

Title: **Building the Spatial Web**

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A Spatial Web is emerging as access to spatial content, services and applications multiply on the Web, and particularly as these capabilities are integrated into the Web's standards infrastructure. It's important to realize how important this is.

Spatial content, services, and applications are inherently different from -- and more than -- video, sound, text, and images. Having location and information about location fully integrated into our digital information environment adds a missing conceptual dimension to peoples' formulation of problems and questions. "Spatial" becomes an essential element of workflow. It will touch most Web-mediated human activities.

Consider the hours or days it takes a disaster manager to bring together data from many sources for floodplain, roads, dwellings etc. before running what-if scenarios. When the Web can integrate and present such information in real time, the decision process can proceed in real time. Attention focuses on the real problem, not the data. The data production and data logistics mentality gives way to more creative, intuitive thinking about the real world. This progress will apply in research, urban planning, environmental management, transportation planning and every other geoprocessing application domain.

Speed of light communication and faster-than-a-horse transportation are fairly recent capabilities that have allowed us to overcome the barriers of geography. But the technologies that help us think about an expanded spatial world -- GIS, remote sensing, GPS and location-based services -- are much newer than the technologies that have expanded our ability to act in that world. Our accommodation to an expanded realm of action is limited by a spatial awareness that hasn't advanced much beyond the space immediate to our bodies. Many readers of this magazine, but relatively few people in the population at large, have learned how these technologies can enhance spatial reasoning. Thus relatively few people at this early point in the "spatial enabling" of our digital information environment can appreciate the degree to which the Spatial Web is a necessary and vital part of that environment.

Believing that the Spatial Web is extraordinarily important, we must assert certain truths:

Like the Web it is part of, the Spatial Web is self-organizing. It grows through the diverse commercial and non-commercial activities of countless people who use the Web to publish, find, and process information about places, objects, people, phenomena and events in "Earth space." But self-organizing does not mean chaotic or beyond our responsibility. The self-organization of this technology-mediated social phenomenon is based on precedents, inherent principles, and human intentions:

-- The precedents are the early geoprocessing systems that established the indisputable value of geoprocessing in a wide range of human endeavors.

-- The inherent principles are democratic, open and universal access, interoperability, the ability to evolve , trustable systems, and decentralization.

-- The human intentions are many, but we must agree that our overriding intention with respect to the Spatial Web must be to ensure that the Spatial Web, like the Internet itself, remains a community resource that is not controlled or excessively characterized by any commercial interest or national or regional government. The Spatial web must be built and maintained as one of humanity's critical infrastructure elements and cultural resources. It must become and remain an international public resource that people can use for activities of all kinds: personal, commercial, cultural, social and political.

Readers of this magazine represent the geospatial community. You are the people who are the early builders and users of this nascent, unfolding Spatial Web infrastructure. Many of the companies, agencies, and academic organizations in this community participate in data coordination groups, OGC, ISO TC/211, FGDC and other Spatial Web organizations. There is growing communication between these groups and the organizations that specify standards for the larger Web and Internet. Working together in a global process that brings together many consensus processes, we can work to ensure that standards advancements will support and guide a constructive unfolding.

Consensus standards processes are a wonderful social invention, tailor made for ensuring both lively commerce and protection of the public interest. Some spatial content, services and applications will be for sale, sometimes on a transaction basis, while others will be free. Some will be delivered via centrally managed systems, proprietary client-server application architectures, and distributed services, and others via decentralized peer-to-peer architectures. This range of possibilities -- enabled by an expanding consensus standards infrastructure -- is in the spirit of the Web and the National Spatial Data Infrastructure, too.

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