



The Federal Networking and Information Technology Research and Development (NITRD) Program

**Briefing to the National Security Telecommunications
Advisory Committee R&D Task Force**

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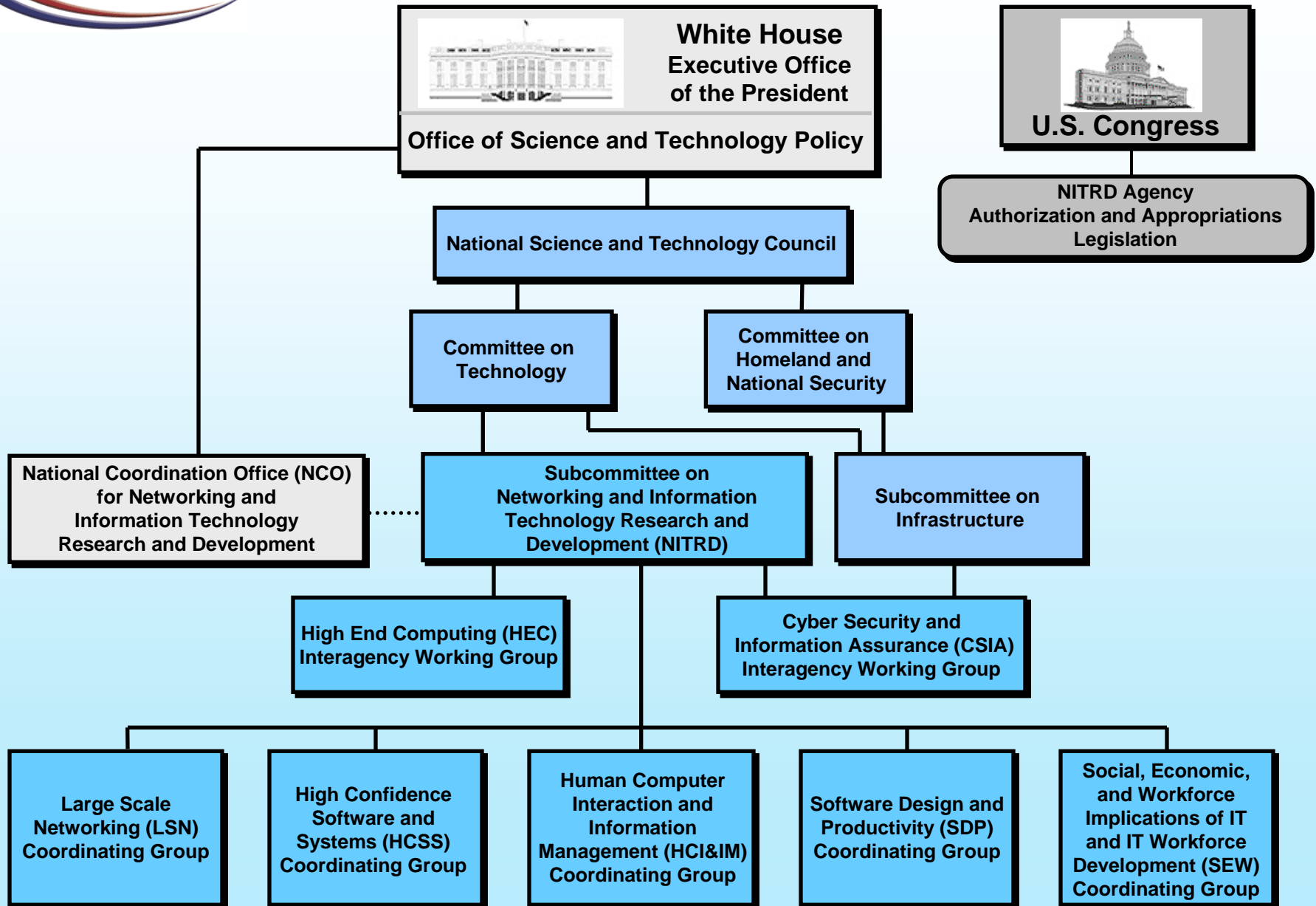


Overview of the NITRD Program

- **Authorization of the Networking and Information Technology Research and Development (NITRD) Program**
 - High-Performance Computing Act of 1991
 - Next Generation Internet Research Act of 1998
- **NITRD Subcommittee, National Science and Technology Council (NSTC)**
 - Representatives from 12 program agencies + OMB + OSTP + NCO/NITRD
 - Has two Interagency Working Groups (IWGs) and five Coordinating Groups (CGs)
- **Budget of \$2.2 billion in FY 2006**



NITRD Program Coordination





Agency NITRD Budgets by PCA

FY 2006 Budget Requests (dollars in millions)

