

# INTERSECTION Project

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**SECTION**

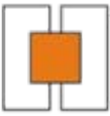
*EC Grant Agreement n. 216585*

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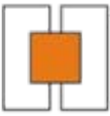


# Project Summary

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- **IN-TE-R-SE-C-T-I-O-N** : **Infrastructure for he**TE**roogeneous, **Resilient, Secure, Complex, Tightly Inter-Operating **Networks******
- **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

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## 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

- Elsasg Datamat (Coordinator) [Italy]
- Thales Research and Technology [UK]
- *Coronis Systems SA [France]*
- ITTI (SME) [Poland]

## END USERS

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



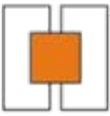


# Heterogeneous Networks

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- Networks based on different low-level protocols (physical, data link)
- A data network comprised of devices from different manufacturers and/or different types of LANs.  
([www.carrollcommunications.com/voip\\_ip\\_telephony\\_dictionary2.html](http://www.carrollcommunications.com/voip_ip_telephony_dictionary2.html))
- A heterogeneous network is a network connecting computers and other devices with different operating systems and/or protocols  
([en.wikipedia.org/wiki/Heterogeneous\\_network](http://en.wikipedia.org/wiki/Heterogeneous_network))
- Interconnection of different type of devices for e.g.: LANs, computers with different operating systems, etc.

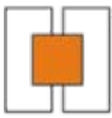


# Interconnection

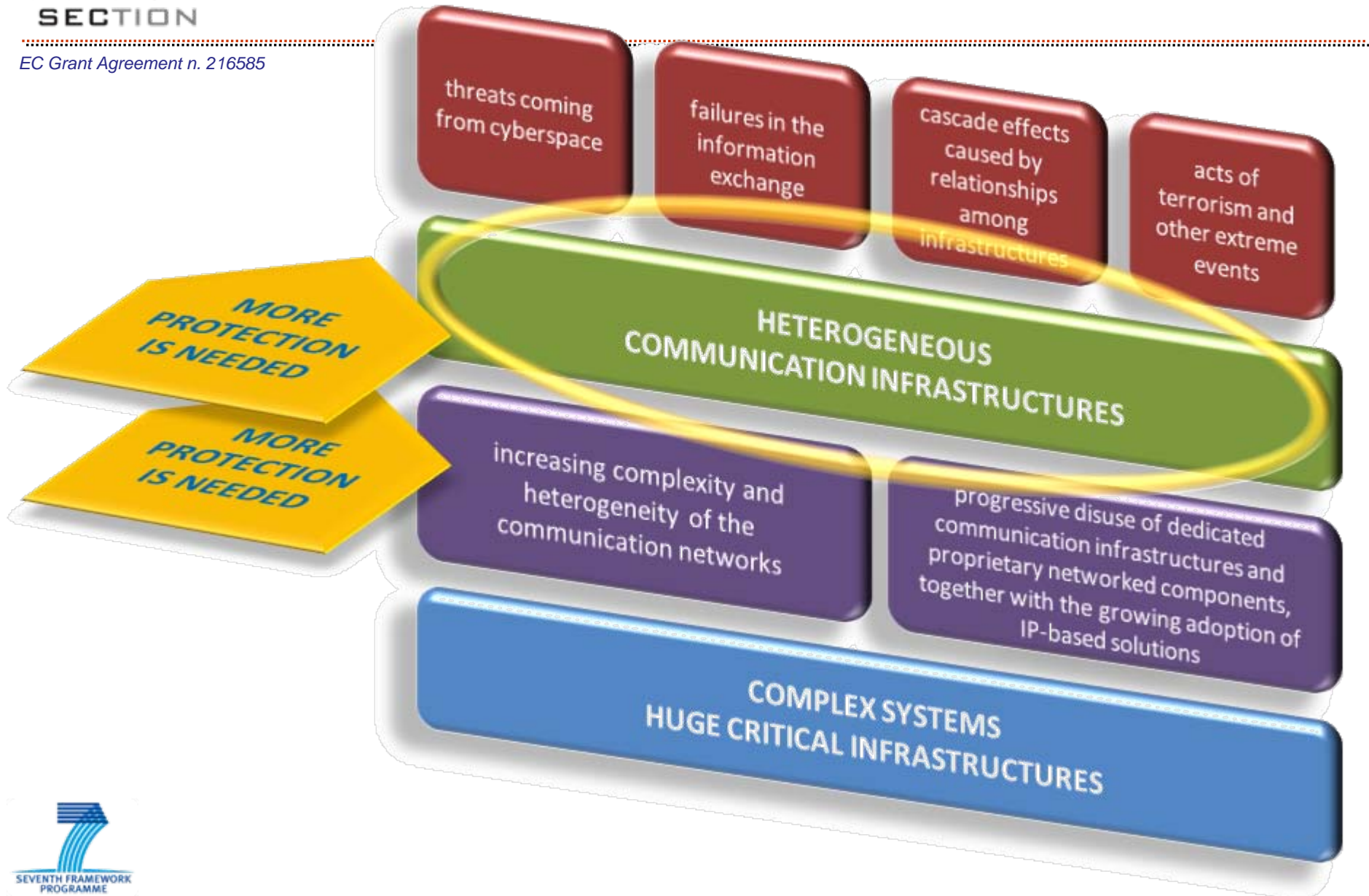
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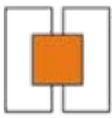
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- Is the linking of two networks for the mutual exchange of traffic (doesn't include the transport and termination of traffic) – *source: US regulatory law*
- Means the physical and logical linking of public communication networks used by the same or different undertaking, or to access services provided by another undertaking. Service may be provided by the parties involved or other parties who have access to the network. Interconnection is a specific type of access implemented between public network operators. – *source: European Directive 2002/19/EC*



