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Homeland Security Technical Group Update & a Snapshot of Homeland Security Research Budgets

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Homeland Security Technical Group Update & a Snapshot of Homeland Security Research Budgets

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ABSTRACT

An overview of this conference (#6203) will include an overview of the program. A summary of the background and activities of SPIE's Global Homeland Security Technical Group, especially the Port and Harbor Security and Drinking Water Safety sub-committees will be included. Highlights and interesting aspects of the FY 06 & 07 Department of Homeland Security Budgets will be briefly discussed as well as the FY 07 Federal R&D budget focusing on Homeland Security.

Keywords: Homeland Security R&D Budgets, Port & Harbor Security, Drinking Water Security, SPIE Global Homeland Security Technical Group

1. SPIE GLOBAL HOMELAND SECURITY TECHNICAL GROUP

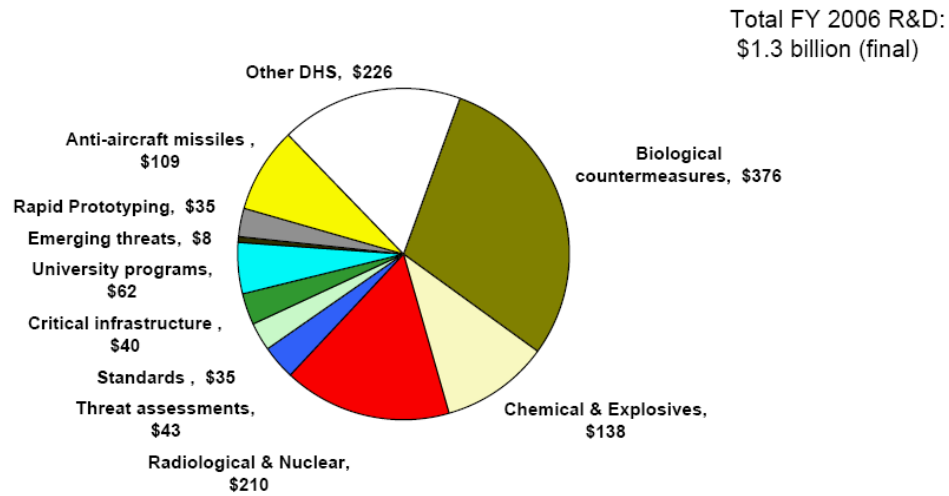
SPIE's Global Homeland Security Technical Group was organized in response to the robust response to SPIE's December 2002 workshop in Washington, DC. The group's mission is "To stimulate and focus the optics and photonics technology community's contributions to enhance the safety, improve the sense of well being and counter terrorist threats." (http://www.spie.org/Membership/index.cfm?fuseaction=TG_HomelandSecurity) With over 200 members the technical group has two major initiatives: Port and Harbor Security and Drinking Water Security. Port and Harbor Security addresses issues such as cargo/container security, diver detection & interdiction, waterside & seas-surface surveillance, and others which impact port security.¹ Drinking Water Security is looking at photonic applications to keeping our drinking water safe. In response to inputs from the Apr 05 Technical Group Meeting, a special joint meeting was hosted by the Lawrence Livermore National Laboratory's Water Monitoring & Treatment Networking Group and the Zone 7 water district. Scheduled to coincide with SPIE's Photonics West Meeting in San Jose, attendees gained first hand insights into daily operational issues of supplying drinking water. We also were given insights into understanding deliberate drinking water contamination issues by Cliff Bowen, Homeland Security Senior Engineer for Northern California's Drinking Water Field Operations. The day was capped off with a tour of Livermore's impressive water monitoring and forensic technology capabilities.

2. DEPARTMENT OF HOMELAND SECURITY (DHS) FY 06 BUDGET

2.1 FY 06 Overview

It is important to note, as will be further discussed in section 3, that Homeland Security Research is funded by several Federal agencies. R&D within DHS is driven primarily from the Science & Technology Directorate and the newly formed Domestic Nuclear Detection Office (DNDO). Their roles include setting R&D goal and priorities, coordinating homeland security through the Federal Government, funding DHS R&D, and facilitating transfer and deployment of technologies.² The FY 06 DHS R&D, as analyzed by the American Association for the Advancement of Science (AAAS), is summarized in Figure 1 with R&D trends given in Figure 2.

