AUSTRIAN INSTITUTE OF TECHNOLOGY
TOMORROW TODAY

C2-SENSE

Interoperability Profiles for Command/Control Systems and Sensor Systems in Emergency Management

FP7 – Grant Agreement nr. 607729

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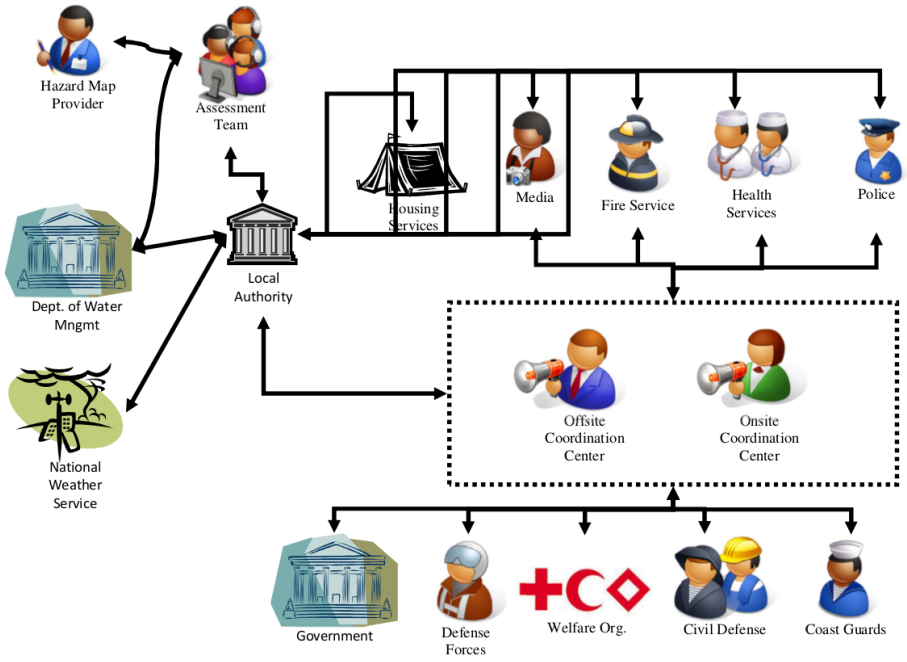
The Emergency Interoperability Framework

The Challenge

Effective management of emergencies depends on timely information availability, reliability and integrity.

Different Command and Control Systems and Sensor Systems have to cooperate – interoperability.

However, unless standards and well-defined specifications are used, the interoperability of these systems can be very complex.

