CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION						DATE May 2009	
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 4**			R-1 ITEM NOMENCLATURE **0603609N/CONVENTIONAL MUNITIONS**				
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Total PE Cost	7.018	8.087	3.458				
0363 / Insensitive Munitions Adv. Development	2.893	2.482	3.458				
1821 / Conventional Fuzed Warfare Package	2.573	4.715	0.000				
2299 / Non-Nuclear Expendable Ordnance	1.552	0.890	0.000				

A. MISSION DESCRIPTION:

Insensitive Munitions Advanced Development (IMAD) (Project 0363): 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. This 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. IMAD 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.

Conventional Fuzed Warhead Package (Project 1821): The Navy requires improved lethality of air and surface launched ordnance to defeat advanced threats. This is the only Navy 6.3B RDT&E program that addresses improvements in warhead and fuze technology to meet this requirement. This program is a significant vehicle for orderly planning, and timely and effective transition of Navy 6.2 and 6.3A investments to Engineering and Manufacturing Development (E&MD) phase missile/weapon systems. This program addresses increased lethality against current and emerging threats, and is responsive to all mission areas -- anti-air, strike, defense suppression, theater defense and ship defense -- and supports development of complete ordnance sections. The current on-going projects address significant technology advancements for missile systems by developing mature physical concepts to enhance anti-air kill probability, advanced ordnance with augmented overland cruise missile defense and theater ballistic missile defense capabilities, and advanced seeker technology and development and incorporation of Software Guidance Integrated Fuzing - S/W GIF. The program supports the full spectrum of missile advanced development and technology improvements and in future years will continue to provide the vehicle to address emergent requirements by transitioning mature development efforts into weapon systems with minimal technical and financial risk.

Non-Nuclear Expendable Ordnance (NNEO) (Project 2299): This item addresses improvements to Navy surface launched (2T) NNEO.

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 4**	R-1 ITEM NOMENCLATURE **0603609N/CONVENTIONAL MUNITIONS**	

B. PROGRAM CHANGE SUMMARY:

Funding:	FY 2008	FY 2009	FY 2010
FY09 President's Budget	8.760	8.124	8.372
FY10 President's Budget	7.018	8.124	3.502
Total Adjustments	-1.742	0.000	-4.870
(U) Summary of Adjustments			
Program Adjustments	-1.742		-4.870
Total	-1.742	0.000	-4.870

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603609N/CONVENTIONAL MUNITIONS**				PROJECT NUMBER AND NAME **0363/Insensitive Munitions Adv. Development**		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	2.893	2.482	3.458				
RDT&E Articles Qty	0	0	0				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Most Navy munitions react violently when exposed to unplanned stimuli such as fire, shock and bullet impact, thus presenting a great hazard to ships, aircraft and personnel. This 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. The Insensitive Munitions (IM) Program 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 survivability and satisfying performance and readiness requirements. 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.

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603609N/CONVENTIONAL MUNITIONS**	PROJECT NUMBER AND NAME **0363/Insensitive Munitions Adv. Development**	

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.694	0.600	0.618
RDT&E Articles Quantity	0	0	0

Validate and assess weapon systems POA&M's for IM compliance. Compile and analyze weapon system, energetic material and generic technology IM test data.

	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.800	0.530	0.866
RDT&E Articles Quantity	0	0	0

Demonstrate high explosives that show improved IM characteristics while maintaining or improving operational performance. Evaluate pressed and cast metal accelerating explosives. Complete qualification of high performance booster explosive for multiple weapons systems. Begin qualification of best candidate metal accelerating explosive.
Accomplishments: Demonstrated high explosives that show improved IM characteristics while maintaining or improving operational performance. Evaluation of pressed metal accelerating explosives.

	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.501	0.497	0.273
RDT&E Articles Quantity	0	0	0

Evaluate and Demonstrate IM gun propulsion systems which provide improved or comparable performance to in-service systems and have improved IM characteristics.

	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.607	0.605	1.041
RDT&E Articles Quantity	0	0	0

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.

