Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy											DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 ITEM NOMENCLATURE PE 0603542N: *Radiological Control*							
COST ($ in Millions)	**All Prior Years**	**FY 2012**	**FY 2013#**	**FY 2014 Base**	**FY 2014 OCO ##**	**FY 2014 Total**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**Cost To Complete**	**Total Cost**
Total Program Element	16.172	1.312	0.777	0.762	-	0.762	0.807	0.831	0.849	0.863	Continuing	Continuing
1830: *RADIAC Development*	16.172	1.312	0.777	0.762	-	0.762	0.807	0.831	0.849	0.863	Continuing	Continuing

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

Mission Description: The Radiation Detection, Indication and Computation (RADIAC) Program is responsible for providing radiation monitoring instruments that detect and measure ionizing radiation. These instruments are used on all Navy, Coast Guard and Military Sealift Command vessels, and at every Navy shore installation, in order to ensure the safety of personnel, continuity of operations in radiological contingencies, and protection of the environment.

Justification: Title 10 of the Code of Federal Regulations, Part 20 (10CFR20) requires RADIAC instruments be used to ensure the safety of personnel who work with or are exposed to radioactive materials in their work. Additionally, the Navy's mission requires personnel and ships to have the ability to operate in radiological environments and the ability to identify and interdict radiological Weapons of Mass Destruction (WMD). Navy programs that require RADIAC instruments for Occupational Safety & Health (OSH) reasons under the provisions of 10CFR20 include Naval Nuclear Propulsion, Nuclear Weapons, Medical, and Radiological Affairs Support. Non-OSH programs include Radiological Defense, Consequence Management, Training, Technical (RADIAC calibration, shielding evaluation, research, etc.) and Radiological Search (maritime interdiction and radiological search missions to locate or intercept WMD).

This budget item develops new, highly reliable, more easily calibrated, easy to care and maintain, light weight and modern RADIAC instruments in order to improve the effectiveness of radiation safety, to make instruments simpler to use, and to reduce life cycle costs. The ultimate goal is to replace old, bulky, costly to maintain and repair, unreliable and obsolete instrumentation with multifunction equipment that can be automatically calibrated at greatly reduced cost.

This budget item also provides for improvement to nuclear weapons intrinsic radiation (gamma and neutron) shielding calculations, mixed field (neutron and gamma) dosimetry, and in neutron measurement. The objective is to develop less costly and more effective integral shielding for better personnel protection and safety. Improvement in personnel dosimetry and neutron measurement is also a major emphasis.

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy					DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*			R-1 ITEM NOMENCLATURE PE 0603542N: *Radiological Control*		
B. Program Change Summary ($ in Millions)	**FY 2012**	**FY 2013**	**FY 2014 Base**	**FY 2014 OCO**	**FY 2014 Total**
Previous President's Budget	1.338	0.777	0.799	-	0.799
Current President's Budget	1.312	0.777	0.762	-	0.762
Total Adjustments	-0.026	0.000	-0.037	-	-0.037
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.026	0.000			
• Program Adjustments	0.000	0.000	-0.028	-	-0.028
• Rate/Misc Adjustments	0.000	0.000	-0.009	-	-0.009

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	R-1 ITEM NOMENCLATURE PE 0603542N: *Radiological Control*	PROJECT 1830: *RADIAC Development*	

COST ($ in Millions)	All Prior Years	FY 2012	FY 2013#	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
1830: *RADIAC Development*	16.172	1.312	0.777	0.762	-	0.762	0.807	0.831	0.849	0.863	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

Mission: The Radiation Detection, Indication and Computation (RADIAC) Program is responsible for providing radiation monitoring instruments that detect and measure radiation in accordance with the provisions of Title 10 of the Code of Federal Regulations (10CFR). These instruments are used on all vessels afloat and at every shore installation in order to ensure the safety of personnel and the environment. RADIACs are also required after an act of terrorism or war that involves nuclear material in order to enable continuing warfighting ability.