Dept. of Homeland Security R&D: FY 2006 FINAL
(millions of dollars budget authority)



Source: AAAS estimates of R&D in FY 2006 DHS appropriations. DEC, '05 © 2005 AAAS



Figure 1 – DHS FY 06 R&D Budget²

2.2 FY 06 Increases

A major area of research is biological. Significant increases were in Chemical Countermeasures up 78% to \$94 M, Explosives countermeasures up 121% to \$44 M, MANPADS up 79% to \$109 M, and Radiological and Nuclear Counter Measures increased up 71% to \$210 M. The Domestic Nuclear Detection Office has \$191 M as DNDO was established by a National Security Presidential Directive (NSPD-43) and includes personnel from other Federal agencies (State, Energy, Defense and Attorney General).

DHS R&D Priorities, FY 2004 - FY 2006

budget authority in millions of dollars

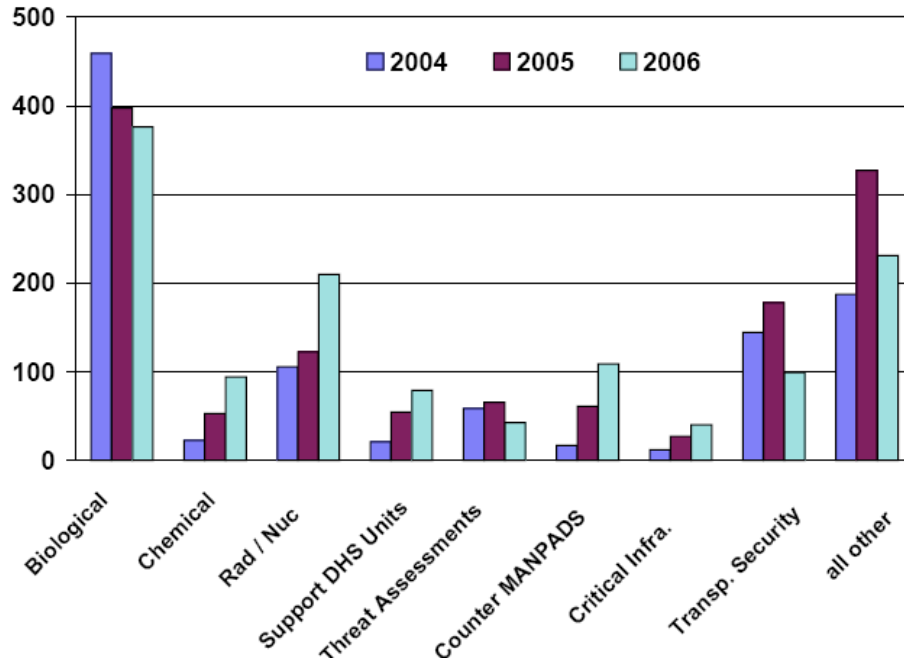


Figure 2 – DHS R&D Trends FY 2004 - 2006

Domestic Nuclear Detection Office’s mission includes developing global nuclear detection architecture, acquiring and supporting deployment of domestic detections system, and coordinating nuclear detection research and development to continually improve detection capability³. DNDO will fund both evolutionary and transformational (RDT&E) programs. For example DNDO’s BAA “Exploratory Research in Nuclear Detection Technology” addresses research in innovative detection materials, innovative detection techniques, advanced special nuclear material interrogation and verification and algorithm development.⁴

Counter MANPADS will develop, prototype, and test promising technologies. In addition \$19 M in DoD funding will be applied to MANPADS. Biological countermeasures at \$376 M is a significant DHS effort. The National Bio and Agrodefense Facility (NBAF) received \$23 M FY 06 funding as part of an anticipated total package of \$450 M aiming at a 2010 completion. The National Biodefense Analysis and Countermeasures Center (NBAAC) is one the key facilities planned for Fort Detrick’s (Maryland) Interagency Biomedical Research Confederation.⁵ In Feb 2006, NBAAC was approaching 70% design completion with a projected construction start this spring for completion in summer of 2008. The estimated 120 staff will have 70,000 net ft² of lab space. It will have dedicated, secure and responsive bio-containment laboratories capable to conduct biological threat characterization. In addition to NBAAC the integrated research facility for the National Institute for Allergies and Infectious Diseases (NIAID) will be located at Fort Detrick. NIAID will employ advanced imaging and diagnostic studies of disease progression (staff 170-200, 147,000 ft²). NIAID expects to be completed in February 2006.

