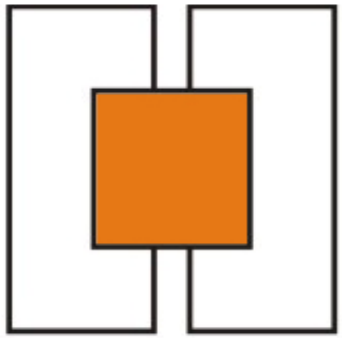


INTERSECTION Project

inter SECTION

EC Grant Agreement n. 216585

Salvatore D'Antonio

CINI

saldanto@unina.it

ICT Fair for Trust and Security Research – Olomouc, 19 May 2009

SEVENTH FRAMEWORK PROGRAMME

ELSAG DATAMAT
A Finmeccanica Company

cini
Consorzio Interuniversitario Nazionale per l'Informatica

LANCASTER UNIVERSITY

THALES

FOKUS

Fraunhofer Institute for Open Communication Systems

Telefonica

iTTi
e-technologies & business

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

TELESPAZIO
A Finmeccanica / Thales Company

era
MOŻESZ WIECEJ

Project overview

- **IN-TE-R-SE-C-T-I-O-N** : **IN**frastructure for he**TE**rogeneous, **R**esilient, **SE**cure, **C**omplex, **T**ightly **I**nter-**O**perating **N**etworks
- **Work programme topic addressed**
  - Challenge 1: Pervasive and Trusted Network and Service Infrastructures
  - Objective ICT-2007.1.4: Secure, dependable and trusted infrastructures
- Start date: January 1st, 2008
- Duration: 24 months

The Consortium

EC Grant Agreement n. 216585

ACADEMY

- Consorzio Interuniversitario Nazionale per l'Informatica [Italy]
- Lancaster University [UK]
- Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung [Germany]
- Eidgenoessische Technische Hochschule Zuerich [Switzerland]

INDUSTRY

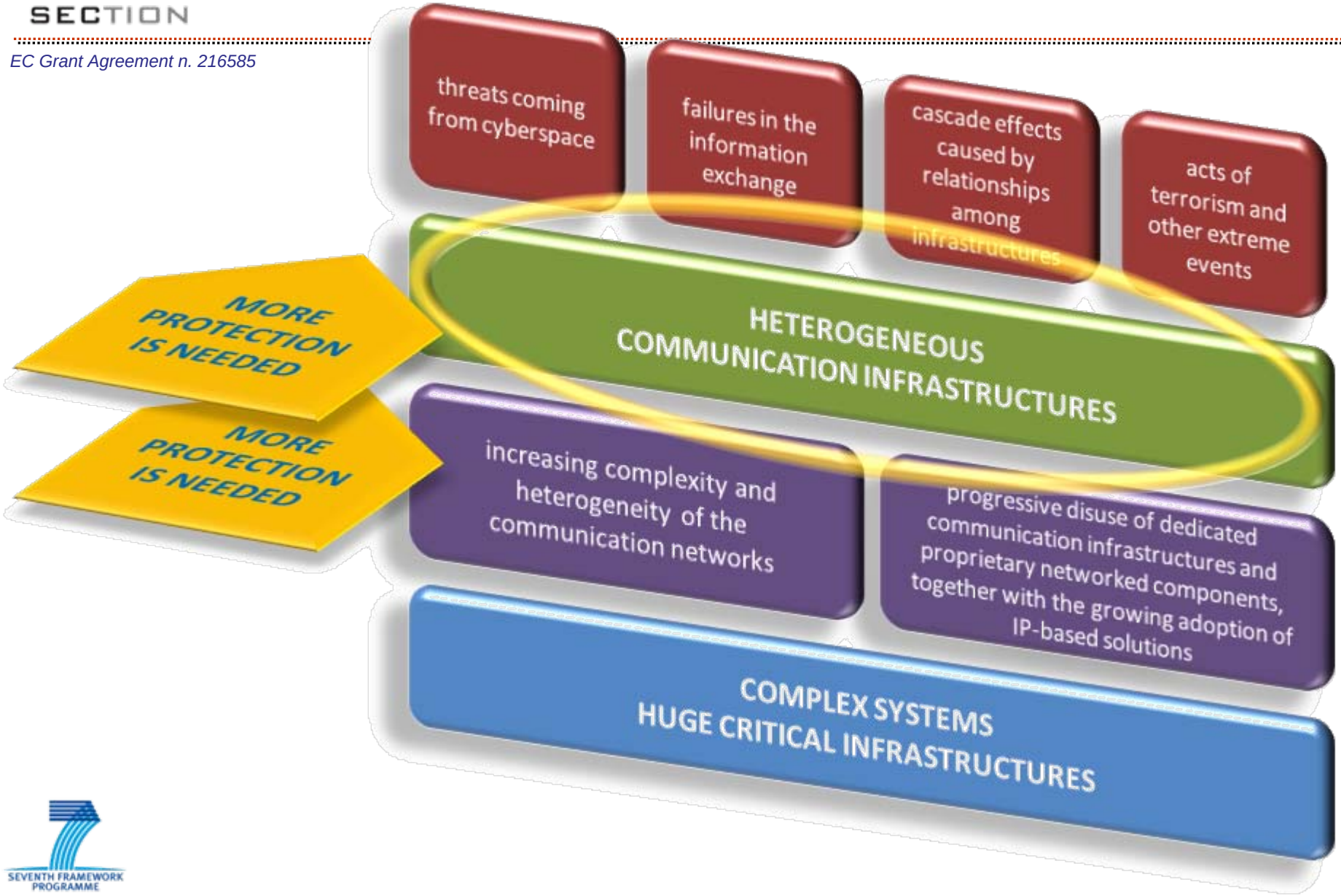
- Elsag Datamat (Coordinator) [Italy]
- Thales Research and Technology [UK]
- ITTI (SME) [Poland]

