



# Integrated Open Service Platform for Enhanced Risk and Emergency Management: the PHAROS Solution

Oriol Vilalta (Pau Costa Foundation, PCF)  
Wildfire Conference, Glasgow Nov 2015

# The PHAROS Consortium



# The PHAROS Advisory Board

The International Emergency Management Society (TIEMS)

Consorcio Provincial de Bomberos de Valencia, *Spain*

Wildfire Advisory Services, *United Kingdom*

Swedish Civil Contingencies Agency, *Sweden*

## Local End Users

Catalan Fire Department, *Spain*

Catalan Police Department, *Spain*

Catalan Traffic Authority, *Spain*

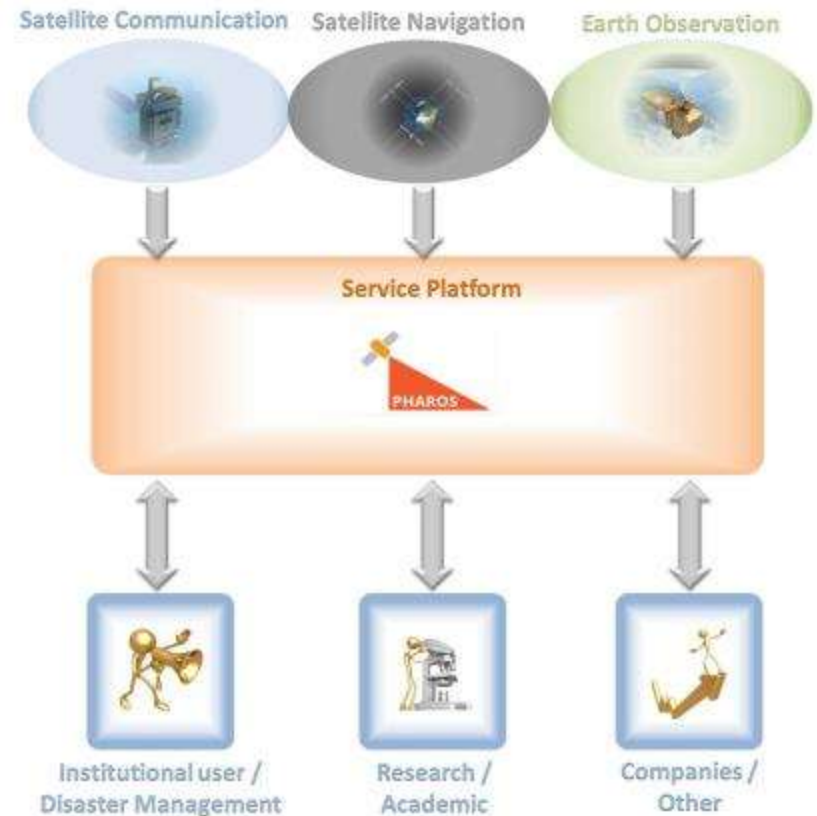
Catalan Civil Protection, *Spain*

# Context

- Emergency and crisis management tools needed for the whole emergency management cycle
  
- State of the art:
  - Not integrated hazard-specific tools
  - Not sharing emergency information between regions/countries/states
  - Potential of integration of space assets (EO, communication and navigation) to be further developed
  - Two major categories of existing EO-based products:
    - Rapid mapping based on EO data
    - Enhanced situational awareness by combining processed EO products with modelling for decision support purposes