# Project Motivation





# Main objectives and principles

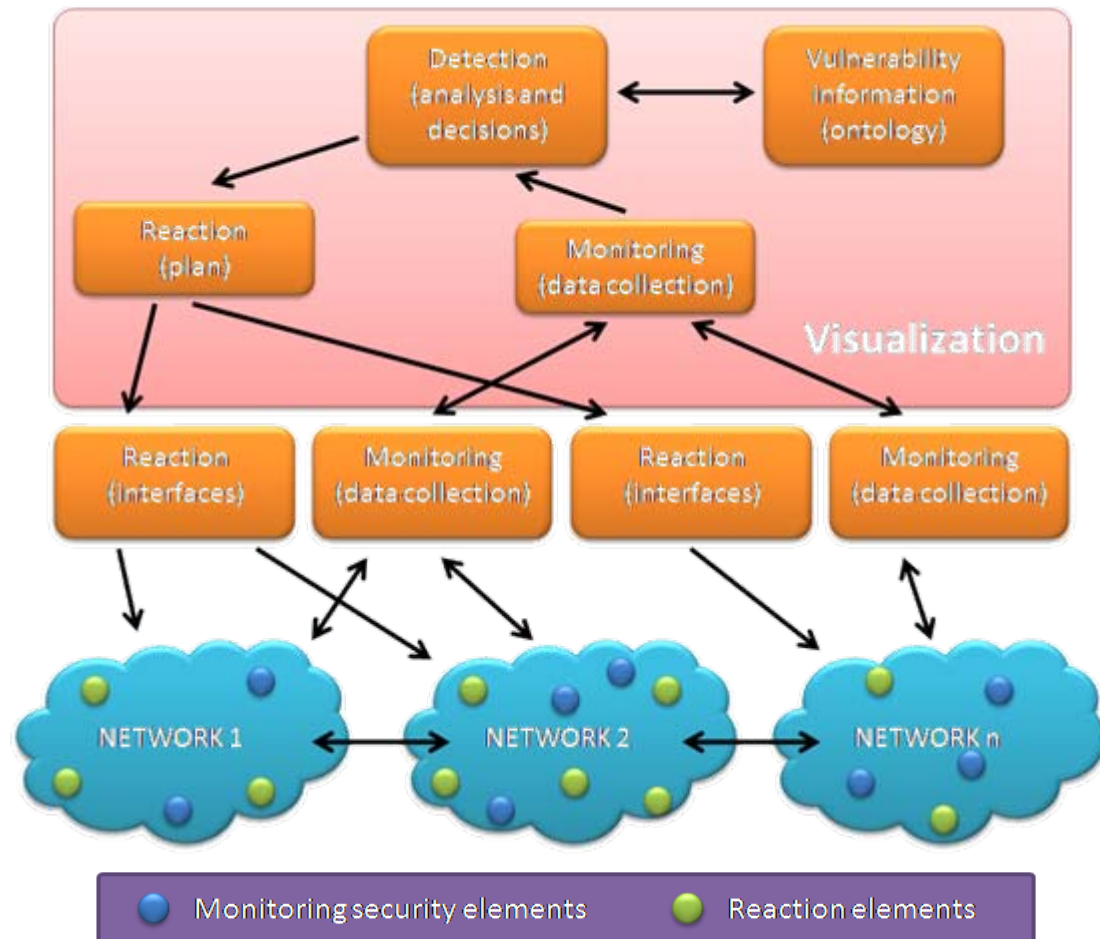
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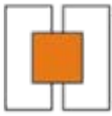
Identify and classify the vulnerabilities of heterogeneous and interconnected network infrastructures (wired, wireless, satellite, mobile networks)