END USERS

- Telefonica ID Investigación y Desarollo [Spain]
- Telespazio [Italy]
- Polska Telefonia Cyfrowa [Poland]

Project Motivation

EC Grant Agreement n. 216585



Heterogeneous networks

EC Grant Agreement n. 216585

- Networks based on different low-level protocols (physical, data link)
- A data network composed of devices from different manufacturers and/or different types of LANs
- A heterogeneous network is a network connecting computers and other devices with different operating systems and/or protocols, services and applications
- Interconnection of different type of networks relying o different communication technologies
- Interconnection of networks managed by different telecom operators adopting diverse security policies

Main objectives and principles

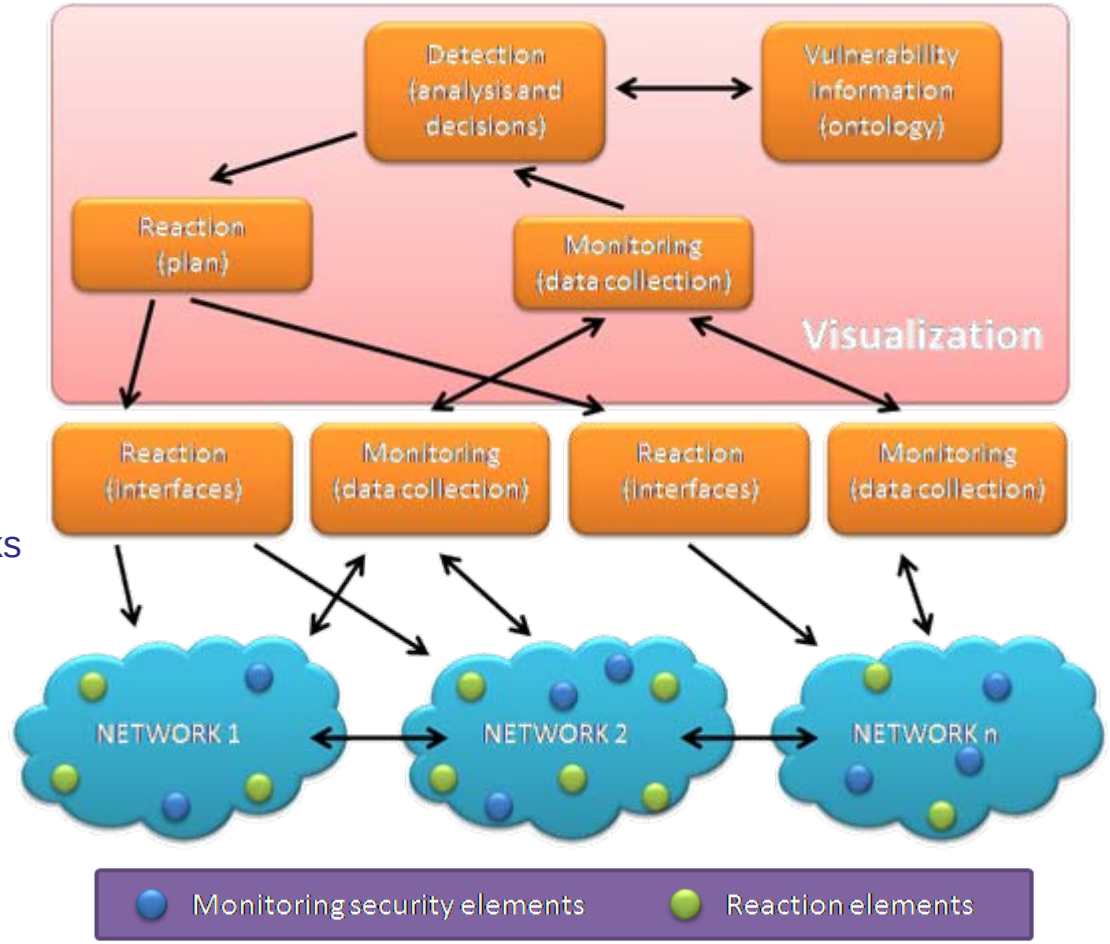
EC Grant Agreement n. 216585

