



Coverage access services: an intercommunity view

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Coverage concept represents the mapping from a domain (e.g. spatio-temporal domain) to parameter values where parameters value types are common to all the locations within the domain. For example, a spatio-temporal domain consists of a collection of direct positions in a coordinate space that may be defined in terms of up to three spatial dimensions as well as a temporal dimension. Coverages are the prevailing data structures in a number of application areas, such as remote sensing, meteorology, and mapping of bathymetry, elevation, soil, and vegetation. Examples of coverages include rasters, profiles, trajectories, triangulated irregular networks, gridded data, and polygon coverages. Hence, coverage is a general geospatial information concept representing space and time-varying phenomena; virtually, any geospatial data may be viewed as an instance of a coverage type.

Most of the different Geospatial Information Communities (GICs) are characterized by acquiring, managing, processing and serving diverse coverage types which are described using specific metadata. In order to support interoperability, the implementation of standard services to access the different coverage types is becoming more and more important.

The presentation will discuss the coverage access services as far as simplicity, effectiveness and interoperability are concerned. The Earth and Space Sciences, GIS, and Society perspectives will be introduced. The need for a robust abstract model underpinning different implementation models is addressed. These specific implementation models are important to accommodate heterogeneous GIC needs and use scenarios. In fact, access services may play an important role in order to map complex datasets to simpler coverage types, introducing explicit semantics.

In addition to the service model heterogeneity, coverage access interoperability seems to be hindered by the heterogeneity of the distributed environment. In fact, different GICs are often characterized by diverse architectural styles of distributed environments. Thus, distribution architecture interoperability is becoming as important as data model interoperability. The presentation will discuss the cases of Earth and Space Sciences community and e-Business one, facing the REST Vs SOA approaches and their possible implementations (e.g. REST-ful, SOAP, POX, etc.).

Coverage access services must return data along with its metadata. Therefore, another important service profiling dimension is represented by dataset encoding. The presentation will discuss valuable examples for the Earth and Space Science community.