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REWSET: A prototype seismic and tsunami early warning system in Rhodes island, Greece

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Tsunami warning in near-field conditions is a critical issue in the Mediterranean Sea since the most important tsunami sources are situated within tsunami wave travel times starting from about five minutes. The project NEARTOWARN (2012-2013) supported by the EU-DG ECHO contributed substantially to the development of new tools for the near-field tsunami early warning in the Mediterranean. One of the main achievements is the development of a local warning system in the test-site of Rhodes island (Rhodes Early Warning System for Earthquakes and Tsunamis - REWSET). The system is composed by three main subsystems: (1) a network of eight seismic early warning devices installed in four different localities of the island, one in the civil protection, another in the Fire Brigade and another two in municipality buildings; (2) two radar-type (ultrasonic) tide-gauges installed in the eastern coastal zine of the island which was selected since research on the historical earthquake and tsunami activity has indicated that the most important, near-field tsunami sources are situated offshore to the east of Rhodes; (3) a crisis Geographic Management System (GMS), which is a web-based and GIS-based application incorporating a variety of thematic maps and other information types. The seismic early warning devices activate by strong (magnitude around 6 or more) earthquakes occurring at distances up to about 100 km from Rhodes, thus providing immediate mobilization of the civil protection. The tide-gauges transmit sea level data, while during the crisis the GMS supports decisions to be made by civil protection. In the near future it is planned the REWSET system to be integrated with national and international systems. REWSET is a prototype which certainly could be developed in other coastal areas of the Mediterranean and beyond.