



Shaping the Department's S&T Strategy

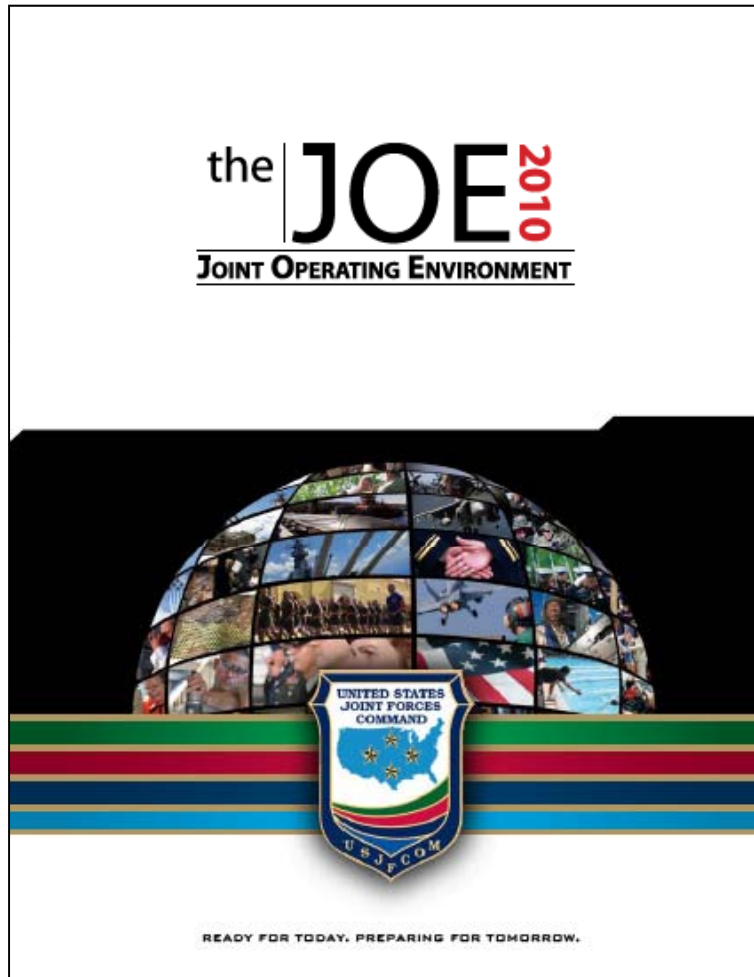
21 June 2011

**The Honorable Zachary J. Lemnios
Assistant Secretary of Defense for
Research and Engineering**

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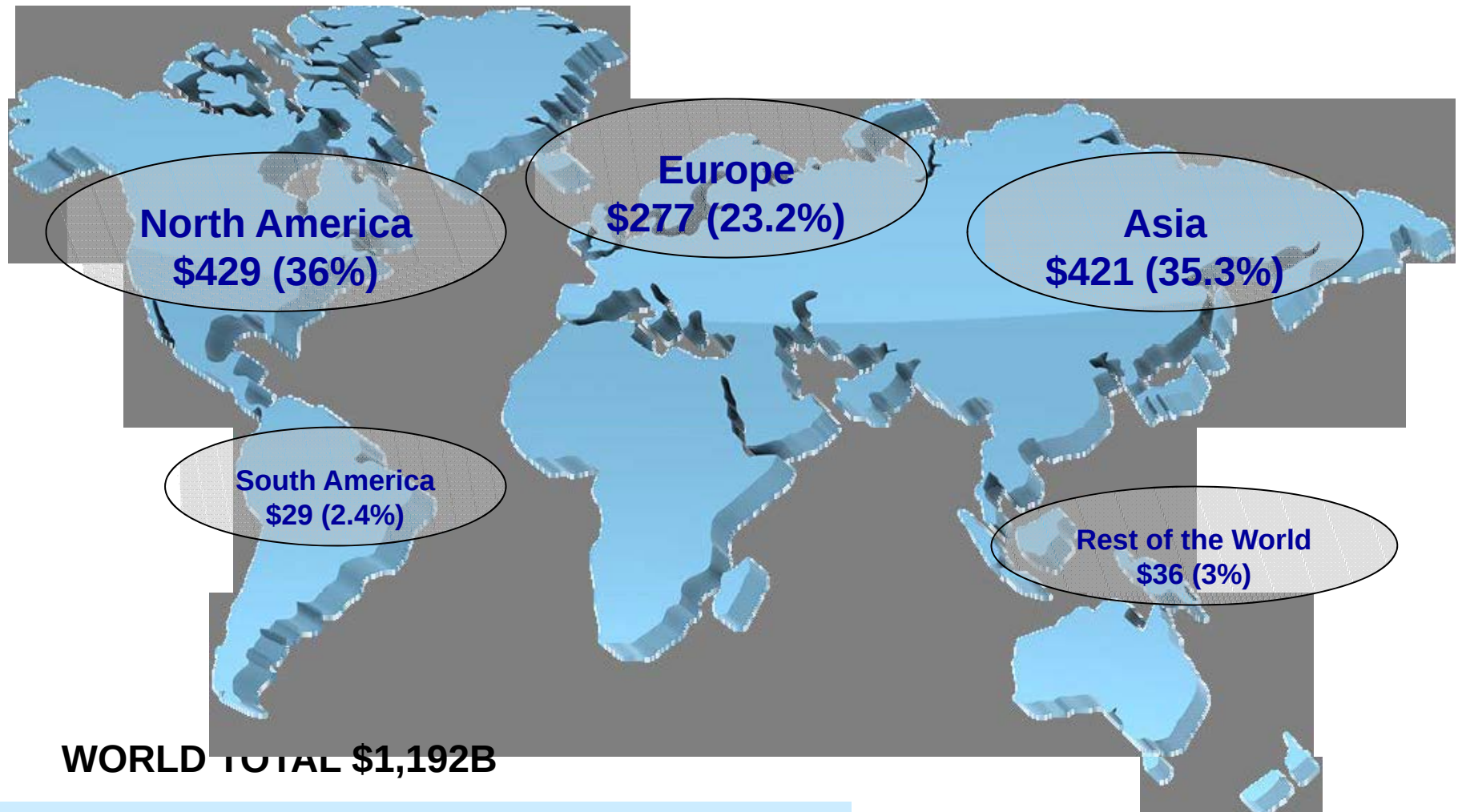
Global Challenges and Trends



- Shifting Global Demographics
- Globalization shifts
- Energy
- Climate change & natural disasters
- Cyber as a new domain
- Challenges to existing state structures
- WMD proliferation