# PHAROS Objectives

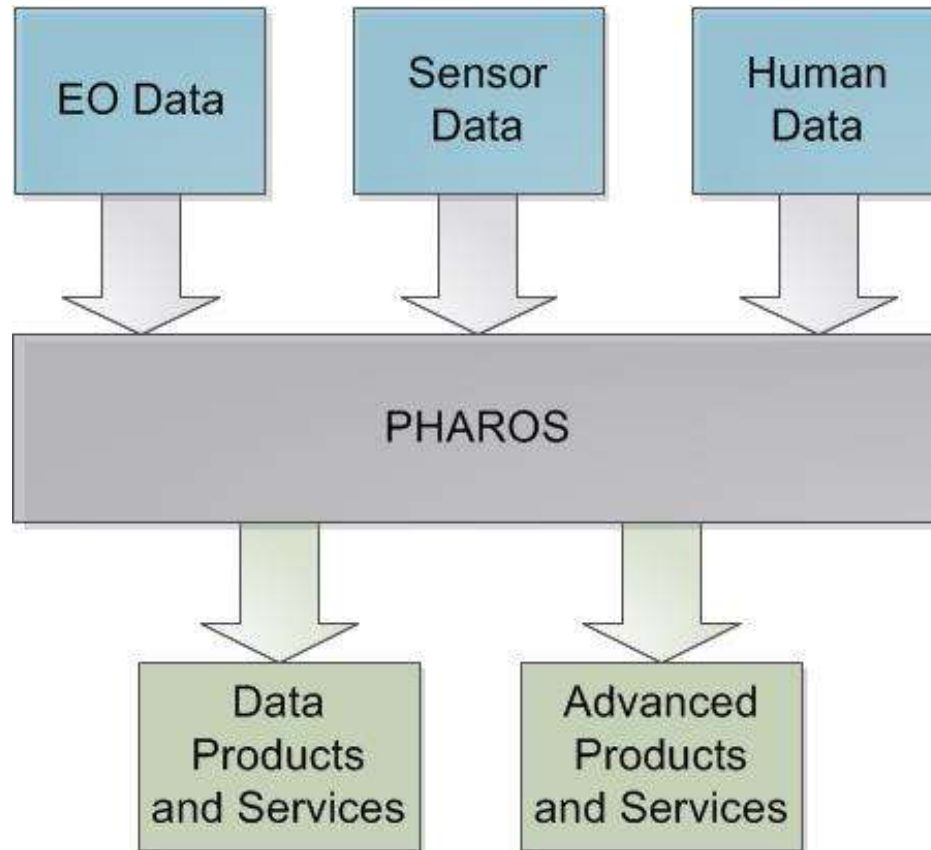
- Multi-hazard open service platform
- Integration of space-based systems with terrestrial technologies
- Sustainable pre-operational services
- Wide variety of users
- Multi-application domains
- Complete emergency management cycle



# PHAROS Service Concept (I)

- Identification of different involved actors:
  - Primary users: Authorities using the system for institutional purposes
  - Secondary users: third-party entities (i.e., research institution, private companies...)
  - Recipients: individuals provided with information sent/made available by PHAROS
  
- Time perspective:
  - Short term: considers until the end of the project time
  - Long term: visionary PHAROS approach without considering time or resource limitations

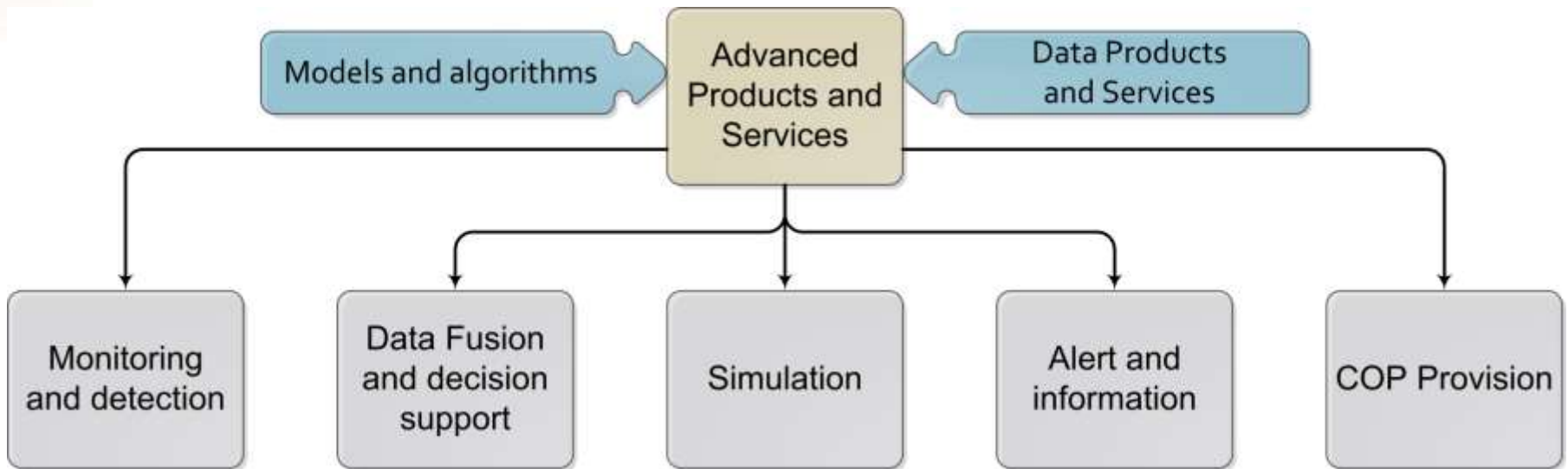
# PHAROS Service Concept (II)