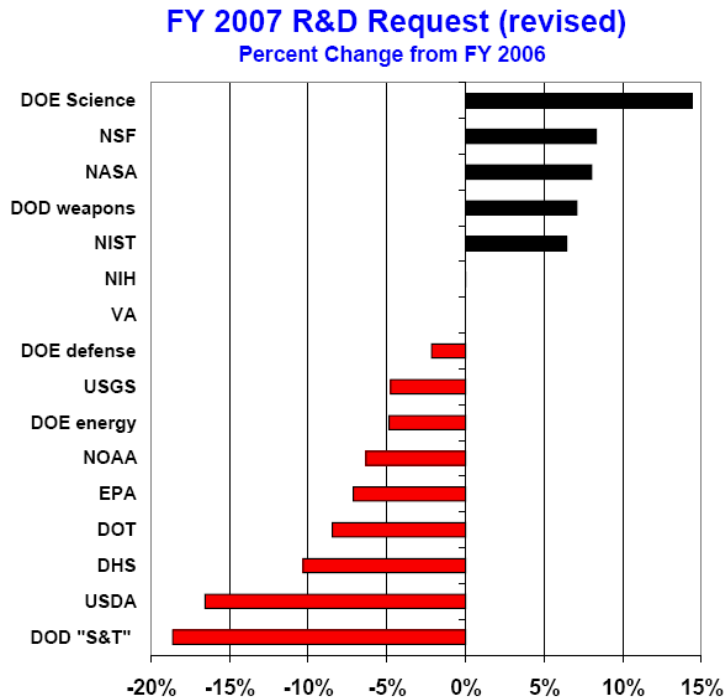
2.3 FY 06 Decreases

DHS R&D areas which had FY 06 decreases were Threat and Vulnerability -35% to \$43 M, Transportation Security Agency -47% to \$99 M, Standards Development -13% to \$35 M, and Rapid Prototyping to \$35M.²

3. FY 07 BUDGETS – R&D IMPACTS ON FEDERAL HOMELAND SECURITY

3.1 FY 07 Budget – American Competitiveness Initiative

In his 2006 State of the Union address, President Bush announced his American Competitiveness Initiative (ACI). ACI calls for doubling the budgets of DOE’s Office of Science, the National Science Foundation, the National Institute of Standards and Technology (NIST) and NASA’s Space Exploration.⁶ The \$136 B investment over 10 years plans for \$5.9 B in FY 07 (\$1.3 B in federal funding and \$4.6 B in R&D tax incentives (R&E)). The per cent FY 07 R&D budget changes as analyzed by AAAS is summarized in Figure 3 and Table 1.⁷ Other research areas will be impacted by ACI.



Source: AAAS, based on OMB R&D data and agency estimates for FY 2007.
DOD "S&T" = DOD R&D in "6.1" through "6.3" categories plus medical research.
DOD development = DOD R&D in "6.4" and higher categories.
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Figure 3: Per cent changes from FY 06 in FY 07 R&D Budget Request⁷

Table 1 – Projected R&D Funding from FY 07 Request⁸
in \$B

Organization	FY 06	FY 07	FY 11
NSF	4.2	4.5	6.0
DOE Science	3.3	3.8	4.9
NASA	11.3	12.2	17.8
NIST	0.42	0.45	0.63
NIH	27.8	27.8	27.2
DoD	72.5	72.4	71.2

3.2 FY 07 Homeland Security R&D Budget

Transitioning our discussion from ACI and its impact on the entire Federal R&D budget, we'll look first at the overall DHS FY 2007 budget. The major FY 07 DHS budget themes are⁹:

- Preparedness & FEMA
- Border Security
- Interior Enforcement & Reforming Immigration Process
- Maritime Security & Better Transportation Systems
- Enhanced Information Sharing
- Strengthening DHS Department

Second, according to AAAS, the Department of Homeland Security's overall R&D budget in FY 07 would be \$1.15 B, a 10% drop (FY 05 was \$1.24 B and FY 06 was \$1.28 B).⁷ Furthermore the DHS Basic and Applied research would drop~20%.⁷ Radiological and Nuclear Countermeasures is up 61% to \$328 M and overall there is a development emphasis in the research.

As mentioned earlier a significant amount of Homeland Security R&D is funded outside of DHS. Table 2 summarizes AAAS's analysis of proposed major FY 07 R&D budgets for Homeland Security R&D (Total estimated at \$ 5.1 B) in different federal organizations.

Table 2
Federal Government FY 07 Homeland Security R&D
Major Components of the \$5.1 B FY 07 Budget
Proposed FY 07

Organization	FY 07
NIH – National Institute of Allergies & Infectious Diseases (NIAID)	\$2.0 B
Dept. Homeland Security	\$1.1 B
Defense (DoD)	\$1.1 B
NSF	\$ 0.37 B

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