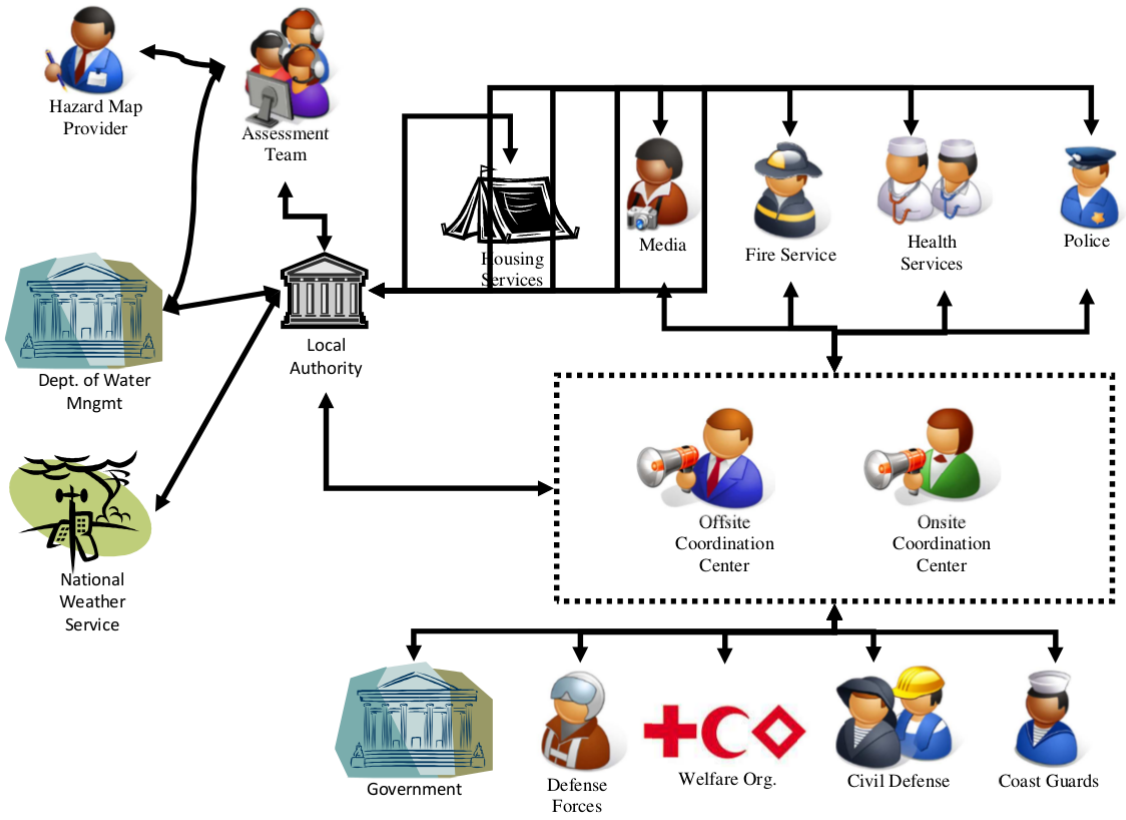


C2-SENSE (Main) Objectives

- **Develop a profile based Emergency Interoperability Framework**
  - Identify, define and test the *profiles* in the emergency management domain
  - Further Develop Interoperability Stack
  - Development of Emergency Domain Ontology
  - Implement the framework in a pilot in an area often hit by floods (Italy)

“Interoperability Profiles for Command/Control Systems and Sensor Systems in Emergency Management”

- DISASTER AND EMERGENCY MANAGEMENT
- INTEROPERABILITY
- PROFILES
- SENSOR AND DATA INTEGRATION
- STANDARDS IMPLEMENTATION



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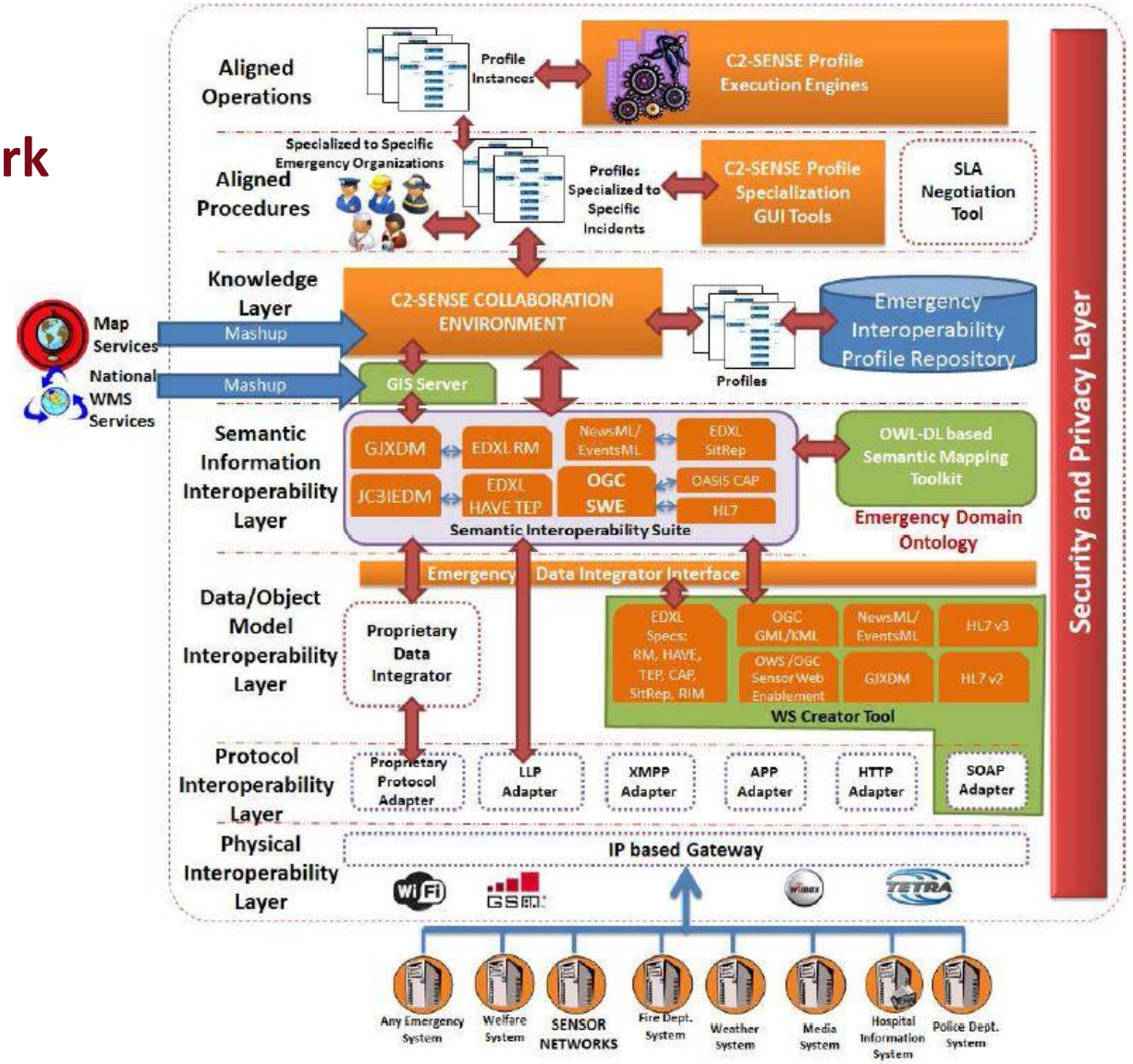
C2-SENSE Framework



