Open Spatial Enterprise

In 2003, Autodesk, Intergraph, Laser-Scan, MapInfo, and Oracle introduced a real-world interoperable spatial data management platform to leverage and advance the spatial capabilities of an open spatial enterprise that enables customers to use critical location information in an IT environment and with multiple applications. This resulted in an industry standard for managing spatial, annotation, and attribute information. The resulting specifications are widely supported by the leading GIS and spatial technology vendors worldwide. Today, we are taking this effort to the next level to address the challenging requirements of large enteprises and mainstream business applications that are building upon ground-breaking Oracle 10*g*.

Open for business

In today's environment, enterprise applications that openly share spatial information are more important than ever. They help organizations work more efficiently, allowing data to move among professionals, tasks, and departments without special "middleware." In the past, proprietary GIS technologies limited interoperability, but now organizations can benefit from new systems that share spatial information freely.

Industry leaders – Autodesk®, Intergraph®, Laser-Scan®, MapInfo®, and Oracle® – support this concept of an "open spatial enterprise." An open spatial enterprise exists in any organization that shares geospatial, design, business, and operational information seamlessly through a central data store – regardless of data type or format – making spatial information open and available throughout the enterprise.

Location is critical

During the past five years, new technologies have changed how organizations use location information. Real-time location-based information can be used to enhance emergency response, customer service, and business decisions. For enterprises with mobile resources – field crews, vehicles, and assets – location is critical to managing these resources effectively. An open spatial enterprise enables real-time updates through open and interoperable systems – enabling users across the enterprise to access current information.

What makes an open spatial enterprise different from other infrastructure systems?

- **Security:** When it comes to security, spatial data needs to adhere to the same strict standards applied to every other aspect of enterprise information – whether it is the management of business data, operational data, or design assets. Organizations require leading security features to ensure that their spatial data is managed as well as their other business information assets. The IT-centric approach, building systems with secure database, network, and client and server components, ensures the use of the latest advances in secure solutions applicable for geospatial applications.

- **Data Centric versus GIS Centric:** Database management systems and other information technology products provide a consolidated and secure management environment, enabling users and application developers to leverage a single and reliable information store. To guarantee security, Oracle products have been reviewed under International Common Criteria (ISO-15408) for security, undergoing 17 evaluations against every major worldwide criteria over the past 12 years. Oracle protects sensitive information where it is stored – in the database itself – with more precise control of access and permissions than any other vendor. Oracle products build in a variety of advanced security features that enable simplified identity management, encryption of sensitive data managed by job role, and continuous uptime. In addition, the consolidation of information assets enables developers to involve server side rules that ensure consistency, independent of the tool or application that created the data.

- **Leveraging Investments in Data:** Web Services offer a practical approach to integrating a broad range of existing legacy GIS and operational systems. Geospatial technology vendors are working closely in standards forums such as the Open Geospatial Consortium (OGC) to define a new generation of Web Service interfaces, which enable application developers to incorporate location into mainstream business applications.

- **Consolidating IT Skills:** Consolidating all geospatial data types (vector, raster, grid, imagery, network, topology) in a single, open, standards-based data management environment reduces the cost and complexity of managing isolated, proprietary systems. Developers can integrate spatial features directly into business and location-based applications, thereby reducing training, software, support, and application integration costs inherent in multiple stove-pipe GIS systems.

Multiple needs – one database

Consider this scenario. The planning department uses MapInfo

> "This is really an idea whose time has come. An open spatial enterprise approach enables all users and applications to share spatial data with the security, scalability and manageability of an enterprise database. This is an essential step to maximize business value in spatial information management."
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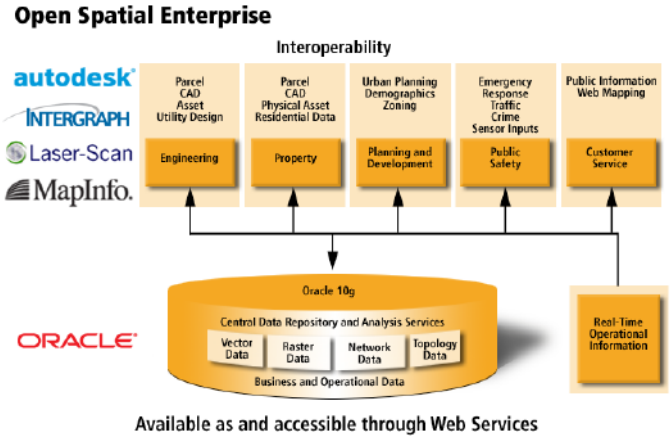
> *– David Sonnen, Senior Analyst with IDC*

