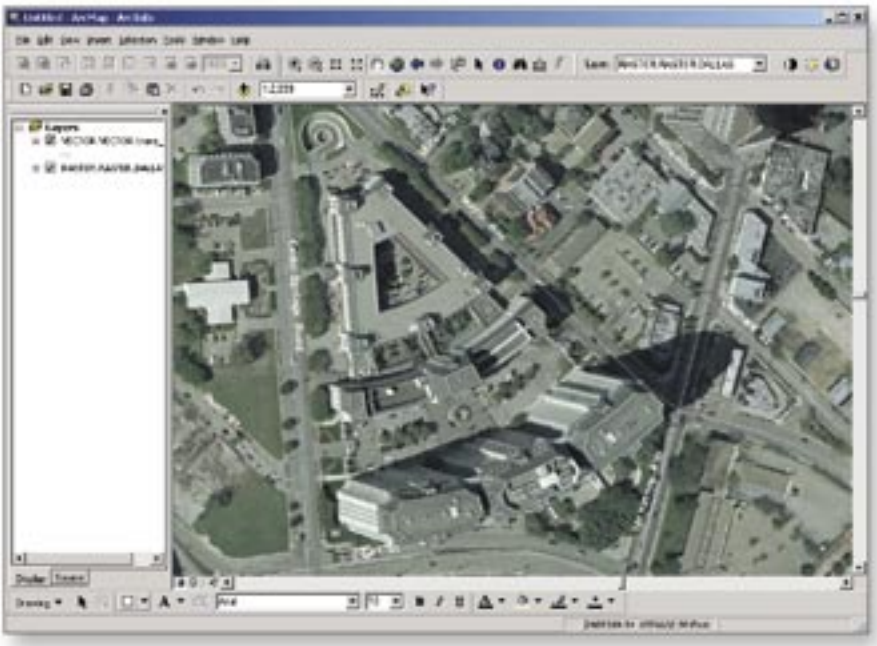
ArcSDE™

Focus on Raster Data Management

ArcGIS ESRI

Flexible Architecture

Case Studies



NCTCOG uses ArcSDE with ArcIMS for raster and vector data on its iCommunities Web site.

North Central Texas Council of Governments

In 2001, North Central Texas Council of Governments (NCTCOG) entered into a cooperative purchase with local governments for high-quality one-foot aerial images and digital elevation contours of north central Texas. Combined, the two products will create a three-dimensional picture of more than 9,000 square miles of north central Texas. Access to the GIS data created by this project, including more than one terabyte of aerial images, is available to the public via a Web site. NCTCOG also provides customized MapObjects Internet Map Server (IMS) and ArcIMS services to its member governments. Its iCommunities Internet service combines the high-quality aerial image base with local government planning, economic development, and geographic information system (GIS) resources customized to a city or county's needs. The final system includes ArcGIS with ArcSDE for Microsoft SQL Server with MapObjects IMS and ArcIMS.

North Central Texas Council of Governments **www.dfwmaps.com**

ArcSDE Support

To ensure the success of your investment in ArcSDE, ESRI provides the following:

- End user and developer technical support from a team of trained personnel with years of experience in database management systems and implementing enterprise GIS
- Training for database administrators and developers
- Start-up consulting support for both end users and developers
- Web-based self-help including the Knowledge Base and a user support forum

For more information about ArcSDE, visit www.esri.com/arcsde

ArcSDE

Raster Data Management

Organizations worldwide spend billions of dollars annually to collect and store spatial data from remote sensing, surveying, global positioning system (GPS) technology, and fast scanning devices that can quickly turn legacy paper-based map data into digital data sets. ESRI® ArcSDE™ now makes it possible to store raster and vector data together in a relational database management system, enabling enterprisewide data dissemination.

Since the initial release of ArcSDE in 1995, thousands of organizations worldwide have adopted it to manage vector data in a database management system. In fact, many organizations now consider ArcSDE the de facto gateway for vector data management in a DBMS. However, what is not so well known is that ArcSDE now brings open access and information technology standards to raster data.

