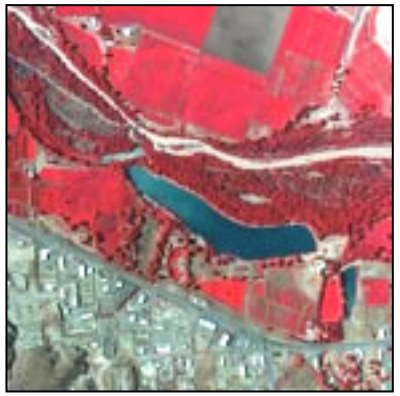
Applied Generalization and MRDB for Mapping Agencies using Open, Geospatial Clients

Vince Smith,
GeoMedia Desktop & Cartography Product Manager



INTERGRAPH

June 20, 2008

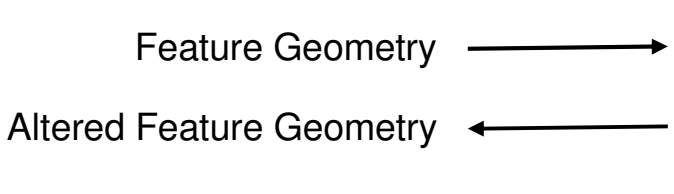
First, Some History at Intergraph

- Research and algorithm development dates back to late 1980's done under federal contracts.
- Released commercial products containing generalization algorithms from 1992-2000.
  - Dynamic preview of generalization results.
  - Incorporation of elevation information.
  - Varied results with MGE Map Generalization and DynaGen.
- Evaluated partnerships with other vendors since 2004.
  - 1Spatial, formerly Laser-Scan
  - CPA
  - Some prototype work performed and reviewed
- Decided to once again (re-)develop generalization in 2007

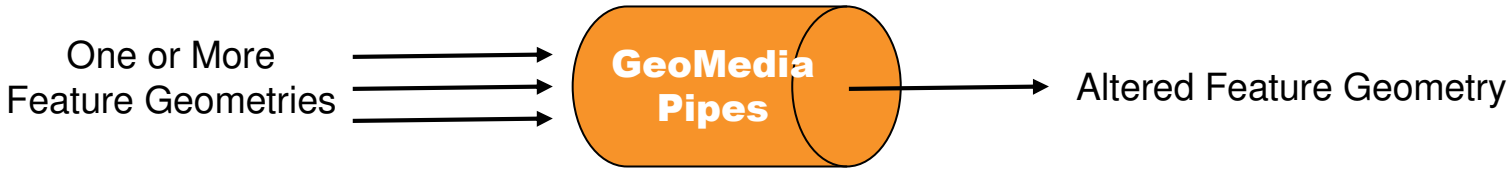
Strategy & Packaging

- Re-implement DynaGen algorithms and principles into a GeoMedia environment using service oriented architecture (SOA)
- Incorporate latest research available.
- Overcome past deficiencies.
  - Generalization in context.
  - Customization.
- Model generalization added to GeoMedia Fusion product for building digital landscape models (DLMs).
- Cartographic generalization added to GeoMedia Map Publisher for building digital cartographic models (DCMs).
- Satisfy INSPIRE directives for harmonization with GeoMedia WebMap-based products.
- Lay groundwork for implementing MRDB and revision workflows
- Implement generalization in non-traditional geospatial applications