Justification: Many RADIAC instruments and dosimetry systems are decades old and approaching the end of their useful lives. In some cases the equipment and replacement parts are no longer manufactured, making the equipment logistically unsupportable. In other cases increasing failure rates due to age make replacements an economic efficiency
improvement. In all cases a technology refresh will make both economic sense and provide increased operational capabilities.
Naval Nuclear Propulsion Program (NNPP): Instruments are developed to support the safe operation and maintenance of nuclear powered vessels and at nuclear maintenance facilities.
Non-NNPP: Instruments are developed to support other than NNPP end users, such as Explosive Ordnance Disposal, Weapons, Medical, Industrial Radiography and Training.
Visit, Board, Search & Seizure (VBSS): The Navy has been tasked to intercept and board vessels at sea to search for nuclear or radiological materials that could be used for terrorist attacks. These instruments would have different characteristics than those used for NNPP and non-NNPP purposes and prototypes must be developed and/or tested and evaluated.
The AN/PDR-65 Ship Board Monitoring System is obsolete and will be replaced. The IM-239/WDQ Air Particle Detector (APD) and the HD-732, HD-1150 and HD-1151 Air Particle Samplers (APS) are obsolete and will be replaced.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: Next Generation Air Particle Detector	0.666	0.000	0.000
Articles:	0		
Description: The IM-239/WDQ Air Particle Detector (APD) is a 400-pound piece of installed equipment on nuclear powered ships and submarines that monitors emissions into the air from the ships' nuclear power plants. The current version is approximately 30 years old and despite component upgrades, has reached the end of its useful life due to parts and technological obsolescence.			

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Naval Reactors requires a new version for the nuclear fleet. To develop the new IM-272/WDQ the RADIAC Program is working with the pre-eminent facility in the U.S. for sampling air for radioactivity, the DoE Remote Sensing Laboratory at Nellis AFB, NV. ***FY 2012 Accomplishments:*** Selected the winning prototype and prepared final specifications prior to production.			
Title: Radiological Affairs Support Program Survey Meter ***Articles:*** ***Description:*** The Radiological Affairs Support Program (RASP) survey meter is obsolete and must be replaced. ***FY 2012 Accomplishments:*** Tested and evaluated RASP survey meter. Issued final report and recommendation.	0.079 0	0.000	0.000
Title: Electronic Personal Dosimeter Telemetry ***Articles:*** ***Description:*** Naval Reactors has requested the study of adding capabilities to the Electronic Personal Dosimeter (EPD). Besides its basic functionality for recording dose exposure, this instrument also has the ability to remotely monitor and report the radiation exposure of on-scene emergency responders. This feature has not been implemented in the Navy EPDs that were recently procured and fielded, but the USAF already makes extensive use of the same EPD, along with the extra hardware and software required for the purpose of keeping track of responders in emergencies in terms both of their accumulated exposure and precise location while working inside the boundaries of a radiological scene. A second application of the EPD telemetry capability is for radiological work. This would include workers wearing EPDs during high radiation level work, and EPDs being posted at locations where radiation level measurements are required in high radiation background areas. Posting of EPDs in such a situation would preclude having a technician enter the danger area with a survey meter to measure the radiation level. An example would be monitoring the radiation level of the pipe through which primary plant resin is being discharged from the ship. Exploitation of the full potential of this COTS item will maximize the Navy's return on this hardware investment. ***FY 2012 Accomplishments:*** Issued final report and recommendations.	0.066 0	0.000	0.000
Title: Optically Stimulated Luminescence ***Articles:***	0.072 0	0.069 0	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Description: The need for dosimetry is a very significant consequence of working with or around ionizing radiation. The expensive infrastructure and investments by the Navy in its dosimetry program is evidence of the importance attributed by the Navy to the health and safety of the Navy's military and civilian personnel, and that of the general public. As new and improved technologies appear, it is important to evaluate them for their potential to improve performance while reducing total operating costs. Optically Stimulated Luminescence (OSL) is a relatively new technology where the benefits appear to be significant but have yet to be fully evaluated. This project's objective is to make modest investments with the labor of a Navy Health Physicist to explore, in collaboration with a U.S. Army colleague interested in the same technology for Army use, the potential of the joint military application for OSL dosimetry. ***FY 2012 Accomplishments:*** Researched dosimetric properties of OSL material for suitability as a Navy dosimeter. ***FY 2013 Plans:*** Research dosimetric properties of OSL material for suitability as a Navy dosimeter.			
Title: Radiological Shipboard Defense Monitor	0.052	0.067	0.044
Articles:	0	0	0
Description: All surface combatants require an instrument to detect and measure radiological activity in the event of a nuclear detonation in order for the ship to avoid the radiological danger and continue its mission. The AN/PDR-65, at over 40 years of age, was the instrument used for this purpose, but it is obsolete and has been de-fielded. An interim replacement has been fielded while OPNAV finalizes updating the Cold War requirements under which the AN/PDR-65 was designed in order to include radiological (terrorist dirty bomb) threats. The interim replacement is the IM-265 Survey Meter, which is already in the Navy inventory, but it was not designed for this requirement and cannot measure radiation external to the ship and is therefore not suitable as the permanent replacement. In light of Operation Tomodachi this requirement has taken on more significance. ***FY 2012 Accomplishments:*** Begin studying and analyzing replacement equipment and possibility of integration of a shipboard radiological warning system with a chemical and biological warning system called JWARNS. ***FY 2013 Plans:*** Finalize specification development for follow-on procurement. ***FY 2014 Plans:*** Continue working with Navy end users to develop technical specification.			
Title: Visit, Board, Search & Seizure	0.087	0.112	0.049