Create and maintain a European 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

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

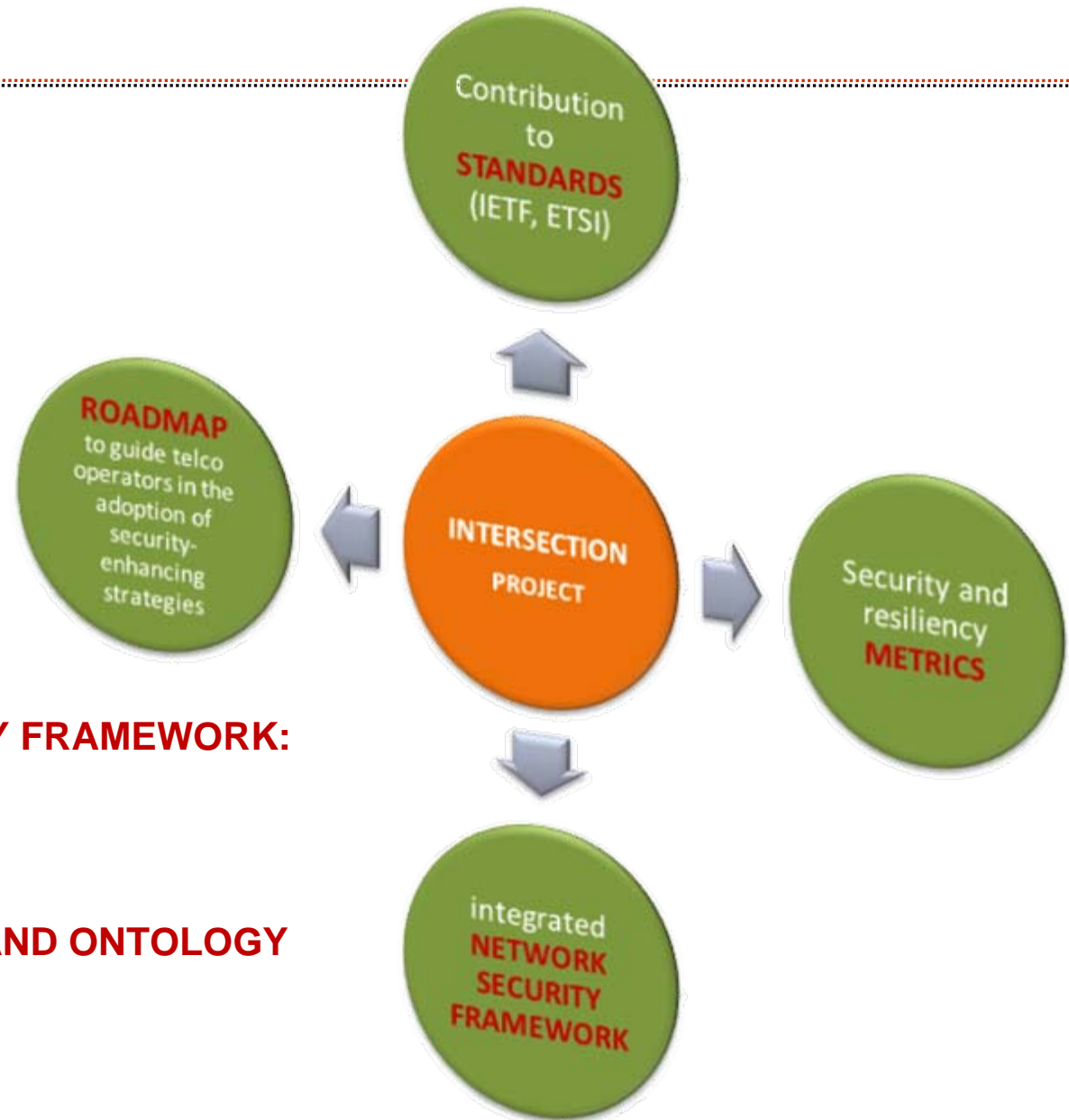
**ROADMAP** to guide telecom  
operators in the adoption  
of security-enhancing strategies

