



TRIDEC Natural Crisis Management Demonstrator for Tsunamis

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The management of natural crises is an important application field of the technology developed in the project Collaborative, Complex, and Critical Decision-Support in Evolving Crises (TRIDEC), co-funded by the European Commission in its Seventh Framework Programme. TRIDEC is based on the development of the German Indonesian Tsunami Early Warning System (GITEWS) and the Distant Early Warning System (DEWS) providing a service platform for both sensor integration and warning dissemination. In TRIDEC new developments in Information and Communication Technology (ICT) are used to extend the existing platform realising a component-based technology framework for building distributed tsunami warning systems for deployment, e.g. in the North-eastern Atlantic, the Mediterranean and Connected Seas (NEAM) region.

The Kandilli Observatory and Earthquake Research Institute (KOERI), representing the Tsunami National Contact (TNC) and Tsunami Warning Focal Point (TWFP) for Turkey, is one of the key partners in TRIDEC. KOERI is responsible for the operation of a National Tsunami Warning Centre (NTWC) for Turkey and establishes Candidate Tsunami Watch Provider (CTWP) responsibilities for the NEAM region. Based on this profound experience, KOERI is contributing valuable requirements to the overall TRIDEC system and is responsible for the definition and development of feasible tsunami-related scenarios. However, KOERI's most important input focuses on testing and evaluating the TRIDEC system according to specified evaluation and validation criteria.

The TRIDEC system will be implemented in three phases, each with a demonstrator. Successively, the demonstrators are addressing challenges, such as the design and implementation of a robust and scalable service infrastructure supporting the integration and utilisation of existing resources with accelerated generation of large volumes of data. These include sensor systems, geo-information repositories, simulation tools and data fusion tools. In addition to conventional sensors also unconventional sensors and sensor networks play an important role in TRIDEC.

The first system demonstrator, deployed at KOERI's crisis management room, has been designed and implemented to support plausible scenarios for the Turkish NTWC and to demonstrate the treatment of simulated tsunami threats with an essential subset of a NTWC. The feasibility and the potentials of the implemented approach are demonstrated covering standard operations as well as tsunami detection and alerting functions. The demonstrator presented addresses information management and decision-support processes in a hypothetical natural crisis situation caused by a tsunami in the Eastern Mediterranean.