Department of Defense
Science & Technology Priorities

18 March 2011

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DoD Science & Technology
Budget Activity
- President’s Budget Requests – in Constant FY11 Dollars -

Total FY12 S&T request = $12.25B

6.1 Basic Research

6.2 Applied Research

6.3 Advanced Development

Constant FY11 Dollars (in Millions)

FY98  FY99  FY00  FY01  FY02  FY03  FY04  FY05  FY06  FY07  FY08  FY09  FY10  FY11  FY12  FY13  FY14  FY15

$1.00B

$2.08B

$4.69B

$5.48B

$7,000,000

6.2 Applied Research

6.3 Advanced Development

6.1 Basic Research
FY12 DoD S&T
President’s Budget Request

Total FY12 S&T Request = $12.25B

6.1 Basic Research
6.2 Applied Research
6.3 Advanced Development

$ in Millions

Army
Navy/USMC
Air Force
DARPA
Chem Bio
DTRA
OSD
Other Defense Agencies

$2.28B
$2.01B
$2.29B
$2.91B
$502M
$527M
$1.14B
$596M
Globalization of R&D

World R&D Spending: $1.2T

U.S.: $405B

Asia: $421B
- Japan $144B
- China $154B
- India $36B

Europe: $276B

Rest of the World: $36B
China’s Timeline for Science and Technology Catching Up

- 2004: 24th in global S&T competitiveness*
- 2007: 15th in science, 27th in technology*
- 2009: 6th in science, 21st in technology*
- 2020: Attain 5th place; Leader in space, nuclear fields, near top in IT, biotech sectors, and have several world-class research institutes & universities
- 2040-2050: Reach S&T parity with the U.S.

Ranking from International Institute of Management Development’s World Competitiveness Report
Source for 2020 box: Statement by COSTIND senior official Wu Weiren, July 2007
S&T Enterprise

Joint Urgent Operational Needs

Rapid Fielding

Emerging Capabilities

QDR
S&T Priorities

Emerging Technology / Science

Basic Research Areas
Capability Priorities for FY12-16

Complex Threats

- Electronic Warfare / Electronic Protection
- Cyber Science and Technology
- Counter Weapons of Mass Destruction

Force Multipliers

- Data-to-Decisions
- Engineered Resilient Systems
- Autonomy
- Human Systems
Architecture – Technology Trade Space

Priority Steering Councils

- Architectures
- Capabilities
- Technologies

Architectures Drive Technologies
Technologies Inform Architectures

Fires Coordination Net
CAS A/C
DASC
FSCC
FO/FAC
FFCC
Terrestrial Network
FDC
FIRING BTRY
SACC
TARGET
NSFS

Approved for public release: distribution is unlimited
High Interest Basic Science Areas

- Synthetic Biology
- Modeling of Human Behavior
- Engineered Materials
- Cognitive Neuroscience
- Quantum Systems
- Nano Science and Engineering
Goal: Align Incentives and Processes to Create A Tightly-Coupled Community
Backups
USD AT&L: New Era

- Feb. 9, 2011 “The Defense Industry Enters a New Era”
  - A strong, vibrant, and financially successful defense industry,
  - Structural change largely through market forces but adjusted where the interests of the taxpayer and warfighter require,
  - Preserving and enhancing competition,
  - Equal attention to the health of smaller and mid-sized companies, spinouts, new entrants, and service providers,
  - Encouraging open entry into the defense marketplace, and
  - Full advantage taken of the opportunities of globalization
IR&D Goals

• Reinvigorate industry’s independent research and development and protect the defense technology base.
  
  • Better define the Department’s needs to our industry partners
  • Provide better feedback to industry researchers
  • Remove impediments to innovation
  • Maintain industry’s independence to pursue technologies
Quadrennial Defense Review Missions Require New Capabilities

1. Defend the United States and Support Civil Authorities at Home

2. Succeed in Counterinsurgency, Stability, and Counterterrorist Operations

3. Build the Security Capacity of Partner States

4. Deter and Defeat Aggression in Anti-Access Environments

5. Prevent Proliferation and Counter Weapons of Mass Destruction

6. Operate Effectively in Cyberspace.
Shaping Industry Independent Research and Development (IR&D)

Industry and Government info sharing about IR&D has been on a decline

Resulting in relatively low risk IR&D investments

New Initiatives to Leverage IR&D to Reinvigorate Innovation

Pilot Project

CRAD / IRAD Integration for Advanced Multi-Role Technology

BAA Requests IR&D Info to Better Align Government and Industry Investments