Identify and classify the vulnerabilities of heterogeneous and interconnected network infrastructures (wired, wireless, satellite, mobile networks)

Create and maintain a network vulnerability database

Design and implement an integrated network security framework including different components and tools:

- detecting anomalous events
- reacting to well-known, as well as new kinds of anomalies
- deploying truly distributed countermeasures against ongoing attacks
- providing systems with mechanisms for intrusion tolerance, i.e. preventing intrusions from generating a system failure



Expected Project results and innovation

EC Grant Agreement n. 216585

Contribution to **STANDARDS** (IETF, ETSI)

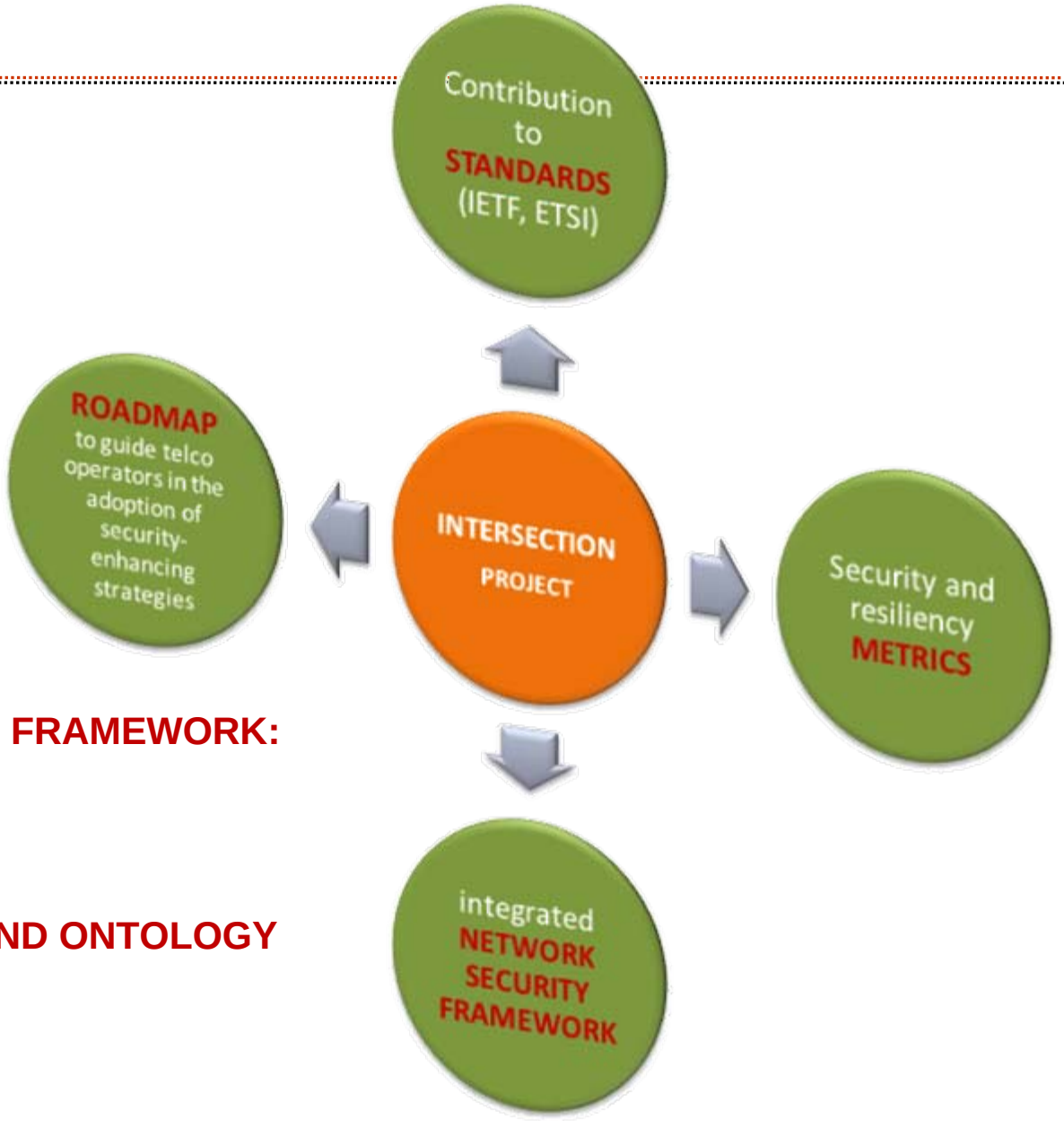
ROADMAP to guide telecom operators in the adoption of security-enhancing strategies