GeoMedia Principles & Architecture

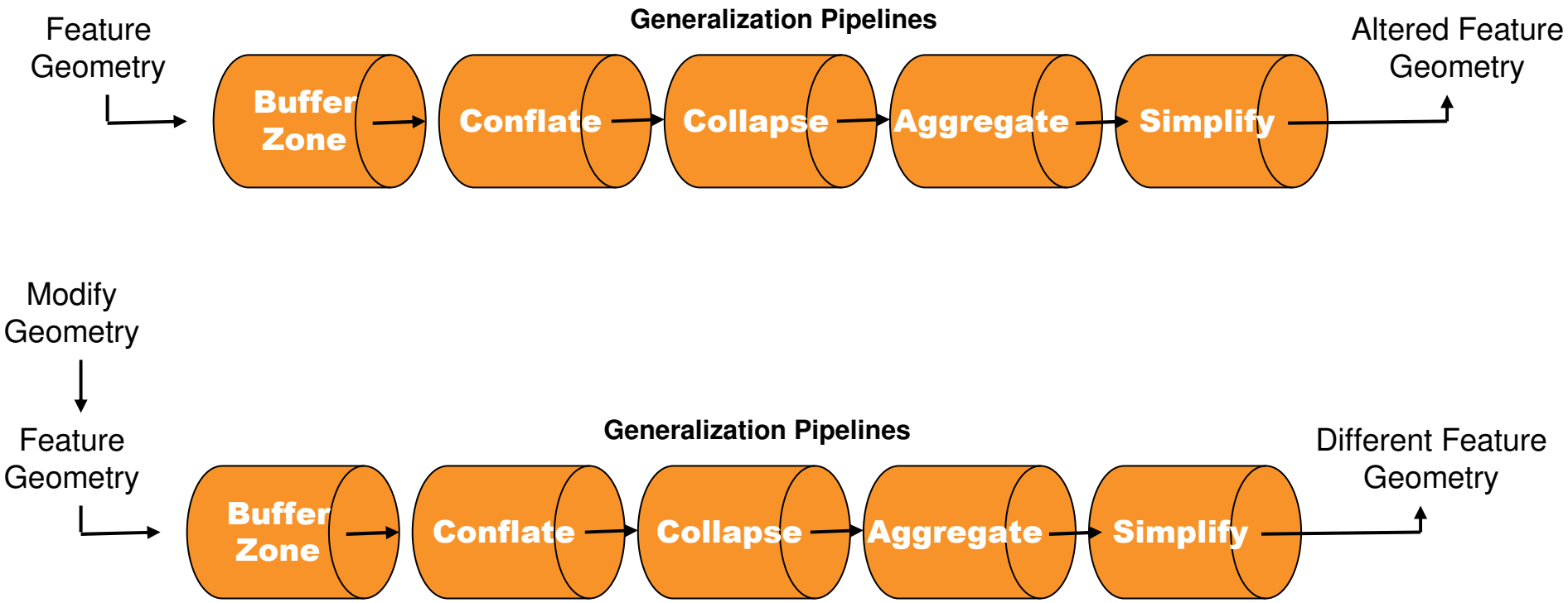


- Works on individual features, one at a time
- Static, not persisted
- User's can add their own and have them participate throughout GeoMedia commands wherever expressions
- Visual Studio 2005, Visual Studio .NET

