

Panel: Research Agenda for Data and Application Security  
**How are the federal research themes relevant  
to the data and application security?**

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*"cyber threat is one of the most serious economic and national security challenges we face as a nation"  
"America's economic prosperity in the 21st century will depend on cybersecurity."*

**President Obama**



# NITRD's Three Game-changing Themes (1/3)



**Toward a Federal  
Cybersecurity Research Agenda:  
Three Game-changing Themes**



The central focus is the NITRD logo, which features a blue star with a red and white swoosh underneath, followed by the text "NITRD" in a bold, blue, sans-serif font. Surrounding this central logo are various logos of federal agencies and organizations, including the National Nuclear Security Administration (NSA), U.S. Department of Homeland Security, National Science Foundation, National Institutes of Health, National Institute of Standards and Technology (NIST), DARPA, Environmental Protection Agency, NOAA, National Security Agency, NASA, Office of Science (U.S. Department of Energy), HRQ, and The National Archives.

## 1. Tailored Trustworthy Spaces (TTS)

(supporting context specific trust decisions)

Research Challenges:

- Identifying dimensions of a TTS
- Policy specification and mgmt
- Validation of platf. integrity
- Detection violation
- Verifiable separation of spaces
- ...

## How relevant to DASPY?

- An application can be seen as TTS in the first place
- Given ubiquity of cyberspace, a TTS can be defined by (usage of) data and the Context (location, time, etc.)
- Privacy and Security of data to identify an environment
- Managing overlapping/conflicting TTS
- explicit/implicit data-flow between applications/TTS
- ...



## 2. Moving Target (MT)

(Controlled changes across multiple system dimensions)

Research Challenges:

- Managing MT systems
- Smart (agile, adaptive) movement
- Develop a Cyber Ecosystem to support Agility
- ...

## How relevant to DASPY?

- Resilient/distributed application
- Resiliency of data integrity
- Applications/Data capable of migration
- ...



## 3. Cyber Economic (CE)

(Examination to determine what impacts CE, and what incentives can be provided to enable ubiquitous security)

Research Challenges:

- Cyberspace Data
- Personal Info/Behavior
- Empower critical infrastructure providers
- ...

## How relevant to DASPY?

- Data anonymization
- Infrastructures that separate private data in the first place
- Data are critical asset for taking decision (adaptively)
- Distributed reputation trust is based on Data
- ...



# “overseas”: ICT Security Research direction in EU

- Framework Program (FP) 7 (2007-2013) - 51 billion euros
  - Specific Programs -> Theme -> Challenges
  - (each year) Work Programme: budgets and timetable for specific calls
  - Programs:
    - 64% *Cooperation* in (of which, ICT 28%)
    - 15% *Ideas* aim at “frontier of knowledge”, where risks are higher  
*ERC (“NSF-like”) calls for funding nationals **of any country***
    - 9% *People*: training, mobility, career development of EU researchers
    - 9% *Capacities*: enhancing research infrastructures

ICT Trust and Security Research in FP7:



“Central to the research is **enabling users to manage and protect their digital assets, identities and personal data** when they interact in the digital world.”



## “overseas”: ICT Security Research direction in EU

Five closely interrelated thematic areas are promoted:

- 1 secure and trustworthy ubiquitous network infrastructures and their protection against **emerging cyber-threats**
- 2 assuring the protection of critical information infrastructures of modern life and **managing their complexity and interdependencies**
- 3 trustworthy and secure service infrastructures, supporting **applications and end-to-end services**
- 4 **trust, privacy and identity in the digital economy**
- 5 **enabling technologies** for security and trustworthiness of ICT

Example of funded project: *NESSoS project* “aims at constituting and integrating a long lasting research community on engineering secure software and services”

What's next? “Interactive Policy Making” open this month for FP8 IT research

