

# Atmospheric Conditions and Meteorological Geographical Features – Executive Summary

The Thematic Working Group responsible for the specification development of Atmospheric Conditions and Meteorological Geographical Features was composed of ten experts coming from Austria, Finland, France, Germany, Italy, the Netherlands, Norway, Sweden, the United Kingdom and the European Commission.

The two themes are defined by the INSPIRE Directive as:

- Atmospheric conditions: physical conditions in the atmosphere. Includes spatial data based on measurements, on models or on a combination thereof and includes measurements locations;
- Meteorological geographical features: weather conditions and their measurements: precipitation, temperature, evapotranspiration, wind speed and direction.

The distinction between these two themes gave rise to many unanswered questions, and no criteria could be found to make it operational. Therefore, the TWG decided that the most efficient way of covering the two themes was to address “Atmospheric Conditions” and “Meteorological Features” together, and to check later on that no problem emerged in doing so with respect to the identified Use Cases and other questions raised during the commenting period on version 2.

This did appear to be the case, so the merging of the two themes into one theme labelled “Atmospheric Conditions and Meteorological Features” is recommended.

## Use cases

In order to identify priority areas for the specification of meteorological data, the TWG selected the following three high level use cases:

1. Use of meteorology in support of environmental emergency response
2. Flood forecasting
3. Climate assessment (with past or predicted data).

These cases were selected after reviewing a list of use cases considered for conceptual modelling by the OGC Met Ocean Domain Working Group. It was felt that they were all highly relevant to environmental protection, and that they would all require significant and possibly challenging cross boundary as well as cross theme cooperation.

A close examination of the stated User Requirements had been carried out as well.

Five detailed use cases have been developed, involving the use of both real time and non real time data.

## The scope

According to the INSPIRE Directive the data relevant to the themes “Atmospheric Conditions” and “Meteorological Geographical Features” should provide sufficient information for the users to assess, at least, precipitation, temperature, evapotranspiration and wind at their location of interest. General information on physical conditions should also be made available, however, neither the Directive nor any of the subsequent documents give any operative guidance regarding the range that this information should cover: questions such as the inclusion of forecast data, the list of parameters, the spatial resolution of the data, are not addressed.

After reviewing in detail the available documents on these issues, the TWG considered that there was no a priori reason to exclude any type of meteorological information from the overall scope of the themes on Atmospheric Conditions and Meteorological Geographical Features. It could possibly be argued that real time and short-range forecast data is not needed strictly speaking for protecting the environment but only for ensuring security. However, as the example of GMES is showing, there is no clear limit between these two fields of activity, and it is highly likely that they will eventually be combined into a common framework.

It should however be noted that the volume of data created, exchanged and archived by national meteorological centres in Europe is huge (multi-terabytes production per day, multi-gigabyte exchange

per day and multi-petabyte archives). These resources are not primarily shared using the Internet, but through high capacity dedicated links, and it is only once the data have been moderated and summarised into much smaller information products which users can handle using common internet tools that they should be made available through INSPIRE service.

Therefore a phased approach is recommended to make it possible to progressively integrate an increasing variety of data into the INSPIRE framework.

- For the first implementation a basic data set following as closely as possible the text of the Directive is required as a mandatory minimum,
- In addition to this basic set a recommended data set is defined. This data set could become mandatory later on at a further stage of the INSPIRE development, but SDIC and LMOs are encouraged to implement it, resources permitting, without waiting for this stage.
- Most importantly the present data specifications have been developed so as not to exclude any type of atmospheric data including air quality data. Therefore they can be used from the start by any operator willing to integrate its data into the interoperable environment defined for INSPIRE and to make users benefit from it.”