Accomplishments: Evaluated and demonstrated IM propellants and propulsion systems which provide improved or 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.

	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	0.291	0.250	0.660
RDT&E Articles Quantity	0	0	0

Evaluate ordnance and container concepts. Model applications that reduce and enhance IM warhead design.
Assess the operation utility of current and projected IM improvements to determine current state of IM and prioritize future funding for IM technology.
Accomplishments: Assessed operational utility of IM improvements and demonstrated feasibility of IM optimization of weapons storage.

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION (CONTINUATION)		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603609N/CONVENTIONAL MUNITIONS**	PROJECT NUMBER AND NAME **0363/Insensitive Munitions Adv. Development**

C. OTHER PROGRAM FUNDING SUMMARY:
NOT APPLICABLE

D. ACQUISITION STRATEGY:
NOT APPLICABLE-

The Insensitive Munitions Advanced Development Program (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. MAJOR PERFORMERS:
NAWC WPN DIV/China Lake - Propulsion Development and Evaluation
NOSSA/Indian Head - Program Management
NSWC Dahlgren - Ordnance and container concept development
NSWC, Indian Head - High Explosive Development and Evaluation
-Gun Propulsion Development and Evaluation

CLASSIFICATION:		UNCLASSIFIED										
EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS									DATE May 2009			
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 4**		PROGRAM ELEMENT NUMBER AND NAME **0603609N/CONVENTIONAL MUNITIONS**				PROJECT NUMBER AND NAME **0363/Insensitive Munitions Adv. Development**						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost ($000)			FY 2009 Cost ($000)	FY 2009 Award Date	FY 2010 Cost ($000)	FY 2010 Award Date			Target Value of Contract
PROPULSION DEV. AND EVAL.	WX	NAWC DIV/CHINA LAKE	88.442			0.625	NOV-08	1.150	NOV-09			0.000
EXPLOSIVES DEV. AND EVAL.	WX	NSWC/INDIAN HEAD DIV.	72.422			0.530	NOV-08	0.866	NOV-09			0.000
ORDNANCE DEV. AND EVAL.	WX	NSWC/DAHLGREN	20.477			0.230	NOV-08	0.551	NOV-09			0.000
GUN PROPULSION AND EVAL.	WX	NSWC/INDIAN HEAD DIV.	1.154			0.497	NOV-08	0.273	NOV-09			0.000
Subtotal Product Development			**182.495**			**1.882**		**2.840**				**0.000**
Remarks:												
Subtotal Support Costs			**0.000**			**0.000**		**0.000**				**0.000**
Remarks:												
Subtotal Test and Evaluation			**0.000**			**0.000**		**0.000**				**0.000**
Remarks:												
Program Management Support	WX	NOSSA	4.476			0.600	NOV-08	0.618	NOV-09			0.000
Subtotal Management Services			**4.476**			**0.600**		**0.618**				**0.000**
Remarks:												
Total Cost			**186.971**			**2.482**		**3.458**				**0.000**

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603609N/CONVENTIONAL MUNITIONS**				PROJECT NUMBER AND NAME **1821/Conventional Fuzed Warfare Package**		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	2.573	4.715	0.000				
RDT&E Articles Qty	0	0	0				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This program provides for orderly planning, timely maturation, and effective transition of Navy 6.2 and 6.3A investments in ordnance technology to missile/weapon systems end item System Development and Demonstration (SD&D) phase development. It is the only Navy 6.3B RDT&E program that addresses improvements in warhead and fuze technology. It focuses on increasing effectiveness against current and emerging threats and is responsive to all mission areas -- anti-air, strike, defense suppression, theater defense, and ship defense. On-going projects make advanced fuze and warhead technology available to and reduce the time and risk for specific system development programs by performing three important functions: (1) identify technology advances with the most potential to improve generic warhead and fuze safety, reliability, and effectiveness, e.g. development and incorporation of Software Guidance Integrated Fuzing - S/W GIF: (2) mature the most promising technologies with a goal of achieving Technology Readiness Level 6, or preferably TRL 7, and (3) transition mature technology to specific cruise missile, surface-to-air missile, and land attack weapons system development programs. The program supports the full spectrum of missile advanced development and technology improvements and in future years will continue to provide the vehicle to address emergent requirements by transitioning mature development efforts into weapon systems with minimal technical and financial risk.

