



**Fiscal Year 2014
President's Budget Request
for the
DoD Science & Technology Program
April 24, 2013**

Mr. Bob Baker

Deputy Director, Plans & Programs,

Assistant Secretary of Defense (Research & Engineering)



Theme

- **Continue aligning S&T investment to enable development of capabilities consistent with the January 2012 strategic guidance***

* Sustaining U.S. Global Leadership: Priorities for the 21st Century Defense, Jan 2012

- **“U.S. Armed Forces will be smaller and leaner, but they will be agile, flexible, ready, and technologically advanced.” “Protect investments in key technology areas and new capabilities...”**

- Overview, DoD FY 2014 Budget Request, Apr 2013

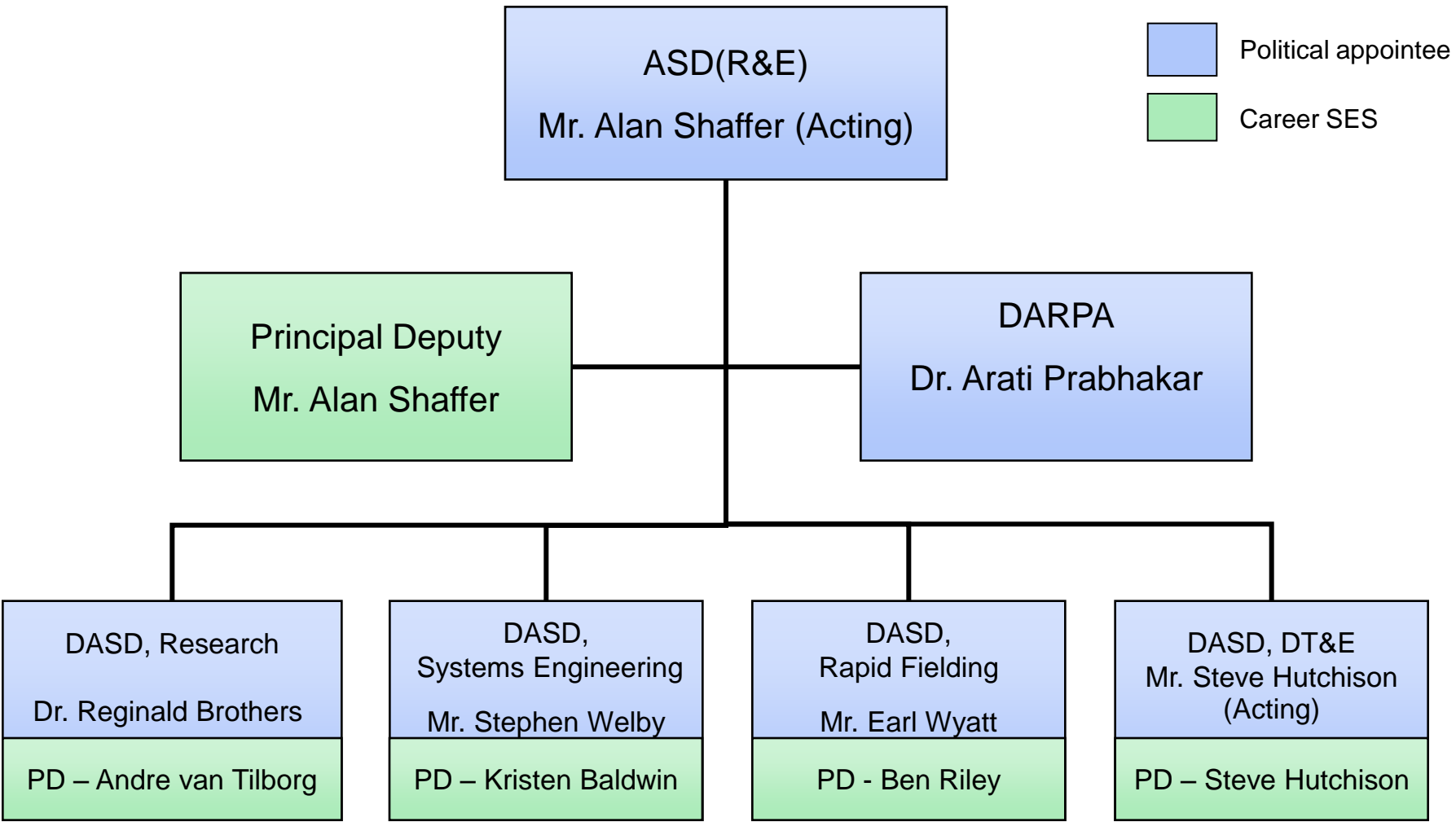
- **DoD continues to support a strong S&T investment**



Distribution Statement A - Approved for public release. Distribution is unlimited.



ASD(R&E) – Organization





Outline



- ***Changes, Challenges & Priorities***
- ***FY2014 S&T President's Budget Request***
- ***Historical Context***
- ***Strategic Planning & Budget Changes***



The Changing National Security Mission



- Proliferating WMD capability
- Adversaries will increasingly leverage commercial technology to challenge U.S. military capabilities
- New emerging challenges, e.g., energy security, climate change, cyber security
- Policing and peacekeeping in a coalition of many, in contrast to warfighting
- Balancing current vice future requirements
- Maintaining conventional and irregular warfare capability
- Soft power often more appropriate than hard power
- Failing/failed rather than aggressor states are a big challenge
- Need to rebalance our focus from Iraq and Afghanistan toward the security and prosperity of the Asia-Pacific region

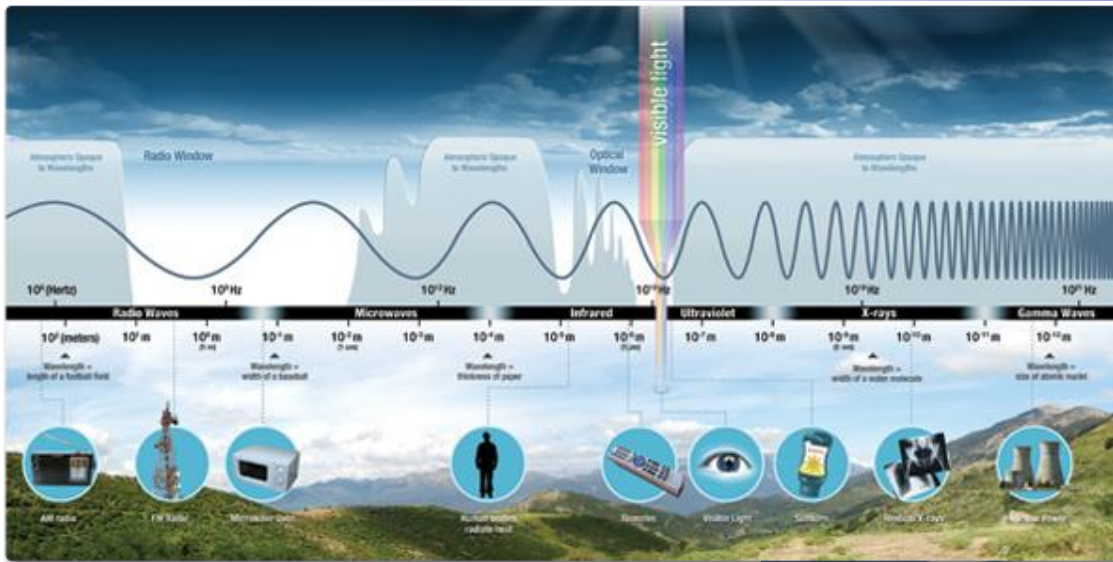
* MG Michael Flynn, DCS, Intelligence, ISAF, Afghanistan





Rise of the Commons

Cyber, Electromagnetic Spectrum & Space



Military operations increasingly depend on being able to operate in places “no one owns” – *the Commons*