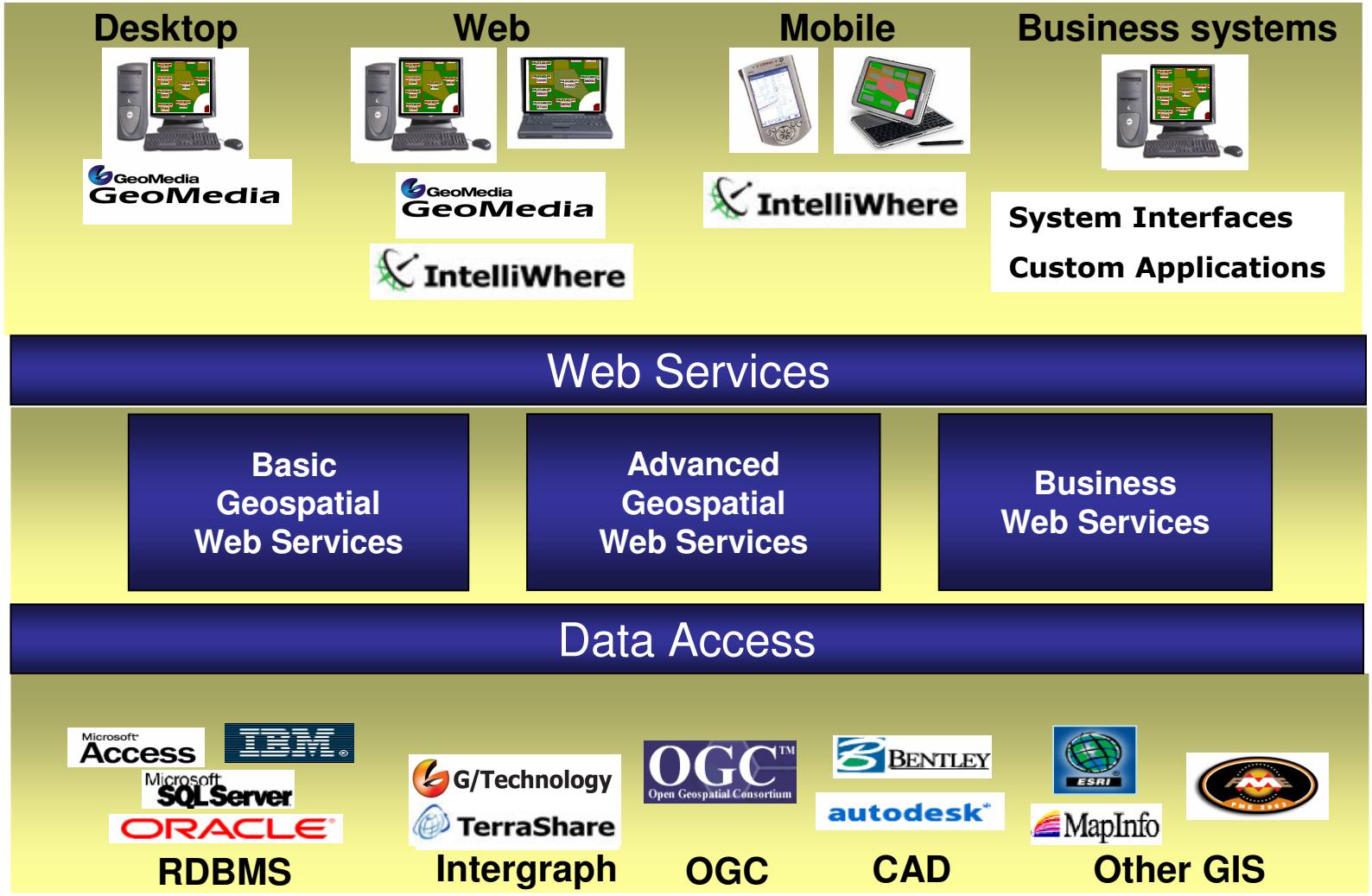


- Basis of GeoMedia's query system
- Persisted and associated to features or other queries
- Dynamic, for what-if analysis

