Geophysical Research Abstracts
Vol. 14, EGU2012-12521, 2012
EGU General Assembly 2012

Evaluation results after seven years of operation for the permanent Hellenic Seismological Network of Crete (HSNC).

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The Hellenic arc and the adjacent areas of the Greek mainland are the most active in western Eurasia and some of the most seismically active zones of the world. The seismicity of South Aegean is extremely high and is characterised by the frequent occurrence of large shallow and intermediate depth earthquakes. Until 2004, the installed seismological stations from several providers (NOA, GEOFON, MEDNET) provide average interstation distance around 130km resulting to catalogues with minimum magnitude of completeness (Mc) equals to 3.7. Towards to the direction of providing dense and state of the art instrumental coverage of seismicity in the South Aegean, HSNC begun its operation in 2004. Today it consists of (12) permanent seismological stations equipped with short period and broadband seismographs coupled with 3rd generation 24bit data loggers as well as from (2) accelerographs . The addition of HSNC along with combined use of all the active networks in South Aegean area (NOA, GEOFON, AUTH) decrease the average interstation distance to 60km and provide catalogues with Mc$\geq$3.2.
Data transmission and telemetry is implemented by a hybrid network consisting of dedicated wired ADSL links as well as VSAT links by using a unique private satellite hub. Real time data spread over collaborating networks (AUTH) and laboratories (Department of Earth Science – UCL) while at the same time, events are appended automatically and manually to EMSC database. Additional value to the network is provided by means of prototype systems which deployed in-situ for the purposes of:
a) Acquiring aftershock data in the minimum time after main event. This is a mobile seismological network called RaDeSeis (Rapid Deployment Seismological network) which consists of a central station acting also as the central communication hub and wifi coupled mobile stations.
b) The development of dedicated hardware and software solutions for rapid installation times (around 1 hour for each station) leading to infrastructure that can provide data for aftershock studies can be initiated after a few hours.
c) Real time algorithms for Early Warning Purposes. These include the rapid estimation of magnitude and epicentre after 5secs from the initial P-wave arrival.

Acknowledgements.
This work was supported in part by the ARCHIMEDES III Program of the Ministry of Education of Greece and the European Union in the framework of the project entitled "Intredisciplinary Multi-Scale Research of Earthquake Physics and Seismotectonics at the front of the Hellenic Arc (IMPACT ARC)"