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Articles:	8	4	0
Description: The Visit, Board, Search & Seizure (VBSS) mission of the Navy includes the requirement to be able to board ships and be able to detect and identify potential radiological or nuclear Weapons of Mass Destruction (WMD). Such a sensitive mission requires leading edge technology and capabilities to ensure success. The AN/PDX-1 RADIAC Set was fielded in response to a Joint Urgent Operational Needs Statement to meet this requirement. It contains several instruments that serve different purposes, including the search detector, isotope identifier, and personal dosimeter. Current technology dictates that the sensitivity of the detector is directly proportional to the size of the detector element; i.e., the larger the detector, the more sensitive and capable it is. However, in VBSS there must be a tradeoff between size/weight and capability, since it is difficult and hazardous for boarding parties to carry a backpack-sized detector, along with their weapons and other gear, up a rope ladder to board a vessel on the high seas. This will be a continuing and growing effort to find smaller, lighter instruments with enhanced sensitivity, reach-back capability, and other enhancements to provide the Navy the best and most cost effective equipment possible for this critical mission. ***FY 2012 Accomplishments:*** Procured Radiological Search and Dosimetry articles for evaluation. ***FY 2013 Plans:*** Procure Isotope Identifier articles for evaluation, issue report on testing to date. ***FY 2014 Plans:*** Continue testing of previously purchased units.			
Title: Naval Nuclear Propulsion Program Survey Meter	0.023	0.035	0.077
Articles:	0	0	0
Description: A survey meter for the Naval Nuclear Propulsion Program (NNPP) must meet military specifications for shipboard use, to include high tolerances for exposure to characteristics such as shock, temperature, humidity and sea water. COTS survey meters, which in most cases might be adequate in the mentioned environmental regards for shore-based requirements, cannot meet military requirements. COTS equipment is evaluated for compliance with technical specifications, and for potential hardening for shipboard use. ***FY 2012 Accomplishments:*** Tested and evaluated commercial prototypes for suitability for Navy use. ***FY 2013 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Test and evaluate commercial prototypes for suitability for Navy use, begin surveying manufacturers regarding options. ***FY 2014 Plans:*** Continue testing previously purchased units. Provide product demonstrations to end users and capture feedback.			
Title: Naval Academy Midshipman Summer Internship ***Articles:*** ***Description:*** Every summer a Midshipman is selected to conduct laboratory studies in support of the Naval Dosimetry System to research various responses and issues with thermoluminescent dosimetry. Funds pay for materials. ***FY 2012 Accomplishments:*** Accomplished study assigned by Naval Academy instructor. Presented paper to American Health Physics Society on FY11 findings. ***FY 2013 Plans:*** Accomplish study assigned by Naval Academy instructor. ***FY 2014 Plans:*** Accomplish study assigned by Naval Academy instructor.	0.015 0	0.015 0	0.015 0
Title: Neutron Electronic Personal Dosimeter ***Articles:*** ***Description:*** A neutron EPD will show real-time neutron accumulated doses in accelerator facilities producing high neutron yields. Currently, the DT-702 dosimeter is worn, but it must be processed at an off-site facility to obtain a dose report, which are not available for several weeks after exposure. With increased demand of accelerator facility use, the lag time between dose receipt and dose report poses increased risk to personnel safety. ***FY 2012 Accomplishments:*** Evaluated COTS examples for neutron detection characteristics and suitability for use alongside the Navy's new Neutron Area Monitor.	0.038 0	0.000	0.000
Title: Calibrators ***Articles:*** ***Description:*** Calibrators are the basic tool used to calibrate all Navy radiological detection equipment. Essentially they consist of a high energy radiological source (Cs-137) in a shielded container that is located in a specially constructed room, or "range." A technician places the instrument to be calibrated at a specific calibration point in the range and remotely operates the calibrator	0.043 0	0.165 0	0.067 0

