



European Commission



Security Research in the EU Framework Programme for RTD

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RTD for Trust and Security in the Commission

Situation now, during FP6:

1. IST Programme

- ICT for Trust and Security
- Other application fields (eGov, eHealth, Mobile networks, DRM for Media, Crisis management)

2. Preparatory Action for Security Research

- Action to prepare programme under FP7
- ‘Civil security’: security of citizen, infrastructure, ..
- Multi-disciplinary, security solution oriented



ICT for TRUST and SECURITY

From the 'walled fortress'

To the 'open metropolis'



Closed doors, physical isolation

Open, unbounded, interconnected

Security as protection

Trust as an enabler

Defending data and systems

Sharing content and resources

**Resilience, Interdependencies, Complexity, Vulnerabilities
Biometrics; Identity and Privacy, Authentication, Access;
Trust in the Net: Trusted Computing, Fight against Malware**



Resilient Infrastructures



Highly vulnerable, complex and interconnected infrastructures and utilities.

September 28, 2003 Italian electricity grid collapse: ~50 million people without electricity for one day

October 31, 2004 Part of France Telecom IT infrastructure collapse: ~15 million people without telephone for two days

EU research:

- Dependable, resilient ICT infrastructures
- Control of large scale dependable systems
- Understand and manage interdependencies
- Some work ongoing (MEDSI, CI2RCO)
- Strong results from Call 4 (3 IP's, 1 NoE, STREPs) on dependability, risk reduction, resilience and survivability, engineering of resilient systems.





Resilient Infrastructures

- **MEDSI**
Management Decision Support for Critical Infrastructures
- **CI2RCO**
Critical Information Infrastructure Research Co-ordination
- **SAFEGUARD**
Intelligent Agents Organisation to Enhance Dependability and Survivability of Large Complex Critical Infrastructure
- **EXAMINE**
Experimentation of a Monitoring and control system for managing vulnerabilities of the European Infrastructure for Electrical power exchange
- **MAFTIA**
Malicious- and Accidental-Fault Tolerance for Internet Applications; Solutions for dependable and secure networked computer systems that are intrusion tolerant: provide a secure service, even when a system is under attack



Biometrics to benefit EU citizens



Biometric identification for lifelong secure access to data and services; without compromising trust and privacy

EU research:

- **Usability** of biometrics in passports and visa
- Biometrics for **access to mobile or PC**
- **Smart cards vs Databases** for biometric data
- **Multimodal and interoperable**

Significant work started under Call 1 and expected to be continued under call 4





Biometrics to benefit EU citizens

- **BIOSEC (IP: Biometrics and Security)**
Enhance security features of authentication elements and put technology to work in real scenarios; Improved performance of multimodal biometrics, including face-voice and iris-finger combinations used together with advanced classification methodology
- **BIOSECURE (NoE: Biometrics for secure authentication)**
Integrating multidisciplinary research efforts to increase trust in biometrics
- **SECUREPHONE**
Secure contracts signed by telephone
- **BIOVISION**
Roadmap to successful deployments from the user and system integrator perspective



Identity, Privacy, Authentication



Privacy risks, 'big brother', abuse of personal data and commercial assets, identity theft, undermine TRUST in the Information Society

EU research:

- **Encryption:** digital signature and access
- **Identity** at home and travel; location based mobile services;
- **Privacy:** user controls his data/assets; context sensitive privacy technologies; RFID and privacy

Strong work from Call 1 (PRIME, FIDIS, ...).

More work from Call 4 expected





TRUST

Identity, Privacy, Rights, Assets

- **PRIME**
Privacy and Identity Management for Europe
- **FIDIS**
Future of Identity in the Information Society
- **ECRYPT**
European Network of Excellence in Cryptology
- **RAPID**
Roadmap for Advanced Research in Privacy and Identity Management



PRIME



VISION: In the Information Society, users can act and interact in a safe and secure way while retaining control of their private sphere.