# PHAROS Service Concept (III)

➤ Advanced Services:



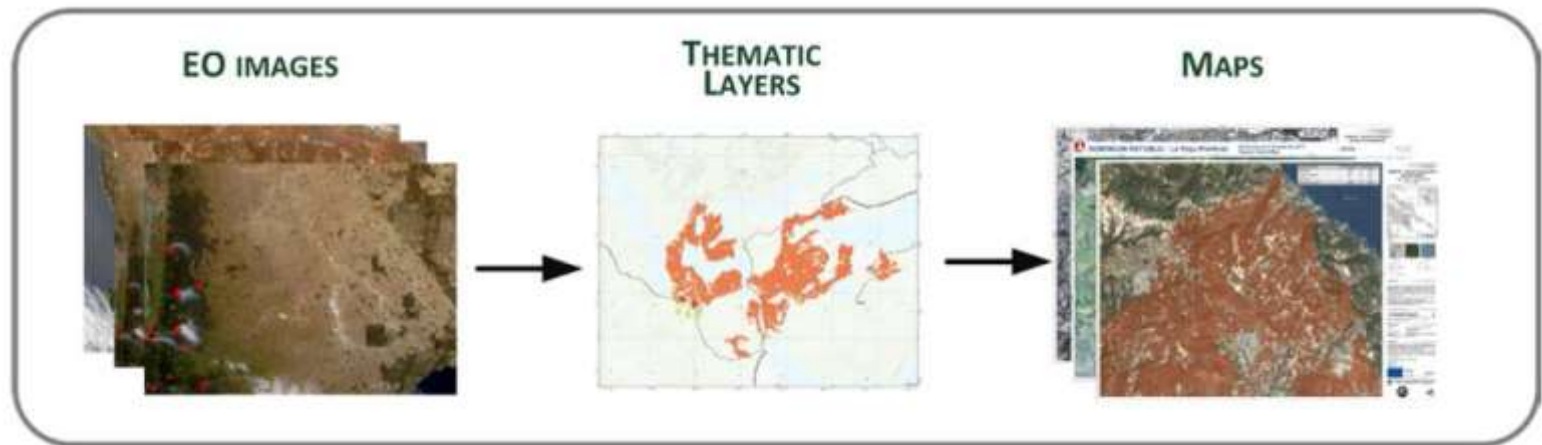


# System Architecture

- Modular architecture allows system scalability at two levels:
  - Functional scalability:
    - Total, partial and/or incremental deployment of PHAROS components
    - Addition of new data sources and tools when available (extension to other hazards)
    - Totally/partially distributed deployment
  - Operational scalability:
    - Able to adapt to the existing organisational and administrative structures

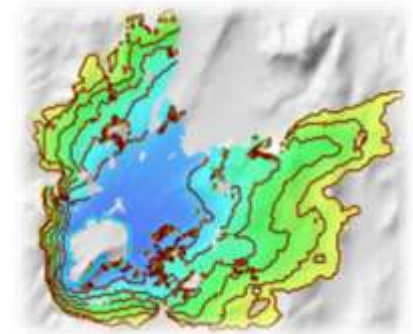
# Earth Observation Services and Products

- **Detection (periodical) of active fire hot spots** for triggering the simulation module
- **Provision of additional thematic products**
  - for risk modelling improvement
  - for early risk detection
- **Evaluation of further optical sensors** for the use in the PHAROS context



