

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

Date: February 2007

APPROPRIATION/ BUDGET ACTIVITY
RDT&E/ Defense Wide BA# 6PE NUMBER AND TITLE
0605799D8Z - Force Transformation

Cost (\$ in Millions)	FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total Program Element (PE) Cost	58.790	48.947	20.585	20.738	21.564	21.894	22.236	22.579
P579 Office of Force Transformation	58.790	48.947	20.585	20.738	21.564	21.894	22.236	22.579

A. Mission Description and Budget Item Justification: (U) This funding request supports the activities of Force Transformation under the Department of Defense Research & Engineering (DDR&E), Rapid Reaction Technology Office, in the Operational Experimentation Division. The request is intended to support transformational RDT&E activities. Within these activities, the office is expecting to sponsor groundbreaking research and prototyping, as well as operational experimentation in selected areas that are considered vital to the advancement of transformation within the OSD (DOD). Funding will be used to catalyze transformational activities such as experimentation and exploration of the ramifications of new concepts and technologies and their combination. Activities include; research, testing, studies, analysis and development of transformation articles ("prototype-like" system surrogates) that will enable advanced experimentation for the co-evolution of concepts and technologies.

B. Program Change Summary	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2007)				
Current BES/President's Budget (FY 2008/2009)	58.790	48.947	20.585	20.738
Total Adjustments	58.790	48.947	20.585	20.738
Congressional Program Reductions				
Congressional Rescissions				
Congressional Increases				
Reprogrammings				
SBIR/STTR Transfer				
Other	58.790	48.947	20.585	20.738

C. Other Program Funding Summary: Not Applicable.

D. Acquisition Strategy: Not Applicable.

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E. Performance Metrics: Not Applicable.

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Cost (\$ in Millions)	FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
P579 Office of Force Transformation	58.790	48.947	20.585	20.738	21.564	21.894	22.236	22.579

A. Mission Description and Project Justification: The Office of Force Transformation will catalyze transformational activities such as experimentation and exploration of the ramifications of new concepts and technologies and their combination. Activities include; research, testing, studies, analysis and development of transformation articles ("prototype-like" system surrogates) that will enable advanced experimentation for the co-evolution of concepts and technologies. Examples of such activities include: 1) the continued development and fielding of a prototype full-spectrum effects platform under the "Wolf Pack Platoon" initiative for use in urban operations that will have an integrated set of both lethal and non-lethal tactical capabilities, as well as a distributed network of advanced and highly mobile platforms, that provide options to the ground warrior beyond those currently available in Iraq, or any other urban engagement, giving the warrior the most effective means to engage across the mission spectrum. This concept/technology pairing attempts to create a new engagement model by shrinking the enemy's engagement zone in both time and space while expanding ours to create maximum advantage; 2) the development of a transformational Tactical Relay Mirror System capability to re-direct laser energy at the tactical level for tactical applications/effects in which laser energy is re-directed from a ground-based laser through the use of a mirror-relay system carried by an airborne platform such as UAVs or airships. This system will extend the future use of lasers by ground commanders with a semi-persistent, ISR-strike platform that would perform all functions across the find-fix-track-target-engage (at the speed of light) - assess kill chain; 3) the development of a micro-satellite system that is responsive to the needs of the operational and tactical commander, which includes the critical design of a standardized bus for tactical satellite operations and the development of operationally responsive payload and a universal user interface in both the SIPR (DOD use) and NIPR (Interagency/NGO use) called VMOC (Virtual Mission Operations Center). VMOC will allow SIPR users to task an array of distant sensors and all users the ability to use real-time overhead products. 4) the conduct of technical performance trials and operational experimentation of the Stiletto advanced composite high-speed craft that addresses the military and interagency(USCG and Homeland Security) needs to develop engineering and operational solutions for effective littoral operations with distributed adaptive networked forces; and finally, 5) the exploration of an array of transformational capabilities addressing urgent personal countermeasures requirements, to include the development of optical augmentation systems capable of detecting various optical sensors, including human eyeballs, after which an integrated system could track these sensors followed by non-lethal through lethal engagement, thus providing the warfighter, particularly in the urban environment, with an ability to have the highest level of situational awareness.

