

Geospatial Means "GIS Unbound"

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Although most of our industry's trade magazines removed the term "GIS" from their titles years ago, some people still object to the word "geospatial," asking, "What's wrong with 'geographic' and 'GIS'?" The answer is that "geographic" and "GIS" aren't adequate to describe what we mean when we talk about geospatial data, technologies and processing in the context of today's information infrastructure.

Geospatial" encompasses technology, content, and markets. Geospatial content may or may not be graphic. It is all data about features and phenomena and their location on Earth. Geospatial technologies range from traditional GIS to GPS, automated cartography, image processing, location services, sensor networks, digital rights management, photogrammetry and more.

The definition of GIS as a computer system for capturing, storing, checking, integrating, manipulating, analyzing and displaying geographically referenced information still means what it always meant. But in the new world of geospatial technology and processing, an entire GIS capability is not required. Instead, single components, such as geocoding or routing, can be integrated as services in a larger application such as insurance risk assessment. The component could be a GPS enabled cellular phone that allows the consumer to ask the question, "Where is the closest coffee house?" Or it could be a simple XML document that encapsulates a single latitude/longitude for use in an emergency services alert message.

Evolving Technology

We have created a new reality in which GISs aren't the only applications that can handle geospatial data. When a new reality arises, we sometimes need new words.

Web-resident data and processing services (e.g., coordinate transformations, proximity calculations, route calculations, etc.) don't mean the end of GIS, but they do mean the end of technology- or vendor-imposed limits to data sharing. They also mark the beginning of an era in which geospatial data and services are available to everyone.

The specialized GIS database is extended by integrating it into an open network of more general-purpose databases that also are capable of storing geospatial data, registering the data in catalogs and serving it through open interfaces. The network also contains process servers that can do things with data obtained from remote data servers.

Through open interfaces, geospatial data and services are available to any specific GIS technology as well as other kinds of applications. The client requesting data or services may be a customer-service application, a Web site displaying bus routes or any of thousands of applications that can benefit from geospatial "intelligence."

OGC Specifications

Products implementing Open Geospatial Consortium (OGC) Web Services specifications are increasingly making a difference for government and private-sector enterprises. Technology providers need the word "geospatial" to help them explain to enterprise customers how Web services can help them meet the information requirements of decision makers across the enterprise. The providers' challenge is to help customers stretch their imaginations.

Vendors, integrators and data suppliers have worked together for a decade in OGC to create the necessary standards framework. Now enterprise information system architects must imagine ways to employ standards-based products to provide spatial capabilities that make the enterprise more efficient and flexible for users.

Web Services are lifting geospatial information up and out of yesterday's narrowly defined GIS domain and putting it squarely in the mainstream of computing. Users of the larger information infrastructure are improving their processes by exploiting a spatial dimension that had been largely untapped.

Geospatial data and basic geospatial capabilities have become a standard component of common relational database systems, and geospatial components and services are being integrated into all kinds of information systems so those systems can better serve people engaged in a wide range of strategic and operational tasks.

According to Daratech's 2004 GIS Revenue Forecast, "The old GIS term no longer encompasses all of the tools and technologies used in this more modern world. In essence, 'geospatial' is 'geographic information systems' brought into the new millennium" (see <http://www.daratech.com/press/2004/041019>).

Accepting Truth

One is reminded of 19th century German philosopher Arthur Schopenhauer's aphorism that all truth passes through three phases: first, it is ridiculed; second, it is strongly resisted; and third, it is finally accepted as being obvious. We think it will soon become obvious that most data used by businesses and government agencies have a reference to place, and that data's "spatialness" is worth exploiting in a thousand useful ways.