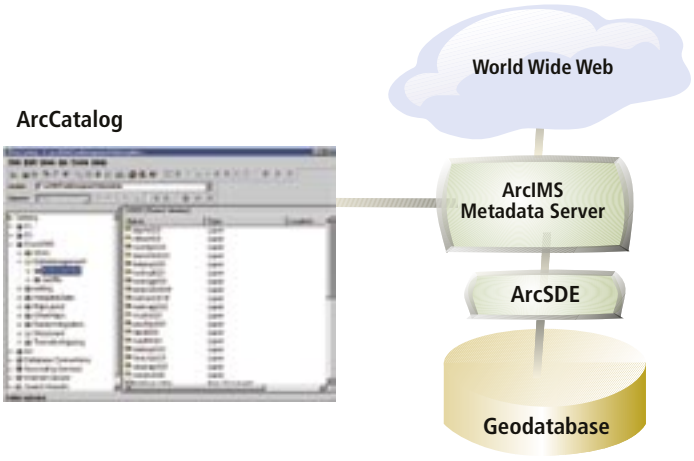
A new generation of software has enabled ESRI to become the first vendor to offer a complete end-to-end raster data management system. The combination of ArcSDE, ArcIMS®, and the ArcGIS™ Desktop applications provides an out-of-the-box raster data management system for collections of aerial photographs, satellite images, digital elevation models (DEMs), and other raster data such as scanned maps and computer-aided design (CAD) drawings.

Leverage Your Investment—Manage Raster Data in Your DBMS

The ability of an organization to store and manage the actual pixels and related metadata in a DBMS using standard relational tables means that now the same storage, indexing, and spatial search functions can be used to store both raster and vector data. Moreover, when organizations move their raster data into their DBMS, they extend all of the DBMS tools for recovery, backup, security, fail-over, and replication to their raster data collection. This in turn means that just as ArcSDE first enabled organizations to store and manage their vector data in the leading relational databases, including IBM®, IBM/Informix®, Microsoft®, SQL Server™, and Oracle®, along with the rest of their core data, ArcSDE now brings the same open access and information technology standards to raster data.

Designed From the Ground Up to Store and Manage Large Collections of Raster Data

ArcSDE provides a fast, scalable platform for multiuser access to raster data; support for loading all raster data formats supported by the ArcGIS Desktop applications; options for storing raster data with no compression, lossless LZ77 compression, or lossy JPEG compression; image "pyramids" (a series of reduced resolution representation of each raster data set) for fast display performance; and caching for fast redisplay.

