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 0603609N: *Conventional Munitions*							
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	195.377	4.660	7.342	8.404	-	8.404	8.548	9.428	8.680	8.804	Continuing	Continuing
0363: *Insensitive Munitions Adv. Development*	195.377	4.660	7.342	8.404	-	8.404	8.548	9.428	8.680	8.804	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

Most Navy munitions react violently when exposed to unplanned stimuli such as fire, shock and bullet or fragment impact, thus presenting a great hazard to ships, aircraft and personnel. The Insensitive Munitions Advanced Development (IMAD) program will provide, validate, and transition technology to all new weapon developments and priority weapon systems and enable production of munitions insensitive to these stimuli with no reduction in combat performance. Insensitive Munitions (IM) is the Navy's focused effort on propellants, propulsion units, explosives, warheads, fuses and pyrotechnics to reduce the severity of cook-off and bullet/ fragment impact reactions, minimizing the probability for sympathetic detonation, both in normal storage and in use, increasing ship and platform survivability and satisfying performance and readiness requirements.

B. Program Change Summary ($ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	4.753	7.342	8.513	-	8.513
Current President's Budget	4.660	7.342	8.404	-	8.404
Total Adjustments	-0.093	0.000	-0.109	-	-0.109
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.093	0.000			
• Rate/Misc Adjustments	0.000	0.000	-0.109	-	-0.109

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 0603609N: *Conventional Munitions*	PROJECT 0363: *Insensitive Munitions Adv. 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
0363: *Insensitive Munitions Adv. Development*	195.377	4.660	7.342	8.404	-	8.404	8.548	9.428	8.680	8.804	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