autodesk® INTERGRAPH Laser-Scan MapInfo ORACLE®

Professional®, engineering uses Autodesk Map 3D, the records department uses GeoMedia® to maintain the parcel data, and the GIS team uses Laser-Scan's Radius Topology solution to provide spatial data quality assurance in Oracle 10*g*. Your organization requires all of this information to be available to business and operational systems in an open, secure, and manageable manner. You are not alone.

In the past, organizations that selected the best tool for the job were not usually concerned with interoperability requirements. Built for different needs, these spatial solutions and data were historically incompatible. Today, many applications require data from various enterprise systems. Using spatial technology in the Oracle database and interoperable technologies from Autodesk, Intergraph, Laser-Scan, MapInfo, and other geospatial technology vendors, your organization can have an industry-leading enterprise solution while offering users their choice of tools.



Interoperability through IT standards

Effective homeland security, utility management, local government administration, and more, require organizations to integrate information managed by both public and private agencies. When decision makers have the right information with a complete view of their enterprise, regardless of the data's origin, decisions can be made better, safer, and faster. Only technology built on open standards and not constrained by proprietary systems can deliver this level of collaboration on demand. The applications must be purpose-built to address specific tasks, but be able to connect to other systems for everyday business operations.

"An open spatial enterprise solution can make a tremendous difference in addressing the challenges facing state and local governments. Real-time interoperability of geospatial data is a mission critical requirement for first-responders. Different communities, agencies, counties and utilities all use different software and cannot afford nor do they wish to change their existing systems. However, if these organizations use tools and applications that support an open spatial enterprise, then changes made by one group can instantly propagate through the database to all the others. These industry-leading companies are to be congratulated for propelling this approach for first-responders and companies using geospatial data."

– Fred Limp, Director, University of Arkansas Center for Advanced Spatial Technologies (CAST). CAST manages the GeoStor system, an Oracle-based, multi-terabyte government spatial data warehouse serving thousands of users in federal, state, and local agencies.

"With a shared database, Thames Water can now realize its vision of making its maps available to many departments and many workers. And that easy access to GIS data is just the start. For instance, customers will be served faster and more efficiently. Expensive and unwieldy processes will be eliminated, freeing up funds for other vital projects, such as infrastructure upgrades."

– Simon Timmis, IS Business Partner, RWE Thames Water

A secure and consolidated IT solution

For more than two decades, organizations have stored and maintained spatial data as separate "islands of information," often outside the standard corporate IT infrastructure. No longer satisfied with disparate and disconnected spatial systems, organizations now manage all their data in a single, secure relational database. Public agencies and private corporations now employ their existing IT resources to support spatial and location-based applications, reducing the need for expensive teams and specialized consultants. Additionally, spatial data is now subject to the same industry-tested security standards accepted worldwide. With software built to work directly with an Oracle database and without proprietary spatial middleware, geospatial and design data are now part of mainstream IT data management.

Open spatial enterprise with data interoperability

Autodesk, Intergraph, Laser-Scan, and MapInfo realize that by connecting directly, with interoperable access to spatial data stored in an Oracle database, they increase the value of their offerings. With an open spatial enterprise, the sum of these task-specific applications is greater than their individual parts. The most profound benefit to customers is that they can focus on selecting the best tools for an application, and not on whether, or how, their valuable data will be shared. These industry leaders deliver native Oracle spatial support to guarantee consistent data maintenance, regardless of application. The result is an enterprisewide, open solution that delivers true data interoperability and maximum performance.

"We use many different applications and formats throughout the City of Winnipeg. For us to manage our day-to-day business processes and access and analyze any form of spatial data, we need an infrastructure based on standards. The key to our success is an open spatial enterprise, which enables us to make critical and everyday business decisions when needed."

– Peter G. L. Bennett, Manager Information Systems, Corporate Information Technology Department, City of Winnipeg

For more information about the initiative companies visit:

Autodesk	www.autodesk.com
Intergraph	http://imgs.intergraph.com
Laser-Scan	www.laser-scan.com
MapInfo	www.mapinfo.com
Oracle	www.oracle.com

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