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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 6: RDT&E Management Support				R-1 ITEM NOMENCLATURE PE 0605866N: Navy Space & Electr Warfare Supt							
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	2.686	2.659	4.013	5.200	9.213	4.789	5.306	5.396	5.485	Continuing	Continuing
0706: EMC & RF Mgmt	2.006	2.070	3.358	5.200	8.558	3.815	4.301	4.369	4.438	Continuing	Continuing
0739: Navy C2 Top Level	0.680	0.589	0.655	0.000	0.655	0.974	1.005	1.027	1.047	Continuing	Continuing
A. Mission Description and Budget Item Justification											
<p>Project 0706, Electromagnetic Interference (EMI) Reduction and Radio Frequency (RF) Management - Develops advanced technology to identify and reduce EMI sources from Navy systems research and development technology to develop top-level plans and space systems in the Space and Electronic Warfare (SEW) mission area. The Space and Electronic Warfare Shipboard Electromagnetic Compatibility Improvement Program (SEMCIIP) is an element of the Electromagnetic Compatibility (EMC) Systems Engineering Program.</p>											
<p>Project 0739, Navy Command, Control, Communications, Computers, and Intelligence (C4I) Top Level Requirements - This project provides analysis of both Fleet requirements and research and development technology to develop top-level plans and space systems in the Space and Electronic Warfare (SEW) mission area. The Space and Electronic Warfare Studies and Analysis Program (SEWSAP) supports analyses of Fleet requirements and research and development technology to develop top-level plans for operating Navy Command, Control, Communications, Intelligence, Surveillance and Reconnaissance (C4ISR) and space systems in the SEW mission area.</p>											
<p>Overseas Contingency Operations (OCO) Request: Combat Enabler in Theatre Operation Iraqi Freedom (OIF) - Joint Emitters during the continuing OIF operations was a source of debilitating electromagnetic interference to critical United States Navy (USN) Air Operations (OPS) & Ballistic Missile Defense (BMD) assets.</p>											
<p>In-Theater and Pre-Deployment OIF: Will address impact of upgrades to deploying ships and development of electromagnetic interference solutions for the deploying strike group.</p>											
JUSTIFICATION FOR BUDGET ACTIVITY:											
This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.											

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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE			
1319: Research, Development, Test & Evaluation, Navy		PE 0605866N: Navy Space & Electr Warfare Supt			
BA 6: RDT&E Management Support					
B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	2.698	2.703	0.000	0.000	0.000
Current President's Budget	2.686	2.659	4.013	5.200	9.213
Total Adjustments	-0.012	-0.044	4.013	5.200	9.213
• Congressional General Reductions		-0.012			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	-0.032			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.012	0.000			
• Program Adjustments	0.000	0.000	4.013	0.000	4.013
• Rate/Misc Adjustments	0.000	0.000	0.000	5.200	5.200
Change Summary Explanation					
Technical: Not applicable.					
Schedule: Not applicable.					
FY11 from previous President's Budget is shown as zero because no FY11-15 data was presented in President's Budget 2010.					

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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 6: <i>RDT&E Management Support</i>				R-1 ITEM NOMENCLATURE PE 0605866N: <i>Navy Space & Electr Warfare Supt</i>				PROJECT 0706: <i>EMC & RF Mgmt</i>			
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
0706: <i>EMC & RF Mgmt</i>	2.006	2.070	3.358	5.200	8.558	3.815	4.301	4.369	4.438	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification <p>Electromagnetic Interference (EMI) Reduction and Radio Frequency (RF) Management. This project develops tools, processes, and algorithms to identify and reduce EMI sources for Navy systems and platforms.</p> <p>(a) Automated spectrum capabilities will be enhanced to comply with Fleet operational requirements and streamline Strike Force frequency management processes. It will provide automated Spectrum Management (SM) Tools for development of Operational Task Communication and Radar/Weapon plans to support Fleet deployments, Exercises, Contingency Operations, and the Global War on Terrorism. It will provide identification and mitigation of EMI in Navy, North Atlantic Treaty Organization (NATO), Allied, Ashore and Joint Combat Operations.</p> <p>(b) It will support the Shipboard Electromagnetic Compatibility Improvement Program (SEMCIP), an element of the Electromagnetic Compatibility (EMC) Systems Engineering Program to identify, engineer, and evaluate effectiveness of potential EMI corrections.</p> <p>(c) Electromagnetic Pulse (EMP) Survivability Program provides for the Navy response to Secretary of Defense (SECDEF) tasking to assess the EMP survivability of all mission critical systems and to develop a hardness assurance and maintenance program. Develops improved modeling capability to reduce hardness validation costs at delivery and over the lifetime of the system/platform. Provides design criteria, test methodology, test limits, and survivability validation procedures for all Navy systems, ships, submarines and shore facilities.</p> <p>(d) Advanced Technology: Investigates below deck electromagnetic environmental effects and develops the capability to perform remote spectrum monitoring and electromagnetic noise monitoring. Also, develops the tools and technologies for innovative and efficient spectrum use, and continues the development of relationships between measured EMI and system performance for selected communications systems.</p> <p>(e) FY11 OCO Planned Program funds will be used for Combat Enabler in Theater OIF and Pre-Deployment OIF.</p>											
B. Accomplishments/Planned Program (\$ in Millions)											

