ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605605A - DOD High Energy Laser Test Facility**	**E97**

COST (In Thousands)		FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate
E97	DOD HELSTF	16672	18299	15725	15525	16558	17294	18168

A. Mission Description and Budget Item Justification: The High Energy Laser Systems Test Facility (HELSTF) provides a one-of-a-kind, broad based high energy laser (HEL) test and evaluation capability which directly supports testing of laser variants of the Future Combat System (FCS). Specifically, HEL weapons will be part of the Extended Area Air Defense (EAAD) system, a key component of the Future Force supporting Full Dimensional Protection. Candidate HEL programs include Mobile Tactical High Energy Laser (MTHEL) and Solid State Heat Capacity Laser (SSHCL). HELSTF is part of the DoD Major Range and Test Facility Base (MRTFB) and supports Tri-Service HEL research and development and damage, vulnerability, propagation, and lethality laser testing; and HEL weapon developmental and operational test and evaluation (DTE&OTE). The HELSTF's laser development support capabilities include a certified HEL test range, a fully integrated laser support facility, an extensive array of fully instrumented test sites, full laser meteorological support, and an approved site for above-the-horizon dynamic HEL testing certified for predictive avoidance by the Laser Clearing House. HELSTF's location on White Sands Missile Range (WSMR) provides unparalleled testing flexibility because of WSMR's 3200 square miles of controlled land mass and 7000 square miles of controlled airspace. Additionally, WSMR has a wide variety of radar and optics facilities and HEL testing expertise that can support testing at HELSTF. HELSTF facilities include the Sea Lite Beam Director (SLBD), the Mid-Infrared Advanced Chemical Laser (MIRACL), the Large Vacuum Chamber (LVC) with associated Vacuum Test System (VTS), the Laser Device Demonstration (LDD), the 10KW SSHCL testbed, the MTHEL static test site, and the Low Power Chemical Laser (LPCL). HELSTF supports the Pulsed Laser Vulnerability Test System and the MTHEL demonstrator system. This multiple use facility supports testing of laser effects for targets ranging from material coupon testing up through full-scale static and dynamic targets, explosive targets, and testing of targets in a simulated space environment. HELSTF has embarked on its own modernization to fully upgrade its mission control systems, develop state-of-the-art HEL diagnostic capabilities, data reduction, and a mobile HEL diagnostic test suite to support DTE and OTE for potential HEL weapons in the Army Future Force in all relevant combat environments. HELSTF also will also develop digitized scene generation capability, distributed training and testing capability, a live/virtual constructive test environment and open-architecture data links as part of the Army 21st Century Range. Another major upgrade will include a Battle-Management, Command, Control, Communication, Computer and Intelligence (BMC4I) Testbed. This capability is critical for DTE and OTE since modern HEL weapons will be software driven to accommodate mass indirect fire raids. HELSTF plans further include a tactical-power level free electron level testbed, which will operate a variety of HEL weapon lasing frequencies. This modernization will create a more efficient and versatile HEL T&E facility, which will also benefit the development and testing of other Service material solutions using HEL technologies. This system supports the all transition paths of the Transformation Campaign Plan (TCP).

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2004

BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
6 - Management support	**0605605A - DOD High Energy Laser Test Facility**	**E97**

Accomplishments/Planned Program	FY 2003	FY 2004	FY 2005
Perform operation, maintenance and base operations support functions in support of the Army, Department of Defense and other agencies conducting high energy laser systems concept development studies and test and evaluation on candidate high energy laser weapons systems (MTHEL, SOCOM Advanced Tactical Laser (ATL), Air Force Airborne Laser, and Navy HEL Low Aspect Target Tracking (HEL-LATT), other laser programs). Continue lethality testing experiments using 10KW flash lamp pumped SSHCL in accordance with the lethality and propagation test program and support SMDC Technical Center lethality and propagation testing. Continue safety and control system upgrades to integrate other HEL technologies, and development of a mobile HEL diagnostic capability, the BMC4I testbed and the FEL testbed. Repair and upgrade SLBD and MIRACL to support Navy HEL-LATT testing. Eliminate the existing backlog of maintenance and repair. Conduct a variety of tracking tests with SLBD to support Space and Missile Defense Command (SMDC), U.S. Air Force (USAF) and Missile Defense Agency (MDA) missions.	16672	17789	15725
Small Business Innovative Research/Small Business Technology Transfer Programs.	0	510	0
Totals	16672	18299	15725

B. Program Change Summary	FY 2003	FY 2004	FY 2005
Previous President's Budget (FY 2004)	16679	17806	17999
Current Budget (FY 2005 PB)	16672	18299	15725
Total Adjustments	-7	493	-2274
Congressional program reductions		-161	
Congressional rescissions			
Congressional increases		1100	
Reprogrammings	-7	-446	
SBIR/STTR Transfer			
Adjustments to Budget Years			-2274

Change Summary Explanation: Funding - FY 2005: Funds realigned ($2274) to support higher priority requirements.