



## **An implementation and experimentation approach to developing interoperable coverage service specifications**

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At the Boulder OGC (Open Geospatial Consortium) Technical Committee meetings, Unidata hosted a special Interoperability Day to address the use of standard interfaces (CS-W/ebRIM, WFS, WCS, SOS, GML) for providing access to data currently served via THREDDS, OPeNDAP, netCDF-CF and IDD/LDM technologies. The primary data served is Weather, Climate and Ocean data from the community, sometimes referred to as Fluid Earth Sciences (FES). Subsequent discussions have led to a subset of participants in the OGC GALEON (Geo-interface for Air Land, Environment, Ocean NetCDF) Interface Experiment to embark on a revised approach to contributing to the evolution of coverage-related standards.

The overall objective remains the development of practical and concrete ideas for

how to deliver various types of FES data through standard interfaces. But the primary focus will be on actual implementation and experimentation with specific additional features to the version of the standards that are already in use serving data rather than wholesale implementation of radically revised and expanded versions of the standard interfaces. In the case of WCS, this means starting with the WCS 1.0 implementations that are in place serving data in the GALEON community and adding new features to the interfaces as needed by the GALEON/FES community.

In general the new process involves the following steps: 1) Come to agreement on the fundamental set of high-level dataset categories (e.g., point, station, trajectory, swath, grid) and define extensions to CF conventions for each of those categories. 2) Map the data model for each CF-netCDF extension into the ISO 19123 coverages model. 3) Determine how each CF-netCDF extension and the corresponding ISO coverage type can be expressed as Scientific Feature Types in GML (Geography Markup Language) and relates to the Sampling Feature Types of the OGC Observations and Measurements. 4) Ascertain how each coverage type can be delivered via standard service protocols, e.g.: in GML via WFS, as sampling features via SOS as well as coverages via WCS. The results of these incremental augmentation efforts will be fed into the appropriate standards bodies.