



Design considerations for realising a web enabled Spatial Data Infrastructure

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Abstract: Spatial Data Infrastructures, SDI, are made up of a heterogeneous mix of hardware systems, operating systems, applications software and data sets. These have to work seamlessly so as to provide access to users of the system. Interoperability is therefore a major issue in SDI. The Technical Committee 211 of the International Standards Organization, ISO TC211, is addressing these issues of interoperability. The Open Geospatial Consortium, OGC is an international non-governmental agency that is addressing the implementation issues of the ISO Standards. This paper describes the design considerations for a typical interoperable solution for an SDI and its applicability to India's National Spatial Data Infrastructure, NSDI, as a specific example. The NSDI will consist of a number of independent data and application servers maintained by different agencies that will provide a controlled and secure access to authorised users. The design adopts a Service Oriented Architecture, SOA, with very loose coupling to assure a degree of independence to individual data servers and users systems. The OGC specifications are mapped on to a general SOA approach. All major components are discussed including the use of the Dublin Core for the metadata and the usefulness of native XML databases. Future directions for the evolution of this design have been indicated.

Keywords: Interoperability, OGC Web Services, SOA, SDI, Metadata, Database