



# C2-SENSE

The Emergency Interoperability Framework

## D1.2 – Project Presentation V2.0

29<sup>th</sup> February 2016





# The Project





# C2-SENSE Project

*(Funding programme)*



|                     |  |
|---------------------|--|
| Grant Agreement:    | 607729   |
| Project Acronym:    | C2-SENSE   |
| Project Title:      | Interoperability Profiles for Command/Control Systems and Sensor Systems in Emergency Management |
| Funding Scheme:     | SEC-2013.5.3-1   |
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| Duration:           | 36 months  |
| Project Start Date: | March 31, 2017   |

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# C2-SENSE Project

*(Introduction)*

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

Effective management of emergencies, crises and disasters depends on timely available, reliable and intelligible information.

To achieve this, different Command and Control (C2) Systems and Sensor Systems have to cooperate which would only be possible through interoperability. However, unless standards and well-defined specifications are used, the interoperability of these systems can be very complex.

C2-SENSE project's main objective is to develop a profile based Emergency Interoperability Framework by the use of existing standards and semantically enriched Web services to expose the functionalities of C2 Systems, Sensor Systems and other emergency/crisis management systems.

C2-SENSE will assess its outcomes in a realistic "Flood Scenario in Italy" pilot to ensure that the developed technologies are generic and applicable in a real life setting.



# C2-SENSE Project

(Partners - <http://c2-sense.eu/>)

**AIT Austrian Institute of Technology**, Austria's largest non-university research institute, is among the European research institutes and specialist in the key infrastructure issues of the future.

**Sagem**, a high-tech company in the Safran group, holds world or European leadership positions in optronics, avionics, electronics and safety-critical software for both civil and military markets.

**SRDC Ltd.** is a spin-off company of the Middle East Technical University (METU), Software Research and Development Center, located in the METU's techno park. SRDC enjoys strong backing from the university for transferring the R&D efforts to the industry and public administrations.

**Regola** has been designing software solutions and applications in the ICT since 1995 and most of products are *decision-making support* Platforms or Tools targeted to Healthcare and Public Administration, with a remarkable expertise in the Emergency Management.



**Servizio Protezione Civile Regione Puglia** - In the field of Civil Protection the Apulian regional Government regulates the organization of functions and administrative tasks, for which it is invested or it is entitled, related to the care of the interests and the promotion of the development of its community according to cooperation principles with security forces, Provinces, and other local authorities.

**PIAP** has been developing new technologies since its formation in the year 1965. Nowadays it belongs to the top ten of Polish Research Institutes. It is a state owned entity supervised by the Ministry of Economy.

**LUTECH**  
**Lutech S.p.A.**, part of the Laserline Group, is an Italian ICT engineering and services company, working successfully for more than ten years and delivering robust and timely solutions to leading corporate Clients.

**InnovaPuglia S.p.A.**, an Apulia Region's in-house company, drives the Apulia Region in the setting of a Regional Digital System for the development of innovative smart services that achieve the goal of improving the citizens life quality.



# The Emergency Management





# Emergency Interoperability Framework

*(3 main steps)*

- All the Emergency Interoperability Profiles together form the Emergency Interoperability Framework.
- C2-SENSE can be considered as a framework to enable and develop context-aware applications.
- Emergency Interoperability Framework will be developed in three main steps:
  1. Emergency Domain Inventory (*we survey what's existing on the field assessing all stakeholders' knowledge*).
  2. Emergency Domain Ontology (*let's normalize, summarize and consolidate all of them in a lingua franca: Ontology represents a controlled vocabulary which is structured into a hierarchical taxonomy, where the key concepts are found*).
  3. Emergency Interoperability Profiles (*here we create the real outcomes of the project*).