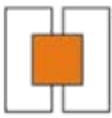
Security and resiliency **METRICS**

Integrated **NETWORKSECURITY FRAMEWORK:**

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

**VULNERABILITY DATABASE AND ONTOLOGY**

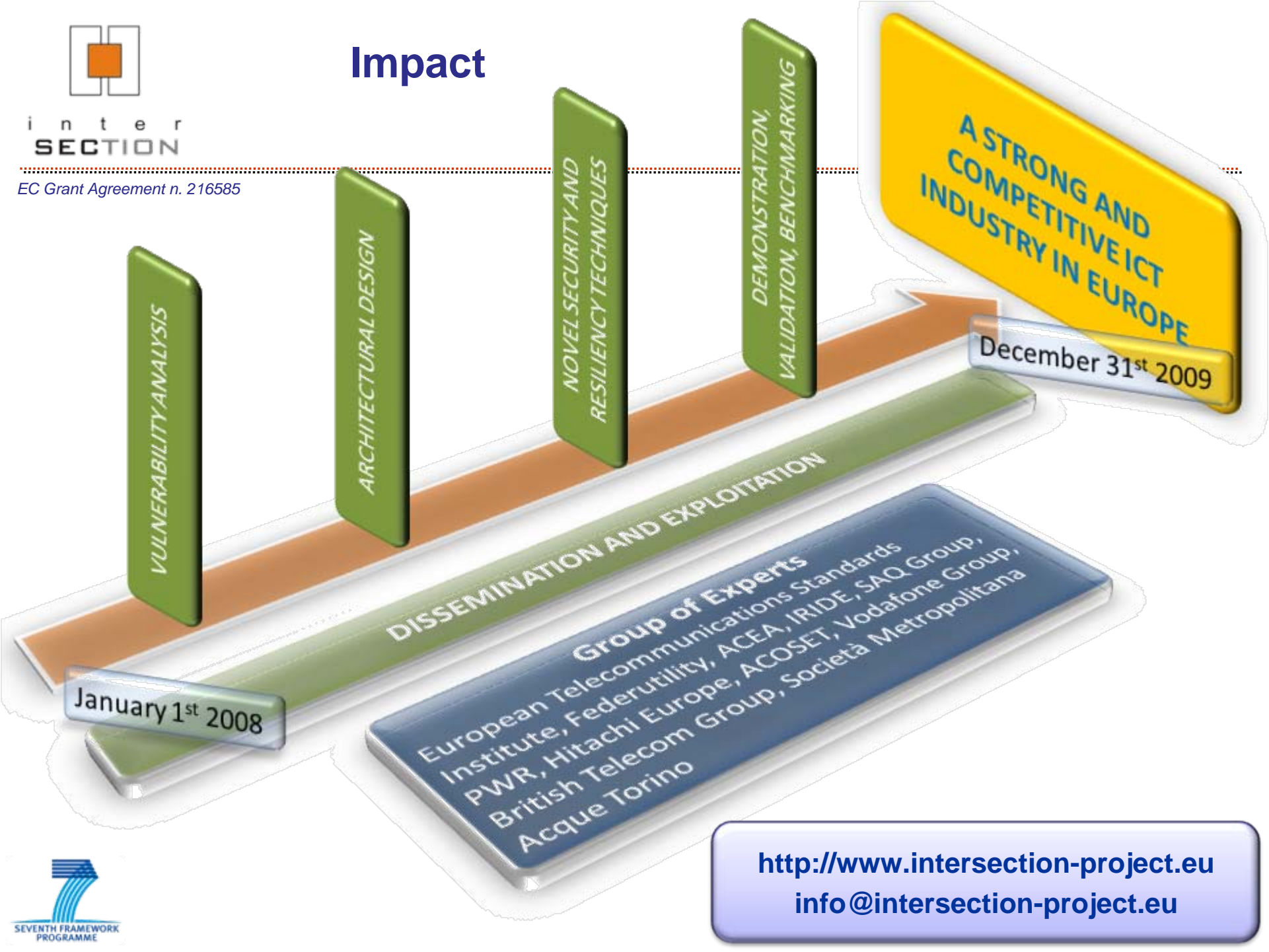




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# Impact

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VULNERABILITY ANALYSIS

ARCHITECTURAL DESIGN

NOVEL SECURITY AND  
RESILIENCY TECHNIQUES

DEMONSTRATION,  
VALIDATION, BENCHMARKING

A STRONG AND  
COMPETITIVE ICT  
INDUSTRY IN EUROPE

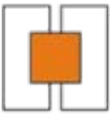
December 31<sup>st</sup> 2009

January 1<sup>st</sup> 2008

DISSEMINATION AND EXPLOITATION

Group of Experts  
European Telecommunications Standards  
Institute, Federutility, ACEA, IRIDE, SAQ Group,  
PWR, Hitachi Europe, ACOSET, Vodafone Group,  
British Telecom Group, Società Metropolitana  
Acque Torino

<http://www.intersection-project.eu>  
[info@intersection-project.eu](mailto:info@intersection-project.eu)



