OGC's column for April 2002 GeoWorld

Title: **Insist on Interoperability!**

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The Open GIS Consortium, Inc. (OGC) exists because major users and vendors in our industry became convinced that it is a good idea to develop shared interfaces that enable interoperability. Vendors want to sell in broader/bigger markets and users want to overcome difficulties that have limited their ability to share and apply geospatial information since the early 1980's.

Geoprocessing is moving out of the backwater and into the Information Technology mainstream. Isolated standalone systems are being replaced by integrated components, big applications are being replaced by smaller, more versatile applications that work together transparently across networks. The Web is becoming the core medium for distributed computing, in IT generally and certainly in the domain of geoprocessing.

You and your organization want to capture the flexibility the web offers, you want to reduce your costs and reduce your risks of obsolescence and isolation, you want to get maximum productivity and efficiency, you want to overcome data sharing issues, learning curves, security, data maintenance, special requirements, etc. So, how do you accomplish this? You develop and follow technology development and procurement policies that show an awareness of technology trends and an awareness of your requirements and the requirements of your partners.

Interoperability should be at the top of your technology and procurement policy requirements lists, because:

- Information supposes communication. Some, perhaps most, of your partners will not have the same software you have. The "spatial web" is not so exciting if your software client can access only those servers that match your vendor.

- No single GIS, mapping tool, imaging solution, or spatial database answers every need.

- Geodata is everywhere. Any database record with a description of location can become spatial data. Any text can be parsed against a gazetteer to create geodata. Advances in remote sensing, location services, fast processors and fat data pipes all contribute to a growing geodata cornucopia.

- The number of software vendors offering components to deal with geographic information is growing, not shrinking.

- It is efficient to collect data once and maintain it in one place. This is particularly cost-effective if communities of users can find, access, and use this information online, so they don't need to access, retrieve and maintain whole files and databases of information that others are responsible for.

- The ability to seamlessly combine accurate, up-to-date data from multiple sources opens up new possibilities for improved decision-making and makes your data more valuable.
- The ability for multiple users, including non-GIS-experts, to use your data (perhaps at different levels with different permissions) also makes the data more valuable.

Any manager of a multi-office organization who commits to a single vendor solution is inviting significant technology costs in the future. The bigger the organization, the more expensive this mistake will be. Forward-looking buyers of GIS, facilities management, automated mapping, remote sensing, and location-based services systems are looking forward to:

- Establishment of shared information service options for their organizations and those they serve.

- Streamlining of operations gained through online geo-information resources and improvements in stewardship and sharing of those resources.

- Faster, better service delivery resulting from standards-based technology delivering the advantages of component approaches.

- Fiscal benefits and risk reduction. Co-investing with partners in open technology platforms and shared data reduces costs and improves information resource manageability.

Interoperability is not just a promise. Today, dissimilar geoprocessing systems on local area networks and on the Web can interoperate for many purposes through common interfaces that implement OpenGIS® Specifications. (See http://www.opengis.org/cgi-bin/implement.pl for a listing of such products.) The extent of interoperability arranged by OGC members and implemented in products is growing rapidly.

Interoperability is a Homeland Security imperative. Spatial data is in the Critical Infrastructure Protection spotlight. Telecommunications, transportation, energy, banking and finance, water supply, emergency services, health services, and government services are geographically distributed networks of things and people. Spatial information systems are necessary tools for management of such physical and human networks. Organizations that cooperate to maintain and protect critical infrastructure must be able to share, analyze, and display information that captures the "where" and "when" of infrastructure elements.

Every day, in local, state, and national jurisdictions, new spatial information systems are coming on line. If you are involved in IT development or a procurement in this area, do your requirements engineering! Talk to people in jurisdictions that are moving in the direction of interoperability. Get input from multiple vendors and integrators who have

helped advance interoperability in OGC, and have them show you how today's interoperable solutions offer benefits that were only dreamed of a few years ago.

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