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
AESOP (Integrated CPM and EMCAP) FY 2009 Accomplishments: Delivered Afloat Electromagnetic Spectrum Operations Program (AESOP) version 2.1 & OP-3840, new AESOP newsletter, and ship card. Performed Electromagnetic Interference Investigation for major industrial & infrastructure customers. FY 2010 Plans: Continue development of interfaces for Afloat Electromagnetic Spectrum Operations Program (AESOP), and other automated tools to interface with evolving network protocols and to ensure currency for web based applications. Develop new algorithms for automated tools for new Navy C4ISR systems for both government and commercial communication systems being used by the Navy. Implement a set of web-based capabilities utilizing latest technologies Extensible Markup Language (XML) and other data standards to optimize information exchange/usability. FY 2011 Base Plans: FY 2011 - FY 2015 - Institutionalize frequency management process for operational fleet by developing procedures that can be utilized by all Navy Strike Groups. Make recommendations to update existing combatant commands, and numbered fleets directives regarding spectrum use in their areas of responsibility. Coordinate with ranges regarding impacts of spectrum relocation for systems used during tests, such as telemetry and data collection. Update the AESOP with the new radiation restrictions that reflect current legal requirements that result from spectrum relocation worldwide.		0.851	0.741	0.722	0.000	0.722
EMC Systems Engineering (SEMCIP) FY 2011 Base Plans: Identify and characterize EMI which can debilitate the Combat capability of strike force capability and operational readiness.		0.000	0.000	1.500	0.000	1.500

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Evaluate effectiveness of proposed EMI solutions and coordinate with Program Managers/Resource Sponsors for procurement of final EMI fix.					
EMP Survivability FY 2009 Accomplishments: Completed initial EMP Survivability Assessment and EMP Hardness Maintenance development in accordance with current OPNAVINST/NAVSEAINST on EMP Survivability. FY 2010 Plans: Prepare EMP Survivability Assessment and EMP Hardness Maintenance Plan. Prepare updates to OPNAVINST/NAVSEAINST on EMP Survivability. Develop modeling capabilities and alternative techniques to reduce hardness validation costs at delivery. FY 2011 Base Plans: Develop and publish EMP Certification process in accordance with Military Standard (MIL-STD)188-125 High-Altitude Electromagnetic Pulse (HEMP) Protection for Ground-Based C41 Facilities. Support Navy and Defense Threat Reduction Agency (DTRA) in the development of a Maritime EMP Standard. This includes conducting a baseline EMP assessment of a Landing Craft Air Cushion (LCAC).	0.935	1.020	1.021	0.000	1.021
Advanced Technology FY 2009 Accomplishments: Completed ititial below decks characterization, investigated predictive application, and developed tools/technologies for spectrum usage. FY 2010 Plans: Continue below decks characterization, investigate predictive application, and develop tools/technologies for spectrum usage.	0.210	0.309	0.115	0.000	0.115

