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ACQUISITION,
TECHNOLOGY
AND LOGISTICS

OCT 30 2006

MEMORANDUM FOR CHAIRMAN, DEFENSE SCIENCE BOARD

SUBJECT: Terms of Reference – Defense Science Board (DSB) Task Force on Directed Energy (DE) Weapon Systems and Technology Applications

You are requested to form a DSB Task Force on DE Weapon Systems and Technology Applications. The technological maturity of directed energy weapon systems indicates the Military Departments may be ready to begin integration into operational forces at all levels of military operations.

In recent years, the Military Departments initiated and are currently pursuing a variety of programs to develop applications for DE technologies for a wide variety of military uses. Interest has grown in the operational use of DE technology for mission areas such as airborne- and ground-based precision attack, missile defense, expeditionary installation defense, homeland critical infrastructure defense, and non-lethal applications. A wide variety of technology advancements support these system developments -- both in commercial industries and military laboratories. DE technology has developed rapidly in key enabling sub-systems areas as well.

DE systems appear to provide the Department with unique opportunities to augment or improve operational capabilities in several areas. However, with the development of DE technologies in military and commercial applications, potential adversaries may have the ability to develop offensive DE systems with equal or greater lethality than current U.S. systems. In order for the Department to effectively incorporate DE weapon systems and technologies into offensive and defensive war fighting operations, the Task Force is to:

1. Review all surface, sub-surface, air, and space DE programs in the Department and other organizations and identify duplicative and/or redundant efforts concerning research, development, procurement, and deployment of DE systems and capabilities. To the maximum extent practicable, the task force will also review the findings from the FY 2004 Strategic Planning Guidance study of DE programs, the OSD DE roadmap, and the DDR&E DE net assessment.

2. Examine recent supporting technology advancements and their applications with respect to supporting military DE weapon system developments.

3. Develop potential tactical and strategic DE system applications and identify processes required to implement these potentials.

4. Determine what remains to be done to "weaponize" DE systems and technologies, including measures needed to allow them to operate and be supported in applicable combat theater environments.

5. Assess DE operational concepts, impacts, and limitations while considering potential legal, treaty, and policy compliance issues concerning DE systems employment.

6. Determine Department vulnerabilities and capability gaps in regards to offensive use of DE weapons by state and non-state actors against U.S. personnel, systems, enablers, and critical capabilities across the full spectrum of military operations including undersea, sea surface, land, air, and space.

7. Make recommendations on:

a. Research efforts not currently being addressed by the Department, including supporting technologies that enable military DE applications.

b. Potential tactical and strategic impact of DE systems on future military operations compared to current kinetic and electronic systems.

c. Potential strategic advantage DE weapons can provide with regards to the delivery of precision effects, decreased collateral damage, limiting unintended effects, and decreasing post-combat reconstitution costs and efforts.

d. Capabilities of the U.S. defense industrial base to support development of DE systems.

e. Transition paths or roadmap for DE weapons development and military applications.

f. Incorporating DE hardening and protection requirements into the Department's current and future weapon system acquisition and procurement programs.

g. Legal, treaty, and policy issues concerning DE employment in military operations.

h. Optimum way forward to fuse DE efforts within the Department and outside organizations.

i. Establishing Department DE policies to preclude unnecessary expenditure of human and fiscal resources.

j. Protection requirements of Department personnel from friendly, allied, and adversary use of DE weapons and systems on the battlefield.

The study will be sponsored by me as the Under Secretary of Defense for Acquisition, Technology, and Logistics, the Secretary of the Air Force, and DDR&E. General (Ret) Larry Welch, and Dr. Bob Hermann will serve as the co-Chairmen of the Task Force. Lieutenant Colonel Jimmy Wallace, USAF, Air Force Combat Support Office and Dr Thomas Spencer, Office of DDR&E, will serve as co-Executive Secretaries. Major Chad Lominac, USAF, will serve as the DSB Secretariat Representative.

The final report will be due no later than May 31, 2007. The Task Force shall have access to requested classified information for development of the assessment and recommendations.

The Task Force will be operated in accordance with the provisions of P.L. 92-463, the "Federal Advisory Committee Act," and DoD Directive 5105.4, "The DoD Federal Advisory Committee Management Program." It is not anticipated this Task Force will need to go into any "particular matters" within the meaning of title 18, United States Code, section 208, nor will it cause any member to be placed in the position of acting as procurement official.