B. Accomplishments/Planned Program:

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Wolf Pack Platoon	9.799	12.000	8.000	0.000

FY 2006 Accomplishments: During FY 06 the Full Spectrum Effects Platform Project was awarded \$32M for further development and acquisition by the OSD Joint Rapid Acquisition Cell and transitioned to the U. S. Army Stryker Program Manager with support of the Naval Surface Weapons Center, Dahlgren Division. The follow-on Wolf Pack Platoon Project was initiated to include: completing technology search and assessment, developing initial capability concepts, conducting warfighter reviews, developing vehicle subsystems, procuring an experimental vehicle and active protective system, and creating experimental and testing plans.

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FY 2007 Plans: The Wolf Pack Platoon project will develop, integrate, and test C4 architecture and vehicle subsystems to include UAVs, UGVs, multi-spectral sensors, lethal / non-lethal weapons, counter-IED, electronic warfare, shot detection and advanced maintenance. Quarterly C2 experiments are conducted with USSOCOM and the Navy Postgraduate School. Concepts of employment (to include cooperative engagement, dispersed operations and increased situational awareness below the current digital divide) will be developed and war gamed with the Marine Corps Warfighting Laboratory. Warfighter Workshops are conducted with the Marine Corps Combat Development Command and USPACOM operating forces. Safety plans are developed, technical manuals prepared and operating forces trained on all systems. Final engineering integration and testing begins.

FY 2008 Plans: Testing on integrated systems is completed to rapid fielding standards of safe, suitable and sustainable. Vehicle platforms (air and ground), subsystems and concepts of employment are delivered to Marine Forces Pacific for three, month-long, field experiments with operating forces at 29 Palms and Yuma, California. Quarterly experiments with USSOCOM and the Naval Postgraduate school continue. Engineering and employment modifications are completed based on warfighter and experimental feedback. A Steering Group composed of combat developers and a supporting S&T community meets monthly to consider spin-out technology and requirements for the Joint Light Tactical Vehicle and interim vehicles such as the Mine Resistant Ambush Protected Vehicle. Concept development, technology assessment and planning for Wolf Pack Platoon Spiral 2 are completed. Wolf Pack Platoon Spiral 2 begins based on (1) opportunities developed by spiral 1, (2) new technologies and (3) warfighter need.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Operationally Responsive Space	38.823	28.575	0.000	0.000

FY 2006 Accomplishments: During FY 06, Operationally Responsive Space had the following accomplishments: TacSat-1 (\$3.8M to NRL) - maintained in storage pending launch, launch funds to SpaceX. TacSat-2 (\$0 to AFRL) - Completed integration, testing of NRL payload. TacSat-3 (\$0 to AFRL) - Utilized \$10M FY05 funding and proceeded from mission selection into design and assembly. Prototyping satellite standards. TacSat-4 (\$20M to NRL) - Proceeded from mission selection into design process. Prototyping satellite standards. VMOC & Operational Experimentation (\$1.2M to NRL) - Continued development as data portal. Used to simulate TacSat-1/2 in PACOM exercises and used to support NORTHCOM-Homeland Defense Border patrol exercise. Standard Bus Development (NRL/APL): Funded from part of \$20M for TacSat-4. Government - Industry consortium for the development of standard interfaces for satellites - TacSat-3 bus and TacSat-4 bus prototyping the standards being to developed. Added Business Development Meeting to discuss the business case/implications of industry adoption of standards. Congressional Report to Congress on TacSat - drafted and given to Legislative Affairs, but not submitted to Congress. Payload Technology Development (FY06 \$17M to NRL): Broad Area Announcement to Industry - 3 categories: below \$500K, \$500K-\$1M and \$2-5M Industry Proposals are jointly evaluated by AFRL, NRL, and ARL.

FY 2007 Plans: During FY 07, Operationally Responsive Space has specific plans to include: TacSat-1 (\$1M to NRL) - Prepping satellite for launch scheduled May 07. TacSat-2 (\$0 to AFRL) - Launched Jan 07. TacSat-3 (\$5M to AFRL - Congressional Plus Up) - Continuing design and assembly. Funding prototyping satellite bus standards. Launch scheduled for Oct 07. TacSat-4 (\$15M to NRL - Congressional Plus Up) - Continuing design process into assembly. Funding of prototyping satellite bus standards. Launch scheduled for Oct 08. VMOC & Operational Experimentation (\$1.5M to NRL) - Continued development as data portal and applications with TacSats, Stiletto and Wolf Pack Platoon. Payload Technology Development (FY06 \$17M to NRL): 7 projects selected for below \$500K category, 4 projects selected for \$500K-\$1M category. Initiating evaluation of projects in and \$2-5M category. Projects jointly evaluated by AFRL, NRL, ARL. Satellite Technology/Standard Bus Development (\$5M to NRL Congressional Plus Up): Continuing development of standard interfaces for satellites and developing the business case for industry adoption of standards. Will fund projects (jointly evaluated by AFRL, ARL, NRL) focused on bus technology as well as converting UAV/Aircraft sensors for space use. Specifics of required funds, operational experimentation opportunities and participation, etc. will be finalized as this project progresses through FY 07.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009