# Project Status

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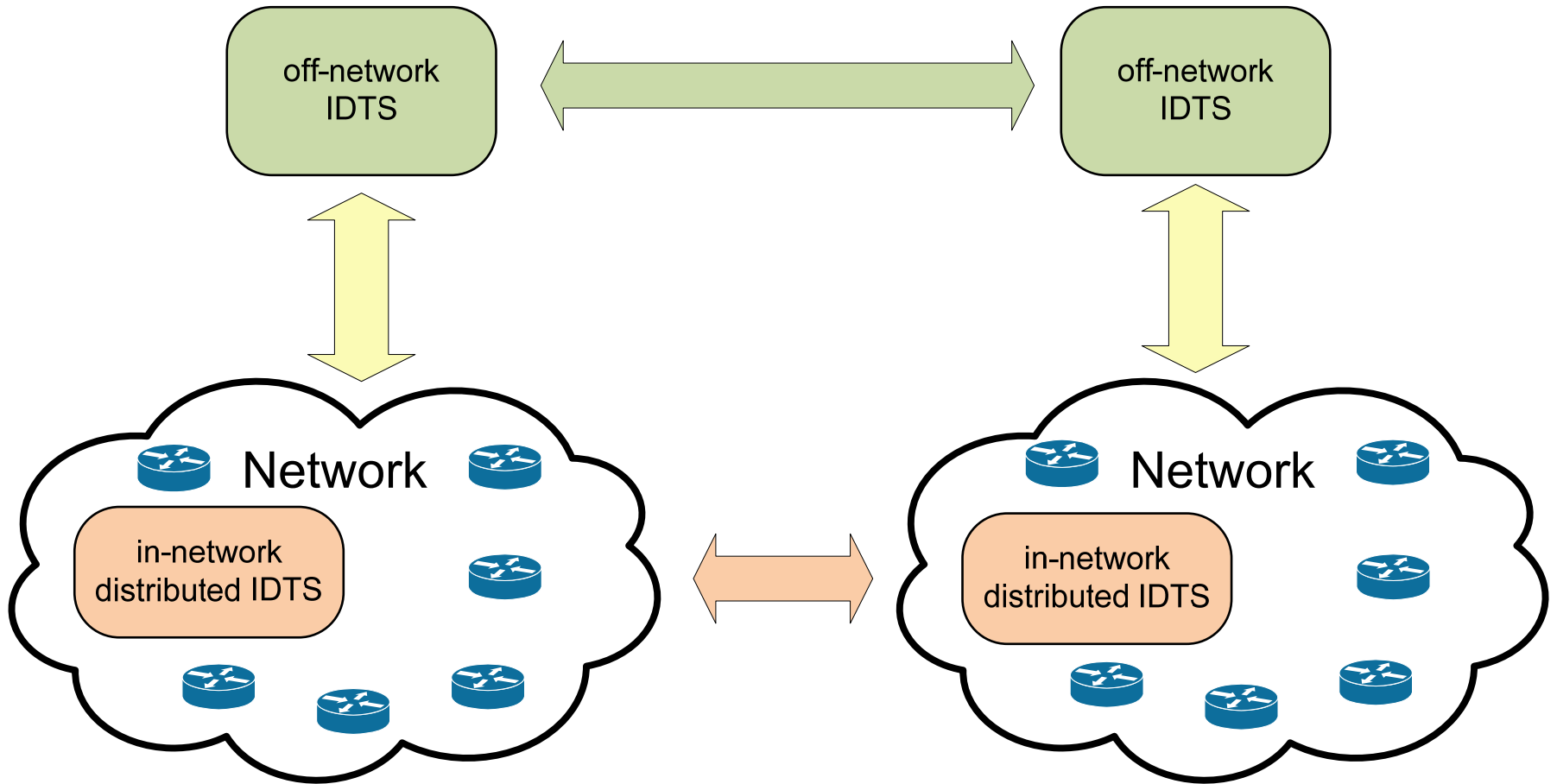
- State of the art and requirements analysis : completed
  - ✓ *State of the art*
  - ✓ *Vulnerabilities of heterogeneous networks*
  - ✓ *Requirements Specification*
- Specification of the framework: in progress
  - ✓ *Preliminary Architecture*
  - ✓ *Vulnerability Database and Ontology*
- Design and development: in progress
  - ✓ *Innovative techniques for intrusion detection*