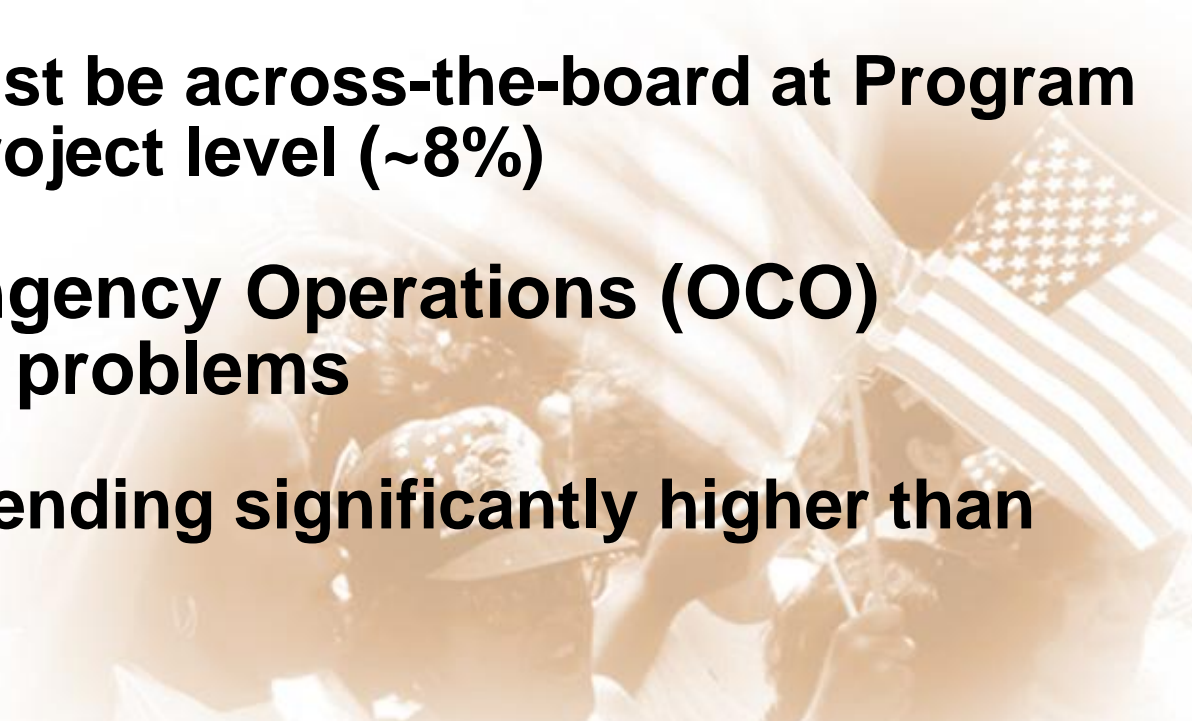


FY 2013 Fiscal Challenges Remain



Even though DoD has an FY 13 Appropriations Act:

- **Sequestration remains**
 - Total cut as much as \$41 billion across DoD
 - By law cuts must be across-the-board at Program Element and Project level (~8%)
- **Overseas Contingency Operations (OCO) shortfalls add to problems**
 - Actual OCO spending significantly higher than expected

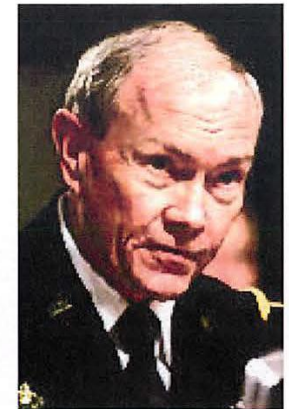
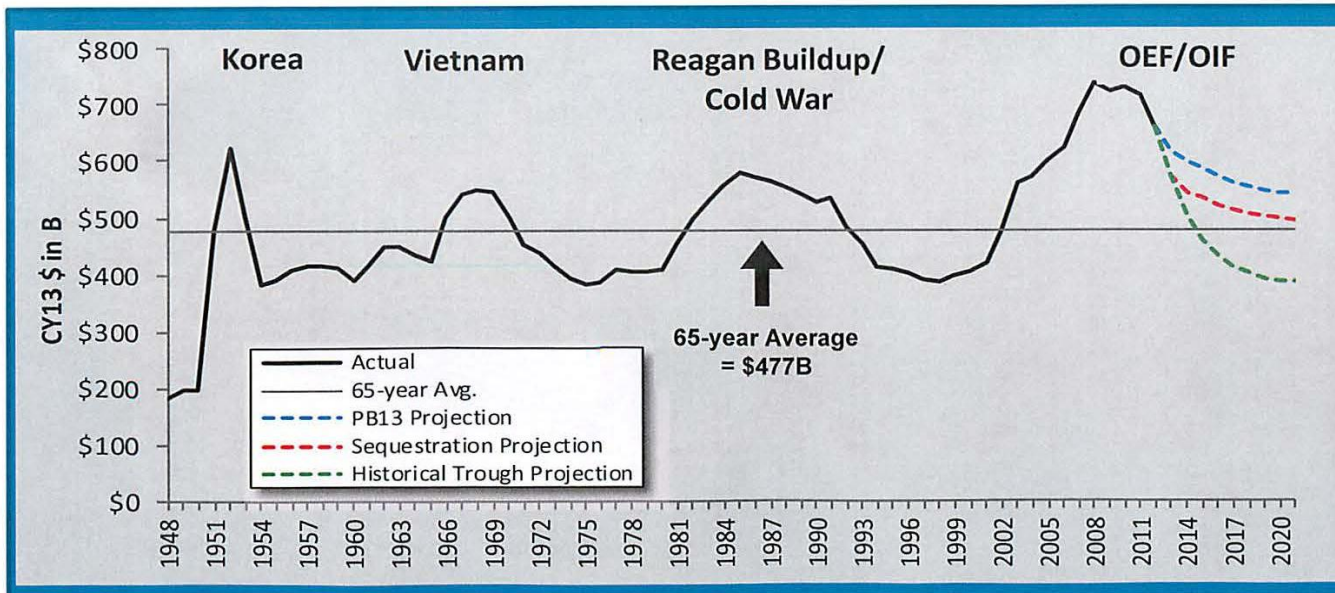




The Reality....

“Our current security challenges are more formidable and complex than those we faced in downturns following Korea, Vietnam, and the Cold War. There is no foreseeable “peace dividend” on our horizon.”

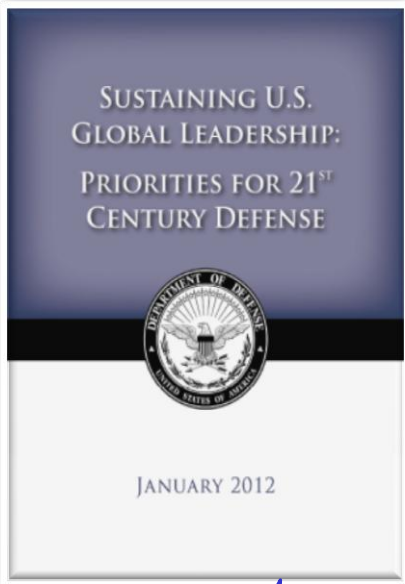
GEN DEMPSEY, CJCS
Testimony to SASC, 12 Feb 2013



UNCLASSIFIED



Priorities for 21st Century Defense

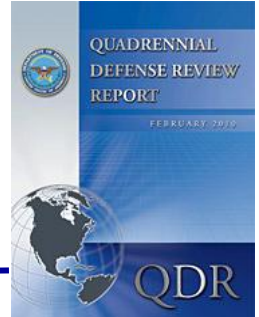


Two new Missions

Primary Missions of the U.S. Armed Forces

- Defend the Homeland and Provide Support to Civil Authorities
- Counter Terrorism and Irregular Warfare
- Conduct Stability and Counterinsurgency Operations
- Provide a Stabilizing Presence
- Project Power Despite Anti-Access / Area Denial Challenges
- Counter Weapons of Mass Destruction
- Operate Effectively in Cyberspace and Space
- Deter and Defeat Aggression
- Conduct Humanitarian, Disaster, Relief and Other Operations
- Maintain a Safe, Secure and Effective Nuclear Deterrent

QDR 2010 Key Mission Areas



- Defend the United States and Support Civil Authorities at Home
- Succeed in Counterinsurgency, Stability, and Counterterrorism Operations
- Build the Security Capacity of Partner States
- Deter and Defeat Aggression in Anti-Access Environments
- Prevent Proliferation and Counter Weapons of Mass Destruction
- Operate Effectively in Cyberspace



Secretary of Defense S&T Priorities Memo – Apr 19, 2011



The Assistant Secretary of Defense for Research and Engineering, with the Department's S&T Executive Council and other stakeholders, will oversee the development of implementation roadmaps for each priority area. These roadmaps will coordinate Component investments in the priority areas to accelerate the development and delivery of capabilities consistent with these priorities.

