Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy											DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 3: *Advanced Technology Development (ATD)*					R-1 ITEM NOMENCLATURE PE 0603651M: *JT Non-Lethal Wpns Tech Dev*							
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	0.000	12.035	11.706	11.854	-	11.854	12.108	12.329	12.541	12.766	Continuing	Continuing
3022: *Joint Non Lethal Weapons*	0.000	12.035	11.706	11.854	-	11.854	12.108	12.329	12.541	12.766	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

The DOD's Joint Non-Lethal Weapons Program (JNLWP) was established by the Secretary of Defense, who assigned centralized responsibility for DOD joint research and development of non-lethal technology to the Commandant of the Marine Corps as the Executive Agent. The Under Secretary of Defense for Acquisition, Technology and Logistics provides direct oversight of the JNLWP.

The efforts described in this Program Element (PE) reflect science and technology (S&T) investment decisions provided by the Joint NLW Integrated Product Team, a multi-service flag level corporate board that executes the JNLWP for the Commandant of the Marine Corps. This direction is based on the needs and capabilities of the Services, the Special Operations Command, and the Coast Guard, as identified in the DoD's Non-Lethal Weapons Joint Capabilities Based Assessment Document. This coordinated joint S&T development approach addresses mutual capability gaps and assures the best non-lethal technologies and equipment are provided to the operating forces while eliminating duplicative service S&T investment.

This program funds Advanced Technology Development of next-generation Non-Lethal Weapons (NLWs) and includes performing analysis, technical development efforts, and modeling and simulation necessary to ensure optimum weaponization and use of these NLWs. Investment areas include research and development of next-generation NLWs such as: non-lethal directed energy weapons (lasers, millimeter wave and high power microwave) for counter-personnel and counter-materiel missions; non-lethal counter-personnel technologies (acoustic, optical, and human electro-muscular disruption technologies), and advanced non-lethal materials (including materiels for vehicle/vessel stopping and counter-facility applications). Next-generation NLW systems focus on long-range localized Non-Lethal (NL) effects to identified threat individuals (or groups of individuals) and/or their threat weapons systems operating in complicated environments such as urban areas, crowds, buildings, vehicles, vessels, and also in close proximity to high-value civilian facilities. By order of the Under Secretary of Defense for Acquisition, Technology, and Logistics, the Commandant of the Marine Corps was established as the Executive Agent for DoD Joint Non-Lethal Weapons RDT&E.

The change in funding from FY2012 to FY2013 is due to a Below Threshold Realignment from PE0602651M for counter-personnel requirements received from the joint community that, based on the research planned to be conducted, more appropriately fit into budget activity 3 according to the FMR definition.

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

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B. Program Change Summary ($ in Millions)	**FY 2012**	**FY 2013**	**FY 2014 Base**	**FY 2014 OCO**	**FY 2014 Total**
Previous President's Budget	11.286	11.706	11.854	-	11.854
Current President's Budget	12.035	11.706	11.854	-	11.854
Total Adjustments	0.749	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.100	0.000			
• SBIR/STTR Transfer	-0.351	0.000			

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 3: *Advanced Technology Development (ATD)*	R-1 ITEM NOMENCLATURE PE 0603651M: *JT Non-Lethal Wpns Tech Dev*	PROJECT 3022: *Joint Non Lethal Weapons*	

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
3022: *Joint Non Lethal Weapons*	0.000	12.035	11.706	11.854	-	11.854	12.108	12.329	12.541	12.766	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