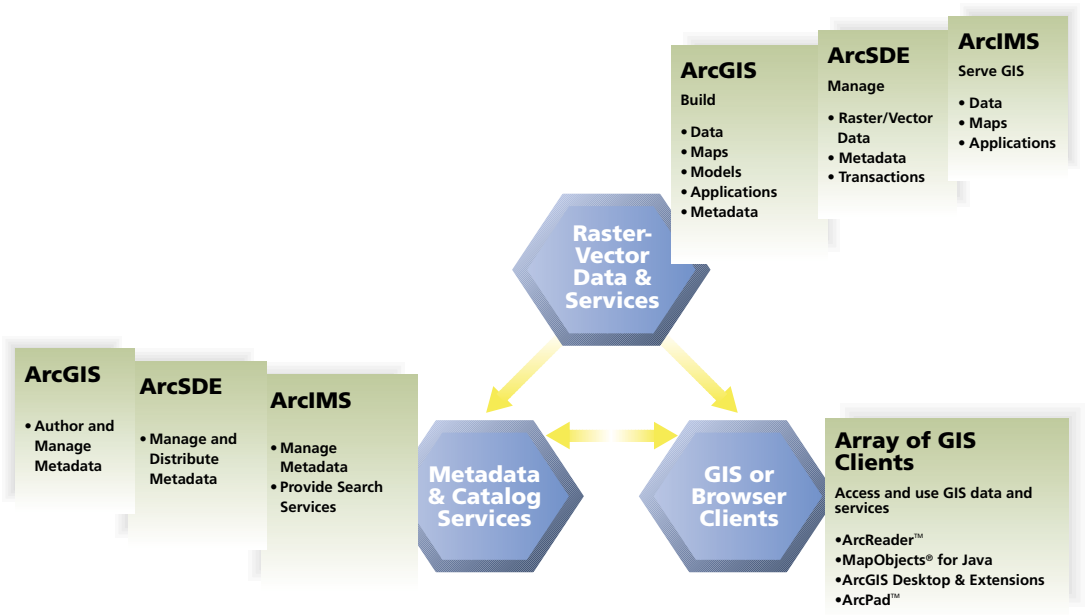


Metadata Creation and Search Tools for Image Data Collection

The combination of ArcSDE, ArcGIS Desktop's ArcCatalog™, and ArcIMS Metadata Server provides powerful tools to allow organizations to create, manage, and publish metadata along with subsampled "thumbnail" images and to create image footprints that enable users to quickly search large raster data collections based on any combination of geographic extent, content type, data format, or keyword.

Delivering Raster Data

The Combination of ArcIMS With ArcSDE Provides Fast, Efficient Distribution



The combination of ArcSDE with ArcInfo™ and ArcIMS provides the building blocks for Web portals.

Build Web Portals for Searching, Viewing, Ordering, and Delivering Raster and Vector Data

Many regional, state, and national government agencies have responsibility for raster data acquisition and warehousing and for offering a fast and easy solution for searching, viewing, ordering, and delivering seamless raster products such as digital orthophoto quadrangles (DOQs) high-resolution aerial photographs, Digital Raster Graphics (DRGs) digitized topographic maps, and digital elevation models. Other national agencies have requirements for managing and delivering overlapping global collections of heterogeneous imagery (multisource, multiresolution, and high-resolution), high volumes of data, always-on availability, and unique security needs for restricted and secure access by a select set of users.

ArcSDE is being employed by many government agencies to make their extensive raster data holdings accessible to large numbers of users. The combination of ArcSDE and ArcIMS provides a fast, efficient solution for distributing raster and vector data to everyone on an organization's Intranet and to the public on the Internet. For example, a state agency could store a seamless mosaic of digital elevation data and aerial photographs with ArcSDE and serve them to ArcGIS users on its local area network (LAN) or wide area network (WAN) and to the public with an ArcIMS-based Web portal.

"When we first began to use ArcSDE for large raster National Elevation Dataset and National Land Cover Dataset, we were surprised not only that we could display them so quickly, but also that we could so efficiently move to smaller or larger scale. The pyramids are generated automatically. When we need to supply our own generalized pyramid layers, we switch between them using scale dependent rendering."

