Demonstrations - GML & WFS

- Standard Vancouver Demo
- Vancouver Feature Editing.
- Vancouver Feature Replication.
- ITS Demonstration – Multiple WFS & WMS.
- S57 Demonstration.
Vancouver Demo 1

- Obtain GML data from WFS.
- Apply map style to create maps.
- Maps in SVG, TIFF etc.
Vancouver Demo 2

Demonstrates Feature Transactions

- Insert
- Update
- Delete

Simple WFS Client

Map Style

Feature Portrayal Service

FreeStyler

(GML 3. Data)

WFS

Cartalinea

Standard Browser with SVG plug-in

Oracle Spatial, ArcSDE/Oracle or X-Hive backend
Vancouver Demo 3

- Replicate specific features or feature types in selected area.

Simple WFS Client

- Standard Browser with SVG plug-in

Map Style

FreeStyler

(GML 3. Data)

WFS

Transactional WFS

Cartalinea

Feature Portrayal Service

- Transactional WFS

FreeStyler

Standard Browser with SVG plug-in
GML & S-57 – Web Feature Service & Portrayal Service

- Obtain S-57 data from WFS.
- Apply style sheets to create maps.
- Use S-52 symbology.

Editorial and WFS.

Cartalinea

FreeStyler

Feature Portrayal Service

Map Style

Standard Browser with SVG plug-in

View Client

Oracle Spatial, ArcSDE/Oracle or X-Hive backend

WFS

Cartalinea

(S-57 & AML)
Integrating Real Time Sensors & Geography

Loop Detectors on Highway

Real time GML observations

GML features

Road Features

Web Feature Service (observations)

Feature Portrayal Service (WMS)

(GML 3. Data)

Real Time Traffic Model

Web Feature Service

DEMO -3

Integrating Real Time Sensors & Geography

Loop Detectors on Highway

Real time GML observations

GML features

Road Features

Web Feature Service (observations)

Feature Portrayal Service (WMS)

(GML 3. Data)

Real Time Traffic Model

Web Feature Service

DEMO -3
INdicio Demonstration - Functionality

Demo System Architecture
INdicio Demonstration - Functionality

- Web service – XML based query/response.
- Find services, datasets, schemas etc.
- Find by:
  - Organization (association)
  - Service Type (classification)
  - Location (classification)
- Follow associations
- Search by spatial location (simple search)
- Life Cycle Metadata
INdicio Demonstration – Customer Site
Web Processing Service

- XML Web Service.
- A general processing engine for geographic data.
- Exposes a library of processing functions based on an internal mathematics engine (Maple, Mathematica).
- Can carry out complex computation (e.g.)
  - Compute network topology.
  - Drape features onto a DEM.
  - Perform automated conflation
Case Study: BC iTRIM

Requirements:

- Integrated, seamless, feature-based topographic spatial database
- Data maintenance through partnership agreements with other multi-jurisdictional agencies and private companies
- Automated access control, feature validation, and topology generation
Case Study: BC iTRIM

The 2D geometry (lat/lon) of a road is observed by a Trusted Partner.

WPS
- GML Parser
- Function Computation Engine (Maple)

iTRIM
- APE
- Observation Tier
- Feature Tier
- Graph Tier

1. Trusted Partner
2. Insert Observation
3. Get iTRIM Objects
4. Realm Tier Policies
5. Observation Tier
6. Feature Tier
7. Graph Tier
Case Study: BC iTRIM

A RoadObservation instance is created that contains road geometry and targets a feature to update.
A WFS insert transaction request containing the RoadObservation is created (by Trusted Partner)
Case Study: BC iTRIM

Insert request is sent to the iTRIM Observation Tier WFS (Galdos Cartalinea).
All policies that match the insert request are applied by APE:

- Authorization (pass/fail)
- Schema validation
- Spatial data integrity

Case Study: BC iTRIM
APE carries out effect of the policies, i.e. if all policies pass, then RdObs001 is inserted in the Observation Tier.
Successful insertion of RdObs001 triggers APE to apply Observation to Feature Tier policies. Policies include: Draping and Realm Tier Snapping.

Case Study: BC iTRIM
APE carries out all obligations (i.e. submits all transaction requests to WPS).
WPS performs requested transactions and returns results (modified geometry) to APE
APE carries out “effects” of the policies, for instance it constructs and submits update Road transaction request to Feature Tier.
Successful update of the Road feature triggers APE to apply “Feature to Graph Tier” policies including graph/topology generation.
APE carries out all obligations (i.e. submits all transaction requests to WPS).
WPS performs requested transactions and returns results (topology model) to APE.

**WPS**
- GML Parser
- Function Computation Engine (Maple)

**iTRIM**
- Realm Tier Policies
- Observation Tier
- Feature Tier
- Graph Tier

**APE**
- Trusted Partner

**Case Study: BC iTRIM**

(WPS performs requested transactions and returns results to APE.)
APE carries out effect of the policies, i.e. submits update RoadNetwork transaction request to Graph Tier.
Demo Scenario

TestRoadObservation1.xml (Rd_1)

TestRoadObservation2.xml (Rd_2)

TestRoadObservation3.xml (Rd_3)

TestRoadObservation4.xml (update to Rd_3: should fail)

TestRoadObservation5.xml (Rd_5)
Conceptual Model for Data Population

 Observation Policies  Feature Policies  Graph Policies  Graph Policies

 Trusted Partner

 Validate & Insert Observation  Apply Observation Policy  Apply Feature Policy  Apply Graph Policy

 WFS Transaction
FPS – Multiple WFS Sources – Galdos/Intergraph

Feature Portrayal Service

Map Style

FreeStyler

WFS

Cartalinea (S-57)

GeoMedia (USA)