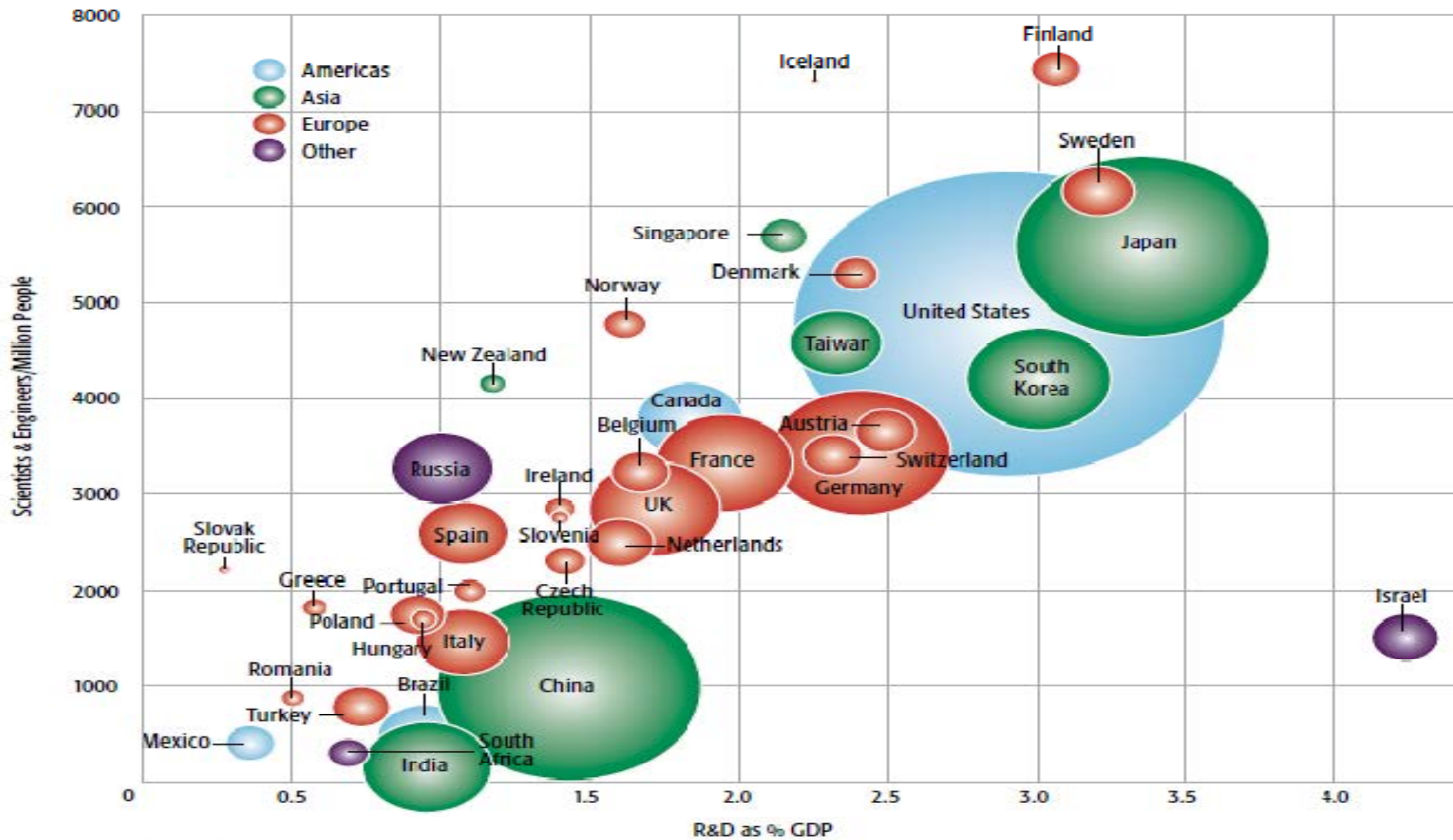
Globalization of R&D



Source: www.rdmag.com "2011 Global R&D Funding Forecast" - Battelle



World R&D Trends: A Global Shift



Source: Battelle, R&D Magazine, OECD, IMF, CIA



Guidance Roadmap



Target Affordability and Control Cost Growth

- Mandate affordability as a requirement
 - At Milestone A set affordability target as a Key Performance Parameter

Improve Tradecraft in Services Acquisition

- Create a senior manager for acquisition of services in each component, following the Air Force's example
- Adopt uniform taxonomy for different types of services