Agency	HEC I&A	HEC R&D	HCI&IM	LSN	HCSS	SDP	SEW	Totals
NSF	201.8	105.0	168.5	94.5	76.0	65.4	92.1	803
NIH	135.1	67.3	171.0	76.6	12.3	26.4	12.0	501
DOE/SC	105.7	82.0		36.2			3.5	227
DARPA		81.0	74.4	20.8				176
NSA		36.9		1.5	62.2			101
NASA	34.0		14.5	13.0	12.8			74
AHRQ			38.0	30.0				68
NIST	5.4	0.6	8.6	4.6	18.0	4.8		42
OSD					2.5	20.0		22
NOAA	13.7	1.8	0.5	2.8				20
EPA	3.3		3.0					6
Subtotals	499.0	374.6	478.5	280.0	183.8	118.1	107.6	2041
DOE /NNSA	33.1	30.5		14.3		31.6	4.4	114
Totals	532.1	405.1	478.5	294.3	183.8	149.7	112.0	2155

Other participating agencies: AFRL, ARO, DHS, FAA, FDA, NARA, ONR



NITRD NCO Objectives

- **To support NITRD-related policy making in the White House Office of Science and Technology Policy (OSTP).**
- **To serve as the Federal focal point for interagency technical planning, budget planning, and coordination for the Federal NITRD Program.**
- **To serve as a source of timely, high-quality, technically accurate, in-depth information on accomplishments, new directions, and critical challenges relevant to the NITRD Program.**
- **To augment the impact of information technology R&D as a transforming force for societal and economic good.**



NCO Impact on NITRD Program Activities

- **Increased NITRD interagency R&D coordination and planning activities.**
- **Increased conferences, workshops, and meetings that aid in identifying NITRD needs in strategic areas that are aligned with and benefit national priorities.**
- **Increased NITRD agency interaction and outreach with non-governmental experts to help identify and implement NITRD Program priorities.**



Role of the NCO in NITRD Program Activities

- **The NCO helps the Interagency Working Groups and Coordinating Groups identify research needs, and plan, budget, and assess progress in addressing those needs.**
- **Programs and activities take place at two levels:**
 - Government-only: interagency meetings
 - With external stakeholders: conferences and workshops involving academia and industry
- **Information dissemination takes place through published reports including:**
 - Annual Supplements to the President's Budget
 - Research needs reports
 - Conference and workshop reports
 - Reports of the President's Information Technology Advisory Committee (PITAC)



Program Component Areas (PCAs)

At the core of the NITRD Program structure are eight technical domains called Program Component Areas (PCAs):

- **High-end Computing (HEC) Interagency Working Group (IWG), with two PCAs:**
 - HEC Infrastructure and Applications (I&A) – R&D to extend the state-of-the-art in computing systems and data management.
 - HEC Research and Development (R&D) – R&D to optimize the performance of today's high-end computing systems and to develop future generations of high-end computing systems.
- **Cyber Security and Information Assurance (CSIA) Interagency Working Group (IWG):**
 - Fundamental and applied R&D to improve the security and assurance of information systems.



PCAs (continued)

- **Human Computer Interaction and Information Management (HCI&IM):**
 - R&D aimed at increasing the benefit of computer technology to humans through development of user interaction technologies, cognitive systems, information systems, and robotics.
- **Large Scale Networking (LSN):**
 - R&D for development of leading-edge networking technologies, services, and techniques to enhance performance, security, and scalability, and in support of high performance research networks.
- **Software Design and Productivity (SDP):**
 - R&D focused on achieving fundamental advances in concepts, methods, techniques, and tools for software design, development, and maintenance.



PCAs (continued)

- **High Confidence Software and Systems (HCSS):**
 - R&D for technologies necessary to achieve affordable and predictable high levels of safety, security, reliability, and survivability in critical systems.
- **Social, Economic, and Workforce Implications of IT and IT Workforce Development (SEW):**
 - R&D investigating the nature and dynamics of IT impacts on technical and social systems, interactions between people and IT devices and capabilities, workforce development needs, and innovative IT applications in education and training.



Highlights of Ongoing NCO/NITRD Activities

- **Supporting development of a National Academies study on problems that are computing and/or data intensive and their mathematical nature in the context of Federal high-end computing needs.**
- **Supporting the integration of the Cyber Security and Information Assurance (CSIA) IWG into the NITRD Program.**
- **Performing early work on data collection for the FY 2007 NITRD Supplement to the President's Budget.**
- **Work underway for future workshops on Optical Networking Testbeds, Aviation Safety: Flight Critical Systems , CIP Power Grid, and NITRD participation in Supercomputing 2005.**



Recent Highlights of the NCO/NITRD

- **Dr. Simon Szykman was named NCO Director on May 26, 2005.**
- **The NCO supported the HCSS CG-sponsored workshop on High Confidence Medical Device Software and Systems held on June 2-3, 2005.**
- **Supported the launching of the High End Computing Interagency Working Group (HEC IWG).**
- **Supported the formation of the Federal Agency Administration of Science and Technology Education and Research (FASTER) Community of Practice (CoP).**



PITAC-Related Highlights of the NCO/NITRD

- **The NCO supported the President's Information Technology Advisory Committee (PITAC):**
 - Public meetings
 - Reports
 - *Computational Science: Ensuring America's Competitiveness*
 - *Cyber Security: A Crisis of Prioritization*
 - *Revolutionizing Health Care Through Information Technology*



Questions?

- Visit <http://www.nitrd.gov/>
- Send e-mail to nco@nitrd.gov
- Call us at (703) 292-4873