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
by raising the source out of its container so that it irradiates the object instrument. The instrument's response to the radiation is measured so that it can be calibrated to specific tolerances. The current suite of AN/UDM-1B calibrators is over 20 years old and the natural decay of the strength of the radioactive source over time restricts calibration effectiveness by limiting the scale of calibration points below American National Standards Institute (ANSI) requirements that are followed in accordance with Navy policy. Also due to the age of the calibrators, there are several parts no longer supported by the manufacturer, and a malfunctioning calibrator poses a very high safety risk. COTS equipment will be surveyed to find the best solution with which to equip the Navy's seven RADIAC Calibration Laboratories with modern calibrators. ***FY 2012 Accomplishments:*** Studied state of the art COTS calibrators for suitability. ***FY 2013 Plans:*** Study state of the art COTS calibrators for suitability. ***FY 2014 Plans:*** Compare performance of Hopewell GC-60 irradiator with J.L. Shepherd irradiator. Evaluate results for possible replacement of current complement of aging Navy irradiators. A report will be generated that details results and recommendations.			
Title: Neutron Area Monitor	0.029	0.049	0.000
Articles:	0	0	
Description: Several facilities throughout the Navy, particularly accelerator facilities, produce significant neutron radiation fields. Having a monitor to provide instant readings on the neutron level provides data on high dose procedures and experiments. The current system requires environmental dosimeters to be used and sent out for processing, taking weeks to obtain results. Waiting on dosimeter results may cause excessive exposures to individuals because safe radiological boundaries may not be maintained where the radiation level is not known. ***FY 2012 Accomplishments:*** Surveyed affected facilities to determine specific neutron monitoring requirements. Developed specification and obtain concurrence from technical sponsors. ***FY 2013 Plans:*** Issue report with findings and recommendations, and determination of a need for First Articles.			
Title: Casualty Dosimeter	0.075	0.073	0.000
Articles:	0	40	

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Description: A Casualty Dosimeter is issued to every individual under certain operational conditions. The dosimeter is used for triage of casualties from a radiological event. The current IM-270's useful life will expire in 2016 so a replacement must be found. ***FY 2012 Accomplishments:*** Studied alternatives, to include leveraging Army and Marine systems for Navy use. Collaborated with BUMED to develop specification. ***FY 2013 Plans:*** Issue report on test results, finalize specification for follow-on procurement.			
Title: Air Particle Sampler ***Articles:*** ***Description:*** Portable Air Particle Samplers (APS) are used to sample for airborne radioactivity on board nuclear powered ships and in nuclear ship maintenance facilities in confined work areas where the installed Air Particle Detectors (IM-239/WDQ) are ineffective. The current HD-732 (AC powered) and HD-1151 (DC powered) are obsolete and will shortly be unsupportable. COTS equipment will be evaluated to replace the two current models, to include the feasibility of finding an AC/DC unit that would simplify logistical support by combining the two units into one. ***FY 2012 Accomplishments:*** Procured COTS models for evaluation to determine if they meet Navy requirements. ***FY 2013 Plans:*** Issue report on prototype evaluation; finalize specification for follow-on procurement.	0.067 3	0.048 0	0.000
Title: Telescoping Rate Meter ***Articles:*** ***Description:*** Telescoping rate meters play a vital role in the practice of radiation safety in the Naval Nuclear Propulsion Program. The detector is attached to the end of an extendable, telescoping pole, thus allowing the operator to maintain a safe distance for high exposure areas. This allows the Navy to comply with federal regulations that radioactive doses received by operators are As Low As Reasonably Achievable (ALARA). ***FY 2013 Plans:*** Develop specification by collaborating with technical sponsor and collecting end user input. ***FY 2014 Plans:***	0.000	0.046 0	0.054 0