Security and resiliency **METRICS**

Integrated **NETWORKSECURITY FRAMEWORK:**

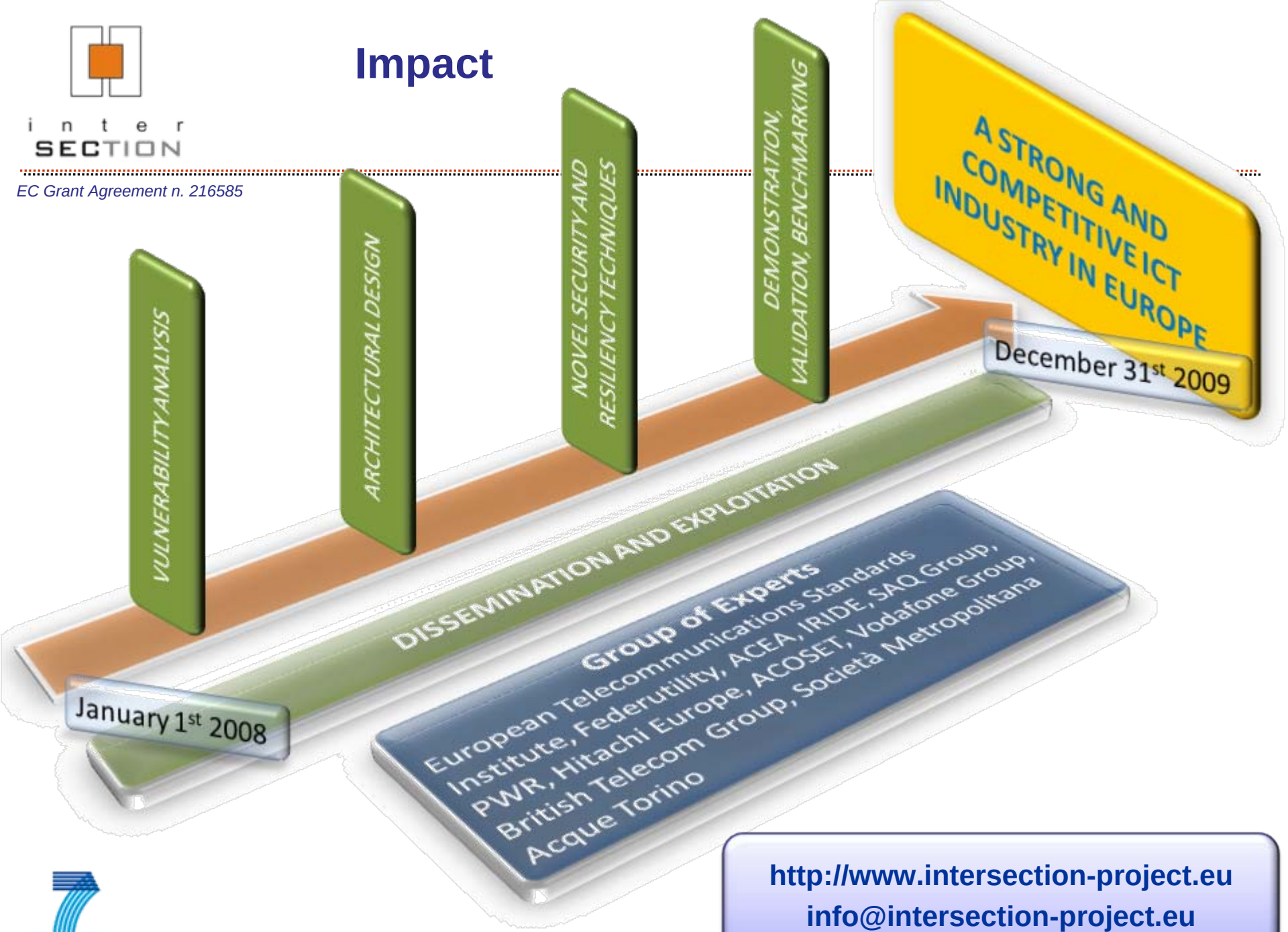
- **specification**
- **prototype**

VULNERABILITY DATABASE AND ONTOLOGY



Impact

EC Grant Agreement n. 216585



http://www.intersection-project.eu
info@intersection-project.eu