Each technology area is divided into subtasks addressing specific munition/munition class IM deficiencies. Energetic materials producibility is demonstrated to assure national capability to produce and load munitions systems. The program leverages are being closely coordinated with other Military Departments, North Atlantic Treaty organization (NATO) and allied countries to eliminate redundant efforts and maximize efficiency. A joint service IM requirement has been developed and through the IM Strategic Planning process, all PEO's are implementing IM in their priority munitions. Insensitive munitions are identified as a DoD critical technology requirement and considered as part of a weapon design. The IMAD program matures the technology developed by a variety of Science and Technology (S&T) sources for program management integration into weapons systems to meet the IM technical deficiencies documented in the PEO IM Strategic Plans. IMAD provides the link between S&T programs and the PMs by optimizing IM technologies to meet Navy requirements. IMAD offers risk mitigation for the PMs in terms of IM technical knowledge, expertise and manpower with the State of the Art expertise across IM products. Each technology area is divided into subtasks addressing specific munition and munition class IM deficiencies.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: Insensitive Munitions Adv. Development	4.660	7.342	8.404
Articles:	0	0	0
Description: Validate and assess weapon systems POA&M's for IM compliance. Review Insensitive Munitions Strategic Plan (IMSP) for Navy Compile and analyze weapon system, energetic material and generic technology IM test data. Perform Threat Hazard Assessments (THAs). Perform analysis of Energetic Material properties logistic process. Review IM Certification and Waivers. Support Insensitive Munitions Council (IMC), Insensitive Munitions Coordination Group (IMCG), and IMC Working Group. Support and develop Insensitive Munitions Technology Tool (IMT2). Support North Atlantic Treaty Organization Standardization Agreement (NATO STANAG) and Advanced Operations (AOP) development. Support IMAD program briefs. Support all Navy Joint Services Insensitive Munitions Technical Panel (JSIMTP) meetings. Support Explosive Safety Working Group (ESWG) meetings. Provide task management support for financial management, review of programmatic deliverables and overall task coordination.			
FY 2012 Accomplishments:			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Evaluate and demonstrate IM propellants and propulsion systems which provide improved or comparable performance to in-service systems and better IM characteristics. Combine candidate IM propellants and case concepts to demonstrate compliance with IM and performance requirements. Demonstrate an insensitive multi-mission, high performance rocket motor. Evaluate options for minimum smoke propellants for shoulder launched applications. Evaluated and demonstrated IM boost propellant formulation for future Tomahawk systems which provide improved and comparable performance to in-service systems and better IM characteristics. Combined candidate IM propellants and case concepts to demonstrate compliance with IM and performance requirements. Design a composite booster case for Tomahawk which will improve IM performance for cookoff and impact scenarios. Demonstrate new formulations that will self extinguish while maintaining performance for Advanced Medium-Range Air to Air Missile (AMRAAM), Sidewinder and other air launched systems. Look at new ways to develop rocket propellant formulations that meet performance requirements and solve IM deficiencies. IM problems resolution using top down approach.Evaluate ordnance and container concepts. Model applications that reduce and enhance IM warhead design. Assess the operations utility of current and projected IM improvements to determine current state of IM and prioritize future funding for IM technology. Assess shielding evaluation of Tomahawk VLS storage canister. New cooperative effort with Advanced Gun System (AGS) Long Range Land Attack Projectile (LRLAP) to review modeling to solve impact and cookoff with AUR pallet. ***FY 2013 Plans:*** Evaluate and demonstrate IM propellants and propulsion systems which provide improved or comparable performance to in-service systems and better IM characteristics. Combine candidate IM propellants and case concepts to demonstrate compliance with IM and performance requirements. Demonstrate an insensitive multi-mission, high performance rocket motor. Evaluate options for minimum smoke propellants for shoulder launched applications. Evaluate and demonstrate IM boost propellant formulation for future Tomahawk systems providing improved and comparable performance to in-service systems and better IM characteristics. Assess combined candidate IM propellants and case concepts to demonstrate compliance with IM and performance requirements. Design a composite booster case for Tomahawk which will improve IM performance for cook-off and impact scenarios. Demonstrate new formulations that will self extinguish while maintaining performance for AMRAAM, Sidewinder and other air launched systems. Look at new ways to develop rocket propellant formulations that meet performance requirements and solve IM deficiencies. Resolve IM problems using top down approach. Evaluate ordnance and container concepts. Model applications that could reduce and enhance IM warhead container design. Assess the operations utility of current and projected IM improvements to determine current state of IM and prioritize future funding for IM technology. Assess shielding evaluation of Tomahawk VLS storage canister. Review modeling to solve impact and cook-off with AUR pallet in support of a cooperative effort with AGS LRLAP. The technical focus is on new weapons and product improvement programs (PIP). IMAD works collaboratively with the Joint IM Technology Program (JIMTP) to transition JIMTP's S&T products to address PEO IM requirements. The PEOs IM Strategic Plans (IMSPs) provide a comprehensive IM technology requirements list that helps to focus IM technology thrusts throughout DoD.			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Additionally, in FY 2013 the program will evaluate and demonstrate MK54 Vertical Launched Anti-Submarine Rocket (ASROC) (VLA) solid propellant rocket IM capabilities that meet performance. Demonstrate and qualify Tomahawk weapon systems to include improved booster explosives and insensitive metalized propellants that are IM compliant. Evaluation of all issues and concerns related to heated RDX discoloration. Perform demonstration and qualification testing of AMRAAM and Sidewinder for Joint Insensitive Munitions to improve response to combat and hazards. Evaluate and provide a modular ballistic shield for protection of Navy Munitions. Assess characterization of Micro-Electro-Mechanical System (MEMS) in support of IM Navy qualifications. Demonstrate and qualify Insensitive Primer for large caliber gun propellant charges.			
FY 2014 Plans: Evaluate and demonstrate IM propellants and propulsion systems which provide improved or comparable performance to in-service systems and better IM characteristics. Combine candidate IM propellants and case concepts to demonstrate compliance with IM and performance requirements. Demonstrate an insensitive multi-mission, high performance rocket motor. Evaluate options for minimum smoke propellants for shoulder launched applications. Evaluate and demonstrate IM boost propellant formulation for future Tomahawk systems providing improved and comparable performance to in-service systems and better IM characteristics. Assess combined candidate IM propellants and case concepts to demonstrate compliance with IM and performance requirements. Design a composite booster case for Tomahawk which will improve IM performance for cook-off and impact scenarios. Look at new ways to develop rocket propellant formulations that meet performance requirements and solve IM deficiencies. Resolve IM problems using top down approach. Evaluate ordnance and container concepts. Assess the operations utility of current and projected IM improvements to determine current state of IM and prioritize future funding for IM technology. Assess shielding evaluation of Tomahawk VLS storage canister. Review modeling to solve impact and cook-off with AUR pallet in support of a cooperative effort with AGS) LRLAP. The technical focus is on new weapons and PIP. Evaluate and demonstrate MK54 ASROC VLA) solid propellant rocket IM capabilities that meet performance. Demonstrate and qualify improved booster explosives and insensitive metalized propellants that are IM compliant for Tomahawk weapon systems. Evaluation of all issues and concerns related to heated RDX discoloration. Perform demonstration and qualification testing of AMRAAM and Sidewinder for Joint Insensitive Munitions to improve response to combat and hazards. Evaluate and provide a modular ballistic shield for protection of Navy Munitions. Assess characterization of MEMS in support of IM Navy qualifications. Demonstrate and qualify Insensitive Primer for large caliber gun propellant charges. IMAD works collaboratively with the JIMTP to transition JIMTP's S&T products to address PEO IM requirements. The PEOs IMSPs provide a comprehensive IM technology requirements list that helps to focus IM technology thrusts throughout DoD. Additional resources are necessary in FY 2014 to support the additional efforts such as: the demonstration and qualification of IM improved booster explosive for GP Bombs; the demonstration and qualification of Insensitive Metalized propellants in			

