



Countering Vulnerabilities and Threats within Digital Urbanization

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1



Grand challenges for digital urbanization

Digital convergence: expansion and globalization

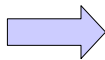
1. Resilience: security and dependability
2. Digital privacy versus collective security
3. Control complex systems with provable and quantitative security
4. Beyond IP and 3G: nano-bio-info and even the quantum world?

2



1. Resilience (security and dependability)

- Fading boundaries between physical space and cyberspace
- Increased dependency of citizens and organizations on ICT (CIIP)
- Complexity: threats and vulnerabilities will increase, while availability decreases



- Closed to open security (monoculture?)
- Static and stand-alone to collaborative, network-centric with full mobility and interactivity
- Proportional responsibility and accountability for deliberate and accidental errors



2. Resilience challenges

- How to create resilience in a **complex connected** (“interdependent”) world with **open** networks and standards?
- How to bring **real-time** resilience in dynamically changing systems

2. Privacy challenge

government:

- anti-terrorism
- detect child porn
- forensics

industry:

- anti-phishing
- anti-SPAM
- control information (DRM)
- data mining
- price discrimination

user:

- convenience
- savings

policies – negotiation - technology

5

3. Provable security

- Quantitative methods (engineering)
 - If you cannot measure it, you cannot improve it
- Proof techniques (science)
- Understand limits of models



6



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