MARINE ENVIRONMENT AND SECURITY FOR THE EUROPEAN AREA

Ocean and Marine Applications for GMES

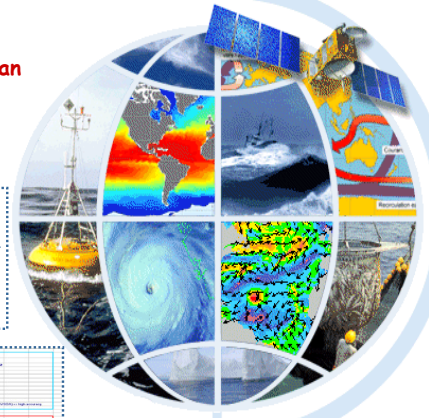
MERSEA

Mersea Remote Sensing Ocean Portal
F. Blanc & all partners of the Remote Sensing Work Package

Remote Sensing

Mersea (43 partners) aims to develop by 2008 a European system for operational monitoring and forecasting on global and regional scales of the ocean physics, bio-geochemistry and eco-systems, the GMES ocean component ('Global Monitoring for Environment and Security'). The data analysis and synthesis is in real-time ('nowcasting'), the prediction time scales extend from days to months. This approach is comparable to the one applied for weather forecasting.

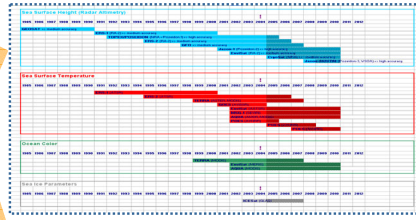
The European Portal To Ocean Data



We focus here on the Remote Sensing activities of the MERSEA IP project.

Satellite data contain long term, synoptic, high-resolution, global and regional estimates of key surface parameters: **sea surface height** and ocean circulation – satellite altimetry – , **sea surface temperature** – infra-red and micro-wave measurements –, **ocean colour** – and sea water parameters derived from colour –, **sea ice** – microwave sensors and radars – and new coming remote sensing data sets that have great potential to improve the description of the ocean state.

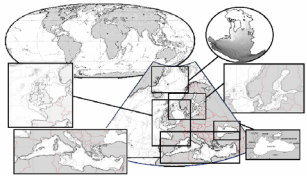
Among its various objectives, Mersea Ocean Portal is to be the European centre serving Godae goals ('*Global Ocean Data Assimilation Experiment*', 2003-2005).



Mersea ocean monitoring system is envisioned as an operational network that systematically acquires data and disseminates information to serve the various user needs.

Remote Sensing products

The main focus of the Remote Sensing work package will be on **global data sets** or products but specific **regional products** (for example at higher resolution, or derived from locally-specific algorithms) for Mersea regional integrated centres (Mediterranean Sea, Arctic, North West and South West European Shelves) will also be prepared.



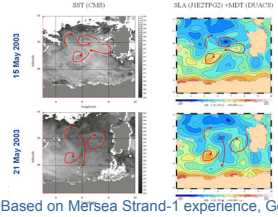
All products optimised for supporting operational oceanography i.e. **in the form required by Mersea modelling and data assimilation systems**: **low and high resolution data sets, real-time and delayed mode delivery, quality controlled and accompanied with quantitative estimate of their error statistic, ad-hoc processing, harmonized and standardised format, harmonized and decentralised distribution network.** The timely delivery of high quality and reliable information to many user categories is essential for the success of such integrated project.

Near-real-time products will be processed, quality-controlled and delivered over 2004-2008. Historical data sets for the last 15 years will also be prepared. Data will be primarily used for assimilation but some data sets will be used as validation data. Higher quality delayed mode data sets will also be prepared for reanalysis activities; the latter are required for some of the GMES applications (e.g. ocean climate monitoring).

Coordination / Framework

There is consequently a large effort to coordinate all delivery actions giving special attention on the users' needs. This effort cover many issues like **product presentation, product definition & organisation, products and web services catalogue and how to deal for an interdisciplinary and integrated use.**

Altimetry vs SST: Algerian Basin

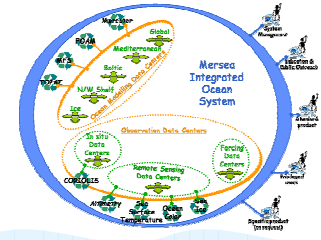


Based on Mersea Strand-1 experience, Godae cooperation (IOOS DMAC) and other european Initiatives *(INSPIRE, HALO)*, **the unified working framework rely on a partner chart** which will recall on the needed requirements to reach ocean metadata and data coherency at many levels :

1- Apply or define standard for ocean products and information (ie. the minimum basis for exchanging multi-disciplinary data, also essential so that common programs can be used for analysis and comparison),

2- Harmonise the data exchange procedures (ie. to rely on a decentralised but compatible system architecture for distribution on Internet – *Opendap technology* – .),

3- Federate remote sensing activities and products (ie. a web portal for easy and efficient access to information, data and products, a management system to facilitate the routine real-time exchange : www information, distribution services, browse / imagery services).



Requirement, Recommandation (the partner charts) as well as Products & Services catalogue are / will be made available on line

http://www.mersea.eu.org

webmaster-mersea@mersea.eu.org

Associated Research & Development

Another important downstream objective of these Mersea Remote Sensing activities is to ascertain the quality of satellite products that must be sustained for effective assimilation into an operational ocean forecasting system. Project participants are in particular, expected to develop strong interactions with Mersea modelling and assimilation teams. This is mandatory to develop the most suitable remote sensing data products and to make the best use of these products in data assimilation systems.

In off-line mode, existing processing systems will be improved through research & development activities and consolidated to become fully operational by 2008. Specific research & development tasks will also be carried out to prepare the use of new remote sensing data sets from forthcoming satellite missions and combined use. These new sensors have considerable potential to improve the description of the ocean state.