# **ESRI and IBM** Transforming Enterprise GIS





## **Enterprise GIS by ESRI and IBM**

## Driving New Business Value with Geospatial Solutions and Web Services On Demand

Today, governments of all sizes struggle with increasingly complex problems, ranging from improving public safety and responding to emergencies in the post-9/11 era to managing sustainable development and improving public service. Businesses face equally difficult challenges trying to overcome tougher competitors, higher operating costs, and increasing customer satisfaction needs.

Geospatial solutions and Web services from ESRI and IBM help governments and businesses solve complex problems and create new business value—higher productivity, doing more with less, better product or service differentiation, and improved customer loyalty.

#### **Location Matters**

- Geographic location is central to how products and services are organized and delivered worldwide. From supply chain management, RFID location awareness, and logistics planning to tax assessment, emergency response, and utilities maintenance, location is critical to operation.
- Business organizations, such as insurance companies, banks, and retail stores, depend heavily on spatial location of their core business data. There is enormous new demand to integrate location-aware applications and services with corporate core business systems via flexible service-oriented architecture (SOA) approaches.
- In today's government and business IT infrastructures, simple and flexible operating environments are more essential than ever. Organizations are beginning to think about adding centralized, discrete,

event-driven, and modular spatial applications and Web-based services, which can be more easily modified as needs change. These IT infrastructures must maintain consistent availability, security, and privacy throughout the enterprise and around the clock.

#### ESRI and IBM: Leading Technology, Experience, and Vision

ESRI develops the world's leading geographic information system (GIS) tools, solutions, and Web services for e-government and on-demand business. ESRI has fully integrated its ArcGIS<sup>®</sup> Desktop—embedded, server, mobile, and developer GIS software and Web services—with IBM's leading middleware including DB2<sup>®</sup> Universal Database<sup>™</sup> (UDB) with DB2 Spatial Extender, Informix<sup>®</sup> Spatial DataBlade<sup>™</sup>, Tivoli<sup>®</sup>, WebSphere<sup>®</sup>, and the Rational<sup>®</sup> and Lotus<sup>®</sup> suites of software products. In addition, IBM<sup>®</sup> eServer<sup>™</sup> and TotalStorage<sup>®</sup> provide customers with a flexible business architecture, high-performance secure data repositories, and integrated GIS application and Web servers.

For any solution need—ranging from business intelligence and customer relationship management to homeland security and mobile deployment—IBM's proven technology, combined with comprehensive ESRI® GIS client, server, and Web services technology, enables collaboration through the rapid distribution of GIS services over every type of network. Combined, ESRI and IBM provide the world's most integrated, functional, and advanced platform for spatially enabling enterprise IT organizations.

#### Java Client Web Web Browser Service WebSphere Portal Legacy WebSphere Rational Spatial Integration Adapter WebSphere WebSphere Studio, Rational Application Developer Application SCADA Business Integrator WebSphere Server Everyplace Access CRM/FRP GIS Application Services WEA LAS ArcGIS Adapters WebSphere Server ArcIMS Portlets ArcGIS Desktop ArcWeb Geopublishing Services **ESRI Image** Geodata ArcSDE Server Image Catalog DB2 UDB Informix eServer, TotalStorage

### ESRI-IBM Technology Infrastructure

# The Experience of ESRI and IBM Customers

#### New South Wales, Australia, Department of

Lands—The Department of Lands has implemented a number of significant spatial data management and dissemination solutions based on the ESRI ArcGIS suite and IBM Informix Dynamic Server (IDS) ORDBMS. The department is responsible for the maintenance and distribution of the state's core spatial datasets, incorporating cadastral, topographic, and property address databases. IBM Informix IDS has been used in the department for some years because of its sophisticated extensible architecture, offering advanced spatial data management functionality.



NSW Lands manages all cadastre data in Informix

"The marriage of ESRI ArcGIS and IBM Informix IDS has given the department a flexible and powerful toolset to offer spatially enabled solutions to its customer base."

> John Murphy, Manager, Integrated Spatial Services, Information and Communications Technology, New South Wales Department of Lands

**Pierce County, Washington**—Pierce County, one of the largest counties in Washington state, implemented an IBM systems infrastructure (BladeCenters, Database servers, and storage) to support a new enterprise GIS solution for the community's 700,000 residents and 35 agencies. The new technology consolidated infrastructure—which will help increase the county's system capacity and lower the technology costs—anticipated to help save the county up to \$3 million on technology and maintenance costs. By teaming with ESRI and IBM, Pierce County was able to create an information infrastructure running ESRI mission-critical applications that provides neighborhood crime statistics, resident polling locations, property tax research, and surveying reports on demand.