Richard J. Finney

SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

APR 19 2011

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARY OF DEFENSE FOR ACQUISITION,
TECHNOLOGY AND LOGISTICS
ASSISTANT SECRETARY OF DEFENSE FOR RESEARCH
AND ENGINEERING
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: Science and Technology (S&T) Priorities for Fiscal Years 2013-17 Planning

The Department's S&T leadership, led by the Assistant Secretary of Defense for Research and Engineering, in close coordination with leadership from the Under Secretary of Defense for Policy, the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense, the Deputy Assistant Secretary of Defense for Manufacturing and Industrial Base Policy, and the Joint Staff, has identified seven strategic investment priorities. These S&T priorities derive from a comprehensive analysis of recommendations resulting from the Quadrennial Defense Review mission architecture studies directed in the FY12-16 Defense Planning Programming Guidance.

The priority S&T investment areas in the FY13-17 Program Objective Memorandum are:

- (1) **Data-to-Decisions** – science and applications to reduce the cycle time and manpower requirements for analysis and use of large data sets.
- (2) **Engineered Resilient Systems** – engineering concepts, science, and design tools to protect against malicious compromise of weapon systems and to develop agile manufacturing for trusted and coaxed defense systems.
- (3) **Cyber Science and Technology** – science and technology for efficient, effective cyber capabilities across the spectrum of joint operations.
- (4) **Electronic Warfare / Electronic Protection** – new concepts and technology to protect systems and extend capabilities across the electro-magnetic spectrum.
- (5) **Counter Weapons of Mass Destruction (CWMD)** – advances in DoD's ability to locate, secure, monitor, tag, track, identify, eliminate and attribute CWMD weapons and materials.
- (6) **Autonomy** – science and technology to achieve autonomous systems that reliably and safely accomplish complex tasks, in all environments.
- (7) **Human Systems** – science and technology to enhance human-machine interfaces to increase productivity and effectiveness across a broad range of missions.

OSD 02073-11



S&T Priorities

- Data-to-Decisions
- Engineered Resilient Systems
- Cyber Science and Technology
- Electronic Warfare / Electronic Protection
- Counter Weapons of Mass Destruction
- Autonomy
- Human Systems



Outline



- ***Changes, Challenges & Priorities***
- • ***FY2014 S&T President's Budget Request***
- ***Historical Context***
- ***Strategic Planning & Budget Changes***

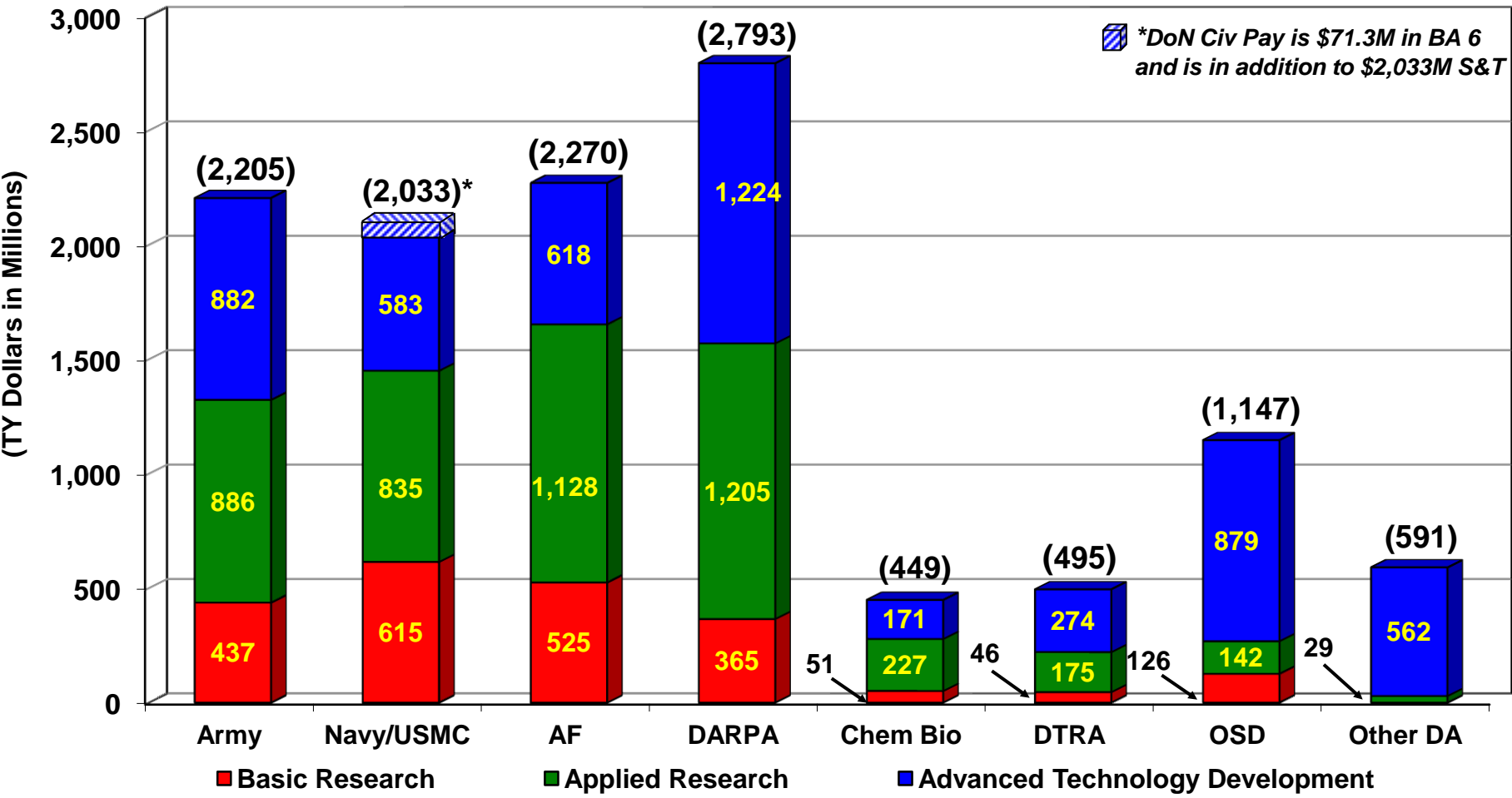


FY14 DoD S&T Budget Request



Total FY14 S&T request = \$11.98B

Total FY13 S&T Request = \$11.86B
Army = 2,210 Navy = 1,980 AF = 2,222 DARPA = 2,746 ChemBio = 508 DTRA = 492 OSD = 1,071 Other DA = 632



Distribution Statement A - Approved for public release. Distribution is unlimited.

