Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force											Date: February 2015	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 1: *Basic Research*					R-1 Program Element (Number/Name) PE 0601108F / *High Energy Laser Research Initiatives*							
COST ($ in Millions)	**Prior Years**	**FY 2014**	**FY 2015**	**FY 2016 Base**	**FY 2016 OCO**	**FY 2016 Total**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	**Cost To Complete**	**Total Cost**
Total Program Element	-	12.837	13.950	13.778	-	13.778	14.168	14.417	14.615	14.906	Continuing	Continuing
615097: *High Energy Laser Research Initiatves*	-	12.837	13.950	13.778	-	13.778	14.168	14.417	14.615	14.906	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program funds basic research aimed at developing fundamental scientific knowledge to support future Department of Defense (DoD) high energy laser (HEL) systems. This programs funds multi-disciplinary research institutes to conduct research on laser and beam control technologies. In addition, this program supports educational grants to stimulate interest in HELs. These educational grants are used for educational tools, scholarships, and summer intern employees in military laboratories. Efforts in this program have been coordinated through the DoD Science and Technology (S&T) Executive Committee process to harmonize efforts and eliminate duplication.

This program is in Budget Activity 1, Basic Research because this budget activity includes scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs.

B. Program Change Summary ($ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	13.286	12.929	13.870	-	13.870
Current President's Budget	12.837	13.950	13.778	-	13.778
Total Adjustments	-0.449	1.021	-0.092	-	-0.092
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	1.021			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.449	-			
• Other Adjustments	-	-	-0.092	-	-0.092

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2014	FY 2015
Project: 615097: *High Energy Laser Research Initiatves*		
Congressional Add: *Program Increase*	-	1.021
Congressional Add Subtotals for Project: 615097	-	1.021

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Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2014	FY 2015
Congressional Add Totals for all Projects	-	1.021

C. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Title: HEL Devices ***Description:*** Improve the fundamental understanding of HEL sources, to include solid state, fiber, and gas laser technologies. ***FY 2014 Accomplishments:*** Continued development of innovative laser technologies including diode-pumped alkali, short-pulse, free electron, fiber, and solid state laser technologies. Continued overseas efforts to leverage international technology advancements. ***FY 2015 Plans:*** Continue innovative laser technologies in diode-pumped alkali, short-pulse, free electron, fiber and solid state laser technologies. Continue overseas efforts to leverage international technology advancements. Conduct a proposal call to universities for advanced laser research initiatives. ***FY 2016 Plans:*** Continue innovative laser technologies in diode-pumped alkali, short-pulse, fiber, and solid state laser technologies. Continue overseas efforts to leverage international technology advancements.	7.424	7.682	8.608
Title: HEL Beam Control ***Description:*** Improve the fundamental understanding of beam control technologies, as they relate to HEL applications. Conduct research in atmospheric characterization, metrology, control systems, algorithms, and beam control component technology. ***FY 2014 Accomplishments:*** Continued research on innovative beam control architectures. Continued overseas efforts to leverage international technology advancements. ***FY 2015 Plans:*** Continue research on innovative beam control architectures. Continue overseas efforts to leverage international technology advancements. Conduct a proposal call to Universities for advanced beam control initiatives. ***FY 2016 Plans:*** Continue research on innovative beam control architectures. Continue overseas efforts to leverage international technology advancements.	4.663	4.427	4.200
Title: HEL Education	0.750	0.820	0.970

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2014	FY 2015	FY 2016
Description: Fund educational grants intended to stimulate interest in HELs among students. ***FY 2014 Accomplishments:*** Provided scholarships and internships to support college students studying HEL degrees. Provided grants to Service Academies to stimulate HEL studies among military cadets. Funded publication of journals and support continuing education for professionals in the HEL field. ***FY 2015 Plans:*** Provide scholarships and internships to support college students studying HEL degrees. Provide grants to Service Academies to stimulate HEL studies among military cadets. Fund publication of journals and support continuing education for professionals in the HEL field. ***FY 2016 Plans:*** Provide scholarships and internships to support college students studying HEL degrees. Provide grants to Service Academies to stimulate HEL studies among military cadets. Fund publication of journals and support continuing education for professionals in the HEL field.			
Accomplishments/Planned Programs Subtotals	12.837	12.929	13.778

	FY 2014	FY 2015
Congressional Add: Program Increase	-	1.021
FY 2015 Plans: Conduct Congressionally-directed effort.		
Congressional Adds Subtotals	-	1.021

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.