Dave Greenlee
U.S. Geological Survey

Flexible Architecture

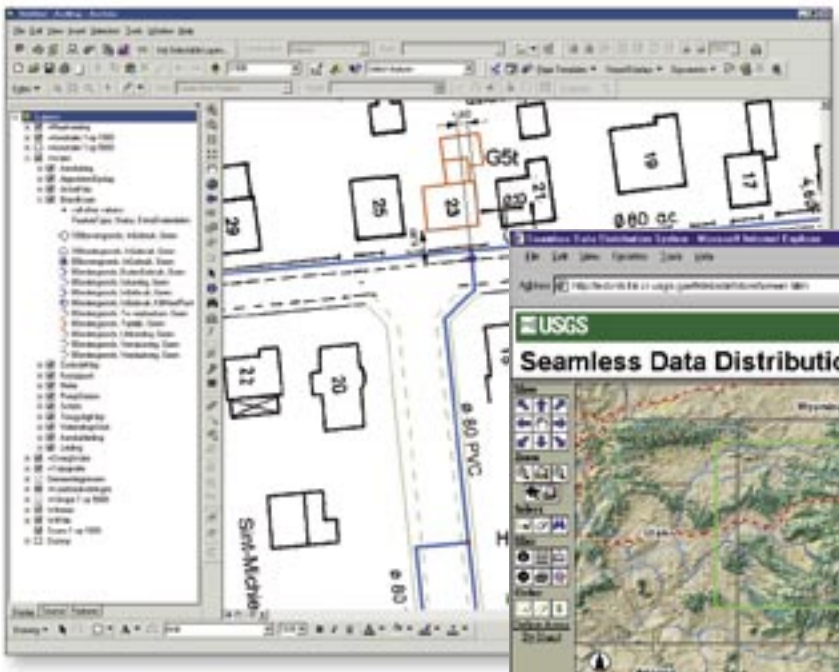
Case Studies

Flexible Architecture Lets You Build on Your Current Assets

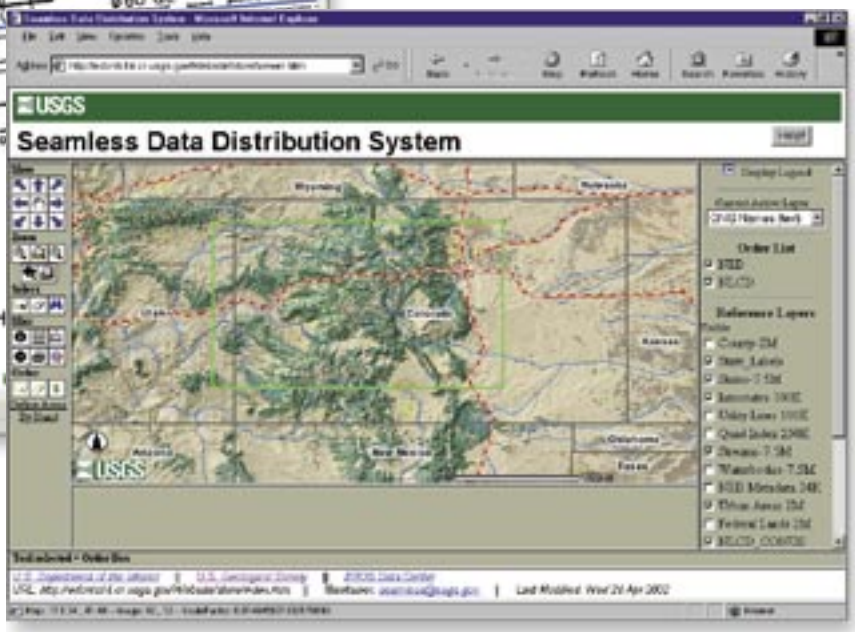
Pidpa

Pidpa, a water supply company in Antwerp, Belgium, had legacy data stored on paper and Mylar® maps. The maps were scanned as one-bit TIFF images. While over time these images will be completely replaced by vector data, Pidpa needed to be able to supply these historic maps to its users as background images, combined with vector data, into a seamless hybrid map. ArcSDE for Microsoft SQL Server was used to centrally store 3,000 images totaling 40 GB, which are supplied as background images to users running ArcGIS. Accessing the applications using Citrix Metaframe, Pidpa users are inserting new vector data and updating existing vector data with new information. The final system includes ArcGIS and ArcFM™ with ArcSDE for Microsoft SQL Server accessed through Citrix Metaframe client tools.

PIDPA **www.pidpa.com**



Pidpa uses rasterized basemaps for multiuser access with ESRI's ArcGIS Desktop applications.



USGS uses ArcSDE with ArcIMS to distribute continuous digital elevation data.

U.S. Geological Survey

In keeping with the National Spatial Data Infrastructure (NSDI) concept of easily accessible data, the National Elevation Dataset (NED) products and the National Land Cover Dataset (NLCD), a 30-meter resolution raster land cover for the entire United States, are available through the U.S. Geological Survey's (USGS) Web-based Seamless Data Distribution System. ArcIMS is used to provide the Web portal and user interface (the Seamless Data Map Interface), and ArcSDE for Oracle stores and manages the NED and NLCD raster data sets. The USGS has also developed a Web mapping portal that provides maps on demand using the NED and NLCD with selected vector data such as roads, streams, water bodies, and county and state boundaries for the USGS Rapid Prototype Testbed. The final system utilizes ArcIMS, serving data from ArcSDE for Oracle.