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Begin follow-on procurement specification development using results from testing and feedback received during product demonstrations.			
Title: Neutron Detector ***Articles:*** ***Description:*** Several commands use non-destructive interrogation techniques when searching cargo containers. These techniques expose the container to a 14 MeV neutron generator and analyze the reflected data. These end users require a portable neutron detector capable of accurately measuring the neutrons produced by the interrogation in order to monitor the work area to ensure dose limits are not exceeded. This work may also prove to be a suitable technology that would also enable replacement of the aging AN/PDR-70 Neutron Survey Meter. ***FY 2013 Plans:*** Procure, test and evaluate vendor prototypes. ***FY 2014 Plans:*** Purchase three units designed to meet AN/PDR-70 neutron survey meter requirements and perform radiological testing at NSWCCD and other agencies as needed. Issue technical summary detailing the results.	0.000	0.098 3	0.122 3
Title: Primary Dosimetry ***Articles:*** ***Description:*** The need for primary dosimetry is inherent due to the Navy's operation of nuclear reactors and their emission of ionizing radiation. Title 10 of the Code of Federal Regulations, Part 20.1502, states "Each licensee shall monitor exposures to radiation and radioactive material at levels sufficient to demonstrate compliance with the occupational dose limits." A primary dosimeter must pass accreditation proficiency testing, allowing the reading obtained to become a part of an individual's permanent health record. This permanent record is used to protect the individual radiation worker's health, and the Navy from future liability. The Navy's current primary device is the DT-702, a Thermo Luminescence Dosimeter (TLD). Existing TLD and newer technologies (e.g., Optically Stimulated Luminescence, or OSL) must be continually researched to determine on-going performance parameters, cost to field and cost to maintain. ***FY 2014 Plans:*** Initiate testing on new primary dosimetric devices and stay current on the latest dosimetry standards.	0.000	0.000	0.075 0
Title: Secondary Dosimetry ***Articles:***	0.000	0.000	0.159 10

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Description: A secondary dosimeter provides an accurate, real-time readout of the radiation exposure being obtained in operational environments, and is utilized in conjunction with a primary dosimeter. The primary dosimeter does not provide real-time exposure information, so the secondary dosimeter is worn for that purpose. The Navy's secondary dosimeter is the Mk2 Electronic Personal Dosimeter (EPD). Evaluation of the current detector must be accomplished to establish a militarized environmental capability. Also, research is required to find a secondary dosimeter that can measure the type of radiation encountered with pulsed X-ray machines, and to see if this new capability can be incorporated into one device such as the existing Mk2. ***FY 2014 Plans:*** Initiate testing on secondary dosimetric devices capable of responding to pulsed X-ray radiation.			
Title: Tritium Monitor ***Articles:*** ***Description:*** The AN/PDR-73 Tritium Monitor is used at nuclear weapons storage facilities and research laboratories to sample the air for the presence of Tritium. The current instrument is 30 years old and cannot be repaired due to obsolete components. At the current loss rate due to normal wear and tear there will be insufficient assets to meet operational requirements, so a replacement must be found. ***FY 2014 Plans:*** Purchase six COTS examples from multiple vendors. Provide units to end users for field testing and evaluation.	0.000	0.000	0.100 6
Accomplishments/Planned Programs Subtotals	1.312	0.777	0.762

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• OPN 2920: *RADIAC*	6.201	8.083	9.842		9.842	10.285	9.553	8.296	8.443	Continuing	Continuing

Remarks

D. Acquisition Strategy

Development efforts are focused on evaluation, modification (as required to meet operational requirements) and adaptation of commercial-off-the-shelf (COTS) technology in order to minimize total ownership costs. To the maximum extent possible new contracts are targeted for fixed price efforts to control development cost.

E. Performance Metrics

Program Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy			DATE: April 2013
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	NSWCCD:West Bethesda, MD	12.241	0.599	Oct 2012	0.033	Nov 2012	0.000		-		0.000	0.000	12.873	
		Subtotal	12.241	0.599		0.033		0.000		0.000		0.000	0.000	12.873	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	U.S. Naval Academy:Annapolis, MD	0.045	0.015	Mar 2012	0.015	Mar 2013	0.015	Mar 2014	-		0.015	Continuing	Continuing	Continuing
		Subtotal	0.045	0.015		0.015		0.015		0.000		0.015			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	WR	NSWCCD:West Bethesda, MD	1.052	0.428	Nov 2011	0.479	Nov 2012	0.677	Apr 2014	-		0.677	Continuing	Continuing	Continuing
		Subtotal	1.052	0.428		0.479		0.677		0.000		0.677			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering Support	C/FFP	Orbis, Inc.:Charleston, SC	2.834	0.270	Feb 2012	0.250	Feb 2013	0.070	Feb 2014	-		0.070	Continuing	Continuing	Continuing
		Subtotal	2.834	0.270		0.250		0.070		0.000		0.070			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy			DATE: April 2013
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	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.172	1.312		0.777		0.762		0.000		0.762			

Remarks