

# UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification					DATE: February 2003																																																																																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-4 Adv Comp Dev & Prototypes		PROGRAM ELEMENT NUMBER AND NAME 0603851M Non-Lethal Warfare DEM/VAL				PROJECT NUMBER AND NAME C2319 Non-Lethal Weapons Program																																																																															
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program																																																																											
Project Cost	32.524	25.866	43.445	43.492	44.108	44.587	45.173	45.707	Cont	Cont																																																																											
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<p><b>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>            This project covers non-lethal weapon (NLW) systems which are those systems that by their design, do not inflict fatal or permanent injuries. Instead, these systems are designed to stun, incapacitate, or hinder movement of individuals, crowds, or equipment. The availability of NLWs allows commanders less than lethal options, particularly in urban warfare and military operations other than war, i.e., peacekeeping, humanitarian assistance and disaster relief, as well as special operations.</p> <p><b>(U) B. ACCOMPLISHMENTS/PLANNED PROGRAM:</b></p> <table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td>1.630</td> <td>1.400</td> <td>1.430</td> <td>1.550</td> </tr> <tr> <td>RDT&amp;E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Execution oversight, administration and support of the Joint NLW Program and technologies database.</p> <table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td>0.800</td> <td>0.430</td> <td>0.645</td> <td>0.645</td> </tr> <tr> <td>RDT&amp;E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Evaluation of NLWs by Service warfighting laboratories and Joint Forces Command (JFCOM) for direct user feedback of various NL technologies and munitions.</p> <table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td>1.950</td> <td>1.080</td> <td>1.612</td> <td>1.612</td> </tr> <tr> <td>RDT&amp;E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Modeling and simulation (M&amp;S) of NLWs in the Joint Conflict and Tactical Simulation (JCATS) model and performance effects data collection/population to demonstrate/analyze NL effects and optimize training.</p> <table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td>0.415</td> <td>0.540</td> <td>0.540</td> <td>0.540</td> </tr> <tr> <td>RDT&amp;E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Pursuit of new technology through open competition of industry, academia and government laboratory sources for NL capabilities.</p> <table border="1"> <thead> <tr> <th>COST (\$ in Millions)</th> <th>FY 2002</th> <th>FY 2003</th> <th>FY 2004</th> <th>FY 2005</th> </tr> </thead> <tbody> <tr> <td>Accomplishment/Effort Subtotal Cost</td> <td>0.450</td> <td>0.430</td> <td>1.075</td> <td>1.505</td> </tr> <tr> <td>RDT&amp;E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Objective Individual Combat Weapons (OICW) – Continue development of NL munitions for the “next generation” combat weapon that will exploit the ability to air burst munitions with NL payloads at longer ranges with existing systems.</p>											COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	1.630	1.400	1.430	1.550	RDT&E Articles Qty					COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.800	0.430	0.645	0.645	RDT&E Articles Qty					COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	1.950	1.080	1.612	1.612	RDT&E Articles Qty					COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.415	0.540	0.540	0.540	RDT&E Articles Qty					COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	Accomplishment/Effort Subtotal Cost	0.450	0.430	1.075	1.505	RDT&E Articles Qty				
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APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME	
RDT&E, N /BA-4 Adv Comp Dev & Prototypes	0603851M Non-Lethal Warfare DEM/VAL		C2319 Non-Lethal Weapons Program	
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.140	1.100	1.129	1.149
RDT&E Articles Qty				
Program support for each service's coordination and oversight of the Joint NLW Program.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.700	0.860	1.075	1.075
RDT&E Articles Qty				
NL Mortar – Continue development of NL mortar casing devises for delivery of NL payloads at extended ranges..				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.320	0.900	0.000	0.000
RDT&E Articles Qty				
Mk19 NL Munition - Development of a NL munition for the 40mm Mk19 Grenade machine gun.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.288	1.288	0.000	0.000
RDT&E Articles Qty				
Non-lethal technology innovation initiative to allow pursuit of new NL materials and technologies through a network of academic institutions.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	10.440	5.859	4.518	4.857
RDT&E Articles Qty				
Active Denial System (ADS) Advanced Concept Technology Demonstration (ACTD) - Jointly sponsored effort that continues the development of a demo asset for evaluation , testing and target assessment of a High Mobility Multipurpose Wheeled Vehicle (HMMWV) mounted directed energy system.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	1.500	1.612	1.612	0.538
RDT&E Articles Qty				
Advanced Tactical Laser (ATL) Advanced Concept Technology Demonstration (ACTD) - Jointly sponsored effort to demonstrate technology concepts to satisfy the critical mission needs for an ultra-precision strike capability.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.725	1.290	0.810	0.000
RDT&E Articles Qty				
Clear A Space Device - Currently in Concept Exploration, pending Phase A Decision Review to advance downselects into Component Advanced Development (CAD).				