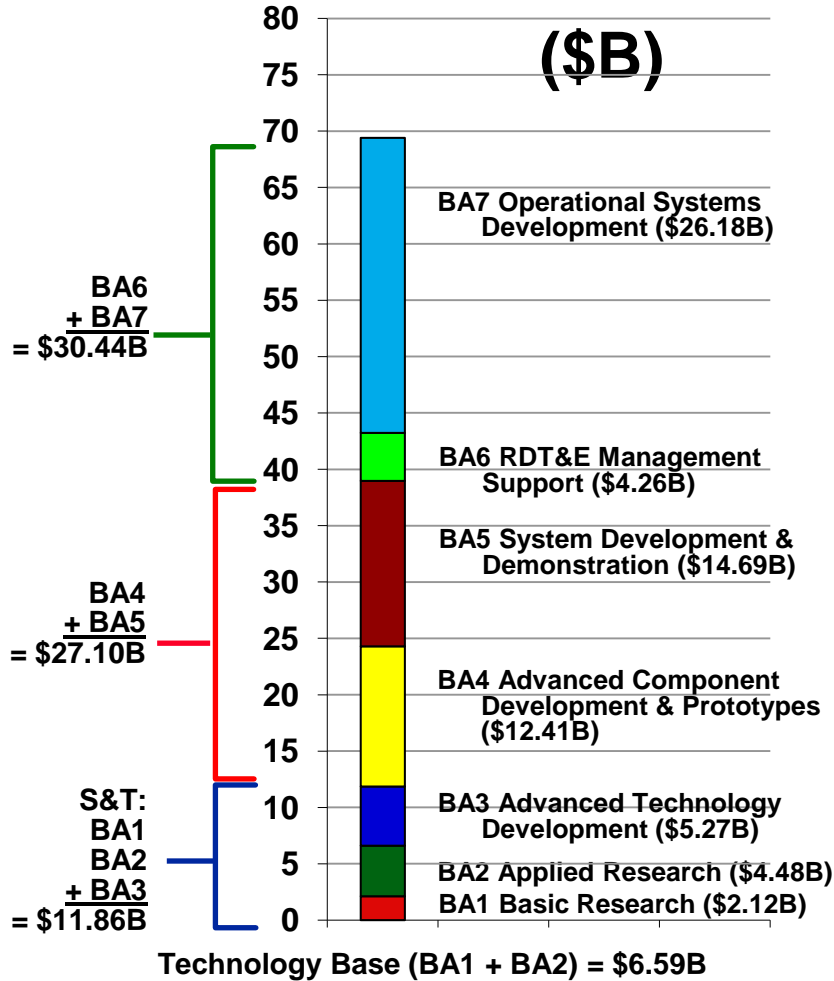


FY13 and FY14 RDT&E Budget Request Comparison



- in Then Year Dollars -

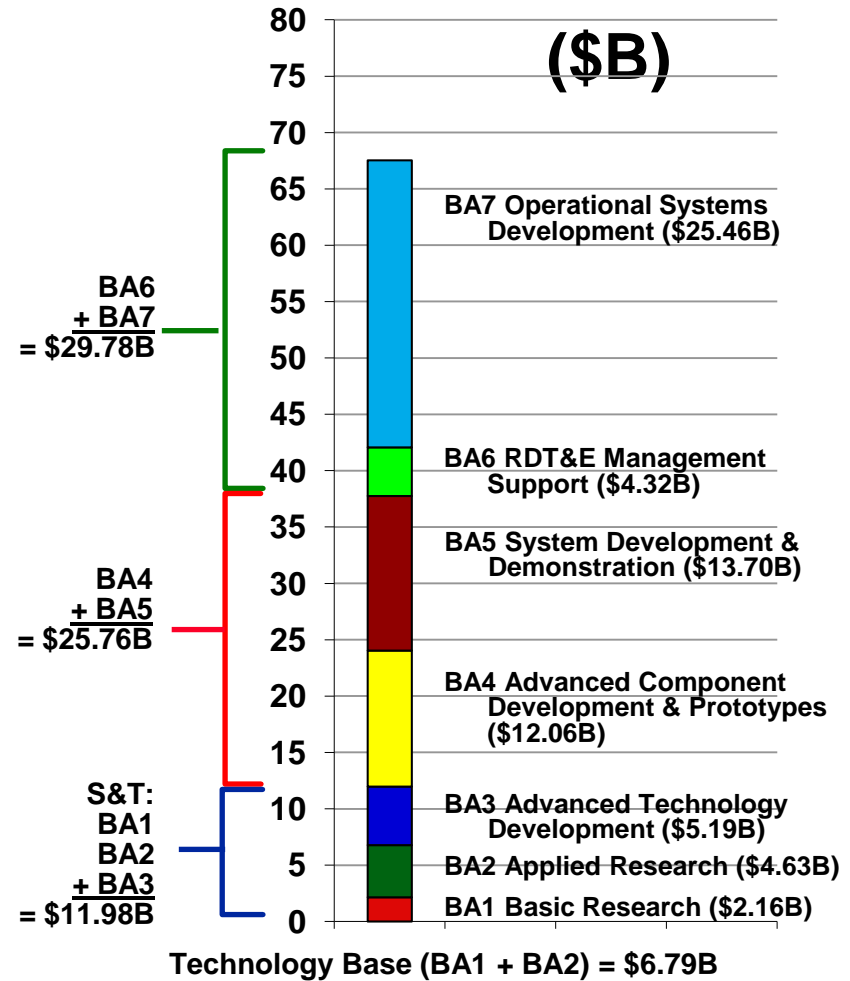
FY13 RDT&E request = \$69.41B
(Budget Activities 1-7)



Technology Base (BA1 + BA2) = \$6.59B

PBR13 S&T is 17.0% of RDT&E

FY14 RDT&E request = \$67.52B
(Budget Activities 1-7)