- Advance the state-of-the-art in **privacy-enhancing identity management**
- Demonstrate how to **embed European privacy laws** and regulations into technology
- **Empower individuals** to effectively realise their right to privacy and informational self-determination

⇒ **Development of real-world tools and solutions for privacy-enhancing identity management**



Trust in the Net



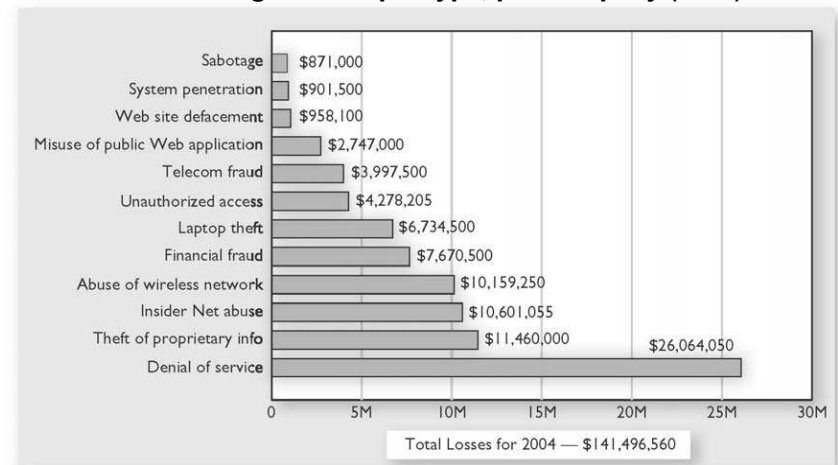
Computer hacking, viruses, spy and malware, (phishing, spoofing)
‘Always-on’ and mobility increase risks and scale, hence costs
66% of Worldwide Internet e-mail is Spam

EU research:

- **Secure Handling Digital Assets** (user and vendor); **Open Trusted Computing**
- **Security architectures and models**
- **Authentication and Identification**
- **Reputation, dynamic trust marking,**
- **Auditing, reporting, logging for forensics and law enforcement**

Work from Call 1 and strengthened in Call 4

Total average losses per type, per company (USA)



2004 CSI/FBI Computer Crime and Security Survey
Source: Computer Security Institute

2004: 269 Respondents



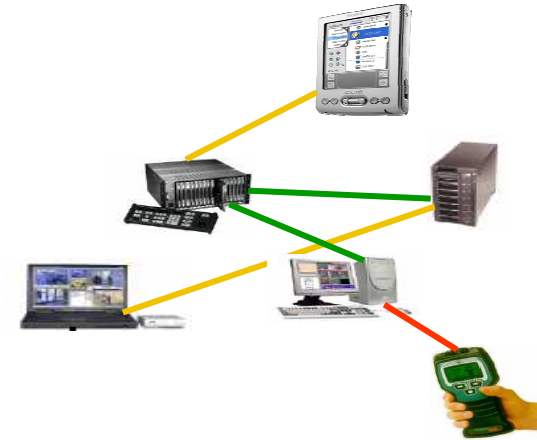
Trust in the Net

- **SEINIT**
Security Expert INITiative
- **POSITIF**
Policy-based Security Tools and Framework
- **CTOSE**
Cyber Tools On-Line Search for Evidence
- **EISPP**
European Information Security Promotion Programme



SEINIT

VISION: Security is a key issue for individuals to whom “the freedom of choice” and “the right to understand” must be guaranteed.



