Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy											DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 2: *Applied Research*					R-1 ITEM NOMENCLATURE PE 0602651M: *JT Non-Lethal Wpns Applied Res*							
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	4.652	5.973	6.060	-	6.060	6.194	6.303	6.427	6.542	Continuing	Continuing
0000: *JT Non-Lethal Wpns Applied Res*	0.000	4.652	5.973	6.060	-	6.060	6.194	6.303	6.427	6.542	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 Non-Lethal Weapons (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 the applied research, study, assessment, and demonstration of technologies that could provide a non-lethal capability or target effect. Investment areas include applied research related to: non-lethal directed energy weapons (lasers, millimeter wave and high power microwave) for counter-personnel and counter-materiel missions; non-lethal acoustic and optical technologies; advanced non-lethal materiels (including materiels for vehicle/vessel stopping and counter-facility applications); associated human effects and effectiveness for new non-lethal stimuli; injury potential and effectiveness of directed energy, electric stun, ocular, and acoustic based non-lethal technologies; and developing models of crowd behavior and dynamics. This program transitioned from PE 0602114N, Power Projection Applied Research by order of the Under Secretary of Defense for Acquisition, Technology, and Logistics, USD(AT&L), to a separate PE for Joint Non-Lethal Weapons Applied Research and established the Commandant of the Marine Corps as the Executive Agent for DoD Joint Non-Lethal Weapons RDT&E.

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	5.937	5.973	6.060	-	6.060
Current President's Budget	4.652	5.973	6.060	-	6.060
Total Adjustments	-1.285	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	-0.185	0.000			

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy			DATE: April 2013
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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
0000: *JT Non-Lethal Wpns Applied Res*	0.000	4.652	5.973	6.060	-	6.060	6.194	6.303	6.427	6.542	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 applied research, study, assessment, and demonstration of technologies that could provide a non-lethal capability or target effect. Investment areas include applied research related to: non-lethal directed energy weapons (lasers, millimeter wave and high power microwave) for counter-personnel and counter-materiel missions; non-lethal acoustic and optical technologies; advanced non-lethal materiels (including materiels for vehicle/vessel stopping and counter-facility applications); associated human effects and effectiveness for new non-lethal stimuli; injury potential and effectiveness of directed energy, electric stun, ocular, and acoustic based non-lethal technologies; and developing models of crowd behavior and dynamics.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
Title: (U) JOINT NON-LETHAL WEAPONS	4.652	5.973	6.060
FY 2012 Accomplishments: -Continued investigation of the characteristics, optimization, and control of Laser Induced Plasma (LIP) phenomena for their nonlethal applications to both counter-personnel and counter-materiel missions. - Continued refinement of directed energy weapon models through research into non-lethal phenomena and assessment of human effects and weapon effectiveness. - Continued academic research into technology areas with relevance to non-lethal weapon capabilities. - Continued investigations of alternative technologies with potential to address emerging capability gaps. - Continued characterization efforts of alternative directed energy technologies by building upon the Advanced Total Body Model (ATBM), as part of the Human Effects Modeling Analysis Program (HEMAP), to incorporate suitable sensors capable of measuring directed energy effects (millimeter - wave, high powered microwave, etc). - Continued human effects investigation of alternative physical phenomena to non-lethally suppress humans beyond small arms range. - Continued investigations of advanced materials and emergent technologies suitable for extended range non-lethal weapon payload applications. - Continued transition of foundational effects associated with advanced electro-muscular disruption technologies to higher levels of technology development and demonstration. - Completed target effects characterization and assessment of resulting crowd behavior and effectiveness associated with promising alternative physical phenomena identified during FY 2010 investigations.			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013	FY 2014
- Completed applied research in the development of counter-personnel and counter-materiel, directed energy, non-lethal weapons, including counter-vehicle and advanced active denial activities. - Completed investigation of candidate technologies applicable to delivering laser induced plasma effects. - Initiated applied research for potential emergent technologies with applicability to the clear-a-space counter-personnel mission. - Initiated transition of foundational effects associated with underwater acoustics bioeffects applied research to higher levels of technology development. ***FY 2013 Plans:*** - Continue all efforts from FY 2012, less those noted as completed. - Complete transition of foundational effects associated with underwater acoustics bioeffects applied research to higher levels of technology development. - Complete investigation of the characteristics, optimization and control of Laser Induced Plasma (LIP) phenomena as they pertain to the counter-material/counter-aircraft mission application (completed during FY11). Investigation of LIP phenomena as they pertain to counter-personnel mission applicability continues. - Initiate investigation of collateral, non-lethal effects to personnel associated with anticipated employment of maturing counter-material nonlethal weapons technologies. ***FY 2014 Plans:*** - Continue all efforts from FY2013, except those noted as completed. - Initiate technologic revisit of using laser induced plasmas to deliver novel NL effects. - Initiate feasibility assessment and evaluation of candidate technologies with potential to mitigate technology challenges impeding NLE capability gap resolution.			
Accomplishments/Planned Programs Subtotals	4.652	5.973	6.060

C. Other Program Funding Summary ($ in Millions)

N/A

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. The program consists of a collection of projects that range from studies and analyses to the development and evaluation of feasibility demonstration models. Individual project metrics reflect the

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technical goals of each specific project. Typical metrics include both the effectiveness of the technology, human effects and effectiveness, 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.