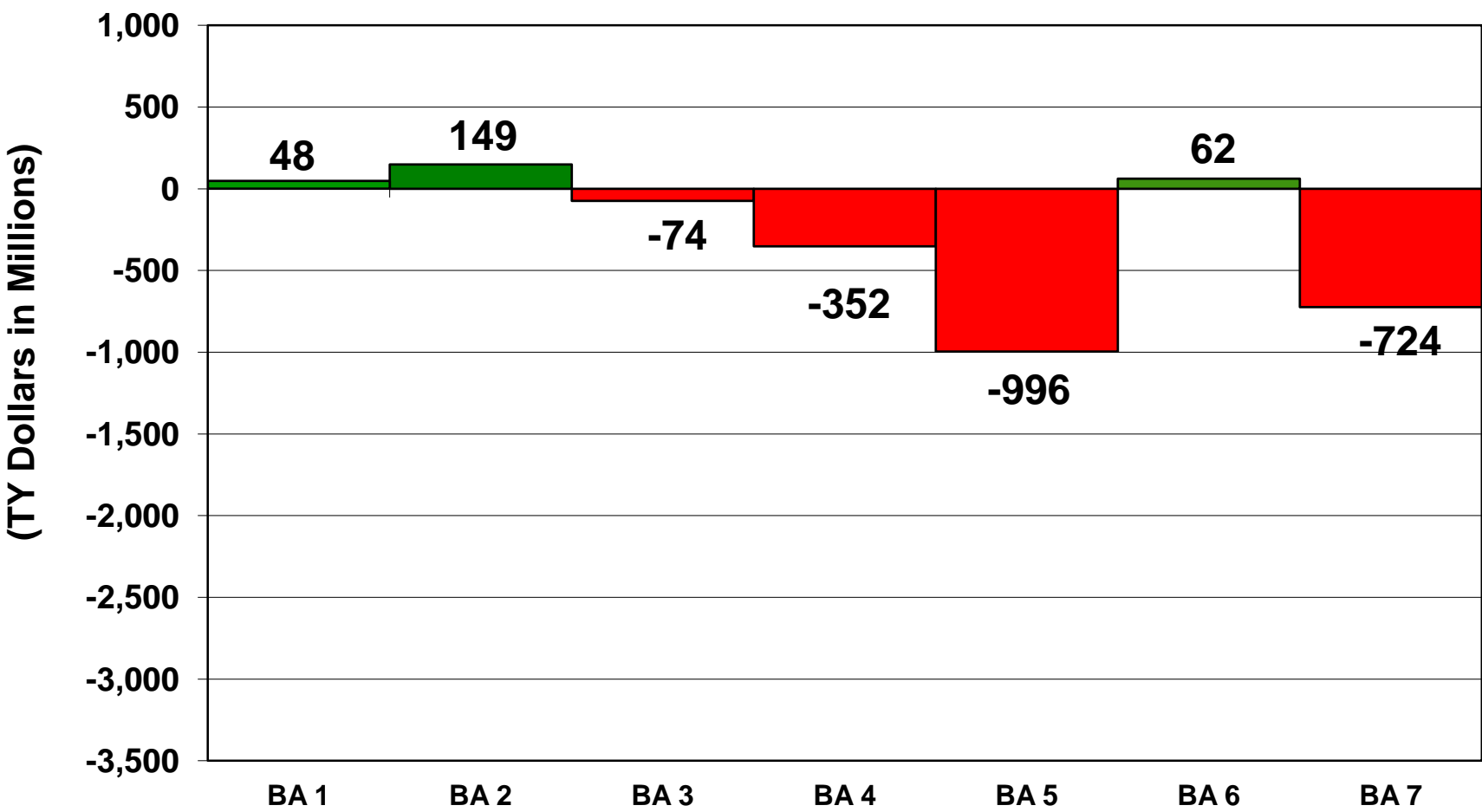
Technology Base (BA1 + BA2) = \$6.79B

PBR14 S&T is 17.7% of RDT&E



RDT&E Budget Request Overview

- FY13 and FY14 Comparison -





FY14 DoD R&E Budget Request Comparison

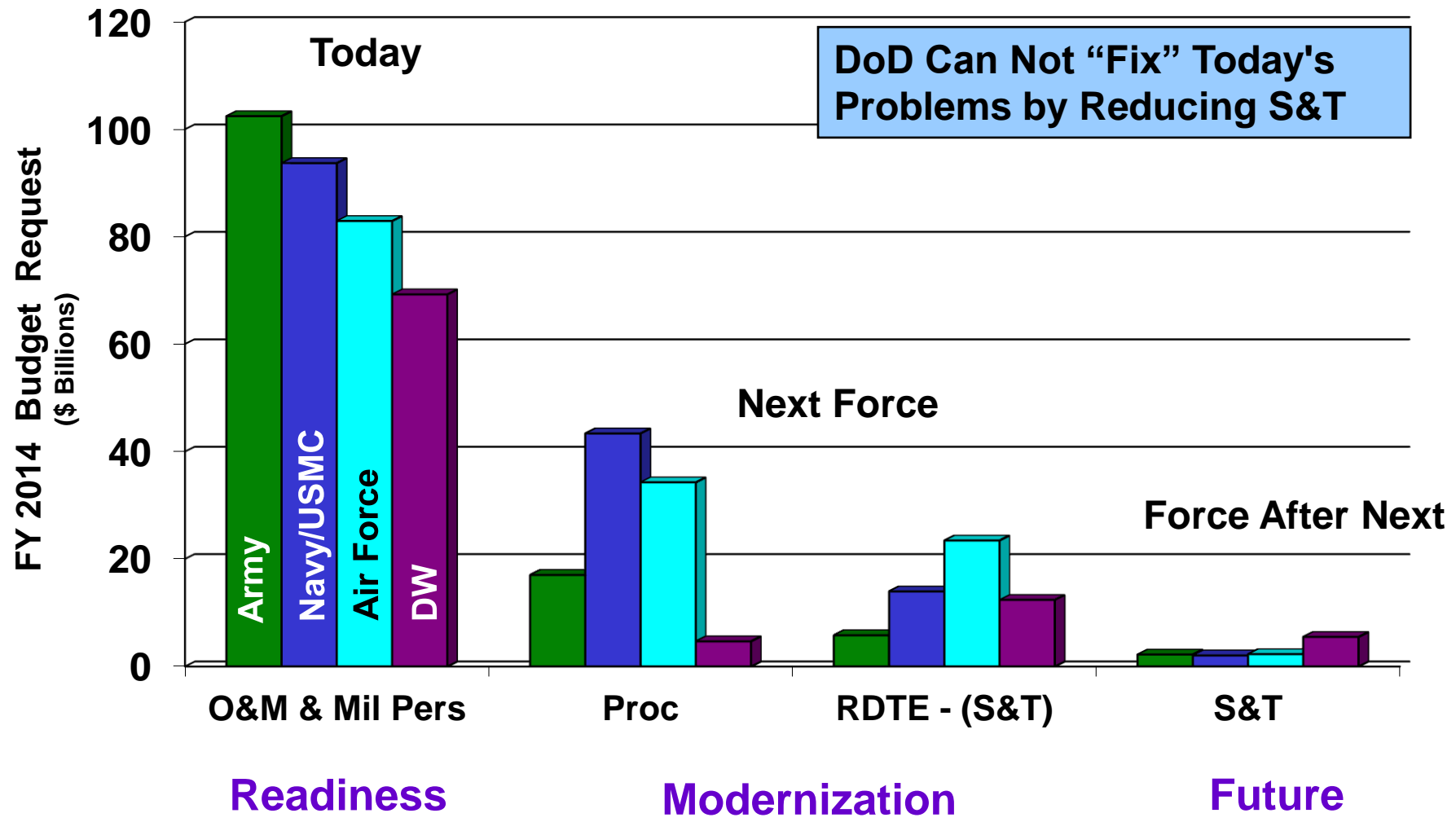


	PBR 2013	PBR 2014 (FY13 CY \$)	% Real Change from PBR 2013 (FY13 CY \$)
Basic Research (BA 1)	2,117	2,164 (2,128)	0.53%
Applied Research (BA 2)	4,478	4,627 (4,549)	1.59%
Advanced Technology Development (BA 3)	5,266	5,192 (5,105)	-3.06%
DoD S&T	11,861	11,984 (11,782)	-0.67%
Advanced Component Development and Prototypes (BA 4)	12,409	12,057 (11,854)	-4.47%
DoD R&E (BAs 1 – 4)	24,270	24,040 (23,636)	-2.61%
DoD Topline	525,449	526,637 (518,854)	-1.26%

** Comptroller Information Systems data as of 1 March 2013



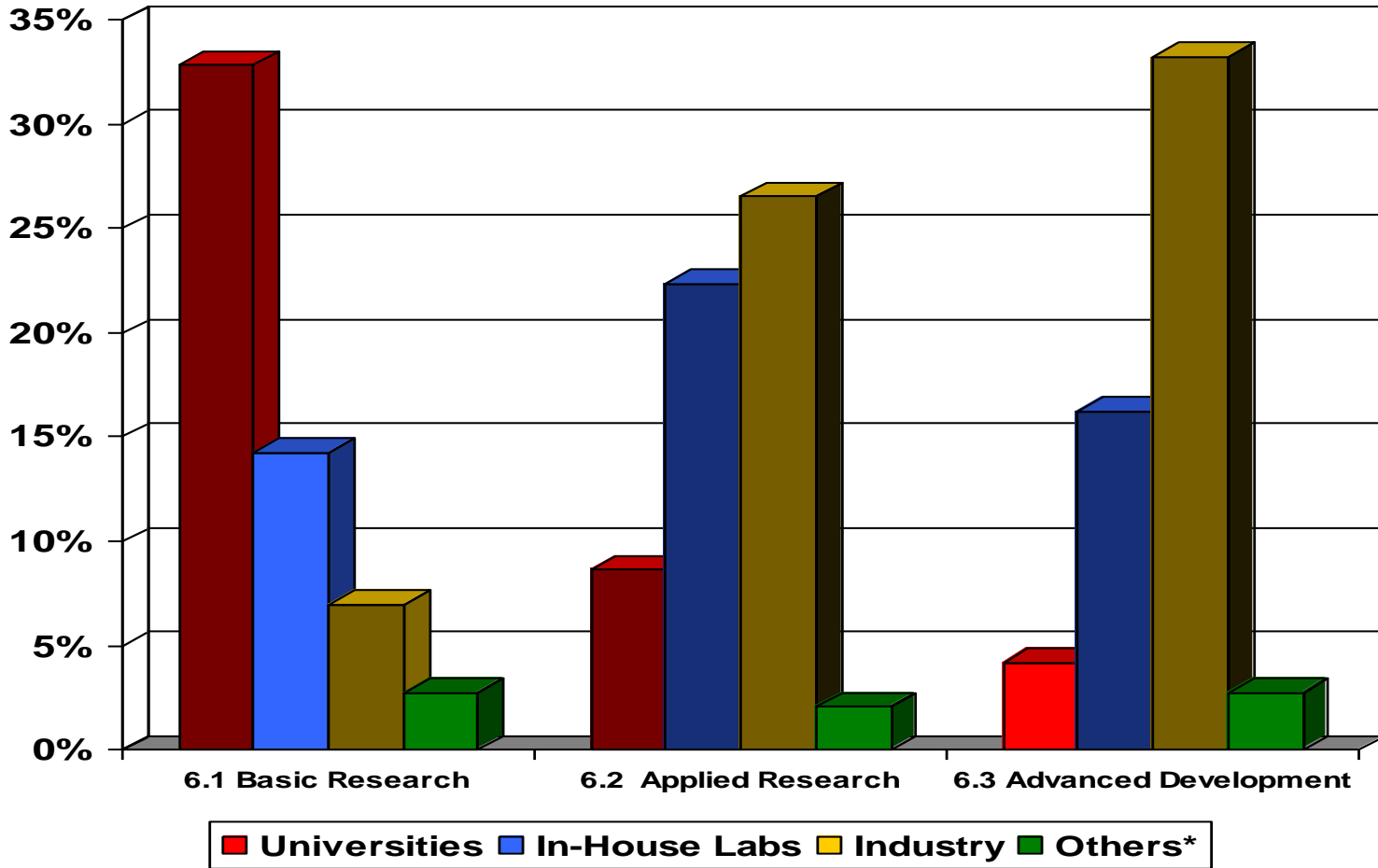
FY14 Technology Investment Compared to Other DoD Categories





Recipients of DoD S&T Funds

DoD S&T Funding Recipients by Percentage
(PBR 2011)



*Includes non-profit institutions, State & local govt., & foreign institutions

Source: National Science Foundation Report (PBR 2011)

Distribution Statement A - Approved for public release. Distribution is unlimited.