GeoMedia Principles & Architecture



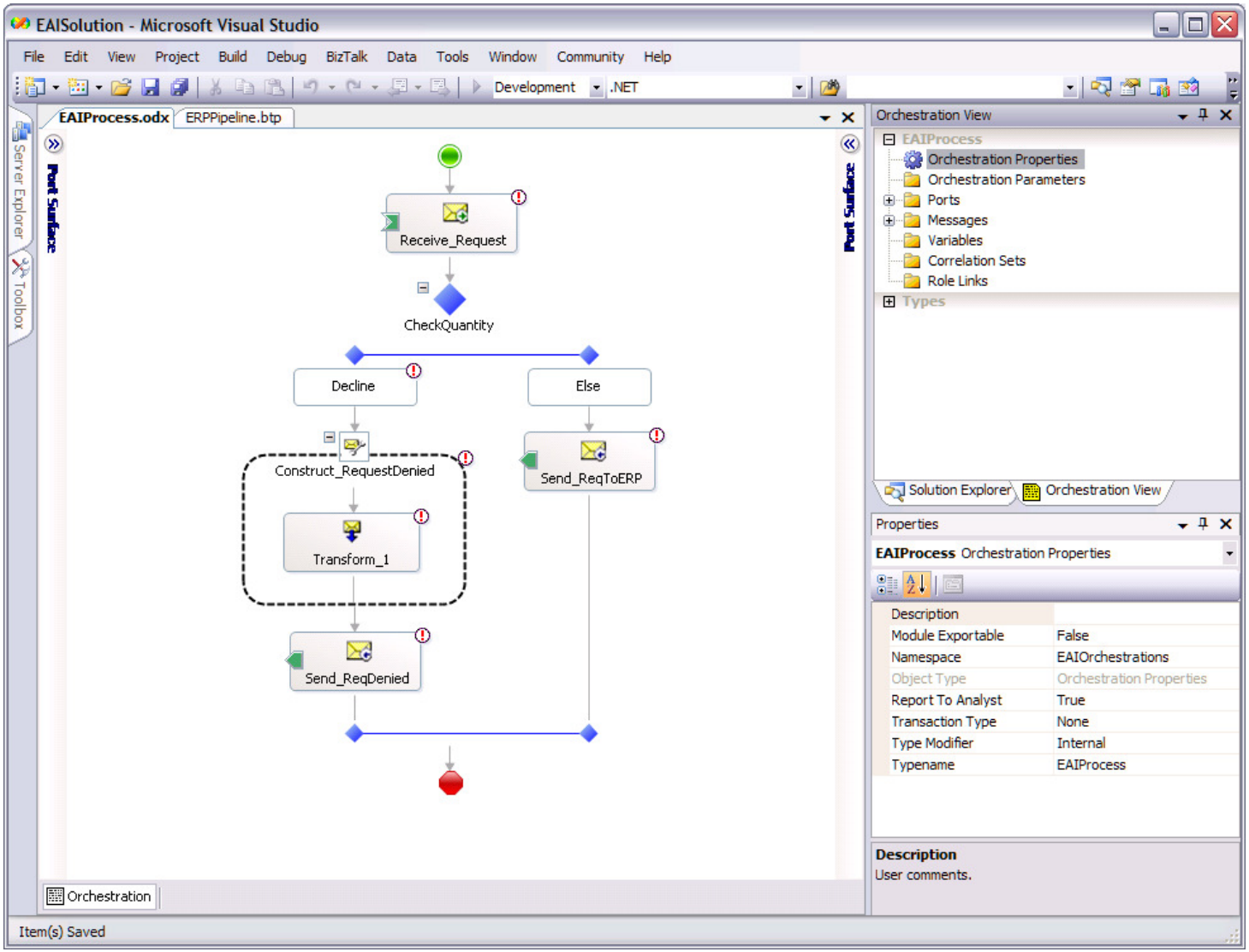
GeoMedia Principles & Architecture



GeoMedia Principles & Architecture

- consume published web services in industry standard web service clients
  - thin clients
    - our own **OGC viewer**, available at www.ogcviewer.com
    - Skyline Globe
    - Ionic Red Spyder
  - thick clients
    - GeoMedia, GeoMedia Professional, GeoMedia Viewer
    - NASA World Wind
    - Carbon Tools GAIA
    - Google Earth

Customizing GeoMedia - Visual Orchestration



Current Status

- GeoMedia Fusion
  - Schema mapping
  - Conflation
  - To be implemented as web services in 2008
- GeoMedia Map Publisher
  - Conflict detection strategies
  - Conflict resolution strategies including point displacement
  - Relates DLM to DCM
- GeoMedia WebMap-based products
  - Support most popular OGC I/F's (WFS, WMS, WCS, WFS-T, Catalog Service)
  - SDI Basic and SDI Pro under development will target INSPIRE directives

Future Areas of Development and Research

- Architecture of web-based generalization.
- Performance considerations.
- Persistent generalized results verses rendered results.
- New applications for generalization.

Thank You –
ICA Commission on Generalization and MRDB

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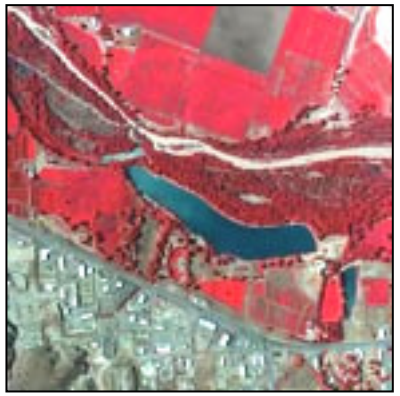

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