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
IM compliant rocket motors for High Performance Systems such as Standard Missile and Tomahawk; and to perform process development of cook-off resistant Thermoplastic Plastomer (TPE) Explosives a potential replacement for all explosives.			
Accomplishments/Planned Programs Subtotals	4.660	7.342	8.404

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

IMAD is assigned as a Non-ACAT program and therefore does not have program milestones like the ACAT I to IV programs. IMAD develops and evaluates IM technologies for use in Navy weapon systems and is not part of a particular weapon acquisition program.

E. Performance Metrics

Quarterly 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
PROPULSION DEV. AND EVAL.	WR	NAWC DIV/CHINA LAKE:WX	90.125	1.016	Nov 2011	1.655	Nov 2012	2.191	Nov 2013	-		2.191	Continuing	Continuing	Continuing
EXPLOSIVES DEV. AND EVAL.	WR	NSWC/INDIAN HEAD DIV.:WX	75.006	1.200	Nov 2011	2.364	Nov 2012	2.295	Nov 2013	-		2.295	Continuing	Continuing	Continuing
ORDNANCE DEV. AND EVAL.	WR	NSWC/ DAHLGREN:WX	21.282	0.814	Nov 2011	0.654	Nov 2012	1.397	Nov 2013	-		1.397	Continuing	Continuing	Continuing
GUN PROPULSION AND EVAL.	WR	NSWC/INDIAN HEAD DIV.:WX	2.952	0.674	Nov 2011	1.718	Nov 2012	1.573	Nov 2013	-		1.573	Continuing	Continuing	Continuing
		Subtotal	189.365	3.704		6.391		7.456		0.000		7.456			

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
PROGRAM MANAGEMENT SUPT	WR	NOSSA:IN HEAD MD	5.227	0.275	Nov 2011	0.151	Nov 2012	0.156	Nov 2013	-		0.156	Continuing	Continuing	Continuing
PROGRAM MANAGEMENT SUPPORT	MIPR	DTIC:FT BELVOIR VA	0.785	0.681	Nov 2011	0.800	Nov 2012	0.792	Nov 2013	-		0.792	Continuing	Continuing	Continuing
		Subtotal	6.012	0.956		0.951		0.948		0.000		0.948			

	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	195.377	4.660		7.342		8.404		0.000		8.404			

Remarks