RDT&E Budget Item Justification Sheet (R-2 Exhibit)							Date**:** February 2005	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense Wide/BA 1			R-1 ITEM NOMENCLATURE Insensitive Munitions PE 0602000D8Z					
Cost ($ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Insensitive Munitions	0.000	0.000	5.176	10.285	10.684	10.386	15.535	15.535

A. Mission Description and Budget Item Justification: This program addresses applied research associated with providing the capability for munitions to withstand unplanned stimuli such as heat, shock and impact. The goal is to develop the enabling Insensitive Munition (IM) technologies that will provide the backbone for the Services to leverage as they pull these technologies into their specific weapon programs. This investment strategy was derived from a joint technology roadmap developed by the DoD Insensitive Munitions IPT that examined the IM shortfalls in today's weapons, and focused an investment portfolio on the top 7 DoD weapon technology priorities. Ultimate payoffs to the war fighter include significantly increased platform and crew survivability, increased safety and reduced quantity-distance requirements for munitions storage. Incorporation of IM technology, and the subsequent reduction in hazard classification, can significantly reduce weapon lifecycle costs and reduce the real estate required for munitions storage and handling operations.

B. Program Change Summary:	FY 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget:	0.000	0.000	0.000	0.000
Current FY 2006 President's Budget Submission:	0.000	0.000	5.176	10.285
Adjustments to Appropriated Value:	0.000	0.000	+5.176	+10.285
Congressional Program Reductions:				
Congressional Rescissions:				
Congressional Increases:				
Reprogrammings:				
SBIR/STTR Transfers:				
Other:				
Program Increases:			+5.176	+10.285

C. Other Program Funding Summary: N/A

D. Acquisition Strategy. N/A

E. Performance Metrics: This PE will be incorporated into WE.96, a Defense Technology Objective (DTO) administered by DDRE and subjected to annual review. The DTO also includes additional IM investments from the Army, Navy and Air Force and will enable efforts to be leveraged across all services, while avoiding duplication of efforts.

Exhibit R-2a, RDT&E Project Justification							Date: February 2005	
RDT&E,DW/BA 2				Project Name and Number Insensitive Munitions PE 0602000D8Z				
Cost ($ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Insensitive Munitions	0.000	0.000	5.176	10.285	10.684	10.386	15,535	15.535

(U) A. Mission Description and Budget Item Justification: The RDT&E effort is a new start (FY 2006) aimed at developing the enabling technologies needed to build weapons in compliance with Insensitive Munitions (IM) requirements established in statute (Title 10, United States Code) and regulation (DoDI 5000.1 and CJCSI 3170.01C). The underlying assumption is that future variants of current weapon systems will have the same, or worse, response to IM stimuli (i.e., they will not improve with the technology available today). New weapon developments will face similar challenges.

B. Accomplishments/Planned Program

Efforts include research and development into the following enabling technologies:

Novel energetic materials and binders including:

Synthesis and scale-up

Crystallization methodologies and constitutive properties of polymeric binders,

Characterization of energetic material defects,

Design of insensitive, high performance rocket motors

Composite and hybrid case materials

Venting concepts and liner materials

High performance and minimum signature propellants

Development of mitigation concepts using eutectics and other novel materials, and

Development of liner materials that provide shock impedance mismatch, gaseous products to over pressurize and vent, and enhanced energy for use in energy balancing concepts.

FY 2006 Plans

FY 2006 Plans: Evaluate, select, and prove novel insensitive high-energy materials, for both warhead propulsion applications, which exploit managed energy release, and are required for improving the lethality and reducing the vulnerability of future gun/missile systems and warheads. Characterize candidate novel insensitive high-energy materials, binders, and liners and additional concepts for mitigating the IM response of candidate systems while maintaining performance. Explore the introduction of additives to propellant formulations to assist in absorbing the energy released during and unplanned exothermic event.

FY2007 Plans

In FY 2007, in addition to those efforts already underway, extend and validate modeling and simulation tools used for design of managed energy systems, and experimentally assess promising materials. Evaluate new and novel methodologies for venting rocket motor and warhead cases, preventing catastrophic energy release.