U.S Geological Survey **http://gisdata.usgs.net**

For more than 30 years ESRI has been helping people manage and analyze geographic information. ESRI offers a framework for implementing GIS technology in any organization with a seamless link from personal GIS on the desktop to enterprisewide GIS client/server and data management systems. ESRI GIS solutions are flexible and can be customized to meet the needs of our users. ESRI is a full-service GIS company, ready to help you begin, grow, and build success with GIS.

Corporate

ESRI
380 New York Street
Redlands, California
92373-8100, USA
Telephone: 909-793-2853
Fax: 909-793-5953

For more information on ESRI, call

1-800-447-9778

(1-800-GIS-XPRT)

Send e-mail inquiries to

info@esri.com

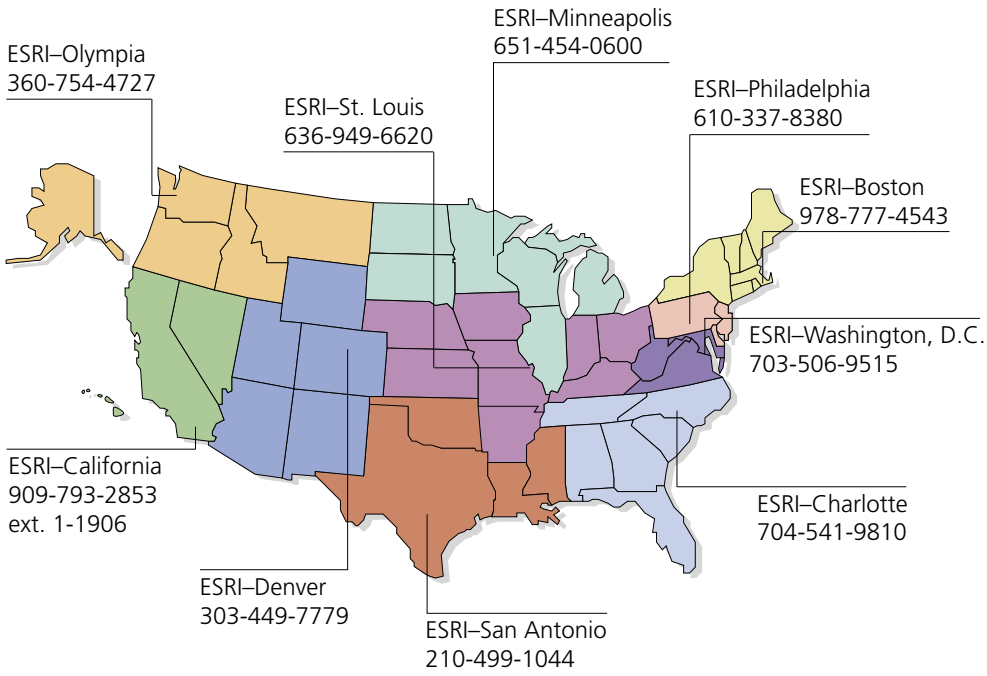
Visit ESRI's Web page at

www.esri.com

Outside the United States, contact your local ESRI distributor. For the number of your distributor, call ESRI at 909-793-2853, ext. 1235, or visit our Web site at

www.esri.com/international

Regional Offices



International Offices

Australia
613-9867-0447

Belgium/Luxembourg
32-2-460-7480

Bulgaria
359-2-964-0850

Canada
416-441-6035

France
33-1-46-23-6060

Germany and Switzerland
49-8166-677-0
41-1-360-2460

Hong Kong
852-2730-6883

Hungary
361-428-8040

India
91-11-620-3802

Indonesia/Malaysia
62-21-570-7685
603-7874-9930

Italy
39-06-406-96-1

Korea
82-2-571-3161

Netherlands
31-10-217-0700

Poland
48-22-825-9836

Portugal
351-2-1-781-6640

Romania
40-1-231-13-81

Singapore
65-742-8622

Spain
34-91-559-4375

Sweden
46-23-755-400

Thailand
66-2-678-0707

United Kingdom
44-1296-745-500

Venezuela
58-212-285-9394

Place ESRI business partner or distributor address here.

GSA
No. GS-35F-5086H

89893
CPG25 M6/02km

Printed in USA