Outline

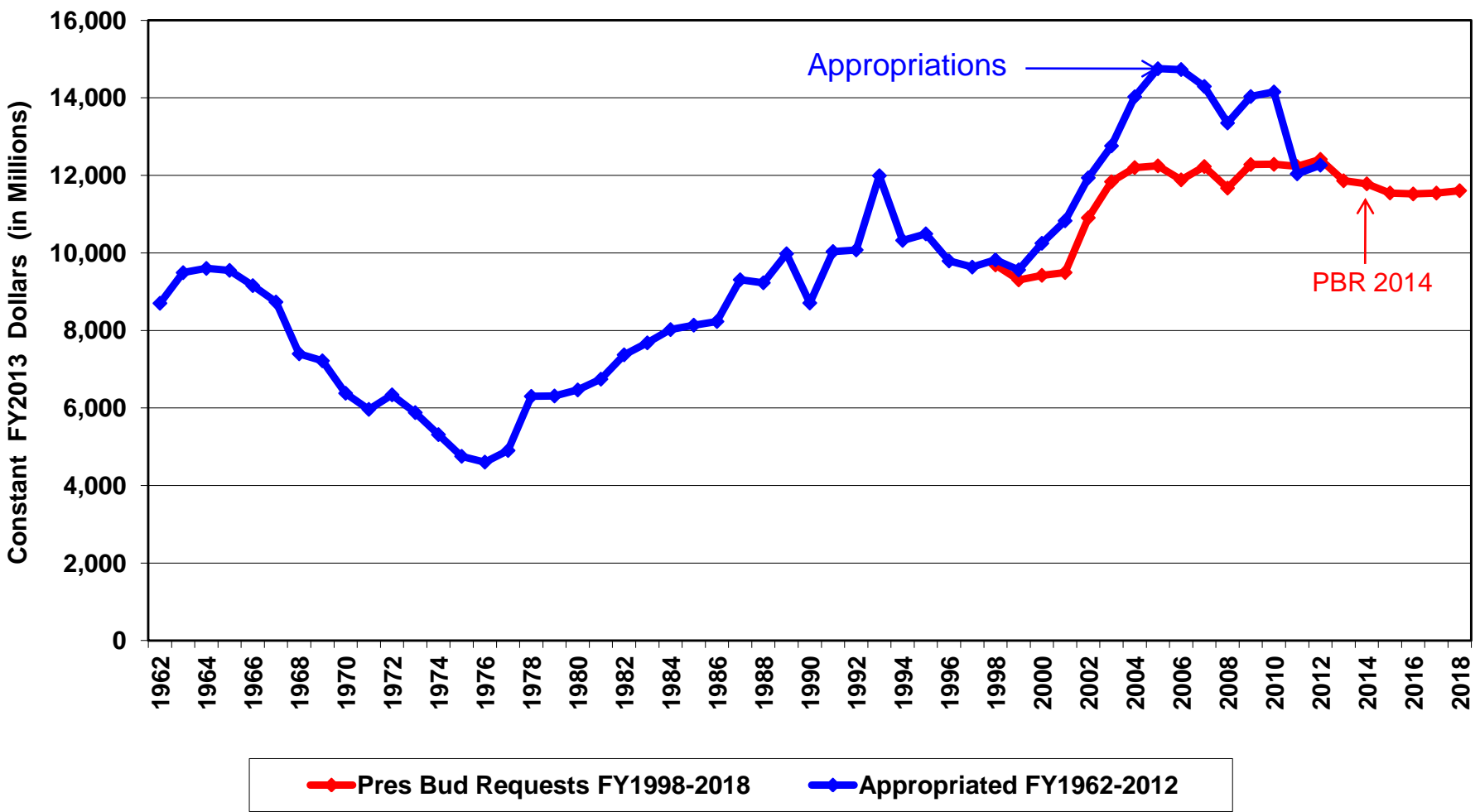


- ***Changes, Challenges & Priorities***
- ***FY2014 S&T President's Budget Request***
- • ***Historical Context***
- ***Strategic Planning & Budget Changes***



DoD S&T FUNDING: FY1962-2018

(FY1962-2012 Appropriated, FY1998-2018 President's Budget Request)

