

Oceanographic Geographical Features – Executive Summary

The INSPIRE *Oceanographic Geographical Features* theme (abbreviated to “Ocean Features” or “OF”) describes the physical and chemical characteristics of the sea i.e. properties such as ‘sea surface temperature’ or ‘salinity’. For reporting purposes this type of information is typically presented as a set of point data, e.g. temperature observations from a fixed monitoring station, or as gridded data e.g. sea wave height observations from a satellite.

Besides point and gridded data, other more complex observations are extremely common in oceanography, such as vertical profiles through the ocean depths or trajectories along the ocean surface. While these types of observation are not likely to be used in a legislative reporting context they are key oceanographic data types therefore they are included in this specification on an informative basis.

The OF theme is closely related to the INSPIRE Sea Regions theme, which describes what describes what most people would refer to as “the sea” i.e. the actual water bodies. To further clarify the distinction between the OF and SR themes the following definition is used:

“Sea Region is a defined area of common (physical) characteristics. An Ocean Feature represents the (physical or chemical) properties of the Sea Region. A Sea Region may have other properties that are not Ocean Features, for example bathymetry (Elevation theme) and properties of the sea bed. A Sea Region will typically be represented as a vector dataset whereas an Ocean Feature will be a grid dataset or other coverage type”.

So an Oceanographic Geographical Feature will typically be used to describe some physical or chemical property of a Sea Region. E.g. “Mean wave height of the North Sea”, where “North Sea” is a defined Sea Region feature type. Similarly, whereas a Sea Region defines the extent of the sea for a given tidal state (e.g. Mean High Water), the Oceanographic Geographical Feature would define the changes in tidal level over time, e.g. observations from a tide gauge.

The Ocean Features theme employs the ISO 19156 Observations and Measurements standard for consistent encoding of observation-related metadata.

There are three other INSPIRE themes that are particularly important in their relationships to Oceanographic Geographic Features and these are:

- *Sea Regions (SR)*: Oceanographic Geographic Features always contain information about a Sea Region, or some part of a Sea Region.
- *Environmental Monitoring Facilities (EF)*: The process used to derive Oceanographic Geographical Features will involve one or more Environmental Monitoring Facilities (e.g. a ship).
- *Atmospheric Conditions and Meteorological Geographical Features (AC-MF)*: On a data level there is a great deal of similarity between measurements made in the seas and oceans and measurements made in the atmosphere so the OF and AC-MF data models have been harmonised as far as possible. Both are based on the same underlying Observations & Measurements model.

Note: It is recommended that this specification is read in conjunction with document D2.9 INSPIRE Observations & Measurements Guidelines, which contains many details of the underlying model used in Oceanographic Geographical Features.