

Open GIS Consortium Partnership with the FGDC

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The Open GIS Consortium, Inc. (OGC), FGDC and many of FGDC's member agencies have worked together for the last ten years to help build the National Spatial Data Infrastructure. Their common goal is to make it easier for people to find and use geographic information and to make it easier and less expensive for governments and businesses to develop, share and maintain high quality geographic information. Their collaboration contributes to government's effectiveness and the growth of the information economy. OGC members include many government agencies, universities, and key GIS vendors who together define and implement common-use specifications that promote interoperability for real-world applications.

OGC's work complements FGDC's: FGDC focuses on data consistency and common approaches to spatial information management. OGC focuses on technical interoperability, that is, encodings and interfaces that enable geoprocessing systems to communicate with each other. OGC's industry standards -- OpenGIS® Specifications -- help integrate GIS (and other geoprocessing technologies like Earth imaging, facilities management, navigation, etc.) into the Web.

FGDC and its agency members have worked with other OGC members on a number of OGC Interoperability Initiatives -- testbeds, pilot projects and demonstrations. These include:

- The U.S. Census Bureau sponsored the second phase of the Open GIS Consortium Critical Infrastructure Protection Initiative (CIPI-2) to advance standards that will help Census make a Web-based system for revising state, county and local government unit boundary information. The new system, called WebBAS, will provide a completely online process that governments can use to file quarterly updates. CIPI-2 also helped Census develop a standards-based Web server for its Topologically Integrated Geographic Encoding and Referencing (TIGER) data.
- OGC partnered with the US Department of Transportation (Bureau of Transportation Statistics) and FGDC to test and demonstrate the use of FGDC's draft Framework Road Transportation Data Content Standard with software products that comply with the OpenGIS Web Feature Service (WFS) and Geography Markup Language (GML) specifications. The project produced a mechanism to generate GML from the models in the draft Road Standard and prototyped ways to convert native content on-the-fly into the common data structure (GML) defined by the standard. Servers at the State of California, the State of Oregon, Jackson County Oregon, and Siskiyou County California are now serving structurally identical roads data matching the draft Framework Standard.
- The Environmental Protection Agency (EPA), the National Aeronautics and Space Administration (NASA) and other sponsors of the second thread of the OGC Web Services Initiative Phase 1 (OWS-1.2) helped develop new interface specifications in the areas of image handling, sensor webs, service chaining, and feature handling. The demonstration showed users easily discovering, accessing, superimposing, and portraying satellite and aerial imagery, vector data, and scientific data stored on servers in Europe, North America, and Australia. New draft OpenGIS Specifications for metadata

and services were used to implement registries to facilitate discovery of data and geoprocessing services. Interfaces based on OGC's Sensor Web Enablement work enabled discovery of and real-time access to measurements from meteorological, water quality, air quality, and seismic sensors. The OpenGIS Web Coverage Service, providing access to raw raster and 'surface' data, and the Coverage Portrayal Service were demonstrated accessing visible, hyperspectral, and radar imagery.

- In OGC's recently launched OWS-2 testbed, FGDC, NASA and other public and private sector organizations are building on previous work in OGC to extend and "ruggedize" existing and draft OpenGIS standards into a robust and complete interoperability framework for implementing a multi-vendor and multi-organizational enterprise solutions in government and business.

Outside of OGC, organizations are collaborating with their data sharing partners in their own small experiments and pilot projects. The lessons are clear:

- Work to harmonize data models and move toward nationally and internationally accepted data content standards.
- Create -- and publish -- metadata that comply with FGDC's and emerging ISO metadata standards.
- Upgrade online GIS servers with free or low-cost OGC-compliant "plug-ins" or "connectors" that make those servers interoperable with other GISs, portals, and application software.

The logic of doing this becomes inescapable, because we have the constant reminder of the Web: HTML and HTTP show the value of software systems "speaking the same language," particularly when that language is not bound to any particular vendor or type of system. We are building the "Spatial Web," and every node in the network increases in value as other nodes are added.

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