CLASSIFICATION:	UNCLASSIFIED		
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION			DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603609N/CONVENTIONAL MUNITIONS**	PROJECT NUMBER AND NAME **1821/Conventional Fuzed Warfare Package**	

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010
Accomplishments/Effort/Subtotal Cost	2.573	4.715	0.000
RDT&E Articles Quantity	0	0	0

Advanced Fuze Technology Development:

FY08/FY09 - Implement advanced fuze technologies to System Development and Demonstration. Designed, developed and tested S/W GIF; significant effort toward completing Mk 45 Mod14/SM-6 TDD V&V.

C. OTHER PROGRAM FUNDING SUMMARY:

Not applicable.

D. ACQUISITION STRATEGY:

Raytheon Missile Systems is designing and implementing Fuze enhancements for current missiles like the SM-2 and for future platforms like the SM-6. This evolution in fuzing technology is required to pace current threats to the US Navy.

E. MAJOR PERFORMERS:

Raytheon Company, Tucson, AZ; SM-2 Block IIIB MK 45 MOD 14 TDD development

NSWC Dahlgren, Dahlgren, VA; Advanced Warhead Technology Analysis;

NAWC China Lake

CLASSIFICATION:	UNCLASSIFIED						
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE May 2009		
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603609N/CONVENTIONAL MUNITIONS**				PROJECT NUMBER AND NAME **2299/Non-Nuclear Expendable Ordnance**		
COST (In Millions)	FY 2008	FY 2009	FY 2010				
Project Cost	1.552	0.890	0.000				
RDT&E Articles Qty	0	0	0				

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This budget item addresses improvements to Navy surface launched (2T) Non-Nuclear Expendable Ordnance (NNEO) outside existing operational capabilities. The commodities comprising 2T NNEO are : Major and medium caliber gun ammunition, small arms ammunition, other ship gun ammunition, pyrotechnics, and demolition items. There are no other RDT&E budget items supporting the 2T NNEO program. This project currently supports the close-out of the Guidance Integrated Fuze (GIF) SAASMS receiver Development to TRL 6.

CLASSIFICATION:	UNCLASSIFIED	
EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION		DATE May 2009
APPROPRIATION/BUDGET ACTIVITY **RDTEN/BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603609N/CONVENTIONAL MUNITIONS**	PROJECT NUMBER AND NAME **2299/Non-Nuclear Expendable Ordnance**

B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2008	FY 2009	FY 2010
Continued Development of GPS SAASM Receiver to Technology Readiness	1.552	0.890	0.000
RDT&E Articles Quantity	0	0	0

The Guidance Integrated Fuze (GIF) program is the major constituent of the NNEO budget line. Other NNEO programs include theNext Generation Surface Projectile.

1. FY2008 PLANS:

GIF: Continue development GIF design to Technology Readiness Level (TRL) level 6. Component, subsystem and system qualification testing. This includes planned airgun/spin test qualification of a replacement oscillator (Obsolete part) which is critical to the receiver performance. Oversight and evaluation of SAASM GPS receiver.

2. FY2009 PLAN:

GIF: Continue development of miniature Global Position System (GPS) Selective Availability Anti-Spoofing Module (SAASM) Receiver to TRL level 6. Support transition of SASSM receiver to JITRRS Tactical Radio for further development and fielding. This includes qualification of component using airgun equipment.

C. OTHER PROGRAM FUNDING SUMMARY:

D. ACQUISITION STRATEGY:

-Continue development of Guidance Integrated Fuze to Technology Readiness Level 6. Continue Development of GPS SAASM Receiver to Technology Readiness Level of 6.

E. MAJOR PERFORMERS:

Guidance integrated Fuzing - Contractor - Mayflower Communications, Boston, Massachusetts

Gov't - Naval Surface Warfare Center, Dahlgren Division, Dahlgren, Virginia