



## **A Rapid Deployment Seismological network (RaDeSeis) for real time aftershock studies**

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The understanding of earthquake faulting process is one of the main factors that contribute to earthquake damage. One of the most valuable and essential tools for the understanding of faulting process in the analysis of aftershocks. The critical point for successful aftershock studies is the mobile seismological network that will be deployed in order to provide the required data. The main problem that arises for these networks is how fast the recorded data are available to data centres in order to estimate the focal mechanisms, the source parameters estimation as well as to examine microseismic activity. The ideal situation is to have these data available in real time but this is limited by the different telemetry requirements for every individual installation.

Based on the experience gained from several installations in the Hellenic Seismological Network of Crete (HSNC) we propose a mobile network scheme (called RaDeSeis) capable of being installed in a limited amount of time and providing real time seismological data. RaDeSeis is a hybrid network based on VSAT and WiFi communication links between seismological stations and data centre. The network is deployed in a star topology where the central station is the communication hub at the same time. Dedicated point-to-point links between central station and border station are established using WiFi links. Communication between central station and data centre is established by VSAT. With appropriate routing on the central station the data centre is collecting, controlling and monitoring all the stations from the area of interest in real time.

In order to decrease the time needed for each installation a specific software (RaLiEs – Rapid Link Establishment) is developed for the quicker link establishment between border stations and central station (with an average distance of 40km LOS) as well as to the data centre. By using this software each telecommunication installation needs less than half an hour to complete the necessary link adjustments.

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