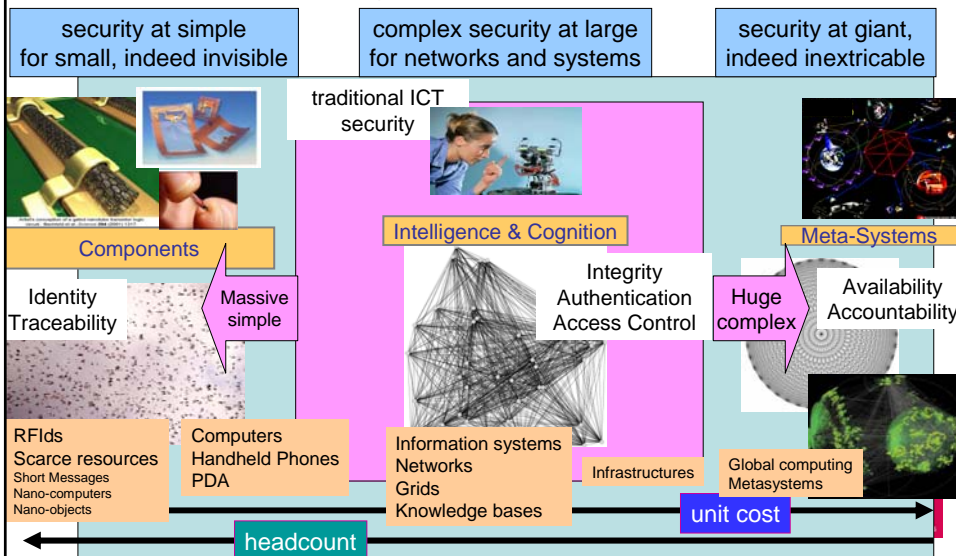


Security Challenges in FP7

Gwendal Le Grand, ENST Paris, France

IST 2006 Helsinki
SecurIST Networking session
Nov 22nd 2006

3 Ubiquities : Storage - Communication - Computation



Security, Trust, Dependability, Resilience Challenges

The security improvement for the **expansion & globalization of digital convergence**

The obligation of a better **digital assurance & trust**

The obligation to attain a **controllable & manageable** world of complex digital artifacts (Includes deployment, monitoring & reconfigurability)

“Future Networks”

- ❑ **Disruptive Protocol Stacks and Architecture Paradigms**
 - Securing Communication & Information Infrastructures & MetaSystems
 - Protecting huge amounts of artifacts (hardware, software, data) for citizens (“privacy”), organizations, governments
 - Treating scarce resources & information (cyber-physical systems)
- ❑ **Transcending Complexity**
 - Multiple Technologies
 - Scalability, heterogeneity, mobility, multiple identities, interfaces
 - Diversity, dynamicity & richness of services, usages
 - Spontaneous virtual mobile architectures
 - Adaptive security policies

=> **New Models, Patterns, Architecture styles and new instruments for secure & dependable communication**

- competencies : system engineering, formal methods, stochastic approach, simulation, ...

Reinforce the Science & Technical Foundations of Security

- **Models, methodologies, tools and languages for trust, security & dependability**
 - **To sense, to measure** & interpret trusted values & commands =>Trust models & Security Policies
 - To assess the **trustworthiness** of the digital living =>Verifiable security

Models and languages

- assessment, evaluation, certification methodologies and tools
- to build trust, privacy, security, dependability, resilience

Measurements

- Collect and analyze data, smart sensors
- Dissociate trust and security infrastructures

Proof

- provable resistance against attacks
- certification

Instruments

- In the design and development phases (languages dedicated to trust & security)
- in the operation and maintenance phases (policies, forecasting, sec. assurance, crisis management)

and testbeds ...