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COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.150	0.000	0.000	0.000
RDT&E Articles Qty				
Running Gear Entanglement System (RGES) - Complete joint evaluation of candidate capabilities to downselect and advance into a service acquisition cycle.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.950	1.571	1.106	0.140
RDT&E Articles Qty				
Mobility Denial System (MDS) - Joint evaluation, analysis and testing of slippery substances and delivery methods/volumnes.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
\\	3.137	1.752	5.862	6.238
RDT&E Articles Qty				
Studies and Analysis – Medical and NL casualty data research and collection; human effects assessments; acceptability analysis; and technical studies/analysis of emerging technologies for possible NL application.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	3.775	3.174	5.884	6.090
RDT&E Articles Qty				
Concept Exploration Program – Explore and evaluate technical NL solutions for crowd control, area denial to personnel, vehicles and boats to satisfy critical joint mission tasks.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.400	0.430	0.430	0.430
RDT&E Articles Qty				
Joint Integration Program (JIP) – Select and test commercial products that will meet the Joint Services’ requirement for specific NL capability set common items.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.736	0.000	0.000	0.000
RDT&E Articles Qty				
Conduct and evaluate concepts of employment for current and emerging NL technologies for operational utility within the naval force protection mission.				
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005
Accomplishment/Effort Subtotal Cost	0.368	0.000	1.500	1.300
RDT&E Articles Qty				
Develop/expand the NATO Measures of Effectiveness (MOE) efforts, chaired by the U.S. to provide input for Defense Capabilities Initiative (DCI) and NATO assessment of NLW in the Defense planning process. Expanded interaction with COCOM staffs to identify emerging NLW capabilities and their utility in theater operations and Homeland Security missions.				

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COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005					
Accomplishment/Effort Subtotal Cost		1.650	2.150	2.958	3.225					
RDT&E Articles Qty										
Pulsed Energy Projectile (PEP) – Explore the development of laser hardware and extensive human effects characterization research and to continue refinement of bio-effects characterization and optimization of lasers as a NL capability.										
COST (\$ in Millions)		FY 2002	FY 2003	FY 2004	FY 2005					
Accomplishment/Effort Subtotal Cost		0.000	0.000	11.259	12.598					
RDT&E Articles Qty										
System development and design of concept exploration downselected items to proceed into the acquisition cycle to provide NL technology solutions to critical joint mission tasks.										
(U) Total \$	0.000	32.524	25.866	43.445	43.492					
(U) PROJECT CHANGE SUMMARY:										
	<u>FY2002</u>	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>						
(U) FY 2003 President's Budget:	35.095	24.082	26.032	26.450						
(U) Adjustments from the President's Budget:										
(U) Congressional/OSD Program Reducti	-0.095	-0.616	-0.782	-1.164						
(U) Congressional Rescissions										
(U) Congressional Increases		2.400								
(U) PBD 751C			18.000	18.000						
(U) Reprogrammings	-2.432									
(U) SBIR/STTR Transfer	-0.044									
(U) Minor Affordability Adjustment			0.195	0.206						
(U) FY 2004 President's Budget:	32.524	25.866	43.445	43.492						
CHANGE SUMMARY EXPLANATION:										
(U) Funding: See Above.										
(U) Schedule: Not Applicable.										
(U) Technical: Not Applicable.										
(U) C. OTHER PROGRAM FUNDING SUMMARY:										
Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Compl	Total Cost
(U) PAN,MC BLI 162800, Non-Lethal Munitions	4.176	5.313	3.671	4.166	4.252	3.797	3.858	3.935	Continuing	Continuing
(U) PMC BLI 237100, Operations Other Than	1.594	1.498	1.349	1.513	1.538	1.565	1.617	1.647	Continuing	Continuing

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<p>(U) <b>Related RDT&amp;E:</b> Not Applicable.</p> <p>(U) <b>D. ACQUISITION STRATEGY:</b> The JNLW Program strategy is to continue to pursue the fielding of NLW systems through modifying Commercial-Off-The-Shelf (COTS) products for near term capabilities and the development of new technology NLW systems in various stages of acquisition. These are balanced with efforts in modeling and simulation, experimentation, and state-of-the-art technology investment. The acquisition strategy for each weapon system is largely lead service dependent.</p> <p>(U) <b>E. MAJOR PERFORMERS:</b> FY02-FY05 - ARDEC, Picatinny Arsenal, NJ. Development and evaluation of the Objective Individual Combat Weapons (OICW) program, the Non-Lethal (NL) Mortar program, and the Mk19 NL Munition program. FY02-FY05 - Raytheon Company, Rancho Cucamonga, CA. Working with the Air Force Research Laboratory at Kirtland Air Force Base, NM on the Active Denial System (ADS) Advanced Concept Technology Demonstration (ACTD) to continue the evaluation, testing and target assessment of a HMMWV mounted directed energy system.</p> <p>(U) <b>SCHEDULE PROFILE:</b> Not Applicable.</p>		