# Emergency Interoperability Profiles

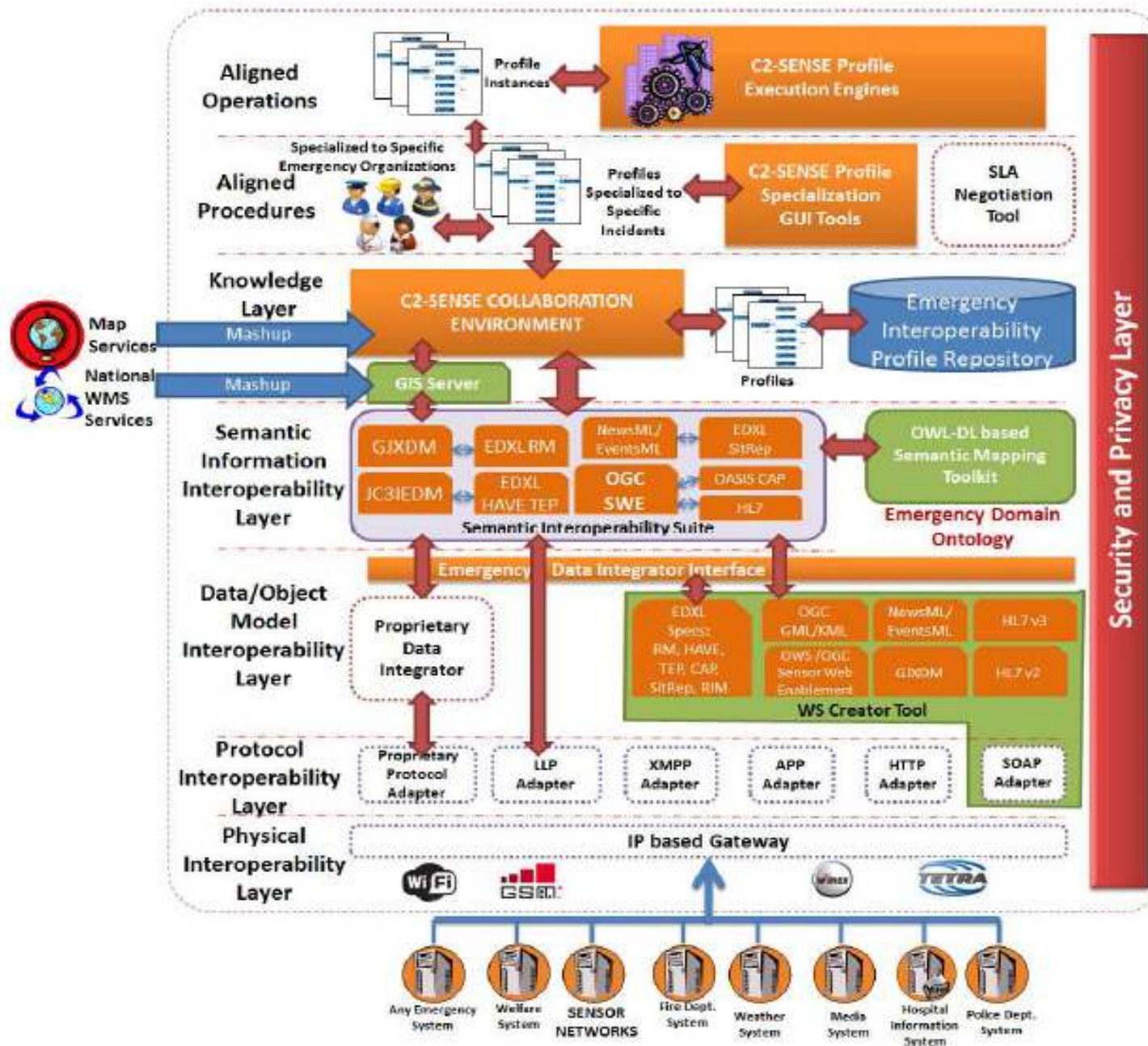
- Although there are commonly used standards and specifications (addressing different layers in the stack), there is no single specification of using these standards together especially in an emergency situation.
- Emergency Interoperability Profiles in emergency domain are not yet another information model or data format: best practice documents on the use of existing dispersed standards to enable timely, effective and efficient exchanges of information among all the layers without requiring any prior special technical arrangements, eliminating the need for a prior bilateral agreement between any two information exchange partners.
- A profile helps the information system to deliver the most relevant data in the right form at the right place and the right moment.
- An emergency profile is a formalization of actors, mutual interactions and information exchange.
- A profile is a machine-readable, machine-understandable and machine-executable process.





