

OGC's column for the April 2001 issue of GEOWorld and GEOAsia/Pacific

Title: OGC Drives Changes in Spatial Services

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As technology accelerates and proliferates, there is a growing need for standards that enable one technology or product to work with another. OGC has been in existence since 1994, and every year it has made important progress toward its goal of geoprocessing interoperability. It is in OGC's Technical Committee that the OpenGIS Specifications get worked out in detail and reach final consensus. OGC's members initiated the Interoperability Program in 1999 generates draft interface specifications quickly and promotes implementation of those open interfaces in commercial products.

The Interoperability Program began with the Web Mapping Testbed (WMT1), in which key standards were developed that enable much easier overlay and use of maps on the Web. WMT1 set a precedent for testbeds in which competing vendors work together in rapid-prototyping projects to achieve interoperability goals set by testbed sponsors. The Interoperability Program enables users and providers of geospatial technologies to cause and direct rapid and revolutionary changes in "spatial services," the broad set of web-based information services that involve geospatial information.

IP 2000 achievements

WMT1 gave rise to IP 2000, the first full year of OGC's Interoperability Program. IP 2000 included three Interoperability Initiatives: WMT2, the Geospatial Fusion Services Testbed (GFST-1), and the Upper Susquehanna-Lackawanna (USL) Pilot Project. WMT2 and GFST-1 yielded over 10 new draft interface specifications for standard interfaces and protocols. USL tested WMT1's open web mapping interfaces in a real-world information network.

IP 2001 progress and directions

IP 2001 will bring as many as eight new Interoperability Initiatives. Each initiative requires an initial planning period, followed by a (usually) shorter period of execution. Here's a brief overview of the revolutionary interoperability agenda that OGC members expect to achieve in the next 18 months:

-- GFS Pilot Project (GFS PP). GFST-1 resulted in standard methods for spatial indexing of many kinds of data not normally thought of as spatial. GFS PP will be an operational prototype based on GFST-1 and WMT2 technology.

-- The OGC Network Initiative Phase 1 (OGCN-1) will be a portal to on-line resources that implement OpenGIS Specifications and a forum for technical support and training. It will support other testbeds and help people take advantage of geoprocessing interoperability advances.

- The Web Mapping Testbed Military Pilot Project (WMT MPP, Phases 1 and 2) will develop and test interoperable Web-based geospatial intelligence information infrastructures, emphasizing a “common thread of interoperability” across coalitions and nations supporting military operations.
- The Civil Pilot Project will demonstrate WMT2 technology to the civil works community and establish leave-behind infrastructure based on commercial products.
- The OpenLS Testbed is the first activity under OGC’s Open Location Services (OpenLS) Initiative. It will develop candidate interface specifications in support of interoperable location services available through mobile terminals, and will develop multi-vendor, specification-based mobile demonstrations of these interfaces.
- Web Services Initiative. This is not a testbed but an initiative with six testbeds in it, which will consolidate gains in the other testbeds, adding things necessary to provide a solid foundation of interoperability standards for spatial services on the web. It will include at least some of the following:
 - Information Community Enablement, Phase 1 (ICE-1) will focus on fielding data models across communities with different spatial semantics, setting up real information communities, Tools for application schema creation, mapping, migration, etc.
 - Geoanalysis & Decision Support, Phase 1 (GDS-1) will involve service chaining, service metadata extensions for complex models (e.g., science models), and updates to OpenGIS Catalog Services.
 - Sensor Web Enablement, Phase 1 (SWE-1) will create common, application-independent interfaces for information gathering from distributed, heterogeneous, dynamic sensors in a limited bandwidth environment.
 - Web Based Exploitation (WBE) will “web enable” some of the extensive work done in OGC in recent years to create open interfaces for image exploitation.
 - Catalog Interactions will advance our understanding and capabilities related to “recursive” catalogs.
 - Security Services will address technical solutions to privacy and security issues in the area of spatial information.
 - 4D will “web enable” the enhancements to OpenGIS features that enable systems to communicate three dimensions and the temporal dimension.

Creating the future

OGC members are working to make visionary interoperable technologies available in the near-term through a unique, proven approach involving hands-on engineering testbeds and pilots. Much that was not possible a short time ago, is now possible because of the OGC Interoperability Program. New, truly revolutionary changes will result from the initiatives described above.

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