

Infrastructure for Spatial Information in Europe	Definition of Annex Themes and Scope		
DT DS v3.0	D2.3 Definition of Annex Themes and scope	2008-03-18	Page 111 of 132

## 7.15 *Oceanographic geographical features*

### **Definition:**

(INSPIRE, 2007) Physical conditions of oceans (currents, salinity, wave heights, etc.).

### **Description:**

Historical versions of the theme definition are found in the INSPIRE IMS and Scoping papers:

- The measurable physical conditions of oceans e.g. salinity, oxygen, other chemical components, currents. Representation e.g. as isolines, grids or other spatial organisation. Based on measurements directly or combined with models. (INSPIRE IMS, 2003)
- Physical conditions of oceans (e.g. currents, salinity, etc) represented as lines, grids or points. Includes spatial data sets based on measurements, on models or on a combination thereof and includes measurement locations (INSPIRE Scoping, 2004)

Both ‘Oceanographic geographical features’ and ‘Sea-regions’ are concerned with physical conditions of marine water-masses. (This is a similar overlap to that which exists for themes 7.13 “Atmospheric Conditions” and 7.14 “Meteorological geographical features”.) To resolve the ambiguity, we consider the multi-level approach to data needs assessment applied in ETC. Data at local or regional level are often needed for management and policy implementation, while lower resolution (‘smaller scale’) data are often required for reporting and policy development/evaluation. The latter includes summaries and integrated data products.

**We regard the theme “Oceanographic geographical features” as being concerned with the high seas and larger oceanic physical/dynamic structures.**

Operational forecasting of ocean dynamic physical conditions – together with the prerequisite observations – are key elements of this theme (e.g. through the GMES Marine Core Service), with France and UK both running a operational facilities.

Relevant observational data include:

- remote-sensing of sea surface temperature, dynamic topography (by satellite altimeter), synthetic aperture radar winds, ocean colour (for primary productivity and sedimentation)
- drifting buoys – surface velocity, temperature, atmospheric pressure
- ships-of-opportunity and regular voluntary observing ships provide temperature (bathythermograph) profiles
- Argo floats provide temperature and salinity profiles

### **Scope, use examples:**

Used in environmental assessments, sector resource exploitation. (INSPIRE IMS, 2003)

### **Important feature types and attributes:**

Typically vertical profile or ocean surface data.

Forecast fields are large gridded four-dimensional (space+time) coverage data.

Infrastructure for Spatial Information in Europe	Definition of Annex Themes and Scope		
DT DS v3.0	D2.3 Definition of Annex Themes and scope	2008-03-18	Page 112 of 132

### **Links and overlaps with other themes:**

Potential overlap with:

- Sea-regions
- Meteorological geographical features, Atmospheric conditions (e.g. very similar spatial object types, and also physical links through the boundary layer, and common observational regimes)
- Orthoimagery (since many oceanographic data come from satellite remote-sensing, e.g. ocean colour, sea-surface height, sea-surface temperature.)

### **Reference documents:**

“Climate Science Modelling Language (CSML)”, available on CIRCA  
[http://forum.europa.eu.int/Members/irc/jrc/imaco2000/library?l=/drafting\\_folders/data\\_specifications/reference\\_material/annex\\_iii/oceanographic&vm=detailed&sb=Title](http://forum.europa.eu.int/Members/irc/jrc/imaco2000/library?l=/drafting_folders/data_specifications/reference_material/annex_iii/oceanographic&vm=detailed&sb=Title)

“Liste des données géographiques de référence en domaine littoral”, available on CIRCA  
[http://forum.europa.eu.int/Members/irc/jrc/imaco2000/library?l=/drafting\\_folders/data\\_specifications/reference\\_material/annex\\_iii/oceanographic&vm=detailed&sb=Title](http://forum.europa.eu.int/Members/irc/jrc/imaco2000/library?l=/drafting_folders/data_specifications/reference_material/annex_iii/oceanographic&vm=detailed&sb=Title)

“MarineXML position paper”, available on CIRCA  
[http://forum.europa.eu.int/Members/irc/jrc/imaco2000/library?l=/drafting\\_folders/data\\_specifications/reference\\_material/annex\\_iii/oceanographic&vm=detailed&sb=Title](http://forum.europa.eu.int/Members/irc/jrc/imaco2000/library?l=/drafting_folders/data_specifications/reference_material/annex_iii/oceanographic&vm=detailed&sb=Title)

Marine Metadata Interoperability: <http://marinemetadata.org/>

SeaDataNet FP6 project: <http://www.seadatanet.org/>

HALO public documents: [http://www.ecmwf.int/research/EU\\_projects/HALO/docs\\_public.html](http://www.ecmwf.int/research/EU_projects/HALO/docs_public.html)  
 (see particularly MERSEA)

French operational oceanography (<http://www.mercator-ocean.fr/en>)

UK operational oceanography (<http://www.metoffice.com/research/ncof/foam/>)

EuroGOOS (<http://www.eurogoos.org/>) is an association of agencies to further the development of operational oceanography within Europe including data management and pilot studies.

NATO ‘Additional Military Layers’

From the other reference material submitted by SDICs and LMOs, the following may be relevant to this theme:

IHO Presentation Library for ECDIS (Publication S-52, Appendix 2, Annex A)

IHO: IHO Transfer Standard for digital Hydrographic Data (Publication S-57)