IMPRESS

Newsletter

1st SAG Workshop

The first workshop of the members of the Stakeholders Advisory Group was organized by the Italian National Research Council (CNR) in Rome, Italy in July, 23rd and 24th of 2014.
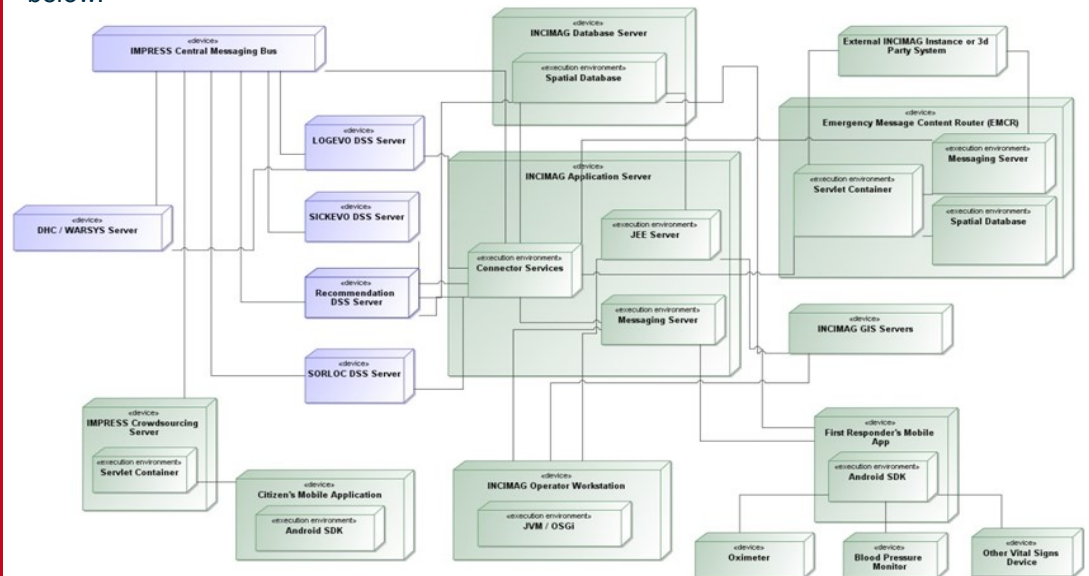The workshop aimed to establish connection between a selected group of disaster medicine experts and the IMPRESS

consortium. It was devoted to the introduction to the IMPRESS concept, identification of needs and collection of data required during large-scale public health emergency crises.

IMPRESS Architecture

The complex architecture of the Integrated System is graphically shown in the figure here next. The Deployment diagrams depicts the physical layout of the various hardware components (nodes) of the system as well as the software components associated to each node. A brief description of these components is provided in the columns below.

INCIMAG Operator Workstation: The Operator Workstation is the hosting device of the INCIMAG Client application. The latter is a multi-screen Rich Internet Application for the various Emergency Operation Centers and the prime system the operators interact with. The client application is fast, efficient, extensible, scalable and adaptable to the agency needs.

INCIMAG Application Server: This is the core of the system, running all server side Business Logic. It stands between workstations or mobile data terminals and the INCIMAG Database Server, handling requests, storing and retrieving data, doing all necessary validations and actions.

INCIMAG Database Server: The Database Server stores all configuration and runtime data of the system. It is based on a Relational Database System with Geospatial capabilities.

INCIMAG GIS Servers: The GIS Servers access geographical data (3D terrain databases and vector layers) from the geodatabase and delivers them to the INCIMAG Operator and Mobile applications. The GIS servers conform to the OGC WMS, WFS, WFS-T and CSW specifications

Emergency Message Content Router (EMCR) : This is an important subsystem that enables different instances (editions) of the INCIMAG systems installed in various emergency organizations (EMS, Hospital EDs, Fire Brigade, Law Enforcement etc.) to exchange data in an interoperable and efficient manner. It makes use of a standardized routing mechanism along with various services for interconnection of endpoints in an Event Driven fashion.

INCIMOB Mobile Data Terminal (MDT): MDT targets individual field responders and team leaders, being or not part of the crew of a vehicle resource and allowing bi-directional information exchange with the EOC operators. The mobile application run on Android tablets and smartphones and is interconnected with specific INCIMAG instances (EMS, Hospital).

Decision Support Tools (DSTs): The DST tools consists of a number of software engines namely LOGEVO, SICKEVO, SORLOC and the Recommendation engine providing forecast of resource provision, patient evolution forecast, biological disease outbreak source localization estimation and resources recommendations respectively to the INCIMAG Operators.