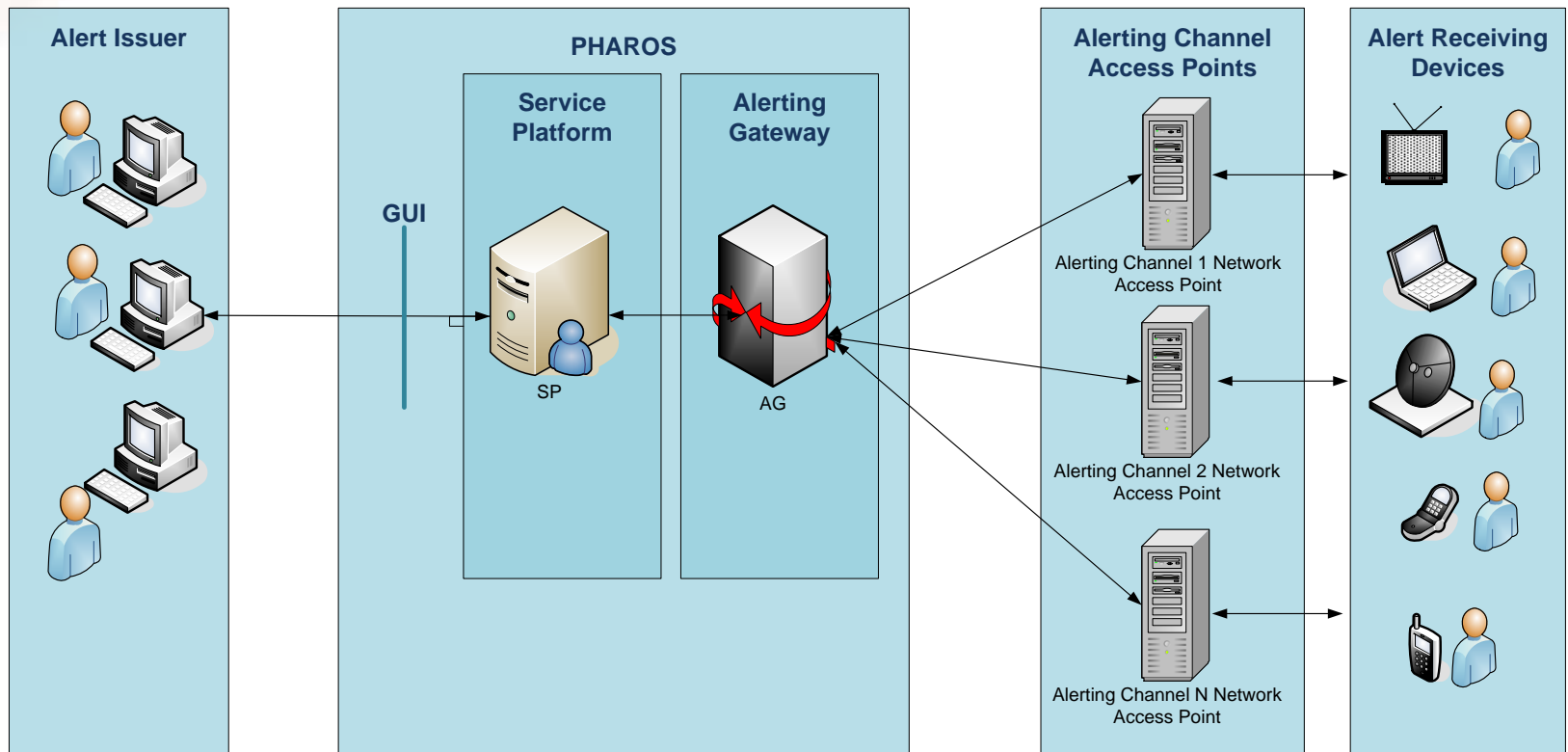
# Simulation and Decision Support

- Decision Support Services based on:
  - Earth Observation data
  - In-situ sensor networks
  - Simulation tools
  - Available databases:
    - GIS data
    - Emergency Management Plans
    - Alerting Plans



# PHAROS Alerting Services

Alerting Gateway dispatches alert messages to the service providers/networks operators that will forward them to the population



## Conclusions and Outcome

- PHAROS integrates space and terrestrial assets to provide a resilient emergency management framework
- Covering the complete emergency management cycle
  - Provides advanced services for risk assessment, disaster preparedness and management for **professionals**, research community and general public
- Extendable hazard independent platform integrating hazard specific tools
  - Use of standards to enhance interoperability
- Pilot demonstration in March 2015 (wildfire scenario in Spain)

# Contact

**Oriol VILALTA**

PCF – Pau Costa Foundation

Spain

Telf: +34 649043261

Mail: [oriol@paucofoundation.org](mailto:oriol@paucofoundation.org)

[www.pharos-fp7.eu](http://www.pharos-fp7.eu)

[www.paucofoundation.org](http://www.paucofoundation.org)