ALIGNMENT

PROFILES

KNOWLEDGE MANAGEMENT

METADATA

DATA HOMOGENITY

PROTOCOLS

SENSORS

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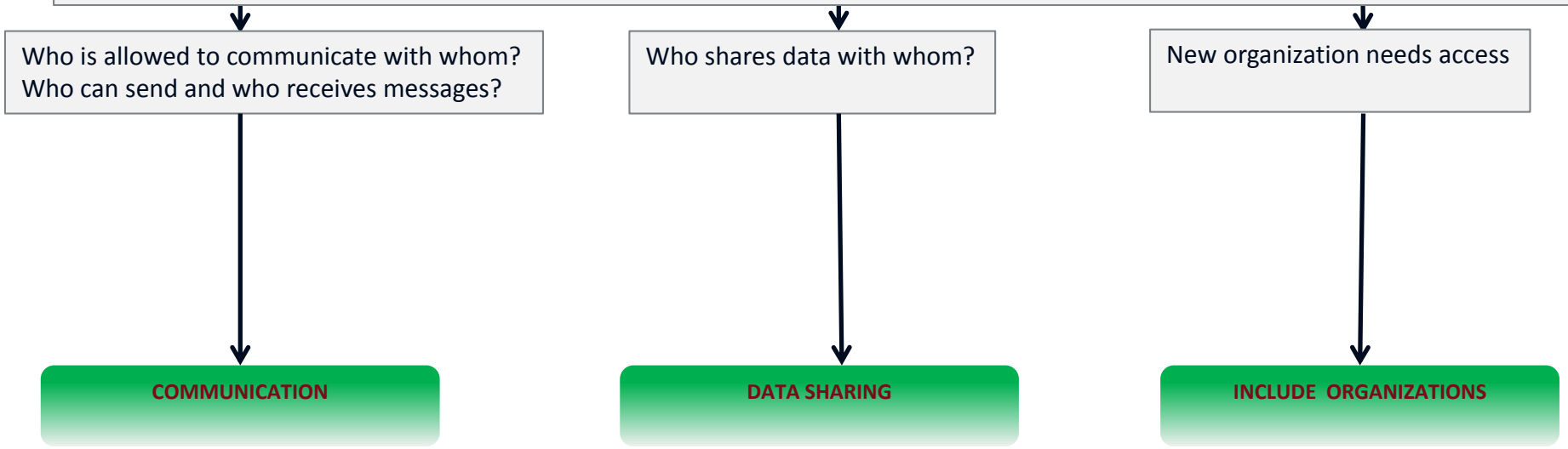
Profiles

- Solve variations in responsibilities that are present among organizations and authorities
- Remove cultural and linguistic variations
- Provide access to relevant (sensor) data
- Identify relevant management actions
- Allow for communication among appropriate partners
- Service Level Agreements



The way of Data

SENSORS & SENSOR NETWORKS

FLOOD DATA

HOMOGENIZED DATA

- Timestamp
- Gepspatial location
- Calibration status
- Etc.