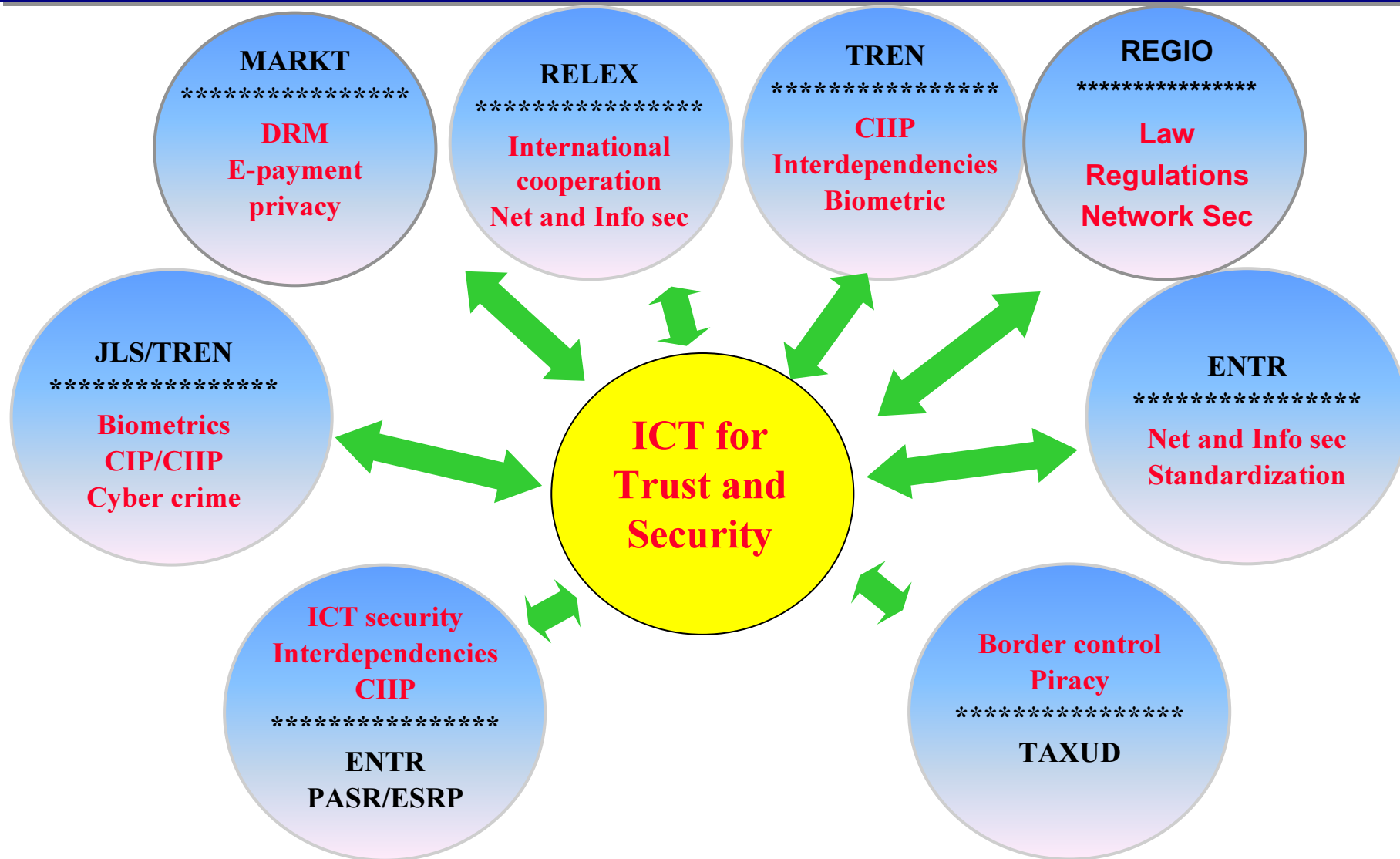
Define **new trust, security models and security policies** that address the **current and future threats** and ensure **affordable security services**, maintaining an **adequate security level** without infringing the privacy



- ⇒ **New models and components to design innovative security architectures and security policies**
- ⇒ **Guidelines and best practices to support take-up of technology**



Main cooperation with other policies





Preparatory Action for Security Research (PASR)

- **Objectives:**
 - Improve EU-citizen security
 - Reinforce European technological and industrial potential and encourage cross sector interaction
 - Prepare a European Security Research Programme (ESRP)
- **Planned duration of 3 years (2004-2006)**
- **A total planned budget of € 55 Mio (15+15+25)**
- **Funding up to 75%**
- **Projects & supporting activities**



Priorities of work

Projects priorities

- Networked systems
- Protection against terrorism
- Crisis management
- Interoperability and integrated systems
- Situation awareness

Supporting Activities priorities

- RTD co-operation, networking and dissemination
- IPR and handling of classified information
- Human factors, perception of security
- Standardisation
- Potential use of existing security infrastructures