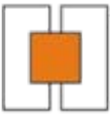


# Preliminary Architecture of the Framework

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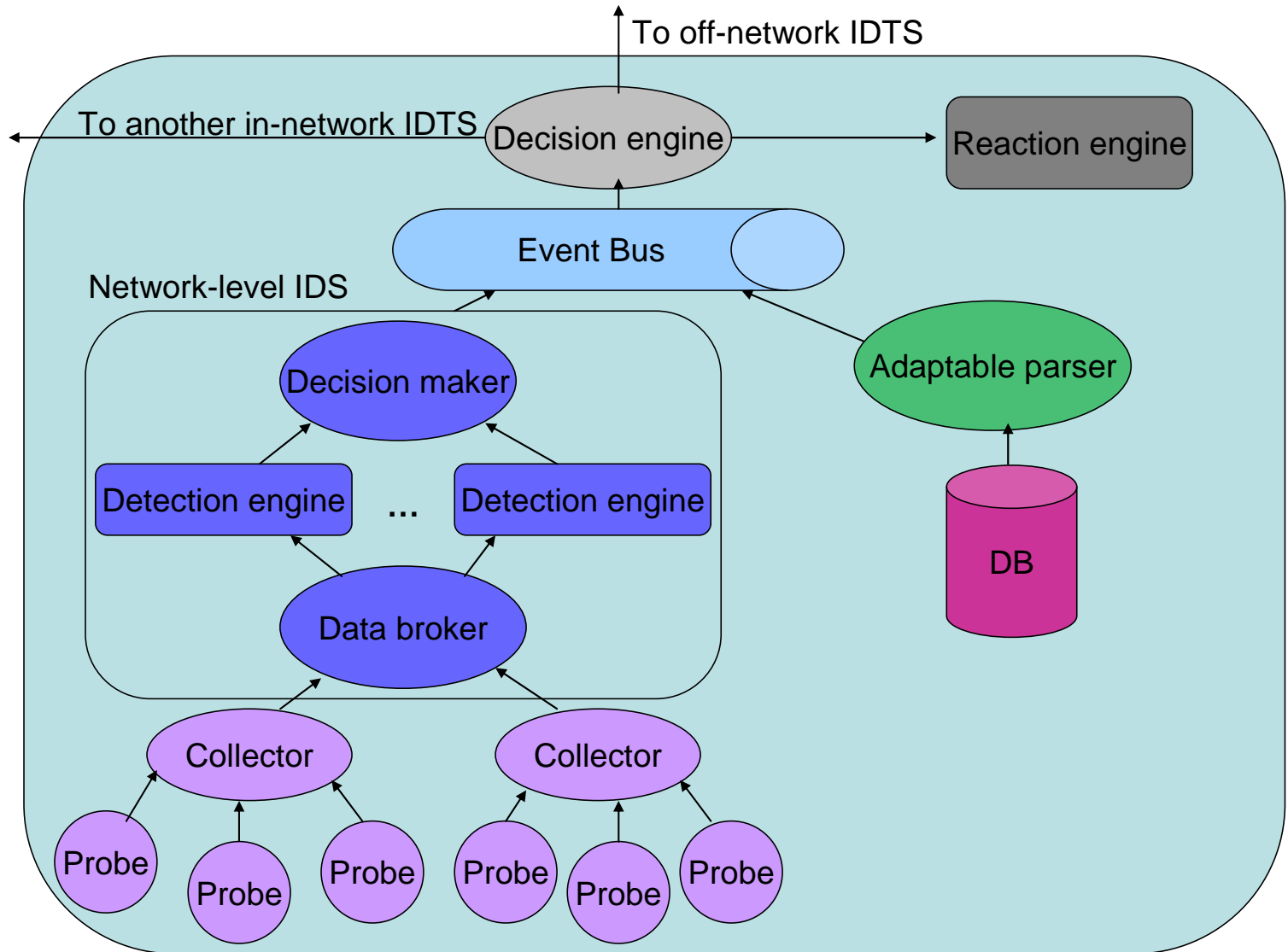