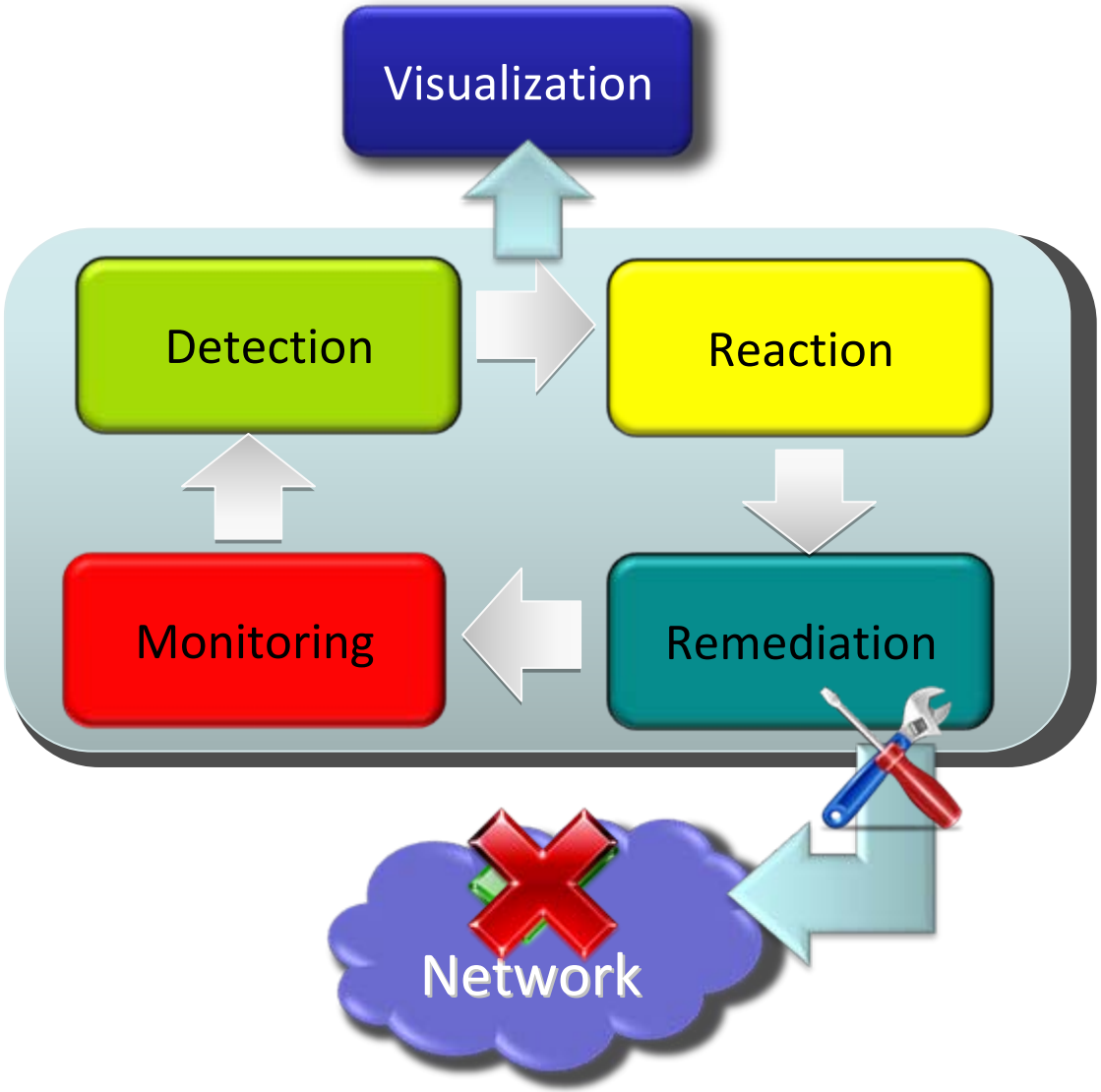
Project status

EC Grant Agreement n. 216585

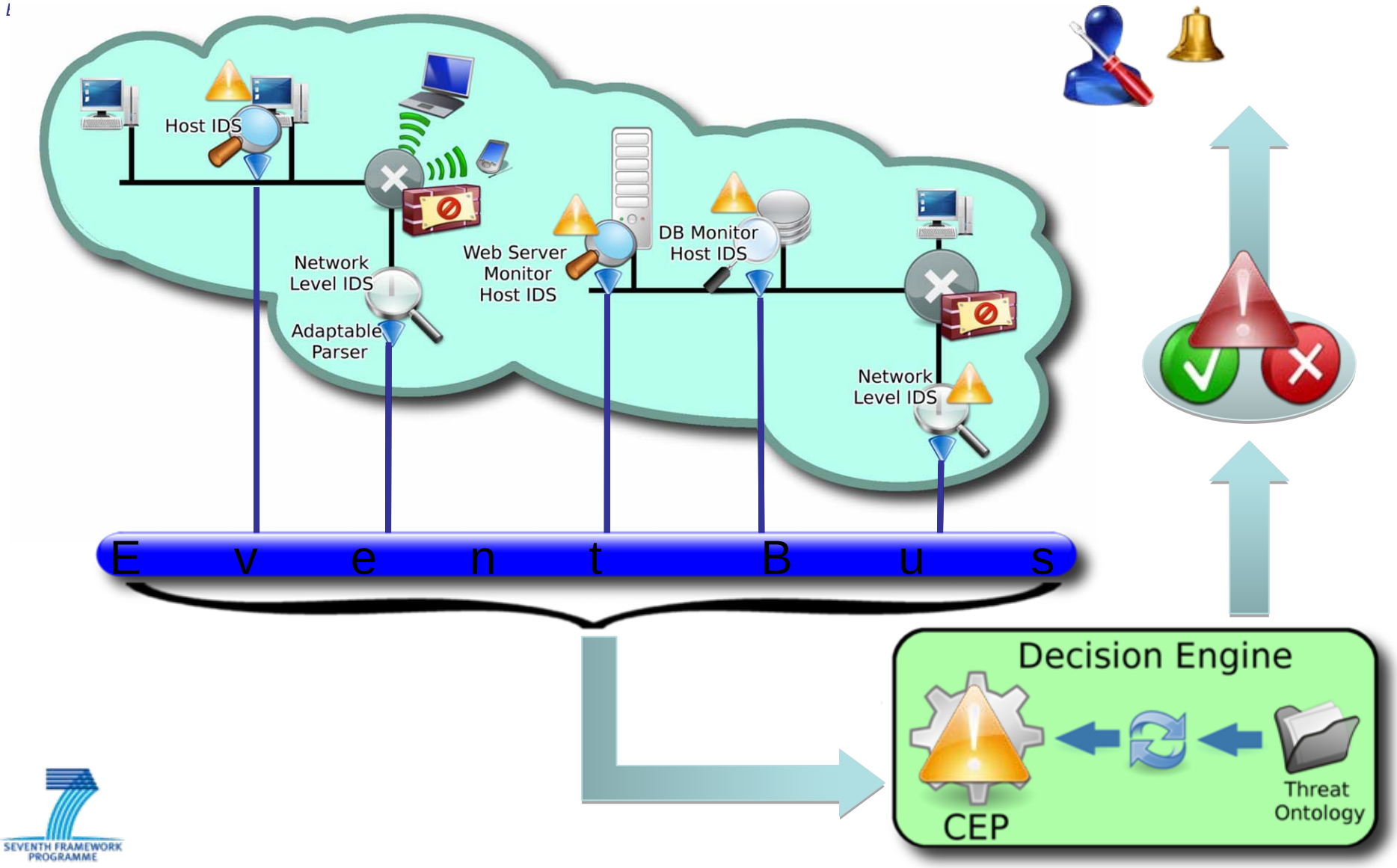
- State of the art and requirements analysis : completed
  - ☑ *State of the art*
  - ☑ *Vulnerabilities of heterogeneous networks*
  - ☑ *Requirements specification*
- Specification of the framework: completed
  - ☑ *Framework architecture*
  - ☑ *Vulnerability database and ontology*
- Design and development: in progress
  - ☑ *Innovative techniques for intrusion detection*
  - ☑ *Data visualization techniques*
  - ☑ *Topology discovery tools*