• Target Affordability and Control Cost Growth

• Incentivize Productivity & Innovation in Industry

• Promote Real Competition

• Improve Tradecraft in Service Acquisition

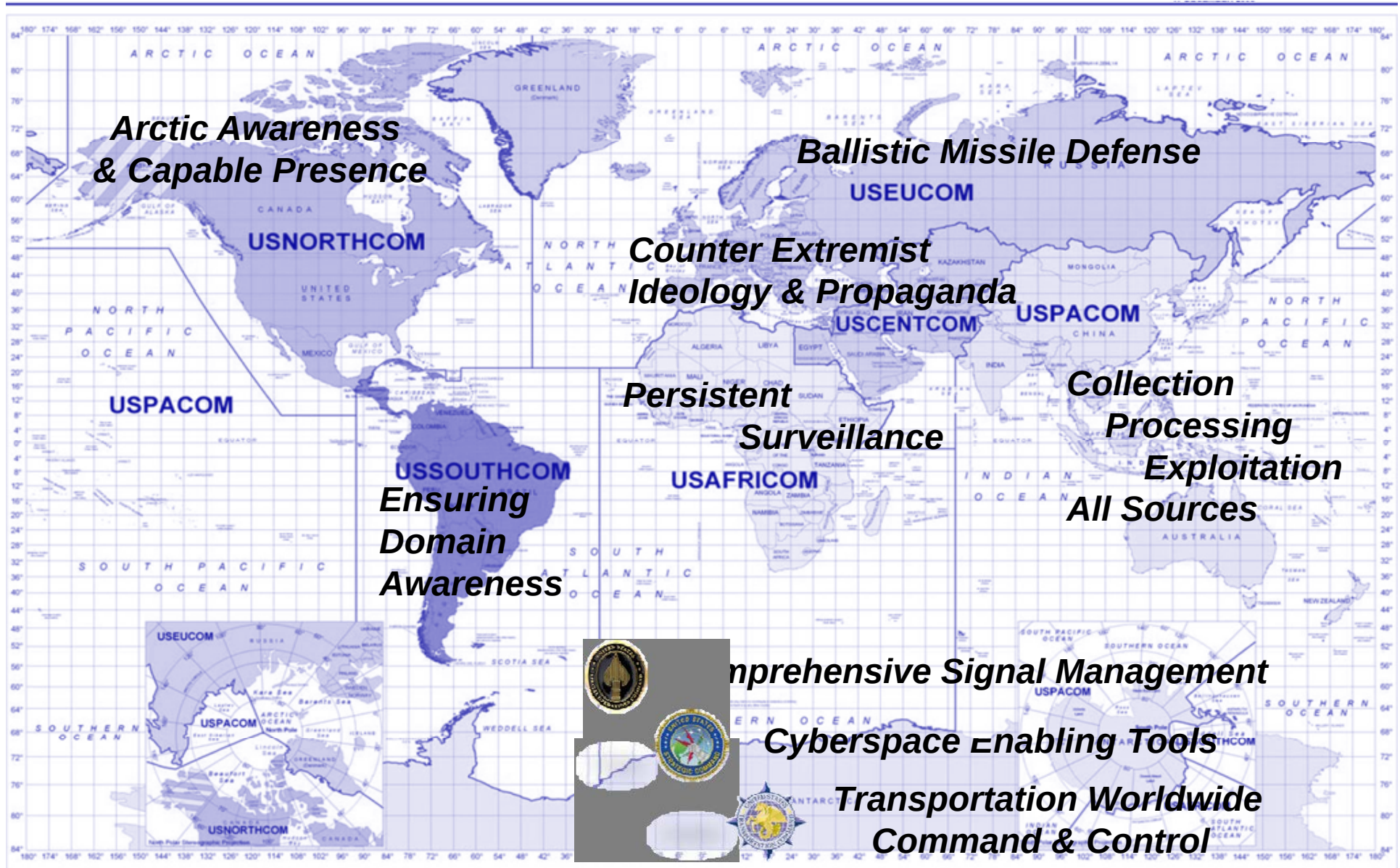
• Reduce Non-Productive Processes and Bureaucracy

- Require open system architectures and set rules for acquisition of technical data rights
- Increase dynamic small business role in defense marketplace competition

