ORCHESTRA

Open Architecture and Spatial Data Infrastructure for Risk Management

The Problem

Recent disaster events have highlighted the urgent need to consolidate information from disparate information systems to support citizen protection and security issues, and disaster and emergency management operations. Disaster risk management activities involve multiple organisations at various administrative levels, each having their own systems and services. The capacity to share relevant information required when dealing with cross-border environmental risks is too limited, thus preventing a truly efficient handling of problems. One of the most urgent and important challenges governments are facing is to get these systems to work together and share information to allow proper data analysis and resource management, both being critical elements of disaster risk management.

Project Objectives

ORCHESTRA is designing and implementing the specifications for a service oriented spatial data infrastructure for improved interoperability among risk management authorities in Europe, which will enable the handling of more effective disaster risk reduction strategies and emergency management operations. The ORCHESTRA Architecture is open and based on standards. Its specifications are contained in a document called the Reference Model–ORCHESTRA Architecture (RM-OA) which is open and free of charge, and can be downloaded from http://www.eu-orchestra.org/documents.shtml .

More information:
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Methodology and Key Technologies

In order to realise this vision, the project:

- Is developing the software infrastructure combined with an integrated service and data approach including spatial, temporal and thematic characteristics, to ultimately enable the provision of the right information at the right time;
- Is developing services that are useful for different thematic risk management applications like forest fires, floods, and man-made risks.
- ORCHESTRA Services have been classified in two categories: Architecture and Thematic Services. The former, which include *Feature Access Services* for maps, documents, source systems, and ontologies, and *Catalogue Services*, provide a generic, platform-neutral and application domain-independent functionality. The latter, which include forest fire simulation and maritime data services (etc), provide application domain-specific functionality, built on top of and using the Architecture services.
- ORCHESTRA results will be validated via four European scenarios that involving different natural and man-made risks, and administrative levels, in cross-border situations. The four pilots take place in Catalonia (Spain), in the French-Italian border region, in the German Bight (Wadden Sea) area, and one of them takes place at pan-European scale
- Is providing valuable input concerning software standards for risk management applications, like the RM-OA, to relevant organisations, including the Open Geospatial Consortium (OGC - www.opengeospatial.org), for consideration, as an initial step for contribution to existing standards; and also to other European projects, initiatives and institutions.

Expected Results

ORCHESTRA will not only deliver technical results such as the RM-OA plus developed services and applications, but also aims to bring together and consolidate the risk management community. This is being done by integrating the results and recommendations of previous and current European and National projects and initiatives, thus harmonising the technical underpinning of Risk Management. In particular, ORCHESTRA is currently collaborating with nearly twenty on-going projects and initiatives, including projects not funded by the EC and projects outside Europe.

Some of the results of ORCHESTRA are being used as input to the INSPIRE (through its Drafting Teams) and GMES initiatives.

An additional goal is to stimulate the creation of an operational service market in Europe. News about the exploitation of results will soon be published in the ORCHESTRA website and newsletters.

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