

UNCLASSIFIED

PE NUMBER: 0603924F

PE TITLE: High Energy Laser Advanced Technology Program

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2008
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BUDGET ACTIVITY 03 Advanced Technology Development (ATD)	PE NUMBER AND TITLE 0603924F High Energy Laser Advanced Technology Program
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Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	3.596	3.790	4.013	3.890	4.026	4.364	4.329	Continuing	TBD
5095 High Energy Laser Advanced Technology Program	3.596	3.790	4.013	3.890	4.026	4.364	4.329	Continuing	TBD

(U) A. Mission Description and Budget Item Justification

This program funds high energy laser (HEL) advanced technology development through the HEL Joint Technology Office (JTO). HEL weapons have many potential advantages, including speed-of-light delivery, precision target engagement, significant magazine depth, low-cost per kill, and reduced logistics requirements. HEL weapons have the potential to perform a wide variety of military missions including interception of ballistic missiles in boost phase, defeat of high-speed, maneuvering anti-ship and anti-aircraft missiles, and the ultra-precision negation of targets in urban environments with little/no collateral damage. This program is part of an overall Department of Defense (DoD) HEL Science and Technology program. This program is in Budget Activity 3, Advanced Technology Development, since it enables and demonstrates technologies for existing system upgrades and/or new system developments that have military utility and address warfighter needs.

(U) B. Program Change Summary (\$ in Millions)

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>
(U) Previous President's Budget	3.699	3.815	4.152
(U) Current PBR/President's Budget	3.596	3.790	4.013
(U) Total Adjustments	-0.103	-0.025	
(U) Congressional Program Reductions			
Congressional Rescissions		-0.025	
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-0.103		
(U) <u>Significant Program Changes:</u>			
Not Applicable.			

C. Performance Metrics
Under Development.

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BUDGET ACTIVITY 03 Advanced Technology Development (ATD)				PE NUMBER AND TITLE 0603924F High Energy Laser Advanced Technology Program			PROJECT NUMBER AND TITLE 5095 High Energy Laser Advanced Technology Program		
Cost (\$ in Millions)	FY 2007 Actual	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	Cost to Complete	Total
5095 High Energy Laser Advanced Technology Program	3.596	3.790	4.013	3.890	4.026	4.364	4.329	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

- (U) **A. Mission Description and Budget Item Justification**
 This program funds high energy laser (HEL) advanced technology development through the HEL Joint Technology Office (JTO). HEL weapons have many potential advantages, including speed-of-light delivery, precision target engagement, significant magazine depth, low-cost per kill, and reduced logistics requirements. HEL weapons have the potential to perform a wide variety of military missions including interception of ballistic missiles in boost phase, defeat of high-speed, maneuvering anti-ship and anti-aircraft missiles, and the ultra-precision negation of targets in urban environments with little/no collateral damage. This program is part of an overall Department of Defense (DoD) HEL Science and Technology program. This program is in Budget Activity 3, Advanced Technology Development, since it enables and demonstrates technologies for existing system upgrades and/or new system developments that have military utility and address warfighter needs.
- (U) **B. Accomplishments/Planned Program (\$ in Millions)**
- | | | | |
|--|----------------|----------------|----------------|
| | <u>FY 2007</u> | <u>FY 2008</u> | <u>FY 2009</u> |
| (U) MAJOR THRUST: Advance solid state laser development, to include advanced technology demonstrations up to a Technology Readiness Level 6. Develop free electron laser technologies that scale to high power. Develop beam-control technologies for surface and air mission areas. | 3.596 | 3.790 | 4.013 |
| (U) In FY 2007: Participated in the 100 kilowatt Joint High Power Solid State Laser (JHPSSL) effort. Determined the requirements for other high-value experiments to follow the 100 kilowatt JHPSSL effort. Investigated advanced beam control architectures and algorithms. Developed technologies leading to a 100 kilowatt class free electron laser (FEL) demonstration. | | | |
| (U) In FY 2008: Continue the development of the 100 kilowatt JHPSSL devices. Provide for independent government-sponsored measurements of the 100 kilowatt lasers. Initiate systems level studies for integration onto airborne platforms. Evaluate advanced tactical laser technologies. | | | |
| (U) In FY 2009: Demonstrate the two 100 kilowatt solid state JHPSSL devices in laboratory environment. Participate in a joint effort to develop a high-power beam director suitable for mating with a JHPSSL device. Evaluate advanced tactical laser technologies. | | | |
| (U) Total Cost | 3.596 | 3.790 | 4.013 |

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(U) **C. Other Program Funding Summary (\$ in Millions)**

	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) PE 0602890F, High Energy Laser Research.									
(U) PE 0603444F, Maui Space Surveillance System.									
(U) PE 0603605F, Advanced Weapons Technology.									
(U) PE 0601108F, High Energy Laser Research Initiatives.									
(U) PE 0603883C, Ballistic Missile Defense Boost Phase Segment.									
(U) PE 0602605F, Directed Energy Technology.									
(U) PE 0602307A, Advanced Weapons Technology.									
(U) PE 0602114N, Power Projection Applied Research.									
(U) PE 0602120A, Sensors and Electronic Survivability.									
(U) PE 0603004A, Weapons and Munitions Advanced Technology.									
(U) PE 0602702E, Tactical Technology.									
(U) PE 0603175C, Ballistic Missile Defense Technology.									
(U) PE 0602651M, Joint Non-Lethal Weapons Applied Research.									
(U) PE 0603651M, Joint Non-Lethal Weapons Technology.									

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BUDGET ACTIVITY

03 Advanced Technology Development (ATD)

PE NUMBER AND TITLE

**0603924F High Energy Laser
Advanced Technology Program**

PROJECT NUMBER AND TITLE

**5095 High Energy Laser Advanced
Technology Program****(U) C. Other Program Funding Summary (\$ in Millions)**

Development.

- (U) This project has been coordinated through the Reliance 21 process to harmonize efforts and eliminate duplication.

(U) D. Acquisition Strategy

Not Applicable.