ENRICHMENT (METADATA)

CALCULATIONS

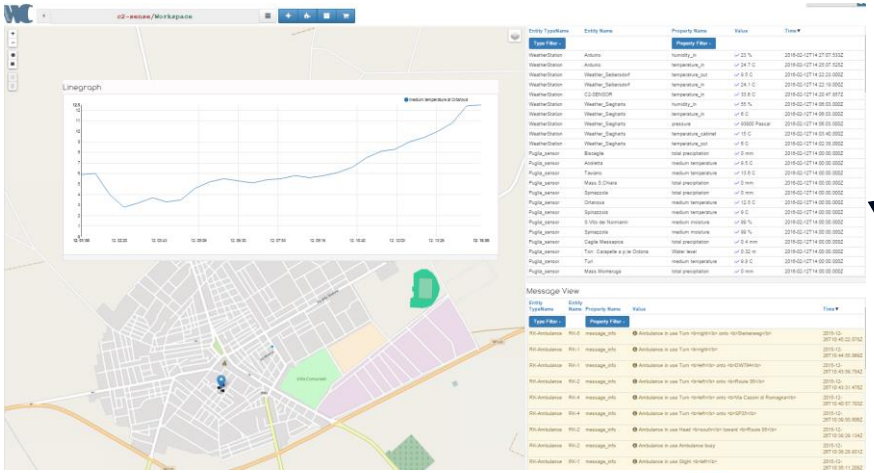
- Limits
- Alarms
- Predictions

PROFILES

RELEVANT DATA

MAPS

DATA SHARING & COMMUNICATION



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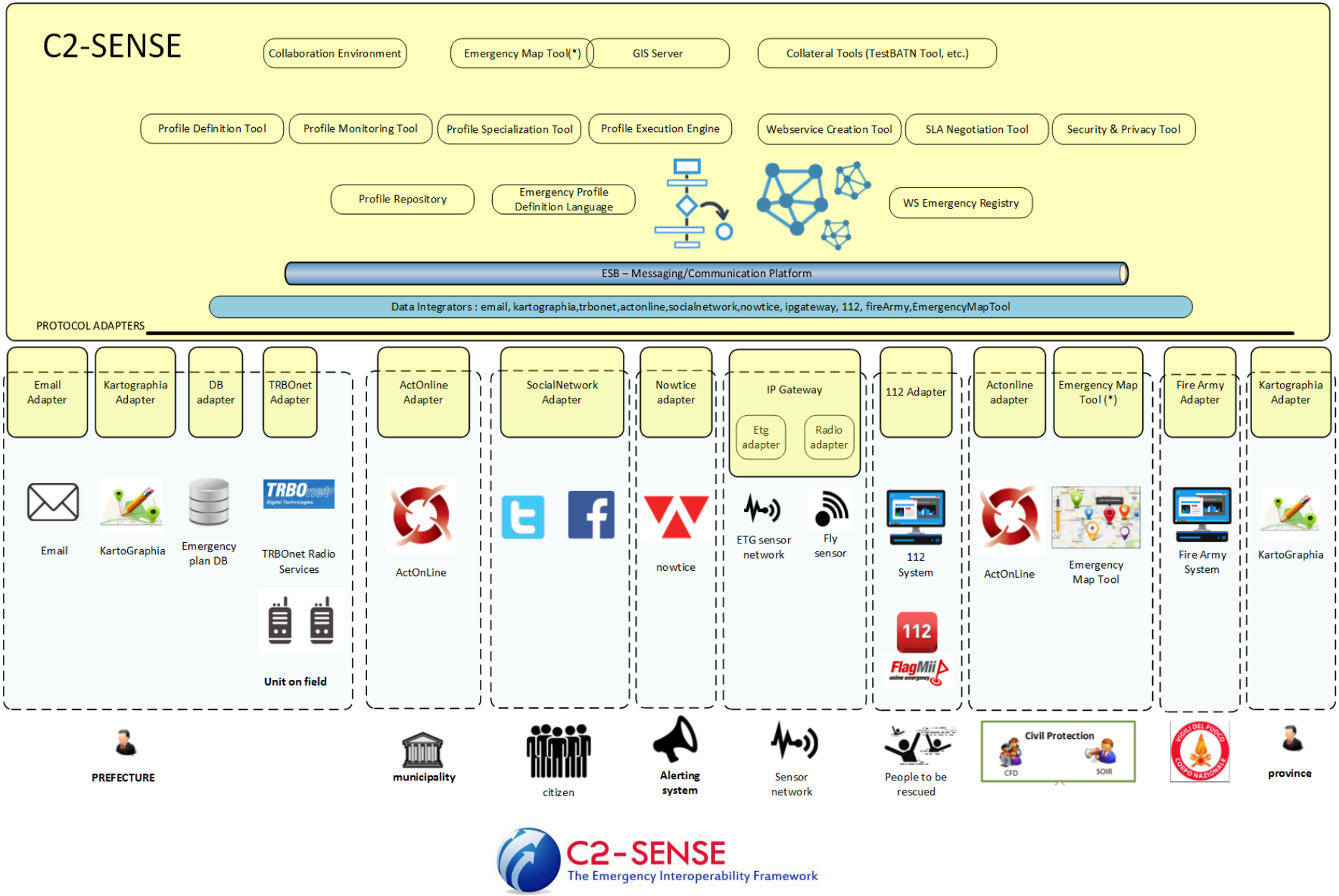
Pilot