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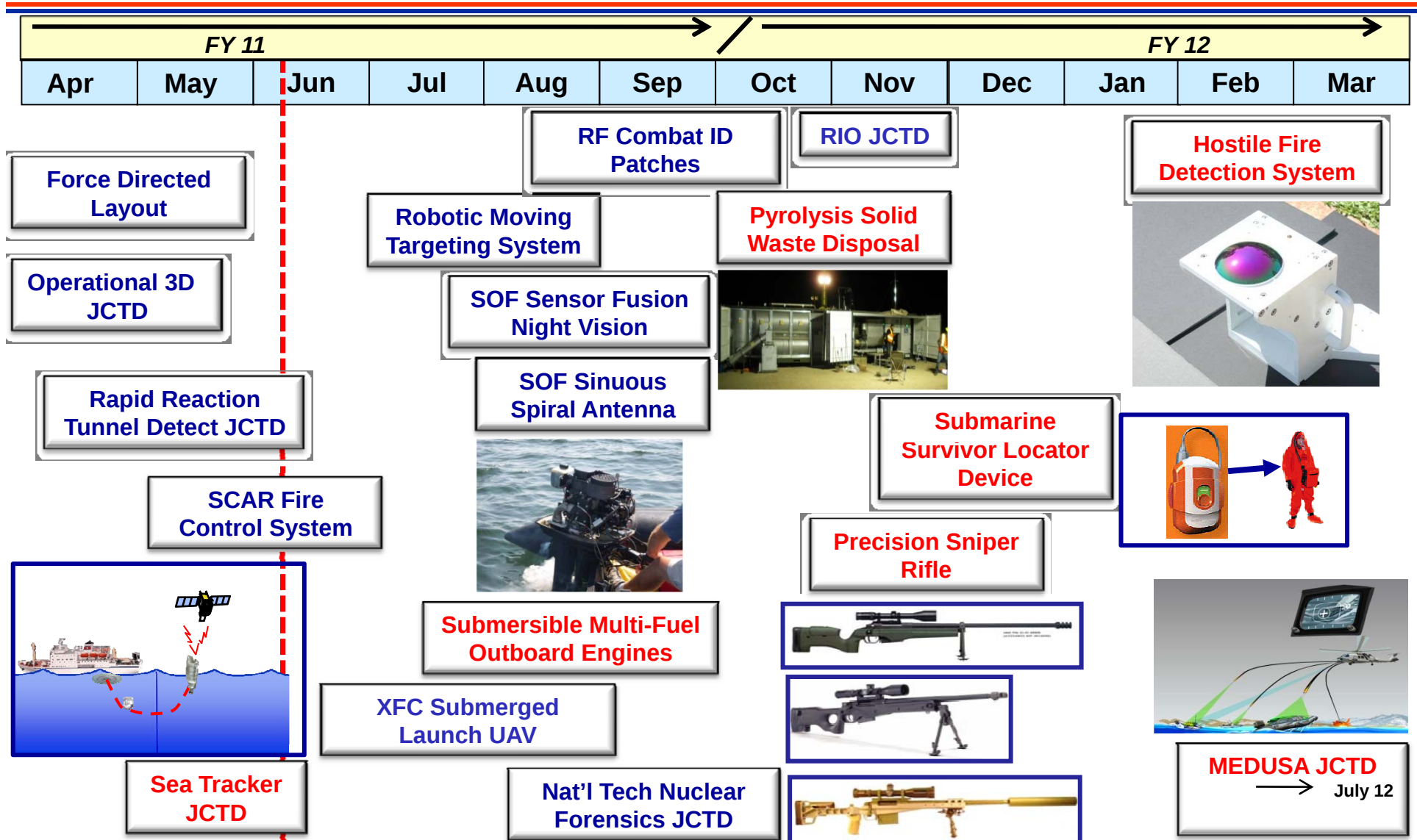


