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The EuroSITES network: Integrating and enhancing fixed-point open ocean observatories around Europe

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EuroSITES is a 3 year (2008-2011) EU collaborative project (3.5MEuro) with the objective to integrate and enhance the nine existing open ocean fixed point observatories around Europe (www.eurosites.info). These observatories are primarily composed of full depth moorings and make multidisciplinary in situ observations within the water column as the European contribution to the global array OceanSITES (www.oceansites.org). In the first 18 months, all 9 observatories have been active and integration has been significant through the maintenance and enhancement of observatory hardware. Highlights include the enhancement of observatories with sensors to measure O2, pCO2, chlorophyll, and nitrate in near real-time from the upper 1000 m. In addition, some seafloor missions are also actively supported. These include seafloor platforms currently deployed in the Mediterranean, one for tsunami detection and one to monitor fluid flow related to seismic activity and slope stability. Upcoming seafloor science missions in 2010 include monitoring benthic biological communities and associated biogeochemistry as indicators of climate change in both the Northeast Atlantic and Mediterranean. EuroSITES also promotes the development of innovative sensors and samplers in order to progress capability to measure climate-relevant properties of the ocean. These include further developing current technologies for autonomous long-term monitoring of oxygen consumption in the mesopelagic, pH and mesozooplankton abundance. Many of these science missions are directly related to complementary activities in other European projects such as EPOCA, HYPOX and ESONET. In 2010 a direct collaboration including in situ field work will take place between ESONET and EuroSITES. The demonstration mission MODOO (funded by ESONET) will be implemented in 2010 at the EuroSITES PAP observatory. Field work will include deployment of a seafloor lander system with various sensors which will send data to shore in real time via the EuroSITES water column infrastructure. EuroSITES Data management is led by NOCS, UK with CORIOLIS, France as one of the Global Data assembly centre (GDAC) for both EuroSITES and OceanSITES. EuroSITES maintains the OceanSITES and GEO philosophy of open access to data in near real-time. With a common data policy and standardised data formats (OceanSITES NetCDF) EuroSITES is increasing the potential users of in situ ocean datasets and the societal benefit of these data. For instance, CORIOLIS is central to the ever increasing contribution of EuroSITES as an upstream data provider to the GMES project MyOcean (both real-time and delayed-mode data). Outreach and knowledge transfer of EuroSITES activities and results are also a key component to the project with a dedicated outreach website, Fact Sheet, cruise diaries and educational tools being developed in the first 18 months. In 2010 a film will be released to represent the network and this will be distributed to a wide audience through the European network of aquaria and at other outreach events. In addition, the EuroSITES project and it's relevance to global ocean observation initiatives continues to be actively promoted at both scientific and non-specialist meetings and events.

By the end of EuroSITES in April 2011, the 9 core ocean observatories will be well integrated. Each observatory will have enhanced infrastructure to include both physical and biogeoechemical sensors. Science missions in the ocean interior and seafloor/subseafloor will have progressed European ocean observational capability significantly. Collaborations will have taken place or will be at an advanced stage of planning with related European and international projects including ESONET FP6 NoE and the NSF funded Ocean Observatories Initiative (OOI) (400M $ over 5 years). EuroSITES will continue to develop it's contribution to the ocean component of the Group on Earth Observations (GEO) through task AR-09-03c 'Global Ocean Observing Systems' and related societal benefit areas.