This project funds the research and development of next-generation NLWs and includes performing analysis, technical development efforts, and modeling and simulation necessary to ensure optimum weaponization and use of these NLWs. Investment areas include research and development of next-generation NLWs such as: non-lethal directed energy weapons (lasers, millimeter wave and high power microwave) for counter-personnel and counter-materiel missions; non-lethal counter-personnel technologies (acoustic, optical, and human electro-muscular disruption technologies), and advanced non-lethal materiels (including materiels for vehicle/vessel stopping and counter-facility applications). Next-generation NLW systems focus on long-range localized NL effects to identified threat individuals (or groups of individuals) and/or their threat weapons systems operating in complicated environments such as urban areas, crowds, buildings, vehicles, vessels, and also in close proximity to high-value civilian facilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
Title: JOINT NON-LETHAL WEAPONS	12.035	11.706	11.854
FY 2012 Accomplishments: - Continued effort to assess the general utility, effect, and effectiveness of technologies for incapacitating personnel, clearing facilities, stopping vehicles and vessels, and denying enemy access to protected areas. - Continued research to define the optimum approaches, technologies and tactics necessary to clear a facility/building with and without entry. - Continued modeling/research to develop an understanding of the complex relationships between individual, group and crowd dynamics in order to predict the macro effects of NLWs. Specifically, investigate factors that cause crowds to move to violent behavior, and what non-lethal technologies will be effective in controlling or mitigating violent crowd behavior. - Continued effort to examine and optimize non-lethal effects and effectiveness of various non-lethal stimuli, to include light, acoustics, electrical, high power laser, high power microwave and active denial technology. Research includes human effects analysis with respect to existing non-lethal stimuli and other emerging system stimuli to characterize behaviors and their operational relevance. - Continued non-lethal effects characterization through modeling and effects testing using the Advanced Total Body Model. - Continued prototype development of advanced payloads for candidate technological capabilities with applications relevant to emerging capability gaps. - Continued prototype development and demonstration of the most promising candidate technologies addressing the extended range/duration incapacitation capability gap.			

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
- Continued transition to higher levels of development and demonstration for the most promising candidate technologies employing multisensory stimuli. - Continued to address non-lethal counter-personnel capability gaps with alternative directed energy technologies. - Continued transition to higher levels of technology development and demonstrate the most promising directed energy technologies under consideration for counter-personnel and counter-material applications. - Continued technology development employing optimized electro-muscular disruption waveforms and mechanisms for an extended duration counter-personnel suppression capability. - Initiated transition to higher levels of technology development the optimum approaches and technologies necessary to clear a facility/building with and without entry. - Initiated transition to higher levels of technology development the most promising candidate technologies addressing the extended range/duration incapacitation capability gap. - Initiated transition to higher levels of technology development for advanced payloads with applications relevant to emerging capability gaps. - Initiated advanced prototype development and demonstration of a smaller, lighter active denial technology demonstrator based on most promising and mature 95 GHZ source technology. ***FY 2013 Plans:*** - Continue all efforts from FY 2012, less those noted as completed. - Completed integration of the Advanced Total Body Model into a suite of non-lethal effects modeling capability now referred to as the Human Effects Modeling and Analysis Program (HE-MAP) during FY11. Non-lethal effects characterization through modeling and effects testing continues using HE-MAP. - Initiate evaluation of alternative non-lethal prototype technologies offering operational utility and transition best candidates to higher levels of technology development and acquisition. ***FY 2014 Plans:*** - Continue all efforts from FY2013, except those noted as completed. - Initiate prototype concepts for an integrated combined effects demonstration platform to provide scalable escalation of force capability using an integrated, systems of systems approach. - Initiate advanced system component research and development for integration into NLE systems (vehicle stopping, vessel stopping, and counter personnel systems).			
Accomplishments/Planned Programs Subtotals	12.035	11.706	11.854

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
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C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

The primary objective of this Program Element is the development of technologies that lead to the next-generation of Non-Lethal Weapons which address identified and prioritized joint NLW capability gaps. The program consists of a collection of projects for the development and evaluation of feasibility demonstration models. Individual project metrics reflect the technical goals of each specific project. Typical metrics include both the effectiveness of the technology, human effects and effectiveness, mitigation of high priority joint NLW capability gaps, and potential for compliance with policy and legislation. Overarching considerations include the advancement of related Technology Readiness Levels and Human Effects Readiness Levels, the degree to which project investments are leveraged with other performers, reduction in life cycle cost upon application of the technology, and the identification of opportunities to transition technology to higher categories of development.