"Pierce County created an information on-demand infrastructure running ESRI mission-critical applications that is anticipated to deliver significant cost savings, increased capacity, and improved reliability for the county for years to come."

Linda Gerull, GIS Manager, Pierce County

### ESRI and IBM Integrated Solutions

#### ArcSDE—GIS Information On Demand

ESRI ArcSDE<sup>®</sup> software facilitates storing and managing spatial data in IBM DB2 UDB and IDS. ArcSDE serves data to ESRI's ArcGIS Desktop products (ArcReader<sup>™</sup>, ArcView<sup>®</sup>, ArcEditor<sup>™</sup>, ArcInfo<sup>®</sup>), ArcGIS application development products (ArcGIS Engine and ArcGIS Server), and ArcIMS<sup>®</sup> Web publishing software.

#### ArcGIS Server—For Centralized GIS Applications and Web Services

ESRI ArcGIS Server is a platform for building enterprise GIS applications that are centrally managed, support multiple users, include advanced GIS functionality, and are built using industry standards. With ArcGIS Server, users can develop server-based, focused Web applications and Web services.

As a foundation for SOA, IBM WebSphere provides a flexible, robust infrastructure to model, assemble, deploy, and manage business processes for today's on-demand environment.

ArcGIS Server easily integrates with

- IBM WebSphere Application Server, which delivers a high-performance and extremely scalable transaction engine
- IBM WebSphere Portal to help extend business processes, applications, and information to existing and new users
- IBM Workplace solutions including WebSphere Studio and Rational Application Developer to improve the ability of people to interact with business applications and collaborate with other business constituents
- Mobile and Speech solutions including IBM WebSphere Everyplace® Access (WEA), enabling the efficient delivery of applications and information to users at any time through a variety of devices

#### **ArcGIS for Enterprise Web Portals**

Web portal software provides powerful new technology for capturing, organizing, storing, securing, and retrieving business-critical information. At a single point, the user interface and all users in an organization can interact with GIS functionality and data, core business processes, and other people.

#### ArcWeb Services—GIS Web Services On Demand

ArcWeb® Services are ESRI's hosted GIS Web services. They offer access to GIS functionality and data over the Web, on demand—when and where needed. ArcWeb Services provide access to location-aware services such as geocoding, best-path analysis, and proximity search as well as an enormous library of worldwide data, some in real time (e.g., current weather). IBM WEA provides an integrated client/server environment to extend applications to mobile users.

# Solutions for Government and Business

#### Public Safety: ArcIMS and IBM Crime Information Warehouse

The IBM Crime Information Warehouse solution can enable police agencies to better understand crime patterns and trends. ArcIMS provides a common operational view of disparate crimerelated information, improving analysis and pattern recognition, decision making, and reports.

For more information, visit www.ibm.com/government/ciw.



#### Security: ArcIMS and IBM Real-Time Adaptive Multi-Intelligence Multimedia Platform

IBM's Real-Time Adaptive Multi-Intelligence Multimedia Platform (RAMMP) collects large volumes of image, sensor, and video data and stores it in a single, highly available, security-rich distributed repository. RAMMP is designed to support security and surveillance, situational awareness, tactical operations, and intelligence analysis. RAMMP integrates ArcIMS at the presentation level, providing a visual interface and mapping frame of reference of the geographic extent of interest and location of imagery and video input devices.

### ESRI

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#### E-Government Data and Collaboration: Geospatial One-Stop Operational Portal

The Geospatial One-Stop portal is an online tool for combining thousands of geospatial resources from federal, state, local, tribal, and private organizations. Geospatial One-Stop is one of 24 e-government initiatives to help make U.S. federal technology resources more

accessible. IBM WebSphere Portal middleware is a cornerstone of the solution providing a customizable framework for running industry-standard portlet applications and creating a personalized user experience. WebSphere Portal enables and supports collaboration, such as communities of interest, while managing which members collaborate and how they interact through its user group management and secure login capabilities.



For more information, visit www.geodata.gov