



1 ASSEM (Array of Sensors for long term SEabed Monitoring of geohazards): monitoring based on modularity.

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Dramatic events from the seabed and geophysical research have demonstrated that long-term time series of critical parameters are needed to understand several ocean systems and underwater geological systems as well. The establishment of alert criteria are requiring a good knowledge of key parameters. ASSEM, a project funded by EU 5th Framework Program, was the first application of a new concept of sea bed observatories dedicated to long term monitoring a small area (a few km²), lying on a network of interconnected measurement nodes. It is a project that enhances marine technologies allowing real time monitoring of the sea bed with a broad modularity. The main component of the system is the COmmunication and STorage Front end, COSTOF. It is an electronic unit, structured on an internal CAN bus, providing a set of sensors with the means to communicate with the external world through an underwater network, and to locally store the produced data. The evaluation of this new concept was made through two experiments addressing two sea bed problems: slope instability risks and seismic risks. Results are presented.