European Ocean Observatory Network

EuroSITES

National Oceanography Centre, Southampton
UNIVERSITY OF SOUTHAMPTON AND NATURAL ENVIRONMENT RESEARCH COUNCIL

Lampitt R.S., Larkin K.E., Pagnani M., Hartman S.E and the EuroSITES Consortium

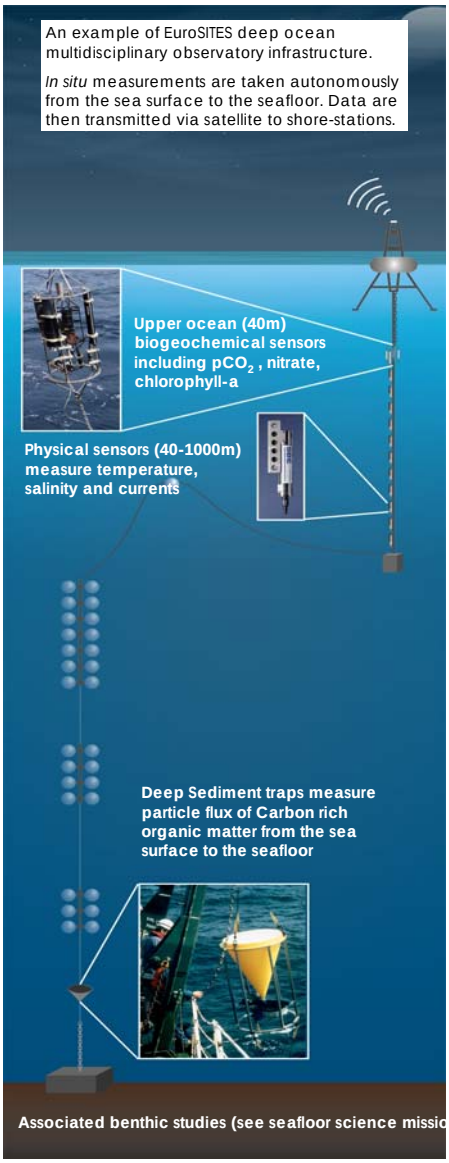
Concept and Objectives

EuroSITES is a 3 year (2008-2011) FP7 EU Collaborative Project **coordinated by NERC-NOCS** which will bring about a major advance in the way the European community monitors the **ocean interior, seafloor** and **sub-seafloor**. EuroSITES has two main objectives:

- To **integrate** and **enhance** the 9 **existing deep (>1000 m) ocean observatories** both **regionally** and **vertically** into a **coherent** and **mutually supportive European network**
- To perform **specific science missions** at selected sites that will, in the future, form the basis for sustained monitoring of **key environmental features.**

EuroSITES will focus on **best practice**, **common data management** and **effective communication** to scientists, industry, policy makers and the general public. Close **interaction** and **collaboration** with **relevant European and International initiatives** including ESONET (FP6 NoE), EMSO PP (FP7) and the North American NSF funded Ocean Observatories Initiative (OOI) are fundamental to the success of EuroSITES.

EuroSITES observatories (blue), 2 associated cabled seafloor sites (green).



Beyond-state-of-the-art

The EuroSITES network will bring about a major advance in the way the European community monitors the ocean interior and sub/seafloor beneath. The **observing capability in the ocean interior** will firstly be **upgraded** at specific sites to reach a common standard (e.g. left). EuroSITES will carry out

Multidisciplinary science missions at selected sites (map above). EuroSITES will support the **research and development** of **innovative ocean observation** technology to demonstrate **sustained autonomous observations** of key climatic features with direct societal relevance:

Water column: deep ocean oxygen consumption**,** mesozooplankton and pH**.**

Seafloor: High accuracy pressure for tsunami detection (see right), pore water pressure monitoring and slope stability, abyssal seafloor megafauna monitoring as indicators of climate change.

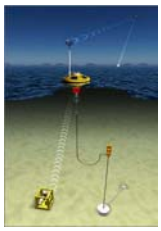
Impact

International Impact: An integral component of EuroSITES is the **Oversight Committee**. This **international advisory panel** of ocean observation **scientists** and **key end users** (data managers and policy makers) of time-series data will create a **road map** ensuring the impact of EuroSITES is large and extends beyond the project end (2011). Members include the **EuroGOOS** director, Dr. Hans Dahlin, representatives of the NSF funded **Ocean Observatories Initiative (OOI)** and ISDR team member Dr. Uli Wolf (IOC of UNESCO, Paris). This committee will also facilitate cross-fertilisation with relevant initiatives and existing standards and protocols. EuroSITES is a registered component of the **Group on Earth Observations (GEO)** and will contribute to **GEO Task CL-06-06 'Global Ocean Observation System'** led by **GOOS** (2007-2009 GEO WP).

European Impact: EuroSITES forms the European component of the **OceanSITES** network of deep ocean observatories www.oceansites.org. EuroSITES will work with other relevant **European** projects including MERSEA, ESONET, EMSO PP, HERMES, HERMIONE and EuroGOOS to contribute s to the **sub-sea component of Kopernicus (GMES)**.

Tsunami detection

An autonomous deep sea platform for **tsunami detection** will be installed in October-November 2008 at the **Poseidon-Pylos site**; **SE Ionian Sea** (see maps above and below).



Above: POSEIDON Tsunami module location
Right: Tsunami module (DART, Pacific System)

A **high accuracy pressure sensor** (sampling 1min, accuracy 1mm) will be deployed at a depth of ~2000m (6-12 month autonomous deployment). This will upgrade the existing full-depth mooring (deployed February 2007) to provide **advanced warning of tsunamis**. An acoustic link (and Imarsat-C, GSM telemetry) will send near real-time data to the surface buoy and shore stations. This work contributes to **EuroSITES WP4 WP4; Task 4.2** forming part of the Greek national-funded **POSEIDON-II project** which contributes to the Greek National Buoy System. Future regional plans include linking EuroSITES E1-M3A (map above) with submarine cable technology (linking with the ESONET project).

Data management

EuroSITES aims to create an integrated network of deep ocean observatories with:

- a common **data policy**
- **convergence** of **standards** (data and metadata)
- **quality control**
- improved **sensor/data accuracy**
- **interoperability**

EuroSITES will work in close collaboration with existing initiatives and projects including OceanSITES, the INSPIRE directive, MyOcean, SeaDataNet and ESONET.

EuroSITES is coordinated by NERC-NOCS and comprises 13 partner institutes, a total of 7 EU countries and an International Co-operation Partner Country (ICPC); Cape Verde.
Partner institutes: 1. NERC-NOCS; 2. UiB; 3. HCMR; 4. OGS; 5. CNR-ISSIA; 6. IFM-GEOMAR; 7. UNIABN; 8. CNRS; 9. IFREMER; 10. Océanopolis; 11. ICCM; 12. INDP; 13. ULPGC

Web site: www.eurosites.info
Email: R.Lampitt@noc.soton.ac.uk
kel1@noc.soton.ac.uk