

Integration of O&M data in the INSPIRE SDI - Benefits, challenges and prospects

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Abstract

Within the INSPIRE framework, data pertaining to observations or measurements of environmental phenomena, often collected through sensors, are to be provided in addition to spatial features; these are usually consolidated in monitoring networks specifically designed to address various environmental issues and related policies. The Environmental Monitoring Facilities (EF) data model describes environmental monitoring facilities as spatial objects in the context of INSPIRE, it includes observations and measurements (O&M) linked to the environmental monitoring facilities, together with relevant metadata on the measurement methodology and process. The OGC Sensor Observation Service (SOS) has been identified as well suited for the provision of O&M encoded data; last December the technical guidance document for the implementation of SOS as an INSPIRE download service were finalized. In addition, the guidelines for the usage of O&M within INSPIRE have been updated to version 3. Both of these documents will be presented, including necessary extensions to the OGC service specifications. Almost one year has passed since the adoption of the technical guidance for SOS and O&M in INSPIRE. Thus, it is time to investigate a broad spectrum of interdependent topics, including (i) feedback from implementers, (ii) challenges related to the currently existing technical guidance documents and the maturity of available technology, and (iii) an outlook for the future of observation data in INSPIRE considering the rapidly changing technological scenery. Within this context, the main focus of this workshop will be on the integration of SOS services with established INSPIRE download services such as WFS; the utilization of Web Processing Services (WPS) or interactive environments (e.g. Virtual Research Environments - VRE, interactive computational environments, etc.) for enrichment of O&M data shall also be taken into account. O&M based data architectures and information flows will be discussed, as well as referencing between service types, illustrating how INSPIRE data stemming from SOS and WFS services can be integrated to complex applications for a wide range of environmental domains. Server and client implementations from various environmental domains will be presented and discussed, including a perspective towards open science solutions. Based on feedback gained during the workshop we will also work on prioritizing next steps on various pending issues, ranging from (i) known deficits within the underlying OGC standards, (ii) development and uptake of new standards such as JSON encoding, and (iii) the new OGC SensorThings API standard.