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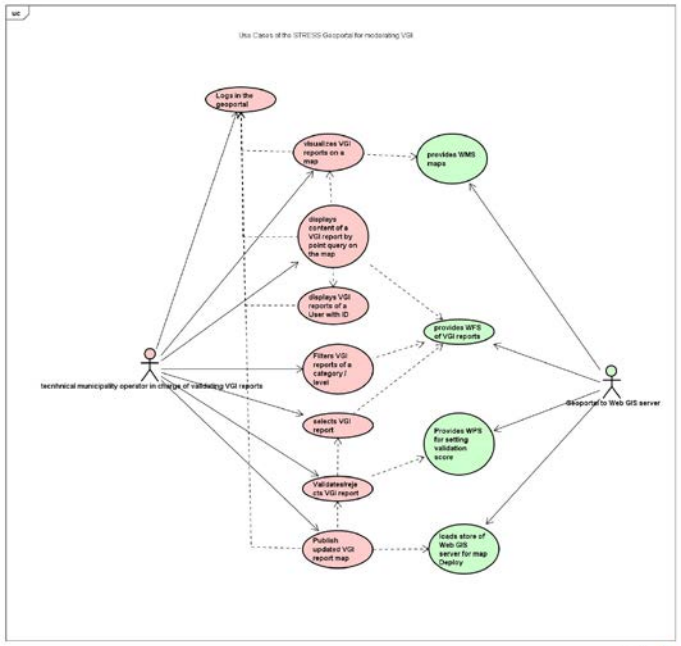
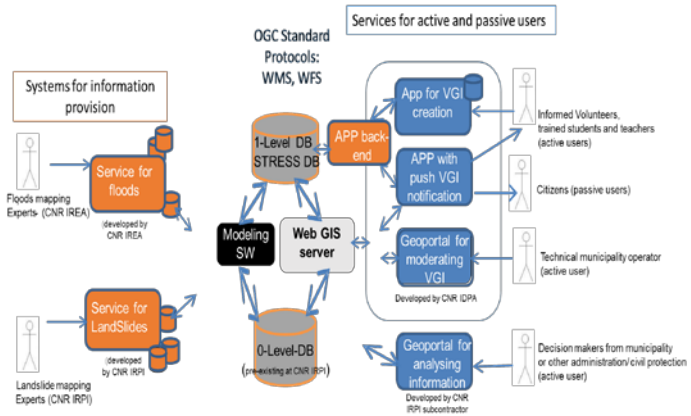


UML use case Diagram of the STRESS Spatial Information Infrastructure



Components of the STRESS Spatial Information Infrastructure

fondazione cariplo

Strategies, Tools and new data for REsilient Smart Societies

Bando Fondazione Cariplo 2016 - Ricerca dedicata al dissesto idrogeologico: un contributo per la previsione, la prevenzione e la mitigazione del rischio

Facebook page
https://www.facebook.com/Progetto-Stress-902319413265425/

Project Website
http://www.itstime.it/w/stress/

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MOTIVATIONS

The **STRESS** project is intended to analyze and cope with several weak points concerning hydrogeological risk assessment/management policies; specifically:

- a general lack of knowledge concerning hydrogeological disaster risk prediction, prevention, monitoring and mitigation strategies supported by;
- a scarce availability and use of modeling techniques targeted to update existing hazard risk maps for spatial and urban planning purposes or in the aftermath of disasters;
- a low level of preparedness to anticipate, as far as possible, the demand for disaster relief operations;
- a low level of risk awareness of communities living in most-at-risk areas;
- a lack of communication and data sharing strategies among stakeholders (authorities, volunteers and general public).

PROPOSED SOLUTIONS

STRESS project will design and implement a Spatial Information Infrastructure (SII) providing new procedures and advanced tools for improving hydrogeological disaster risk assessment and management strategies from one side and consolidating existing ones to support preparedness, response and rescue activities, at municipal/inter-municipal level, from the other side. The purpose is that of preparing local authorities, volunteers and citizens to anticipate, cope with, resist against and recover from the impacts of extreme hydrogeological events.

APPROACH

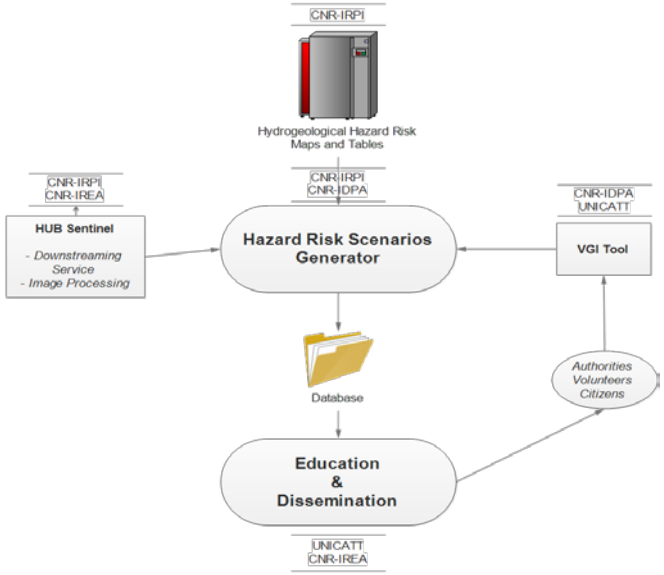
Two modes of action will be pursued:

1. **definition of Hazard Risk Scenarios:** this step will be based on a Risk Scenarios Generation module able to provide information concerning the expected damaging events and their impacts. This module is intended to retrieve risk scenarios from institutional (national, regional and local) data provider repositories and update them on the base of new environmental information coming from satellite systems (Copernicus Programme) or freely provided by citizens. This module will be composed by two complementary sub-modules with the main aim to update existing Hazard Risk scenarios.

2. **Promoting education activities** in order to disseminate project results and train local authorities, volunteers and citizens on disaster risk prevention, monitoring and mitigation strategies by seminars, workshops, training courses and simulation exercises. STRESS is also intended to involve citizens by increasing their level of awareness about the decisions taken by local authorities in risk reduction strategies.

EXPECTED RESULTS

- Algorithms for hazard risk map updating in Hazard Risk Scenarios Generation module
- Downstream service for flooded areas and burnt areas mapping to update hazard risk maps
- VGI application for smart devices to create geotagged in situ observations of anomalous territorial conditions to the aim of updating hazard risk maps.
- ICT-based and consolidated strategies to increase risk awareness through education activities



Schema of the STRESS approach to develop the Spatial Information Infrastructure for improving hydrogeological disaster risk assessment and management