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: Continue below decks characterization, and publish design guides for PEO/SYSCOM to ensure new systems can be installed with minimal interference.						
DAWDF FY 2009 Accomplishments: Completion of DAWDF requirements.		0.010	0.000	0.000	0.000	0.000
Combat Enabler in Theater OIF & Pre-Deployment OIF FY 2011 Base Plans: N/A FY 2011 OCO Plans: (\$1.900) Combat Enabler in Theater (OCO) OIF: Joint Emitters were a source of debilitating electromagnetic interference to critical USN Air OPS & BMD assets. In response to FY11 OIF requirements, funding will be used to expand USN Afloat/Ashore spectrum management tools to address the critical need for interoperability with the USMC's Spectrum management applications and put into place a Joint Capability for the USN/USMC Warfighter. This USN/USMC integration promotes interoperability with the multi-national deployed forces fighting the OCO and decreases the risk of friendly fire incidents. Increased situational awareness, reduction of interference, and restored mission capability are all expected benefits of the improved processes and procedures. The requested funds will deliver a Joint capability system that allows group planning and execution, information data discovery, data interoperability, and data fusion to USN and USMC forces directly supporting OIF and the OCO. Data tasking and deliverables are classified. (\$3.300) In-Theater and Pre-Deployment: Funding to address impact of upgrades to deploying ships and development of EMI solution for the deploying strike group. As the fleet continues to introduce		0.000	0.000	0.000	5.200	5.200

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B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
additional variants of combat systems, electromagnetic interference (EMI)(must be addressed. Timely development of EMI solutions restores combat capability lost due to EMI. Funds will support procurement and installation of EMI Solutions within 12 months for strike groups and independent deployers.								
Accomplishments/Planned Programs Subtotals				2.006	2.070	3.358	5.200	8.558
C. Other Program Funding Summary (\$ in Millions) N/A								
D. Acquisition Strategy An acquisition strategy is not required.								
E. Performance Metrics Performance metrics will consist of quarterly program reviews.								

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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
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Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification This project provides analysis of both Fleet requirements and research and development technology, to develop top-level plans and space systems in the Space and Electronic Warfare (SEW) mission area. The Space and Electronic Warfare Studies and Analysis Program (SEWSAP) supports analyses of Fleet requirements and research and development technology to develop top-level plans for operating Navy Command, Control, Communications, Intelligence, Surveillance and Reconnaissance (C4ISR) and space systems in the SEW mission area.											
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
Navy C2 Top Level <i>FY 2009 Accomplishments:</i> Initiated and completed studies supporting resource and requirement decisions in the Planning, Programming, and Budgeting Execution (PPBE) System; FORCEnet Fleet experiments; FORCEnet Architecture selection; evaluation of Tactics, Techniques and Procedures (TTP); alignment of Science and Technology (S&T) and Research, Development, Test, and Evaluation (RDT&E) efforts with FORCEnet requirements; evaluation and selection of Modeling and Simulation (M&S) tools and scenarios. SEWSAP (1) applied previously-developed models and analytical methods to identify areas of highest sensitivity in Command, Control, Communications (C3) performance, (2) extend previous architectural work on Naval operational functions and networks to detailed analyses of C3 and network requirements and, (3) extend previous system engineering results to newly emerging implementation issues						0.680	0.589	0.655	0.000	0.655	

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> Initiate studies supporting resource and requirement decisions in the PPBE System. Conduct FORCEnet Fleet experiments; FORCEnet Architecture selection; evaluation of TTP and Research, Development, Test, and Evaluation (RDT&E) efforts with FORCEnet requirements. Begin evaluation of M&S tools and scenarios.</p> <p><i>FY 2011 Base Plans:</i> Continue to initiate and complete studies supporting resource and requirement decisions in the PPBE System. Conduct FORCEnet Fleet experiments, FORCEnet Architecture selection, and evaluate TTP and Research, Development, Test, and Evaluation (RDT&E) efforts with FORCEnet requirements. Complete evaluation of M&S tools and scenarios.</p>					
Accomplishments/Planned Programs Subtotals	0.680	0.589	0.655	0.000	0.655
C. Other Program Funding Summary (\$ in Millions) N/A					
D. Acquisition Strategy An acquisition strategy is not required.					
E. Performance Metrics Conduct studies and report plans and analysis of Fleet requirements for operating Navy C4ISR and space systems in the space and electronic warfare mission area.					

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