# C2-SENSE Modular and Functional Architecture

(for systems related to emergency situations)





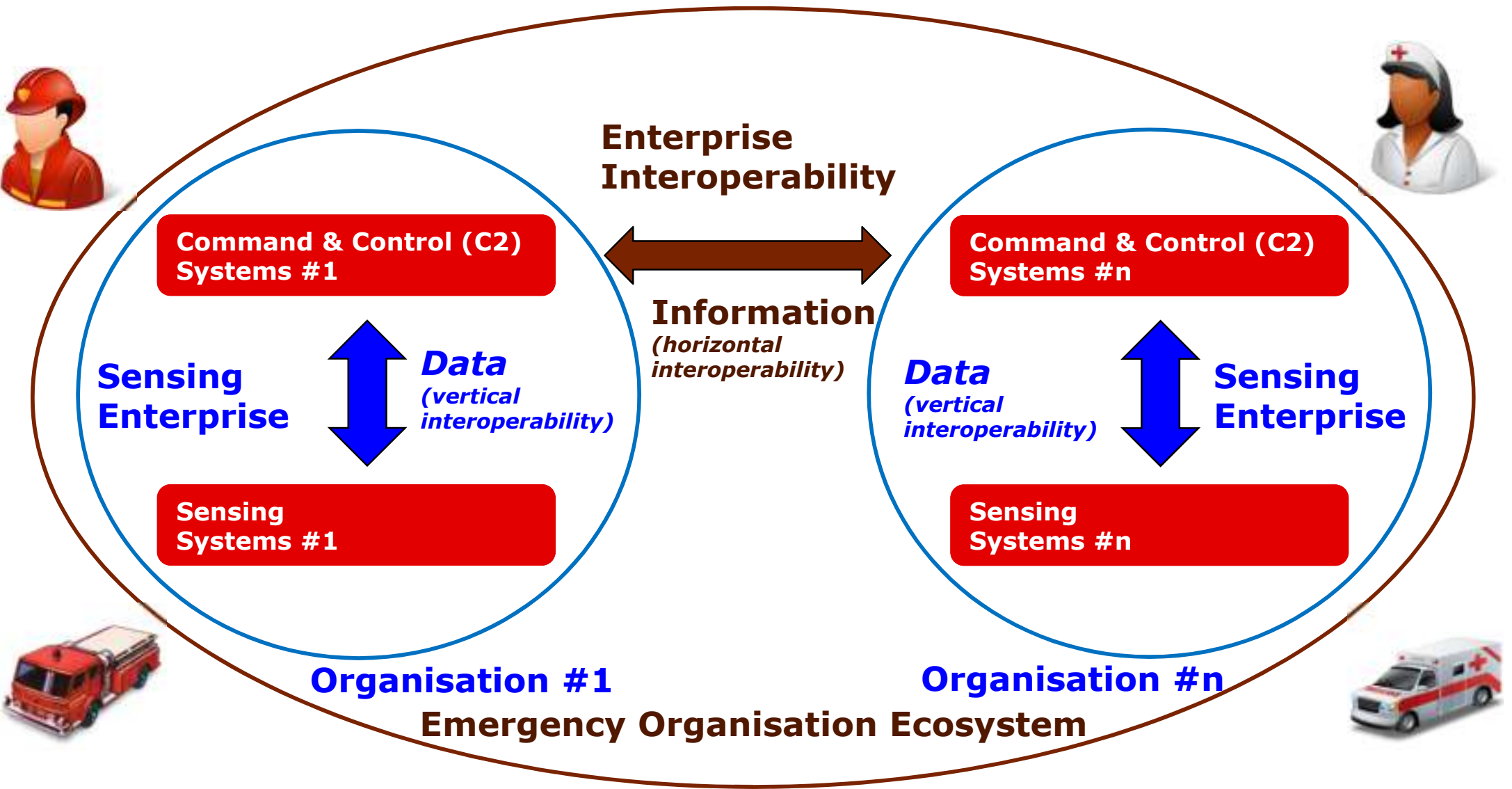
# Challenge and Solution





# The Challenge

(Make the organisations cooperate through interoperability)





# The Solution

(Every organisation is C2-SENSE Certified)



**C2-SENSE**  
The Emergency Interoperability Framework



**Enterprise Interoperability**

**Command & Control (C2) Systems #1**

**Command & Control (C2) Systems #n**



**C2-SENSE**  
Certified

**Information**  
(horizontal interoperability)

**Sensing Enterprise Interoperability**



**C2-SENSE**  
Certified

**Data Sensing Enterprise Interoperability**



**C2-SENSE**  
Certified

**Sensing Systems #1**

**Sensing Systems #n**

**Organisation #1**

**Organisation #n**

**Emergency Organisation Ecosystem**







# How to get more information





# Contacts

*(Get in touch with us)*

Web <http://www.c2-sense.eu>



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