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Exhibit R-3 Cost Analysis								DATE: February 2003							
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME									
RDT&E, N /BA-4 Adv Comp Dev & Prototypes			0603851M Non-Lethal Warfare DEM/VAL			C2319 Non-Lethal Weapons Program									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Product Development	MIPR	USAIC, Ft. Benning, GA	2.999	0.400	12/01	0.000		0.000		0.000		Cont.	Cont.		
Product Development	MIPR	SMDC, Huntsville, AL	1.400	0.000		0.000		0.000		0.000		Cont.	Cont.		
Product Development	MIPR	ARDEC, Picatinny, NJ	45.041	4.341	10/01	3.805	10/02	7.531	10/03	7.810	10/04	Cont.	Cont.		
Product Development	MIPR	SOCOM, McDill AFB, FL	0.000	1.500	06/02	1.500	03/03	1.500	12/03	0.500	12/04	Cont.	Cont.		
Product Development	WR	NSWC, Various	10.161	1.714	Various	0.540	Various	1.152	Various	1.528	Various	Cont.	Cont.		
Product Development	MIPR	Kirtland AFB, NM	16.966	10.440	02/02	5.886	02/03	3.873	12/03	3.942	12/04	Cont.	Cont.		
Product Development	MIPR	JWCF, Ft. Monroe, VA	0.769	0.400	01/02	0.552	02/03	0.645	02/04	0.645	02/05	Cont.	Cont.		
Product Development	MIPR	Brooks AFB, TX	2.313	2.910	02/02	0.800	02/03	5.055	02/04	5.325	02/05	Cont.	Cont.		
Product Development	WR/RCP	MCSC, Quantico,VA	11.349	3.695	11/01	4.096	11/02	5.658	11/03	4.207	11/04	Cont.	Cont.		
Product Development	MIPR	NSMA,Arlington, VA	2.009	1.650	04/02	2.160	01/03	2.958	01/04	3.225	01/05	Cont.	Cont.		
Product Development	RCP	MCLB, Albany,GA	0.550	0.504	01/02	0.300	01/03	0.300	01/04	0.300	01/05	Cont.	Cont.		
Product Development	MIPR	Various (M&S)	0.793	0.550	Various	1.080	Various	1.613	Various	1.613	Various	Cont.	Cont.		
Product Development	MIPR	Various (TIP)	3.670	0.415	Various	0.540	Various	0.540	Various	0.540	Various	Cont.	Cont.		
Product Development	MIPR	Various (Services)	6.517	1.975	Various	2.828	Various	9.425	Various	10.573	Various	Cont.	Cont.		
Subtotal Product Dev			104.537	30.494		24.087		40.250		40.208		Cont.	Cont.		
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Support Cost	WR	MCSC, Quantico, VA	2.709	0.400	11/01	0.430	11/02	0.430	11/03	0.430	11/04	Cont.	Cont.		
Support Cost	WR	NSWC, Dahlgren, VA	1.483	0.370	10/01	0.420	10/02	0.420	10/03	0.420	10/04	Cont.	Cont.		
Support Cost	RCP	CTQMSC, Quantico, VA	4.985	0.584	12/01	0.440	12/02	0.470	12/03	0.570	12/04	Cont.	Cont.		
Support Cost	Various	Various	3.618	0.676	Various	0.489	Various	1.875	Various	1.864	Various	Cont.	Cont.		
Subtotal Support			12.795	2.030		1.779		3.195		3.284		Cont.	Cont.		
Remarks:															

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Subtotal T&E			0.000	0.000		0.000		0.000		0.000		Cont.	Cont.		
Remarks:															
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Contractor Eng Suppt													0.000		
Govt Engineering Suppt													0.000		
Program Mngmnt Suppt													0.000		
Travel													0.000		
Labor (Research Personnel)													0.000		
Overhead													0.000		
Subtotal Management			0.000	0.000		0.000		0.000		0.000		0.000	0.000		
Remarks:															
Total Cost				32.524		25.866		43.445		43.492		Cont.	Cont.		