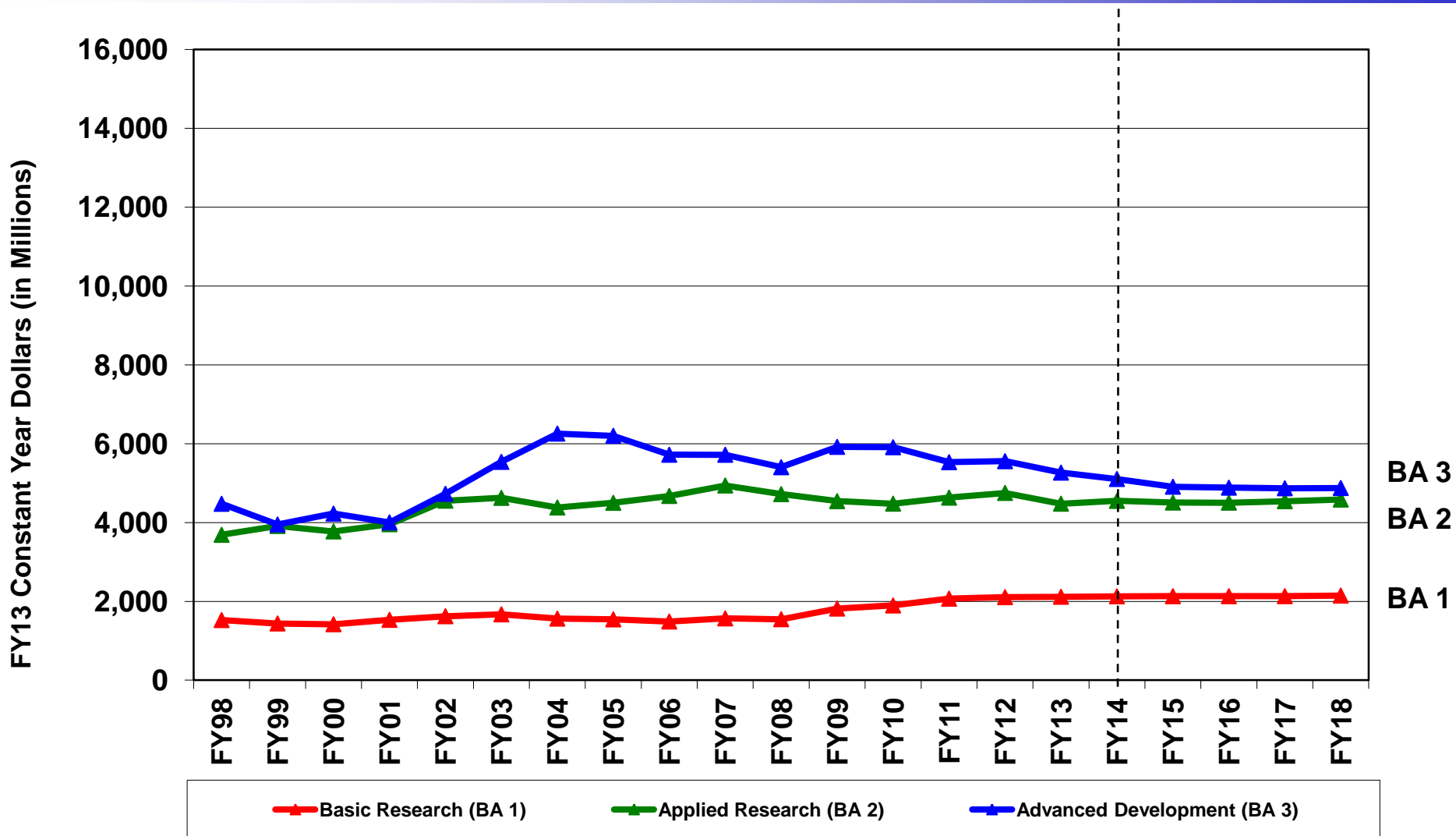


◆ Pres Bud Requests FY1998-2018
 ◆ Appropriated FY1962-2012



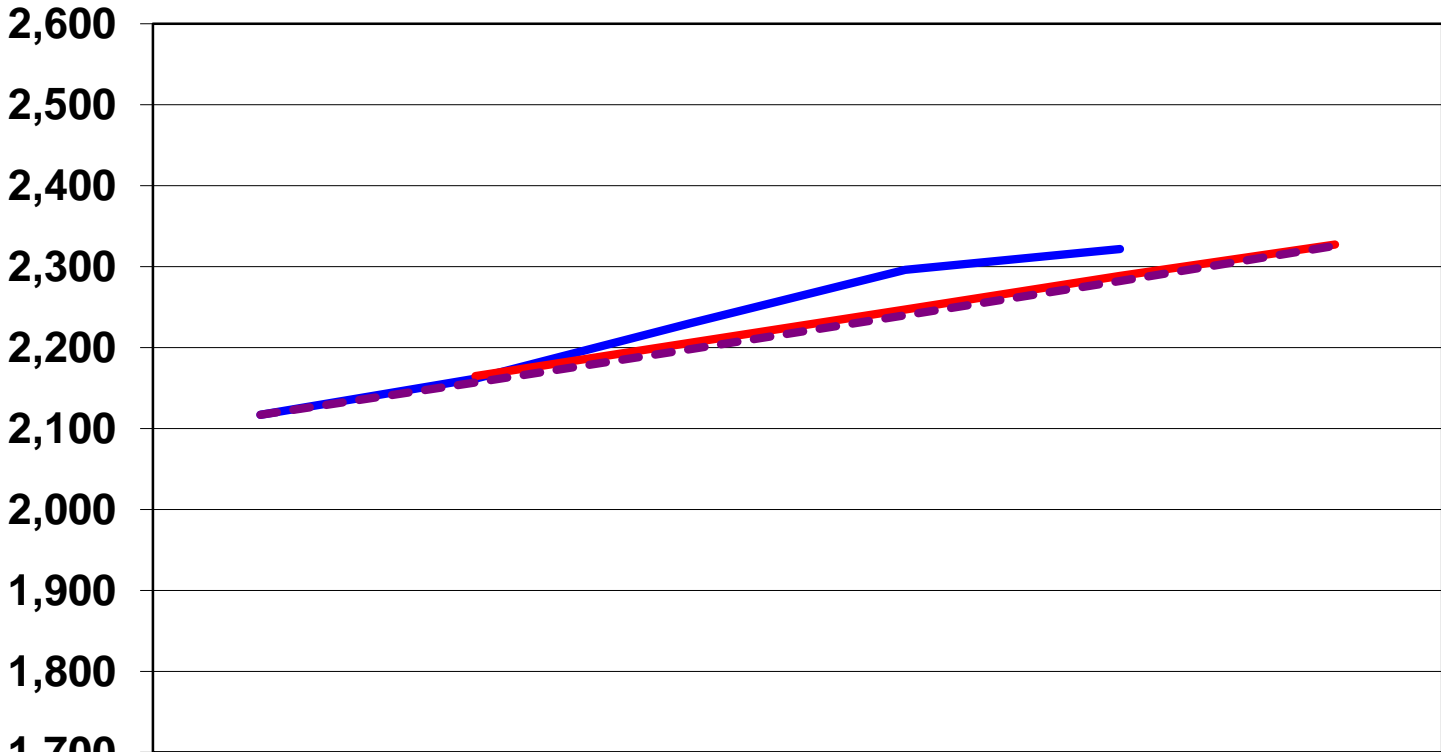
DoD S&T Funding By Budget Activity

- President's Budget Requests -





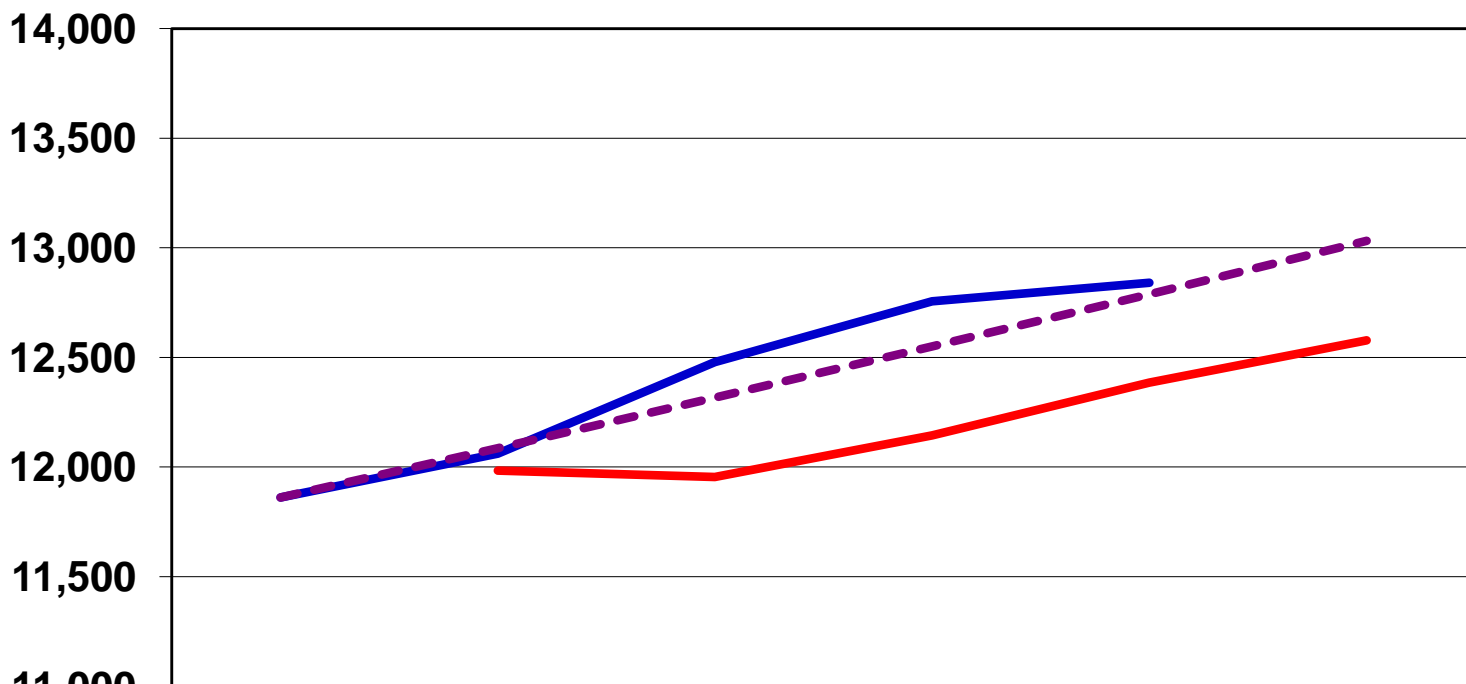
DoD Basic Research (TY Dollars in Millions)



	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
— PBR-13	2,117	2,162	2,230	2,296	2,322	
— PBR-14		2,165	2,206	2,247	2,288	2,327
- - 0% RPG	2,117	2,157	2,198	2,240	2,282	2,326
Δ - PBR14 versus PBR13		3	-24	-49	-33	



DoD Science & Technology (TY Dollars in Millions)