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Consortium

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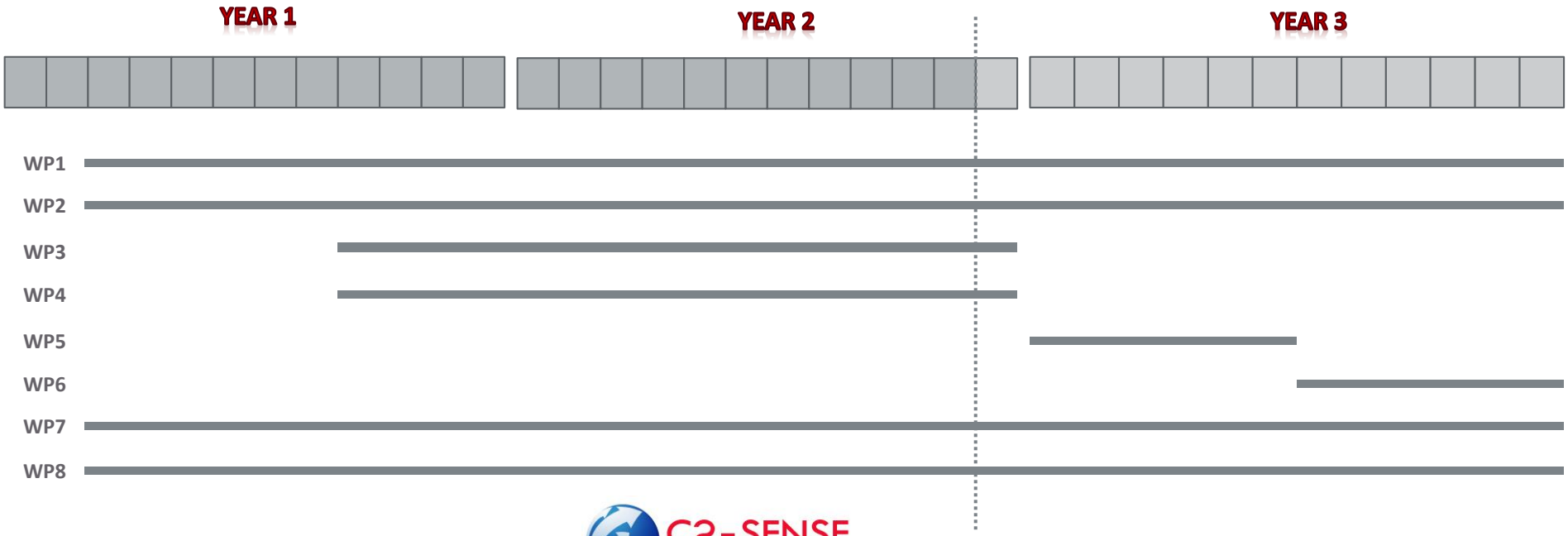
SAGEM DEFENSE SECURITE	France	Project Coordinator Data / Object model interoperability.
LUTECH	Italy	Protocol interoperability . Software integration.
Austrian Institute of Technology	Austria	Knowledge interoperability . Specifications. Standardization activities.
SRDC	Turkey	Information interoperability . Profiles integration. Certification and testing mechanisms.
Servizio Protezione Civile Regione Puglia	Italy	Pilot application – requirements and validation.
InnovaPuglia	Italy	Pilot application – design and deployment.
Industrial Research Institute for Automation and Measurements	Poland	Organizational and physical interoperability.
REGOLA	Italy	Harmonized doctrines. Validation.

General Steps in C2-SENSE

WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8
Administration & Management	State of the art Technologies & Requirements	Technical & Semantic Interoperability	Organizational Interoperability	Integration of Research Results and Implemented Systems	Interoperability Testing Mechanism	Pilot Application Deployment	Dissemination, Exploitation, Standardization and Innovation related Activities



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