Current RTD Project Work

- **TERASEC: detection of hidden weapons and explosives**
- **IMPACT: integrated European CBRN technological capabilities**
- **CRIMSON: crisis management system**
- **SUPHICE: on-demand secure communications provision**
- **ASTRO+: integration of earth and space observation to support security operations**
- **ISCAPS: surveillance of crowded areas exposed to terrorist attacks**
- **VITA: protection of critical infrastructures – methods and scenario demonstration on energy**



Current Work: Supporting Activities

- **CREW + GEODATA: Study of a crisis management early warning system using geospatial data and development of a GeoToolBox**
- **ESSRT: general roadmap for security research**
- **TIARA: improvement of European crisis management in the nuclear area**
- **SENTRE: strategic research plan for security technology research**



FP7: Security and Trust

Com(2005) 119 final – Proposal of Commission for FP7

- **Theme Security and Space (SS Programme)**
 - *“Building capabilities needed to ensure the security of citizens from threats such as terrorism and crime, as well as from the impact and consequences of unintended incidents such as natural disasters or industrial accidents”*
- **Theme ICT (IST Programme):**
 - **Under “ICT technology pillars” (coordinated effort with D3 & F2)**
 - “Software, Grids, security and dependability: dynamic, adaptive, dependable and trusted software and services, and new processing architectures, including their provision as a utility”*
 - **Applications Research**
 - “ICT for trust and confidence: identity management; authentication and authorization; privacy enhancing technologies; rights and asset management; protection against cyber threats”*



Preparing for FP7: SS Programme

- **All Community financed research is carried out in the Framework Programme (FP): next FP is the 7th and will cover years 2007-2013**
- **Security and Space are both new research topics in the framework programme and are grouped as a single theme**
- **Requested level of funding: around 570 M€ per year to be shared with Space Research**
- **Security and Space (with GMES) have both strong security elements, with dual use aspects**
- **Together Security and Space have the required critical mass to have sufficient visibility and weight with respect to other cooperative research themes**



SS Programme - Principles

- **Activities to be mission-oriented in order to develop technologies necessary to meet capability requirements**
- **Activities to complement & integrate technology and system-oriented research carried out in other themes**
- **Programme to be flexible to accommodate unknown future security threats and possible new policy requirements.**
- **Cross-fertilisation with other research sectors and development of multi-purpose technologies to be stimulated**
- **Cooperation between providers (industry) and users (public authorities) of security solutions to be encouraged**
- **Individual rights, public liberties and democratic values to be taken into account**



SS Programme – Content structure

Four main missions

- Protection against terrorism and crime
- Security of infrastructures and utilities
- Border security
- Restoring security in case of crisis

... and 3 cross-cutting areas

- Security Systems Integration & Interoperability
- Security and Society
- Security Research Coordination & Structuring



IST Programme – FP7 Preparatory work

- **Coordination Actions**

- **SecureIST**

- Brings together the FP6 projects on security and dependability (clustering);
 - Provides inputs to a R&D agenda for R&D on security and dependability (bottom-up process)
 - Sets up an Advisory Board strategic directions and recommendations on EU R&D (top-down process)

- **CI2RCO**

- Builds the ERA dimension of R&D for CIIP;
 - Supports the International dialogue on R&D for CIIP (with USA, CAN, AUS, etc.);
 - Brings together the representatives of the EU National R&D programmes relevant to CIIP.

- New actions expected from Call 4



IST Programme – FP7 Preparatory work

- Joint work on Technology pillar **Software, Grids, security and dependability** with Units
 - Software Technologies (D3)
 - ICT for Trust and Security (D4)
 - GRID Technologies (F2)Emerging ETP **SeaSide** (Service Architectures and Software Infrastructures driving the Knowledge Economy) maps on this Technology pillar
- Work Application area **ICT for trust and confidence**, in coordination with eGov, eHealth, ...



WEB sites



www.cordis.lu
www.cordis.lu/ist



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2005-2006 IST Work Programme

http://www.cordis.lu/ist/workprogramme/wp0506_en/2_4_3.htm

ICT for trust and security

http://www.cordis.lu/ist/directorate_d/trust-security/index.htm