



Building a unified GIS database for integrating and disseminating tsunami-related data in Europe: a TRANSFER project experience

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TRANSFER, acronym standing for "Tsunami Risk And Strategies For the European Region", is a EU-funded research project coordinated by the Department of Physics of the University of Bologna, Italy, whose main objectives can be summarized in the following points: 1) improving our understanding of tsunami processes in the Euro-Mediterranean region, 2) contributing to the tsunami hazard, vulnerability and risk assessment, 3) identifying the best strategies for reduction of tsunami risk, 4) focussing on the gaps and needs for the implementation of an efficient tsunami early warning system (TEWS) in the Euro-Mediterranean area. A key aspect is represented by the dissemination of the project data and results to the largest possible public. The two privileged means are and will be the project web site (<http://www.transferproject.eu>) and a web-based GIS database. This contribution focuses on this second tool. The GIS database is intended to support the general project goals by integrating existing data

and storing new project data. During the project development, the database will permit all partners to have a common platform for archiving, using and exchanging their data and interpretations. The database design derives from the work of many TRANSFER partners that are called to contribute with data and simulation results. The final goal to be achieved at the end of the project will be to set up a user-friendly GIS server providing visualization, presentation, and evaluation of large, regionally distributed, comprehensive datasets. This will hopefully be of help for the research needs of a larger scientific community and in disseminating integrated data to the interested public and end-users. To this latter respect, the project Consortium has selected seven test areas in different countries facing the Mediterranean Sea and the eastern Atlantic Ocean, where all the relevant research results, including probabilistic and statistical approaches for tsunami hazard assessment, up-to-date and new methods to compute inundation maps, vulnerability and risk assessment and mitigation measures definition, will have their privileged application.

This paper aims at providing a snapshot on the current status of the database. Presently the main efforts are directed toward compilation and integration of data, involving tsunami catalogues, geological and oceanographic background data, seismic and non-seismic tsunami sources, numerical models, bathymetric and topographic datasets. Concerning the target areas, data on the built environment and on general vulnerability aspects are being compiled also with the aid of local end-users. The necessary conversions and adaptations will be made to achieve common data formats from the input of the various sources. From these inputs, background maps at the whole European scale will be produced, in conjunction with regional tsunami-specific thematic maps. From the technical point of view, the geodatabase is being built using Esri ArcGIS version 9.2, which represents a de facto standard in GIS development. The final implementation of the database will be published through an ArcGIS Server installation, hosted at the Department of Physics of the University of Bologna, Italy. Any interested users will be able to access the GIS resources hosted on the TRANSFER GIS server through ArcGIS Explorer, which is a freely available geospatial information viewer.