National Cyber Leap Year
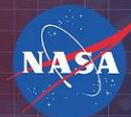
Introduction

October 2008

Comprehensive National Cybersecurity Initiative

Comprehensive National Cybersecurity Initiative

U.S. Computer Emergency
Readiness Team (US-CERT)

Supply chain defense

DHS National Cybersecurity Center

National Cyber Investigative
Joint Task Force (NCIJTF)

Trusted Internet
Connections Initiative

CNCI

Increasing funding
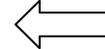for IT security

EINSTEIN Program

Cyber education

National Infrastructure
Protection Plan (NIPP)

Leap-Ahead R&D
&
Coordination

National Cyber
Leap Year
FY 2009

Motivators for CNCI R&D

- Attackers Rule, Disasters are Likely
- Short-term Measures Essential but Insufficient
- Market Forces Will Not Change the Balance
- Usability & Manageability Critical to Solution
- New Technology Can Catalyze Major Changes
- *Only a National Initiative Will Make a Real Difference*

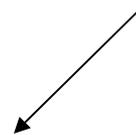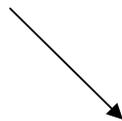-- Safe Computing Workshop (2006) and National Cyber Defense Initiative activities

Vision of R&D under the CNCI

(Coordination)
A high-priority, high-intensity, focused, and <u>coordinated</u> set of Federal government activities over the next 10 years

(Leap-Ahead Program)
Expanding cyber research and development into high-risk, <u>high-return</u> areas

"to transform the cyber infrastructure so that critical national interests are protected from catastrophic damage and our society can confidently adopt new technological advances"

CNCI R&D Coordination: Principles & Framework

- ◆ **Coordination Principles**
  - ▪ Improve synergy between classified and unclassified Federal research
  - ▪ Enable multidisciplinary and multisector effort
  - ▪ Prioritize research needs
  - ▪ Maximize intellectual capital
  - ▪ Exploit the full range of R&D models

- ◆ **Principal Elements of R&D Framework**
  - ▪ Visible leadership at the highest Federal levels
  - ▪ Robust structure for coordination across all CNCI dimensions
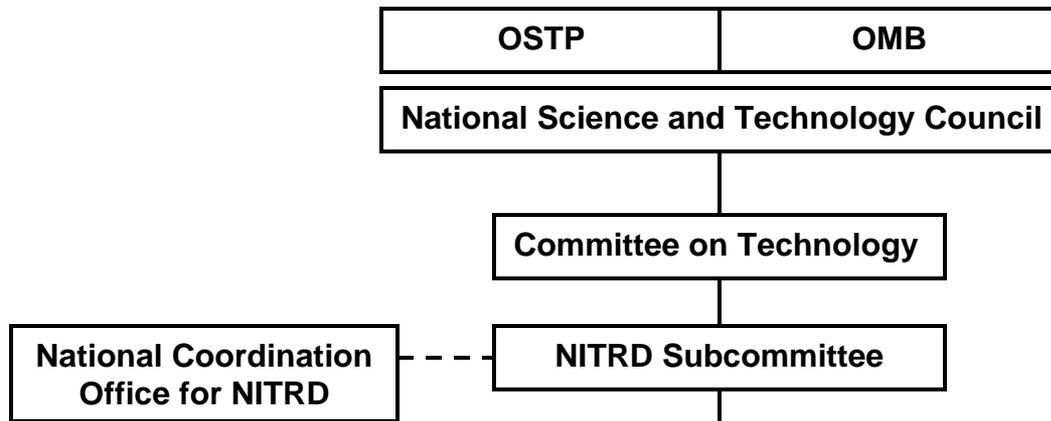 - ▪ Alert, agile, focused mechanism to speed progress

CNCI R&D Coordination Founded on NITRD Program

- **Networking and Information Technology R&D (NITRD) Program's advantages**

  - Foundation for a rapid launch of CNCI R&D coordination activities
  - 17-year history, arguably most successful formal interagency research coordination activity
  - Substantial institutional knowledge about multi-agency coordination
  - Represents full range of Federal R&D agencies in the areas relevant to cyber security technologies (e.g. DARPA, DOE, NASA, NIH, NIST, NSA, NSF, OSD, DOD)
  - Reflects multidisciplinary and multisector principles
  - Engages managers and researchers across many disciplines in the agencies, national laboratories, academia, and industry
  - NITRD participants are among those whose science and technology expertise and agency experience are needed

CNCI R&D Coordination: Implementation

Augmented NITRD Structure for Cyber Security R&D Coordination Under CNCI

OSTP	OMB

National Science and Technology Council

Committee on Technology

National Coordination Office for NITRD - - - **NITRD Subcommittee**

CSIA Senior Steering Group (CSIA SSG)

Cyber Security and Information Assurance Interagency Working Group (CSIA IWG)
+
Representatives of HCSS, LSN, and other NITRD PCAs as appropriate

CSIA SSG Members
- **Agency NITRD co-chair**
- **Director, NCO**
- **Senior representatives of agencies with national cyber security missions (e.g., DOD, DHS, NSA, NIST)**
- **OSTP, OMB** *ex officio*

National Cyber Leap Year

- **Organized by the NITRD/Senior Steering Group for Cybersecurity, FY 2009**
- **Prospecting and selecting game-changing (leap-ahead) ideas that fundamentally change the landscape**
  - <u>Morph the Board</u> (changing the terrain, ex. non-persistent virtual machines, adaptive networks)
  - <u>Change the Rules</u> (rules that favor society's values, ex. accountability, attribution, anonymity)
  - <u>Raise the Stakes</u> (increase risk and cost for attackers, ex. charging for spam email)
- **Selected concepts will form a national R&D agenda**

See Request For Information (RFI) at <u>http://www.nitrd.gov/leapyear/</u>
Submit your ideas to <u>leapyear@nitrd.gov</u>

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