

# ***Securing Critical Infrastructures: The GRID initiative***

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# Background

- Recent power blackouts in different parts of the world
- Communication blackouts
- Increased awareness of malicious attacks, interdependencies and system vulnerabilities

# Power System perspective: The Scene

- Power grid: a vital infrastructure for our modern society – huge economical & social impact of blackouts – less and less acceptance;
- Electricity cannot be stored at a large scale;
- Open access and deregulation -> Multi actors, Transaction amount, Information ...;
- Complex system, more and more dependant from ICT for its protection, control, management, planning and market operations;
- A great number of blackouts in the last years, some in connection with information and communication problems (2003: USA, London, Italy, Sweden & Denmark, Iran, Finland, Algeria; 2004: Australia, Greece, Jordan, Bahrain).



# Challenges

- How to cope with vulnerabilities of present day power systems
- How to cope with increased interdependencies between Power & ICT
- How to change from brittle system to ductile system
- Design and maintenance of dependable *open* systems!

# GRID Initiative

- **A Coordination Action on ICT vulnerabilities of power systems and the relevant defence methodologies**
- **Strategic objectives addressed:**
  - **IST-2004-2.4.3: Towards a global dependability and security framework**

**The increasing dependability of the power grid to the ICT systems used to control and protect them, the complexity and vulnerabilities induced and how to globally tackle and solve the security problem of the whole system**

# The consortium

No	Participant organization name	Short name
1	Institut National Polytechnique de Grenoble - Laboratoire d'Electrotechnique de Grenoble	<b>INPG-LEG</b>
2	Joint Research Center - Institute for the Protection and Security of the Citizen	<b>JRC-IPSC</b>
3	Foundation for Scientific and Industrial Research – Energy and ICT departments	<b>SINTEF</b>
4	Centro Elettrotecnico Sperimentale Italiano	<b>CESI-RICERCA</b>
5	Fraunhofer Institute for Secure Information Technology	<b>FhG-SIT</b>
6	Katholieke Universiteit Leuven - ELECTA Division	<b>KU-Leuven</b>

# Objectives

- Analysis of the different security issues, the current knowledge and bottlenecks, the on-going or planned initiatives and researches, directly or indirectly linked to the topic;
- identification of research priorities - road mapping;
- Identification of recommendations to be issued for security policies;
- Raising awareness on the security concerns at the policy, industrial and academic level.

# Objectives

- Two themes:
  - Methods to assess reliability, security and risks affecting the power grid, especially concerning vulnerabilities arising from the increased control complexity and to the openness of the supporting information and communication technologies;
  - Management, control and protection schemes and the relevant architectures and devices.

# Main project outcomes

- Assess the needs of the power sector:  
exchange of information about national and European on-going research projects on related topics
- Achieve consensus among stakeholders and R&D institutions on a roadmap for collaborative R&D on the two target areas

# Project organisation

Work-package No	Workpackage title
WP1	Management
WP2	Vulnerability and risk assessment
WP3	Management, control and protection schemes and the relevant architectures and devices
WP4	Strategies and dissemination

# Milestones

- 1<sup>st</sup> Plenary Conference to assess needs and background (June 15th 2006 – Stavanger, Norway)
- 2 technical workshops on the target areas:
  - 1<sup>st</sup> workshop (Oct. 2006 – Leuven, Belgium): respond to issues raised by the Conference
  - 2<sup>nd</sup> workshop (June 2007): establish draft R&D roadmap
- 2<sup>nd</sup> Plenary Conference (Oct. 2007 - Brussels): present roadmap to stakeholders/initiate consultation on R&D issues among interested parties

# Stakeholders

- Commission
- Authorities at the EU and national level
- System operators & utilities
- ICT & Energy Manufacturers
- R&D center

# International Cooperation

- International Institute for Critical Infrastructures (CRIS Institute)

Up coming international event: **CRIS'2006, Alexandria, US, 24-27 Sept. 2006 (Joint US/EU panel on CIP)**

[www.cris2006.com](http://www.cris2006.com)

# Methodology - General overview