Data Warehouse (WARSYS): WARSYS allows import of structured data to IMPRESS. More specifically, it provides an interface for importing data from medical and logistics repositories (such as hospital information systems), storing and providing data to the system.

Data Harmonization and Linking: This module implements the data harmonization procedure required to harmonize the multidisciplinary and heterogeneous datasets of the IMPRESS Platform and provide a semantically homogenized view of the data. These data are enriched with information from external resources and are provided as linked data to the rest of the IMPRESS components.

Crowdsourcing Mobile Data Terminal: This terminal targets volunteers and citizens by allowing them to post media enriched situational reports from the field.

Crowdsourcing Server: It is the interface point of the Crowdsourcing Mobile application and an INCIMAG instance via the IMPRESS central messaging bus.

User meeting at Palermo

The Italian Council for Research (CNR) organized in October 2 2015, in close collaboration with the Italian Civil Protection (PCI), the first Italian meeting concerning the "Palermo Demo" of IMPRESS solution. The meeting held at the facilities of CNR in Palermo.

The IMPRESS project plan to perform a real field demo concerning a public health emergency scenario in Palermo, instead of a "table-top" demonstration. The date of the demonstration will be within the first half of June 2016. The Italian group elaborate a relative operative protocol for the demo, which will be presented during the coming IMPRESS Plenary Meeting in Dresden.

Representatives from several Institutions/Entities joined the IMPRESS meeting in Palermo including the following:
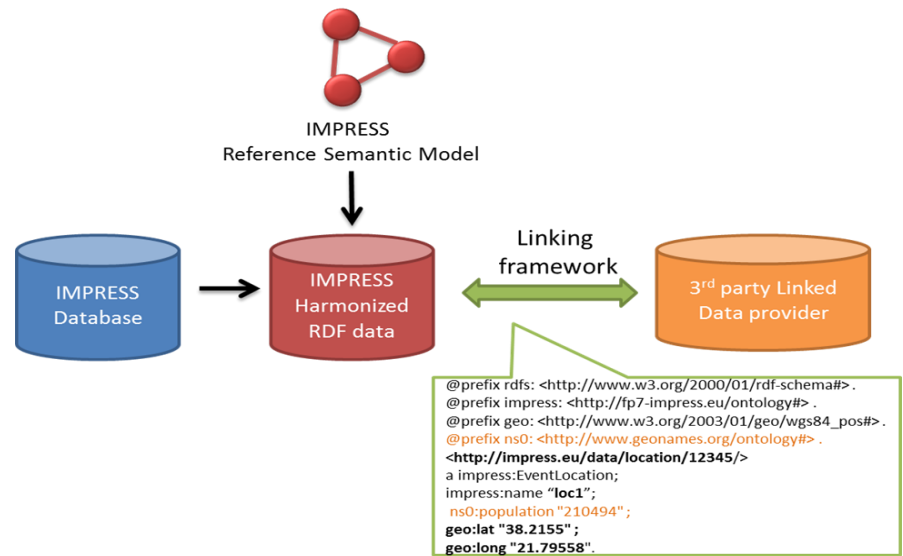
- Consiglio Nazionale di Ricerche
- Italian Civil Protection, Regional Department of Palermo
- Provincial Command of Carabinieri
- Operational Air and Naval Command of Finance Guard
- Nautical Institute of Palermo
- Coast Guard
- Health District of Palermo (ASP Palermo)
- Emergency Health Service (118)
- Telecom Italia
- 12° Carabinieri Battalion "Sicilia"
- Harbor Authority
- Corp of Forest Guards of Sicily
- Civil Protection Office of Province of Palermo
- Command of Financial Police of Palermo
- "Buccheri La Ferla" Hospital, Palermo
- Regional Direction of Fire Department, Sicilia

Reference Semantic Model

During the first year of IMPRESS the consortium elaborated a Reference Semantic Model which comprises the semantics of the IMPRESS architecture and provides an ontology related to the health emergency management domain. The IMPRESS Reference Semantic Model includes the main concepts and the relationships between the concepts of the health emergency management domain. In context of the IMPRESS Platform these include the disastrous events, the response resources, the health emergency activities and the involved agencies as well as the information flow among them.

The IMPRESS solution adopts data harmonization and homogenization techniques, which use the IMPRESS Reference Semantic Model to ensure data consistency between the multidisciplinary and heterogeneous datasets that are offered as Linked Data incorporating information from several dispersed data sources.

Website: http://fp7-impress.eu

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IMPRESS Partnership