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Tactical Relay Mirror Systems	5.100	4.000	5.000	0.000
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FY 2006 Accomplishments: During FY 06, the Tactical Relay Mirror System (TRMS) achieved and passed its critical design review under the TRMS Acceleration Contract. This first-ever accomplishment was followed by the start of procurement of long lead-time parts as the TRMS pallet entered into production status. TRMS was a key technology-concept pairing that participated and excelled in JFCOM's Urban Resolve 2015 exercise. The TRMS Operating Concept was published by the Institute of Defense Analysis. Research on the Laser Materials Interactions Effects study was designed and conducted, while final report development was started.

FY 2007 Plans: During FY 07, the TRMS project will continue to procure parts and to assemble the TRMS pallet; the final report for the Laser Materials Interactions Effects study will be completed; coordination and design work will continue to bring the completed pallet to the Starfire Optical Range at Kirtland AFB, Albuquerque, NM, USA at which it will be suspended from a crane to simulate aerostat operations, and mated with an AFRL source laser (a 25 KW laser is in the process of being acquired) for the conduct of operational field testing. Key labor activities and milestones include payload software development, subcontractor and material hardware procurement oversight, and payload assembly, integration and test. Effort will also include participation in yet-to-be-confirmed wargames.

FY 2008 Plans: During FY 08, the TRMS project, funding permitting, should have a completed pallet that will transition to the Starfire Optical Range for actual field testing. Depending upon the status of partnership developments to include additional funding or support for the provision of a source laser, a battle management function and an airborne vehicle (aerostat), the TRMS project will proceed to an operational testing environment. Significant effort will be devoted to warfighter participation and the development of advanced operating concepts. Specifics of required funds, operational experimentation opportunities and participation, etc. will be finalized as TRMS progresses through FY 07.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Stiletto	5.068	2.218	0.000	0.000

FY 2006 Accomplishments: During FY 06, craft construction was completed; builders and acceptance trials were completed; the first operational experiment focused on mine-clearance was completed; initial performance trials were conducted; Stiletto took part in Fleet Week San Diego, participated in several Tactical Network Topology experiments with Naval Postgraduate School, and participated in Navy NETWARCOM's Trident Warrior 06; participated in and provided test platform for Congressional interest wake wash impact study ICW the Federal Transportation Administration (FTA); and Stiletto hosted numerous VIPs, Flag Officers, and media personnel through various tours and visits.

FY 2007 Plans: During FY 07 the Stiletto project will complete naval architecture performance trials; continue to advance the design and validation of combatant craft design tools; conduct multiple operational experiments; participate in Trident Warrior 07; participate in Fleet Week New York; make hull, systems, and equipment upgrades to Stiletto; support SOCOM experimentation; support SOUTHCOM experimentation; and undertake collaborative efforts to support with the United States Naval Academy naval architecture and networking research. Continue supporting COCOM/Interagency experimentation.

Accomplishment/Planned Program Title	FY 2006	FY 2007	FY 2008	FY 2009
Personal Countermeasures	0.000	2.154	1.000	0.000

FY 2007 Plans: During FY 07, a work effort will begin to design and begin to assemble the hardware and operating systems of Project 208.

FY 2008 Plans: Operational experimentation opportunities and participation, etc. will be finalized as Project 208 progresses through FY 07.

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FY 2008 and 2009 Plans	0.000	0.000	6.585	20.738	

FY 2008/2009 will choose additional programs to be funded with FY 08 and 09 funding. These programs will be assigned in the year of execution. The Stiletto project intends to continue its operational experimentation through FY 08 as well as intentions to continue the identification, design and execution of continued upgrades to Stiletto equipment and hull; continue supporting COCOM, Navy and USCG/HS experimentation. Specifics of required funds, operational experimentation opportunities and participation, etc. will be finalized as Stiletto progresses through FY 07. The Stiletto project and Project 208 will evaluate its plans for FY 09 based upon its accomplishment, progress and opportunities presented during FY 07 and FY 08.

C. Other Program Funding Summary: Not Applicable.

D. Acquisition Strategy: Not Applicable.

E. Major Performers Not Applicable.