY 2012 Plans: Complete interoperability software development, conduct joint evaluation or results and complete the antenna fabrication and testing/demonstration.				
Title: Fibrinogen Supplementation in Treating Trauma Patients with Bleeding Complications Description: This project will determine whether fibrinogen concentrate is effective to stop bleeding in trauma patients with bleeding complications and determine the underlying mechanisms related to the effects of fibrinogen concentrate on restoring coagulation function in trauma patients FY 2010 Accomplishments: Establish a working team, including hiring a research nurse and a research technician; set up the working environment (equipment, etc); enroll patients and perform studies, collect clinical data, perform sample analysis, compile and analyze data.		0.284	-	-
Title: ITA Policy Controlled Coalition Information Query & Dissemination Description: This project will develop enhanced capabilities for the processing, exploitation and dissemination (PED) process for intelligence analysts and ISR data and information consumers by developing an extensible capability of performing distributed federated query and information dissemination across a network of distributed disparate data and information sources. FY 2011 Plans: Begin technology development efforts of algorithms and associated software modules. Efforts will be supported by data collection and analysis, simulation, and equipment purchase. FY 2012 Plans: Continue technology development, with emphasis on algorithm and software implementation on target network platforms. Conduct testing and evaluation and a full-scale technology demonstration of policy-controlled coalition query & dissemination.		-	0.500	0.500
Title: Joint Cross-Domain Collaboration (JC-DC)		-	0.625	0.625

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011
<p>Description: This project will research, develop, deploy, and demonstrate a new Joint Cross-Domain Collaboration suite that facilitates near real-time exchanges of multimedia information while maintaining information assurance requirements. Design in transferability to other COCOMS and coalition partners.</p> <p>FY 2011 Plans: Research, test and evaluate Collaboration Gateway. Begin developing hardware modifications and new software.</p> <p>FY 2012 Plans: Complete hardware modifications and new software. Test, evaluate and deliver: A) Cross-domain Social Networking Services, and B) Cross-Domain Audio & Video streaming.</p>			
<p>Title: Mobile Learning Environment (MoLE)</p> <p>Description: Project aims to leverage a global cellular network infrastructure, mobile phones, and emerging mobile application/ service models to build a mobile learning capability to facilitate the sharing of educational content between U.S. and multi-national partners in support of medical stability operations.</p> <p>FY 2011 Plans: Conduct workshop and establish and formalize collaborative arrangements. Complete management plan, identify medical training courses, and address specific technical requirements of the mobile courses. Complete technical course design and initiate IP integration documentation. Convert medical courses to m-learning.</p> <p>FY 2012 Plans: Complete test plan and m-Learning IP access requirements. Consolidate the results and convene a workshop to seek final input from participants and share findings incorporated in the final project report.</p>		-	0.587
<p>Title: NATO Universal Armament Interface (NUAI) Demonstration</p> <p>Description: Project will demonstrate the ability to integrate platform and weapon systems, independently developed by separate nations, without the need to modify platform software.</p> <p>FY 2011 Plans: Complete the development of the test plan and begin the certification tool updates.</p> <p>FY 2012 Plans: Conduct certification of tool integration and testing. Conduct lab integration and testing. Use findings to update NUAJ standards.</p>		-	0.500
<p>Title: Ultra-stable, High-precision Optoelectronic Oscillators (OEO)</p>		-	0.210
			0.374
			0.200
			0.215

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011
<p>Description: Project will develop an optoelectronic oscillator (OEO) that has ultra-low phase noise, low vibrational susceptibility, and ultra-long stability. The OEO will be used as a local master oscillator, acting as a 'flywheel' to maintain inter-system synchronization when an external master oscillator/clock signal or GPS is unavailable.</p> <p>FY 2011 Plans: Characterize and model noise sources. Design and build OEO.</p> <p>FY 2012 Plans: Experimentally verify optimal configuration and deliver software model. Conduct lab demonstrations.</p>			
<p>Title: Over the Horizon Radar Technology Collaboration Evaluation (OTHR)</p> <p>Description: Project will compare OTHR-specific hardware components and subsystems to determine the component or subsystem offering the best OTHR performance. Project will use this information to develop new prototype components for testing and evaluation.</p> <p>FY 2011 Plans: Develop test plans and procedures. Begin environmental and architecture assessment studies.</p> <p>FY 2012 Plans: Conduct equipment assessment and evaluation.</p>		-	0.645
<p>Title: Reformed Methanol Fuel Cell Power Source (RMFCPS)</p> <p>Description: This project seeks to provide a hybrid power source capable of 150 watts of continuous power for powering military devices and charging military rechargeable batteries in a small, lightweight package.</p> <p>FY 2010 Accomplishments: Conduct durability testing and hard tooling design. Begin firmware validation.</p> <p>FY 2011 Plans: Complete critical design and testing activities.</p>		0.080	0.520
<p>Title: Non-lethal Small Boat Stopping</p> <p>Description: Project will investigate and demonstrate non-lethal stopping of small-boats at greater distances.</p> <p>FY 2011 Plans:</p>		-	0.225

