



# SCHEMA

## SCenarios for Hazard-induced Emergencies Management

### EARTH OBSERVATION DATA FOR ANALYSIS OF TSUNAMI THREATS

The SCHEMA project explores the use of earth observation techniques to elaborate a generic method helping experts in building vulnerability and hazard impact maps associated with tsunamis and disaster scenarios.

The vulnerability map creation technique takes into account the vulnerability characteristics of the systems facing a hazard (types of buildings, categories of inhabitants, etc.), of the environment (location of buildings in old areas, access conditions, etc.) and of crisis organisation which support efficient rescue operations.

The hazard scenario prepared by SCHEMA will be reviewed by end-users and stakeholders in countries recently impacted by coupled earthquake-tsunami events.

Information from the 2004 tsunami in Asia will be used for extraction of relevant vulnerability, hazard and crisis management factors, including indicators from earth observation data. After a first fine-tuning against the data from Asia, the methodology will be deployed for 5 test sites in Portugal, Morocco, France, Italy and Bulgaria. The results of the methodology will be presented within a Geographic Information System to allow interrogation of a primary database by different end-users. A more accurate picture of the spatial and temporal patterns of vulnerability should be obtained for any type of coastal areas.

The resulting work flow will be embedded within existing hazard and exposure analysis techniques to provide risk evaluation of tsunami and related phenomena.

### SPECIFIC OBJECTIVES TO BE ACHIEVED BY SCHEMA

The project goal has been split into six sub-objectives:

- To draw, from the recent Asian tsunami, post disaster studies, the input and output data required for hazard modelling, vulnerability / damage assessment and emergency management;
- To specify rules that provide hazard intensity vulnerability and damage scenario descriptions to support relief managers, rescue planners and policy makers;
- To design and develop a scenario elaboration methodology;
- To propose tsunami-based disaster scenarios in five selected test sites;
- To validate the generic scenario development methodology based on a review of the results obtained for the test sites;
- To disseminate the resulting methodology through relevant workshops and by using web portals.



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Emergencies MAnagement



## LIST OF PARTNERS

- GEOSCIENCES CONSULTANTS sarl, France
- ALGOSYSTEMS, Greece
- HIDROMOD, Portugal
- University of Bologna, Geophysics Laboratory, Italy
- University of Coventry, Centre for disaster management, UK
- National Observatory of Athens, Institute of Geodynamics, Greece
- Centre Royal de Télédétection Spatiale, Morocco
- ACRI-ST, France
- Bulgarian Academy of Science, Space Research Institute, Bulgaria
- Joint Research Centre, Institute for the Protection and Security of the Citizen, International Organisation
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## COORDINATOR

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## PROJECT INFORMATION

SCHEMA: SCenarios for Hazard-induced Emergencies  
MAnagement  
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