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Data specifications for INSPIRE

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In Europe a major recent development has been the entering in force of the INSPIRE Directive in May 2007, establishing an infrastructure for spatial information in Europe to support Community environmental policies, and policies or activities which may have an impact on the environment.

INSPIRE is based on the infrastructures for spatial information established and operated by the 27 Member States of the European Union. The Directive addresses 34 spatial data themes needed for environmental applications, with key components specified through technical implementing rules. This makes INSPIRE a unique example of a legislative “regional” approach.

One of the requirements of the INSPIRE Directive is to make existing spatial data sets with relevance for one of the spatial data themes available in an interoperable way, i.e. where the spatial data from different sources in Europe can be combined to a coherent result.

Since INSPIRE covers a wide range of spatial data themes, the first step has been the development of a modelling framework that provides a common foundation for all themes. This framework is largely based on the ISO 19100 series of standards. The use of common generic spatial modelling concepts across all themes is an important enabler for interoperability.

As a second step, data specifications for the first set of themes has been developed based on the modelling framework. The themes include addresses, transport networks, protected sites, hydrography, administrative areas and others. The data specifications were developed by selected experts nominated by stakeholders from all over Europe. For each theme a working group was established in early 2008 working on their specific theme and collaborating with the other working groups on cross-theme issues. After a public review of the draft specifications starting in December 2008, an open testing process and thorough comment resolution process, the draft technical implementing rules for these themes have been approved by the INSPIRE Committee. After they enter into force they become part of the legal framework and European Member States have to implement these rules.

The next step is the development of the remaining 25 spatial data themes, which include many themes of interest for the Earth Sciences including geology, meteorological and oceanographic geographic features, atmospheric conditions, habitats and biotopes, species distribution, environmental monitoring facilities, and land cover to name a few. The process will follow in general the same steps as for the first themes and the working groups are expected to start their work in March/April 2010. The first draft specifications for public comment are expected at the end of 2010 and the work is scheduled to be completed in 2012.

At the same time, other initiatives like GMES (Global Monitoring for Environment and Security) and GEOSS (Global Earth Observation System of Systems) are also dealing with spatial data from the themes covered by INSPIRE. With the EU-funded project GIGAS, a support action, a step has been made towards architectural coherence between these initiatives. Recommendations to improve the coherence of the information architectures across the initiatives have been discussed in January 2010 with stakeholders from all initiatives, the standards organisations and EU-funded research projects. Based on the general agreements achieved in these discussions, the next step will be to start working towards the implementation of these recommendations, which are in line

with the approach taken by the INSPIRE data specifications.