The real-time intrusion detection and tolerance system

EC Grant Agreement n. 216585

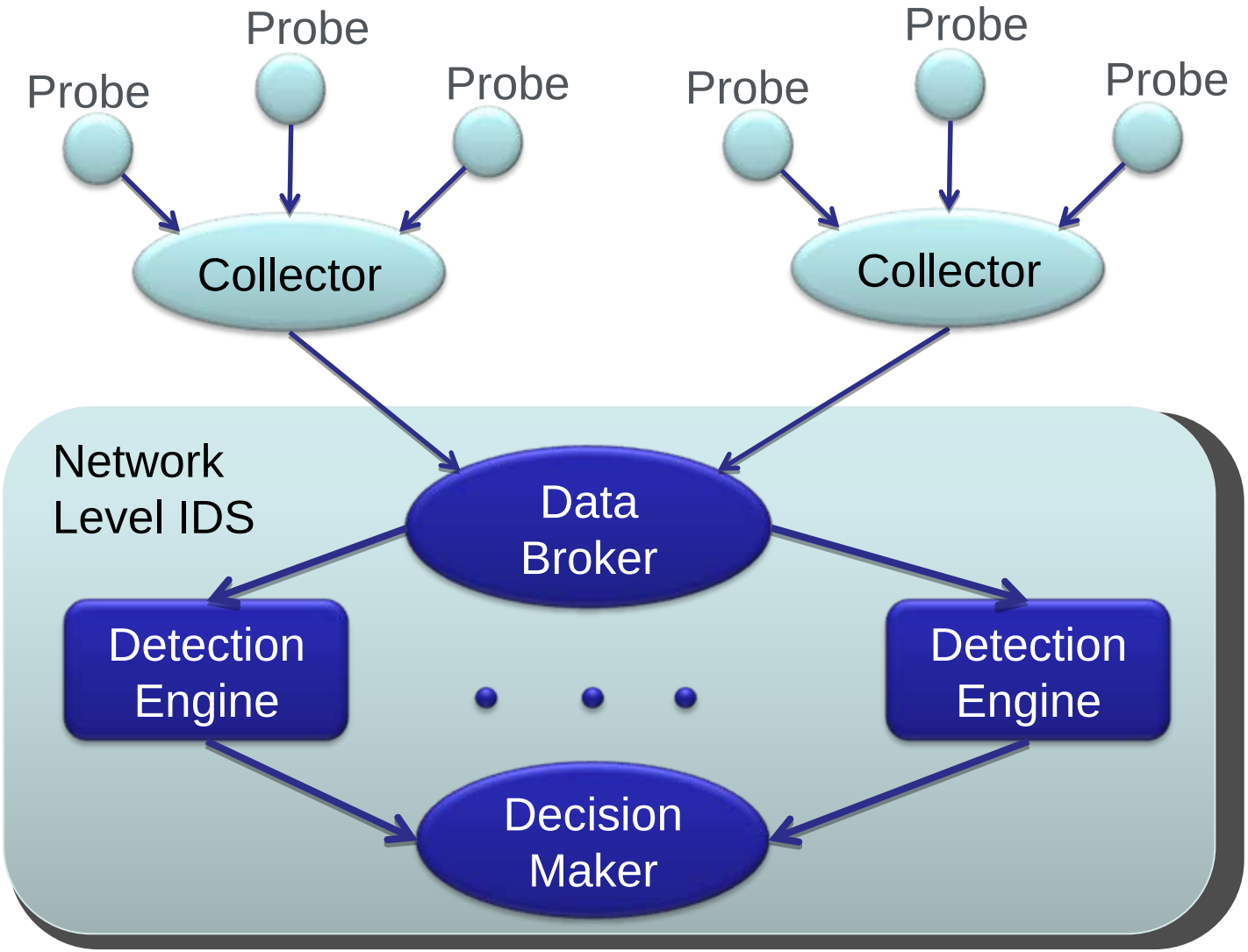


The INTERSECTION Intrusion Detection System



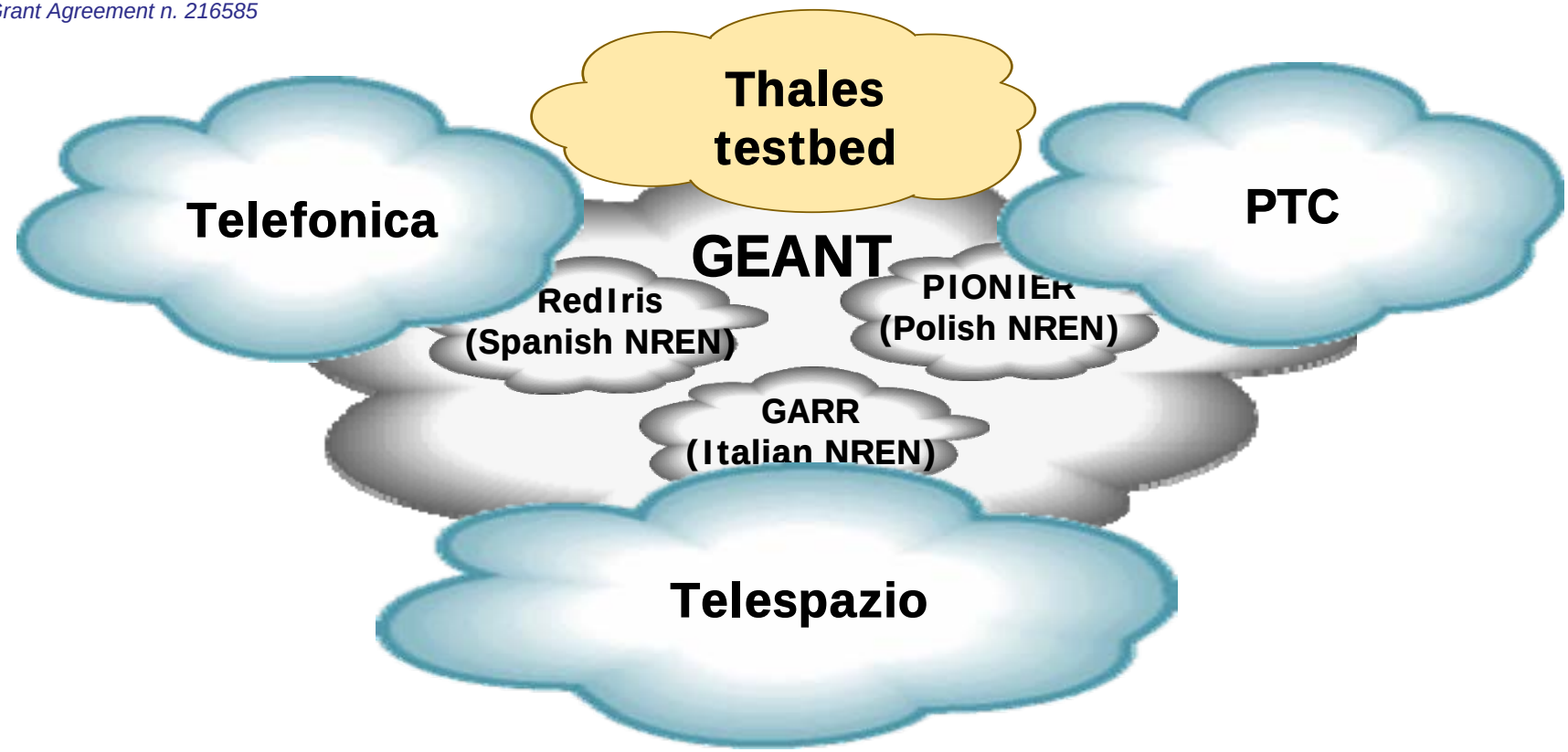
Network-based Intrusion Detection

EC Grant Agreement n. 216585



Building the demo network

EC Grant Agreement n. 216585



- *Built over GEANT and national NRENs*
- *GRE tunnels are used to provide an Internet-like VPN for INTERSECTION demonstration, integration, and testing activities*
- *All available INTERSECTION labs (TID, PTC, Telespazio and Elsag Datamat) and integration testbed are fully interconnected, and SW developers have indirect access for integration and testing activities*

Contacts

EC Grant Agreement n. 216585

- Website : http://www.intersection-project.eu
- Information : info@intersection-project.eu

- Technical Coordinator : saldanto@unina.it

ELSAG DATAMAT
A Finmeccanica Company

- Project Coordinator : Stefano.Vertechi@ElsagDatamat.com
- Dissemination : Marcello.Antonucci@ElsagDatamat.com

SEVENTH FRAMEWORK PROGRAMME