

4.1.1. EuroSITES Executive summary

The main objective of the FP7 project EuroSITES was to integrate and enhance European capability and capacity for *in situ* sustained observations at fixed open ocean locations. It addressed all parts of the water column from the surface to the deep sea floor beneath. This objective was achieved through science and technological excellence; maintaining and developing the existing infrastructure and supporting innovative developments in technology and technique.

The EuroSITES project recognised a lack of integration of open ocean observatories and modest funding of 3.5M Euro was made available over a 3 year period to address this issue. It came at a time when the European Marine Strategy framework Directive was being developed and so provides a compelling scientific, legislative and societal setting for the network. EuroSITES was created in April 2008, coordinated by the National Oceanography Centre, Southampton, UK in conjunction with 12 other partner institutions across Europe and the Cape Verde Islands. The achievements of the program over the past 3 years can be summarised as follows:

1. **Integration:** The program has integrated the 9 open ocean fixed point observatories around Europe such that they now use a common data management system, and adopt techniques and technologies that are shared. Those involved in such activities now see themselves as part of a community of individuals and groups with a common purpose and expertise that is freely exchanged. The opportunity to develop an integrated “operational” network of open ocean observatories is closer now than it has ever been before.
2. **Enhancement:** Observing capability and capacity has been significantly enhanced in the open oceans around Europe as a result of improvements at each and every one of the observatories. A small proportion of the funding was allocated for hardware acquisition and development but even this modest investment has had a measureable and very positive effect on European observing capacity. Several technical developments have taken place which has increased European capability to observe the oceans, some already leading to commercial exploitation.
3. **Data delivery:** The network has produced a vast stream of multidisciplinary data on the ever-changing state of the open ocean around Europe. These data are freely available and in the public domain in near-real time in a common format. EuroSITES has become the European contribution to the international OceanSITES network of reference stations providing about half of the global data stream and a key *in situ* data provider for MyOcean, GMES and GEO.
4. **Research:** Focussed science and technology missions were carried out at several sites and these have led to significant advances in our understanding of the processes occurring in the oceanic realm. These addressed chemical and biological changes in the water column (e.g. pH, oxygen), biological community trends on the seafloor and geohazards. In addition, a collaborative demonstration mission was carried out with the FP7 Network of Excellence; ESONET.
5. **Dissemination:** Considerable effort has been expended on outreach and communication to enhance public understanding of ocean observation, to enlighten policy makers on the results and impact of the network, to influence the regulatory framework and to inform fellow scientists and engineers about the program objectives and results.
6. **Added benefit:** Membership of EuroSITES has in itself been a benefit to individual partners and a lever to attract additional funding. This includes the installation of additional sensors and capability and longer-term National or regional funding commitments (e.g. Norway, France) (e.g. MOON). In addition, research cruises for other purposes have been located at observatory sites where time series data are required in order to place short term observations into a more appropriate temporal context.
7. **Computational modelling** of the oceans is essential if the time-changing properties and processes are to be understood on a broad scale. EuroSITES funded some modelling activity but has also provided the *in situ* datasets and framework to evaluate and constrain models at specific locations. These are already proving to be of considerable value.