

OGC's column for August 2002 GeoWorld

CITE Creates an Interoperability "Seal of Approval"

Jeff Harrison

Migrating from a legacy "island of geoprocessing" to an interoperating node on the "Spatial Web" of online geospatial information sources can begin with a Web Map Server. And thanks to server software vendors' adherence to the Open GIS Consortium (OGC) OpenGIS Web Map Server Specification, interoperable Web Map Servers now are available.

A Web Map Server serves raster images of a map or Earth image, usually in a simple Web page image format such as .PNG. When Web Map Servers have the same interface, based on the OpenGIS Specification, a client application can get raster maps from sources.

Data Cascades

Automatic coordinate transformation provided by a "cascading map server" enables nonexpert users to overlay maps from multiple Web Map Servers. At the U.S. Federal Emergency Management Agency (FEMA) Web site <http://www.hazardmaps.gov>, for example, users can access maps from a cascading map server. Maps from the linked sites automatically overlay on a common coordinate system, although the data may be stored in different coordinate systems on different servers.

As of July 2, 2002, more than 22 vendors (and three universities) offer server products that can be queried by a cascading Web Map Server (see <http://www.opengis.org/cgi-bin/implement.pl>). Note that a Web Feature Server serves vector GIS data such as road segments or polygon-bound wetland areas. Web Feature Server products are just beginning to enter the market, because the OpenGIS Web Feature Server Specification only recently received approval.

Soon, registries and catalogs (defined in other OpenGIS Specifications) will enable the kind of automatic discovery and access in the Web's spatial domain that's currently enjoyed in the Web's text domain. OpenGIS Specifications for other interfaces will enable the rollout of OGC Web Services for the full range of geoprocessing capabilities now available in standalone GIS, remote sensing, location services, facilities management and cartography software products.

Some of the specifications already are approved, some are pending, and some are yet to be developed. Most exciting in terms of near-term benefits is OGC's Geography Markup Language (GML), a standard for encoding spatial data

in Extensible Markup Language (XML). Major users (e.g., U.K.'s Ordnance Survey) are moving to GML, because they can deliver browser-based solutions along with data.

Conforming Products

For Web Mapping, GML and all future OpenGIS interoperability technologies, successful rollout depends on 1) vendor-to-vendor consistency in implementing the standards and 2) customer confidence in the implementations. Every customer wants assurance that the product they buy will "plug and play" with software on other nodes of the Spatial Web.

Key software customers in the geospatial industry (including national agencies in the United States, Canada, United Kingdom, Australia and Germany) are modernizing their enterprises based on the belief that multiple vendors will continue to field interoperating products based on OpenGIS Specifications. Because they and the nations they serve have a large stake in interoperability, some of the agencies are working with OGC to institute a permanent testing program to certify products that correctly implement OpenGIS Interfaces. They're sponsoring OGC's new Conformance and Interoperability Test and Evaluation (CITE) Initiative, which will provide the geospatial industry with the methodology and tools to test products' conformance to OpenGIS Specifications.

The CITE Initiative has three focus areas:

- 1) The Planning and Feasibility Study will research alternative models for conformance and interoperability testing.
- 2) The Conformance Engine, Scripts and Guidelines workgroup will develop a Web-based conformance-testing engine, guidelines, and scripts for testing and validating products with interfaces that implement OpenGIS Web Map Server and Web Feature Server Specifications, GML, and, potentially, other OpenGIS Implementation Specifications. The conformance-testing engine will be available via the OGC network when the CITE Initiative is complete.
- 3) The CITE Portal and Reference Implementation workgroup will design and implement a portal to access CITE resources and reference implementations.

Until the formal certification program is in place, customers simply have to say "show me" before buying. There's a lot of excitement in OGC as we begin to see more products implement OpenGIS Specifications. Enterprises that adopt multivendor interoperability solutions are paving the way by building working intranets with geospatial capabilities.

Such enterprises expect vendors to show the fruits of prior collaboration in OGC, and they expect integrators to understand interoperability. In the near future, enterprise customers, vendors and integrators as well as the global

geospatial community will see accelerating growth in the Spatial Web, because its value increases as more data, services and users come online.

PQ: The global geospatial community will see accelerating growth in the Spatial Web, because its value increases as more data, services and users come online.

NEW AUTHOR BIO

Jeff Harrison is executive director, Interoperability Program, Open GIS Consortium Inc.; e-mail: jharrison@opengis.org.