Support to Combatant Commanders





Continuing the Push for Capabilities to the Fight





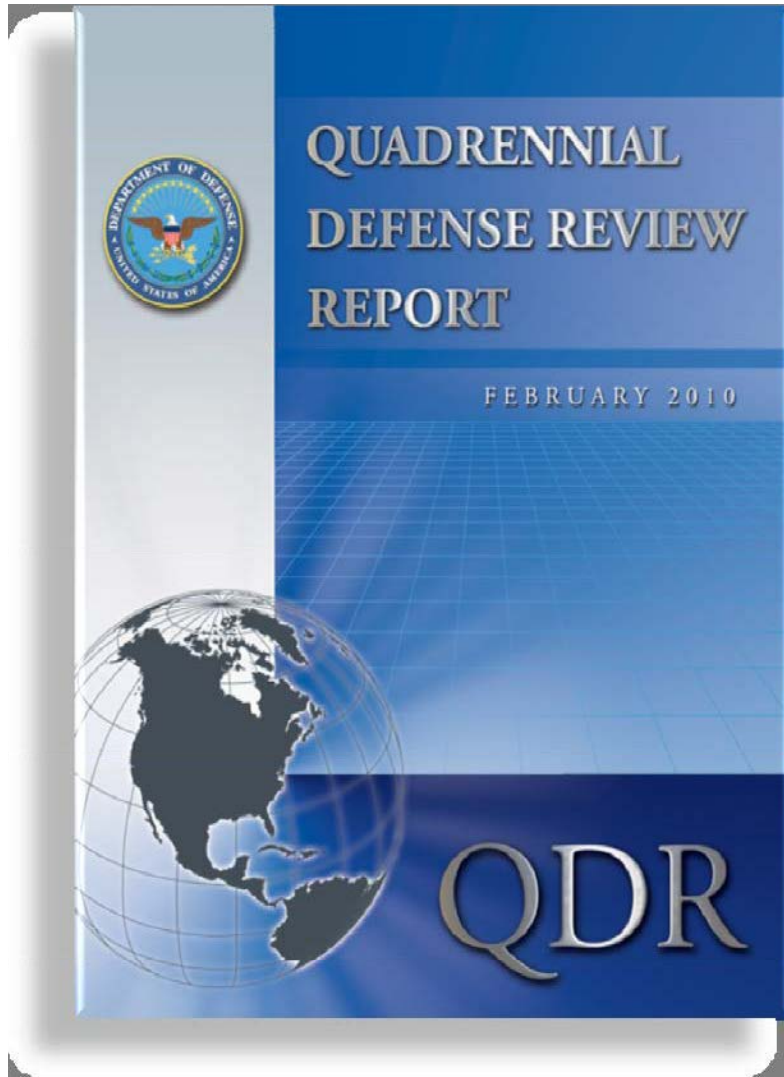
Imperatives



- 1. Accelerate delivery of technical capabilities to win the current fight.**
- 2. Prepare for an uncertain future.**
- 3. Reduce the cost, acquisition time and risk of our major defense acquisition programs.**
- 4. Develop world class science, technology, engineering, and mathematics capabilities for the DoD and the Nation.**



