

INVITED PRESENTATION

Building a Spatial Data Infrastructure for Europe: the many research questions for which we need answers.

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The adoption of the INSPIRE Directive provides the legal framework for building a Spatial Data Infrastructure (SDI) for Europe. Putting this framework into practice across 27 countries, 23 languages and multiple professional and national/regional cultures is not trivial and will require a great deal of effort over a long period of time. Whilst many of the most serious challenges are organizational, financial, and related to the availability of relevant skills, the focus of this presentation is on the research challenges that need to be overcome to build an operational SDI now, as well as developing the next generation of SDIs. In the short to medium term, the research priorities center on: (i) the interoperability of services and infrastructures, (ii) methods for integrating data from heterogeneous and dynamic sources, including in-situ sensor networks, (iii) assessments of data and service quality for different users and applications, and (iv) measurement of social and economic impacts of SDIs at different institutional and organizational levels. In the longer term, the focus of research needs to shift the current data-centric view of SDIs, aimed primarily at a small technical elite, towards a new generation of SDIs which are service-centred and aimed at multiple users, including the non-experts. For this to happen, synergies with distributed (geo)processing Grid infrastructures, and e-science is needed, which in turn requires a major multi-disciplinary effort to ensure that different communities of researchers and practitioners talk to each other and work together. Yet another research challenge?