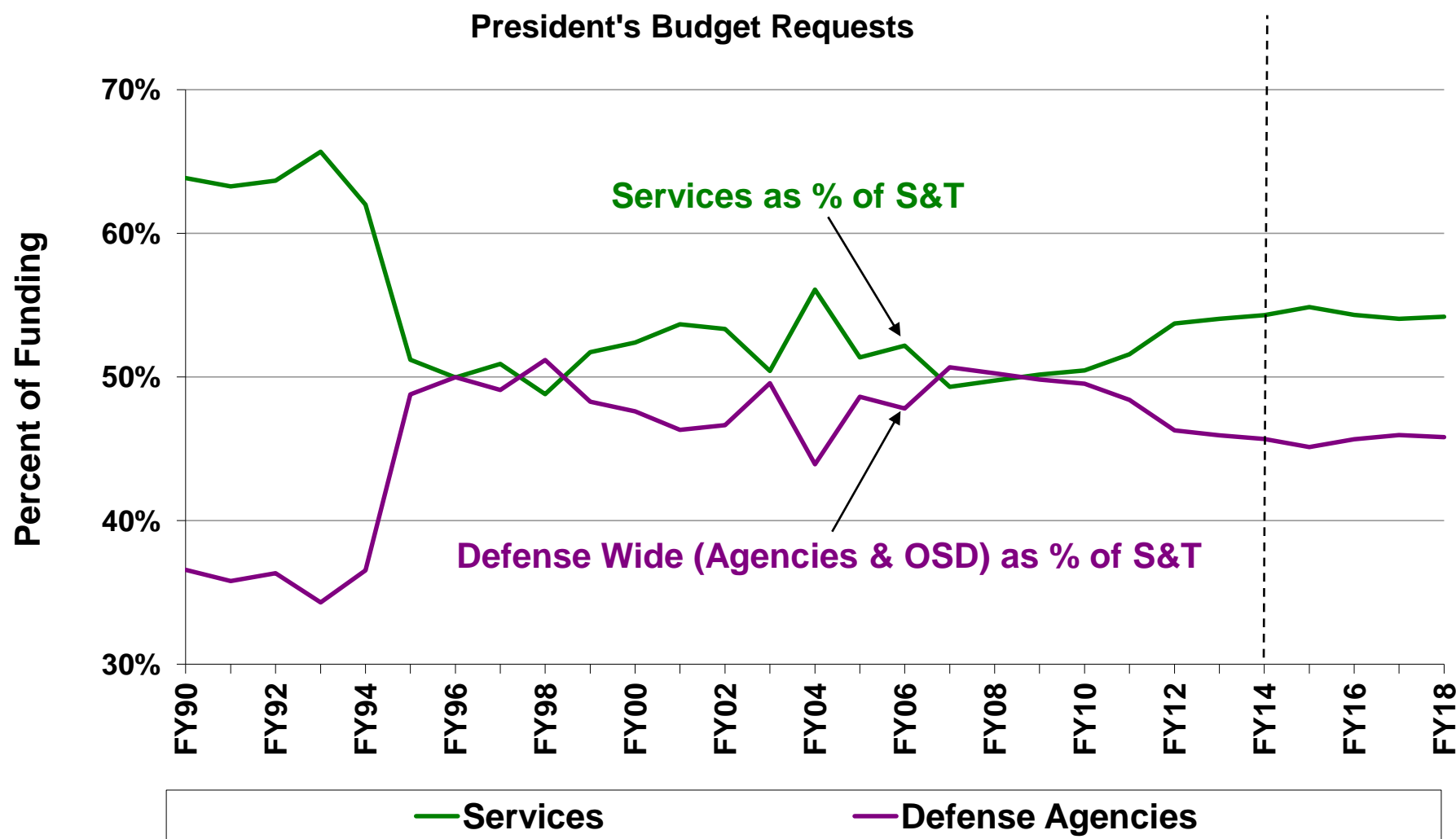


	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
PBR-13	11,861	12,061	12,479	12,756	12,841	
PBR-14		11,984	11,955	12,144	12,386	12,578
0% RPG	11,861	12,086	12,316	12,550	12,789	13,032
Δ - PBR14 versus PBR13		-78	-525	-612	-455	



S&T Breakout

- Services and Defense Agencies as % of Total S&T -





Outline



- ***Changes, Challenges & Priorities***
- ***FY2014 S&T President's Budget Request***
- ***Historical Context***
- ***Strategic Planning & Budget Changes***





DoD Needs to Develop New Ways to Project Power



- Improved Intelligence, Surveillance, & Reconnaissance
- Electronic Attack / Electronic Protection
- Surface to Surface Ship Missiles
- Ballistic and Cruise Missile Defense



- Improved Precision Strike
- Cyber and Space Capabilities
- Undersea Warfare
- Advanced Air Defenses

Technologically advanced capabilities needed for the future



FY 2014 Investments to Meet S&T Priorities



- **Project Power Despite Anti-access/Area-denial Challenges (~\$2B)**
 - *Army \$20M, Navy \$580, Air Force \$620M, Defense Agencies \$650M*
 - Realigned ~\$5 billion across the FYDP for A2/AD priorities (not all S&T)
 - Enhanced electronic warfare to include jamming pods and EW test range
 - Advanced Infrared Search and Track (IRST)
- **Counter Weapons of Mass Destruction (~\$1B)**
 - *OASD(NCB) components: CBD, DTRA*
- **Advanced Manufacturing (~\$83M – up 41%)**
 - *Air Force \$36M, Defense Agencies \$47M*



FY 2014 Investments to Meet S&T Priorities (contd.)



- **Operate Effectively in Cyberspace & Space (~\$1B)**
 - **Cyber:** *Army \$30M, Navy \$50M, Air Force \$60M, Defense Agencies \$340M*
 - **Space:** *Army \$6M, Navy \$20, Air Force \$330M, Defense Agencies \$200M*
- **Electronic Warfare (~\$600M)**
 - *Army \$40M, Navy \$160M, Air Force \$89M, Defense Agencies \$300M*
- **High-speed Kinetic Strike (~\$100M)**
 - *Air Force \$76M*
- **Developmental Prototyping (+\$13.8M) – New vector**
 - *ASD(R&E)*



Summary

--Where We Are Today--



- **FY 2014 S&T President Budget Request (PBR) is \$11.98 billion, an increase of 1% (then year \$) as compared to FY 2013 PBR**
 - Department protected S&T relative to rest of RDT&E and Overall DoD Topline
- **Basic Research and Applied Research increased a total of \$196 million**
- **Defense Advanced Research Projects Agency is funded at \$2.9 billion RDT&E to develop technologies for revolutionary, high-payoff, military capabilities**
- **S&T funding in each Military Department is maintained at approximately \$2.2 billion**
- **Funds aligned to support strategic guidance and S&T priorities**

All FY 2013 funding does not take into account sequestration reduction



BACK-UPS



FY14 President's Budget Request

\$ Millions	PB 2014 Budget Activity	FY2014 PBR 2014	FY2015 PBR 2014	FY2016 PBR 2014	FY2017 PBR 2014	FY2018 PBR 2014
DoD	BA 1	2,164,934	2,205,981	2,246,868	2,288,047	2,327,256
DoD	BA 2	4,626,920	4,666,074	4,747,913	4,872,574	4,966,112
DoD	BA 3	5,191,755	5,082,457	5,149,015	5,225,074	5,284,352
	DoD S&T	11,983,609	11,954,512	12,143,796	12,385,695	12,577,720
Army	BA 1	436,725	443,550	451,375	459,517	467,788
Army	BA 2	885,924	896,644	912,951	929,385	946,113
Army	BA 3	882,106	901,869	854,554	889,069	904,624
	Army S&T	2,204,755	2,242,063	2,218,880	2,277,971	2,318,525
Navy	BA 1	615,306	626,382	637,657	649,135	660,819
Navy	BA 2	834,538	818,295	833,018	848,109	863,374
Navy	BA 3	583,116	591,496	599,444	585,999	593,171
	Navy S&T	2,032,960	2,036,173	2,070,119	2,083,243	2,117,364
Air Force	BA 1	524,770	533,846	543,590	553,509	563,610
Air Force	BA 2	1,127,893	1,148,593	1,170,558	1,193,900	1,220,920
Air Force	BA 3	617,526	599,286	595,472	585,777	596,324
	Air Force S&T	2,270,189	2,281,725	2,309,620	2,333,186	2,380,854
Def Agencies	BA 1	588,133	602,203	614,246	625,886	635,039
Def Agencies	BA 2	1,778,565	1,802,542	1,831,386	1,901,180	1,935,705
Def Agencies	BA 3	3,109,007	2,989,806	3,099,545	3,164,229	3,190,233
	Defense Agencies S&T	5,475,705	5,394,551	5,545,177	5,691,295	5,760,977