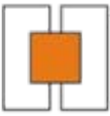


# In-Network IDTS

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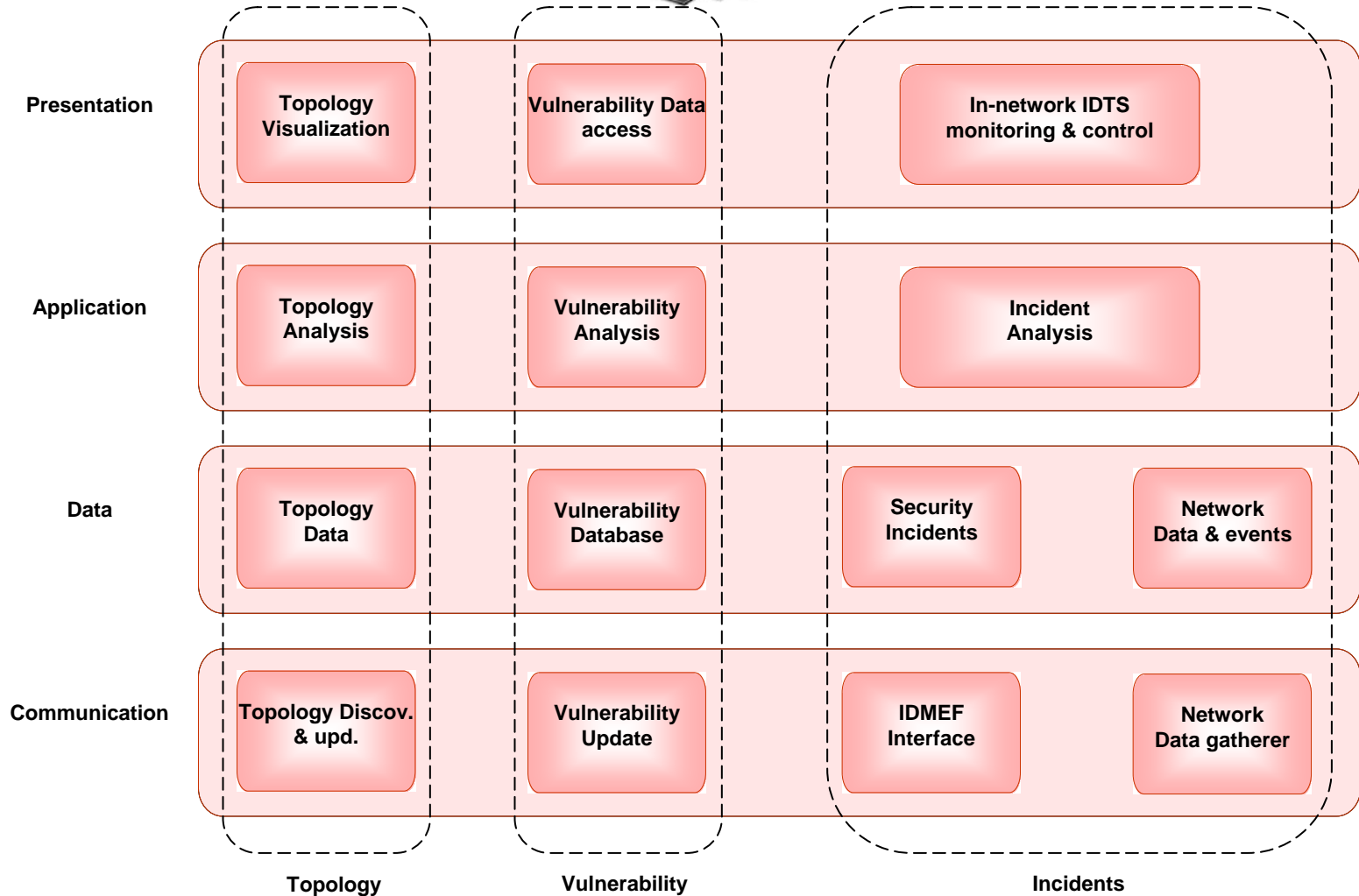




# Off-Network IDTS

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# Contacts

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