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.**



Capability Priorities *for FY13-17*



Complex Threats

**Electronic Warfare /
Electronic Protection**

**Cyber Science and
Technology**

**Counter Weapons of
Mass Destruction**

Force Multipliers

Data-to-Decisions

Autonomy

**Engineered Resilient
Systems**

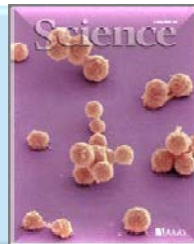
Human Systems



High Interest Basic Science Areas



Synthetic Biology



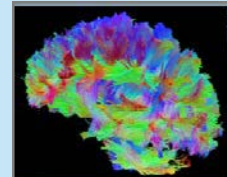
Human Behavior Modeling



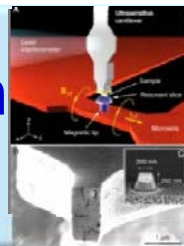
Novel Engineered Materials



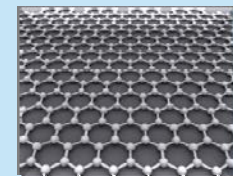
Cognitive Neuroscience



Quantum Information Science



Nanoscience



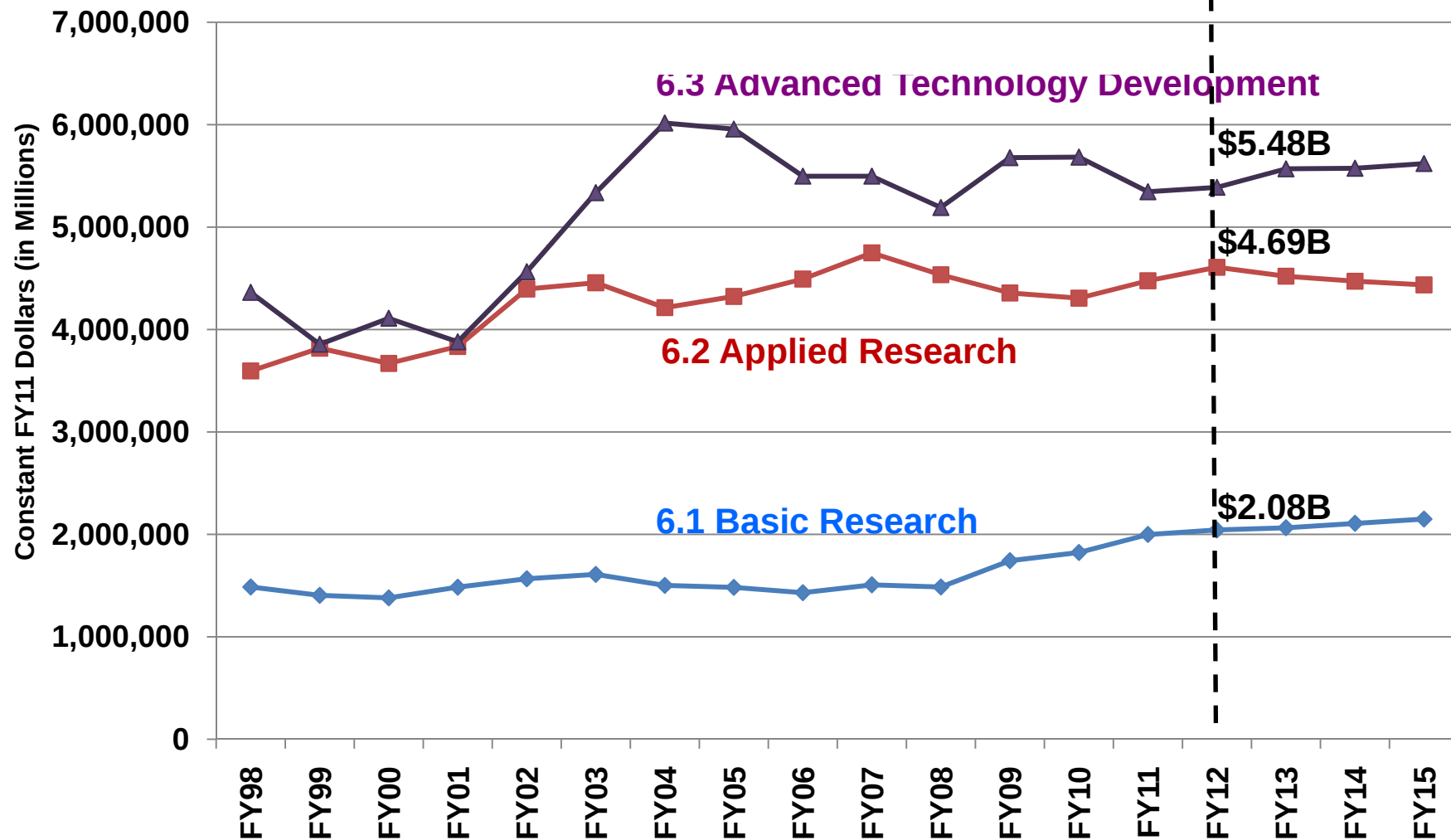


DoD S&T Funding By Budget Activity



- President's Budget Requests - in Constant FY11 Dollars -

Total FY12 S&T request = \$12.25B





Integrated S&T Enterprise

Missions

- National Defense Strategy
- Quadrennial Defense Review
- Space Posture Review
- Nuclear Posture Review

Objective Architectures

Operational Challenge

JUONs, UONs, COCOM
IPL

Critical Capabilities

Enabling Technologies

Laboratory Program

Basic Research Program

STEM Program

Industry IR&D



S&T Executive Committee (EXCOM)



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Conference Summary



- **FY2012 President's Budget Request**
- **ASD(R&E) Programs**
 - Basic Research
 - Rapid Fielding
 - Test & Evaluation
 - Trusted Foundry
- **Department S&T Emphasis Areas**
- **Components' S&T Program Overviews**
- **Combatant Command Briefs**