Leveraging Geospatial Information
Bentley’s Flexible Geospatial Approach

Raise some questions
Share ideas & experiences
Show consequences
Leveraging Geospatial Information

Today Bentley Geospatial solution is flexible

But times are changing and the role of surveyors is changing as well. The big swing could be named "from measurement to management". As mentioned above this does not imply that measurement is no longer important, but due to technology development, the role of the surveying is changed towards managing the measurements. The change also means that surveyors increasingly contribute to building sustainable societies as...
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Facing the Challenges – Building the Capacity
Sydney, Australia, 11-16 April 2010
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Flexibility

Bentley provides flexible access to the enterprise information
Entry Points

Data

Geospatial desktop clients

Geospatial server

Geospatial publishing tools
Data (Information) Integration

- 80 percent of business is conducted on unstructured information (Gartner Group).
- 85 percent of all data stored is held in an unstructured format (Butler Group).
- **Unstructured data doubles every three months** (Gartner Group).

Source: DCI Portals, Collaboration and Content Management conference in Miami, Zach Wahl from the Project Performance Corporation

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Core Cadastral Domain Model (CCDM)
Spatial Data (Information) Integration

1. Data exchange
   - Common GIS data formats like ESRI Shapefiles or MapInfo TAB, MID/MIF & DGN/XFM;
   - CAD formats such as DGN and DWG;
   - XML-based exchange formats such as LandXML or GML

2. Data collaboration
   - Sharing one common spatial database
   - Oracle Spatial/Locator, ArcSDE
   - Two-tier or n-tier architecture

Data exchange editing life-cycle

- Geospatial Desktop
- Export XML File
- Non-Bentley GIS Client
- Import XML File
- DGN/XFM
- SHP
- Export XML File
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Geospatial Desktop Clients

Integration with Geospatial Desktop Clients

- Creating point-to-point connections
  - Using Customization
    - Using APIs to create an interface with other applications
  - Using Common protocols
    - using ISO/OGC protocol-based functionality to interface with other applications
Integration with Geospatial Desktop Clients

- Suited when the integration scope is limited
  - Allowing access to geospatial data for a limited number of applications
  - E.g. form-based applications needing a geospatial interface

- Products are to be designed to be customized

- Wide choice of development options
  - Scripting, VBA, .NET, C++, and C#

- ‘Proven’ approach to integrating applications

Integration with Geospatial Desktop Clients

- Common protocols:
  - Example architecture leveraging OGCs WMS/WFS using Geospatial products

![Integration diagram with OGC-compliant clients and GeoWeb Publisher](image)
Geospatial Server & Publishing

Integration with (Geospatial) Server

• Natural entry point for Enterprise Integration
  – Server to server integration approach

• Using a Connector architecture
  – Interoperability connectors
    • interfacing with enterprise geospatial data stores (e.g. ArcSDE, Oracle Spatial/Locator)
  – Enterprise connectors
    • Interfacing to other, non-geospatial enterprise platforms (e.g. SAP)

• Unique benefits through Federated Data Management
Connector Architecture

Best practices

Core Platform

Web Publishing

Stand-Alone Mapping

ProjectWise / Bentley Geospatial Server

Data Files

Spatial Databases

Business Documents

Ancillary Files w/ RDBMS

Proprietary GIS Databases

Enterprise Data Stores

Utilities

Imaging

Mapping

Cadastre

Utilities

Mapping

Cadastre
Integration with Geospatial Publishing Tools

- Using a publishing server architecture
- Integration paths:
  1. Logical integration using portals
  2. Logical integration using mash-up technology
  3. Integration based on web-services (SOA, SOAP, REST, KML, GeoJSON, GML, WMS, WFS, etc)

Conclusion

- The need for enterprise integration is clear
- Every main purpose for enterprise integration is met by one of Bentley’s geospatial enterprise integration options:
  - Data (information) Integration ← data exchange, collaboration
  - Process Integration ← connector architecture, customization
  - Vendor Independence ← commitment to open standards, protocols
  - Common Interface ← portal, mash-up, or services integration
- Flexibility is key
THANK YOU