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012
Identify technology and develop system platform. FY 2012 Plans: Complete system effects testing and sea trials.				
Title: Tactical Edge Data Solutions (TEDS) Description: Project will enhance data interoperability from the tactical edge by tagging data with C2 Core metadata--as extended from U Core--for access through web services on the Global Information Grid (GIG). FY 2011 Plans: Conduct first set of lab and operational demonstrations followed by software refinement. FY 2012 Plans: Conduct second set of lab/operational demonstrations and final assessment.		-	0.300	0.300
Title: Unmanned Aerial Vehicle (UAV) Tasking and Route Planning Description: Implement the Aircraft Collection Tasking Message (ACTM) messaging standard (NATO STANAG 3277) into TaskView used by aircrew as part of various mission planning systems to ingest and parse Air Tasking Orders (ATO's) and Airspace Coordination Orders (ACO's). FY 2011 Plans: Refine requirements and engineering approach. Begin ACTM development. Hold preliminary design review and critical design review. FY 2012 Plans: Conduct formal ACTM qualification testing as well as developmental and operational testing prior to final delivery.		-	0.750	0.791
Title: FY12 Project Selections Description: Program will conduct competitive nomination process to identify FY12 projects. FY 2012 Plans: FY12 projects will be selected based on COCOM, Service, Joint Staff, OSD, and DoD Agencies priorities and requirements.		-	-	5.300
Title: Coalition Warfare Program Support Description: Program funds contractors to support program management.		0.706	0.724	0.516

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011
<i>FY 2010 Accomplishments:</i> Contractor provided program support. <i>FY 2011 Plans:</i> Contractor will provide program support. <i>FY 2012 Plans:</i> Contractor will provide program support.			
<i>Title:</i> Interoperability and Collaboration Initiatives <i>Description:</i> Program funds interoperability efforts and various initiatives that are aimed at increasing collaboration. <i>FY 2010 Accomplishments:</i> Interoperability initiatives <i>FY 2011 Plans:</i> Interoperability initiatives <i>FY 2012 Plans:</i> Interoperability Initiatives		0.020	0.050
<i>Title:</i> Anticipated Reductions <i>FY 2011 Plans:</i> Anticipated FY11 SBIR/STTR transfer, FFRDC adjustment, other administrative transfers, etc. <i>FY 2012 Plans:</i> Anticipated FY12 SBIR/STTR transfer, FFRDC adjustment, etc.		-	0.895
Accomplishments/Planned Programs Subtotals		13.094	12.743
C. Other Program Funding Summary (\$ in Millions) N/A			
D. Acquisition Strategy The Combatant Commands, Services, Defense Agencies, and the Office of the Secretary of Defense nominate candidate projects on an annual basis. CWP provides selected projects one to two years of funding. The Program selects projects that address DoD priorities and meet the needs and requirements specified by the Joint Staff and the Combatant Commanders. Projects should have equitable contributions from international partners, strong potential for transition, and should contribute to allied interoperability and/or meet a user need.			

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E. Performance Metrics

After successful completion of the competitive nomination process, initial project funding is dependent on receipt of project documentation, which includes financial information, project plan, description of project team, etc. Continued project funding is dependent on compliance with CWP requirements, which include: adequate progress toward each project's stated goals, timely reporting on financial status and project activities, provision of updated project plans and charts, and progress towards transition goals.

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Office of Secretary Of Defense		DATE: February 2011
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Office of Secretary Of Defense			DATE: February 2011
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FY10-FY11 Projects	1	2010	4	2011
FY11-FY12 Projects	1	2011	4	2012
FY12-FY13 Projects	1	2012	4	2013
FY13-FY14 Projects	1	2013	4	2014
FY14-FY15 Projects	1	2014	4	2015
FY15-FY16 Projects	1	2015	4	2016

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