Integrating information towards Digital ATM

Ontologies use for Features Conflation

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Federal Aviation Administration

EUROCONTROL

Air Transportation Information Exchange Conference
(featuring AIXM, WXXM and FIXM)

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Silver Spring, MD

What are Features?

How Geeks talk about features?

Conceptualize it

=

Create a model
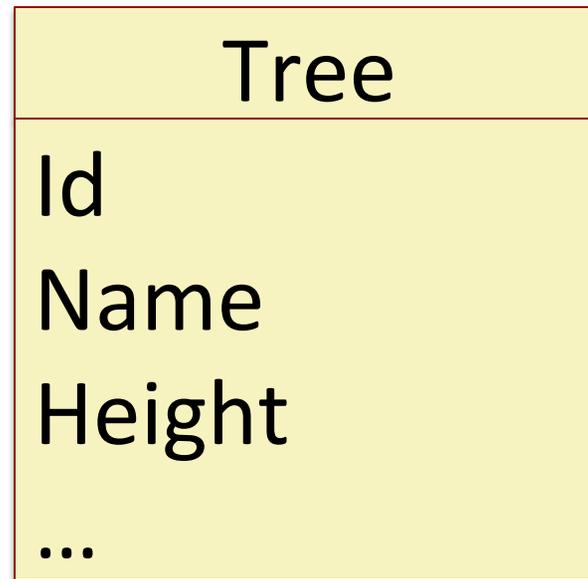
Tree
Id
Name
Height
...

How Geeks talk about features?

Geometries

Location

How Geeks
talk about
features?

<GML>

..model

</GML>

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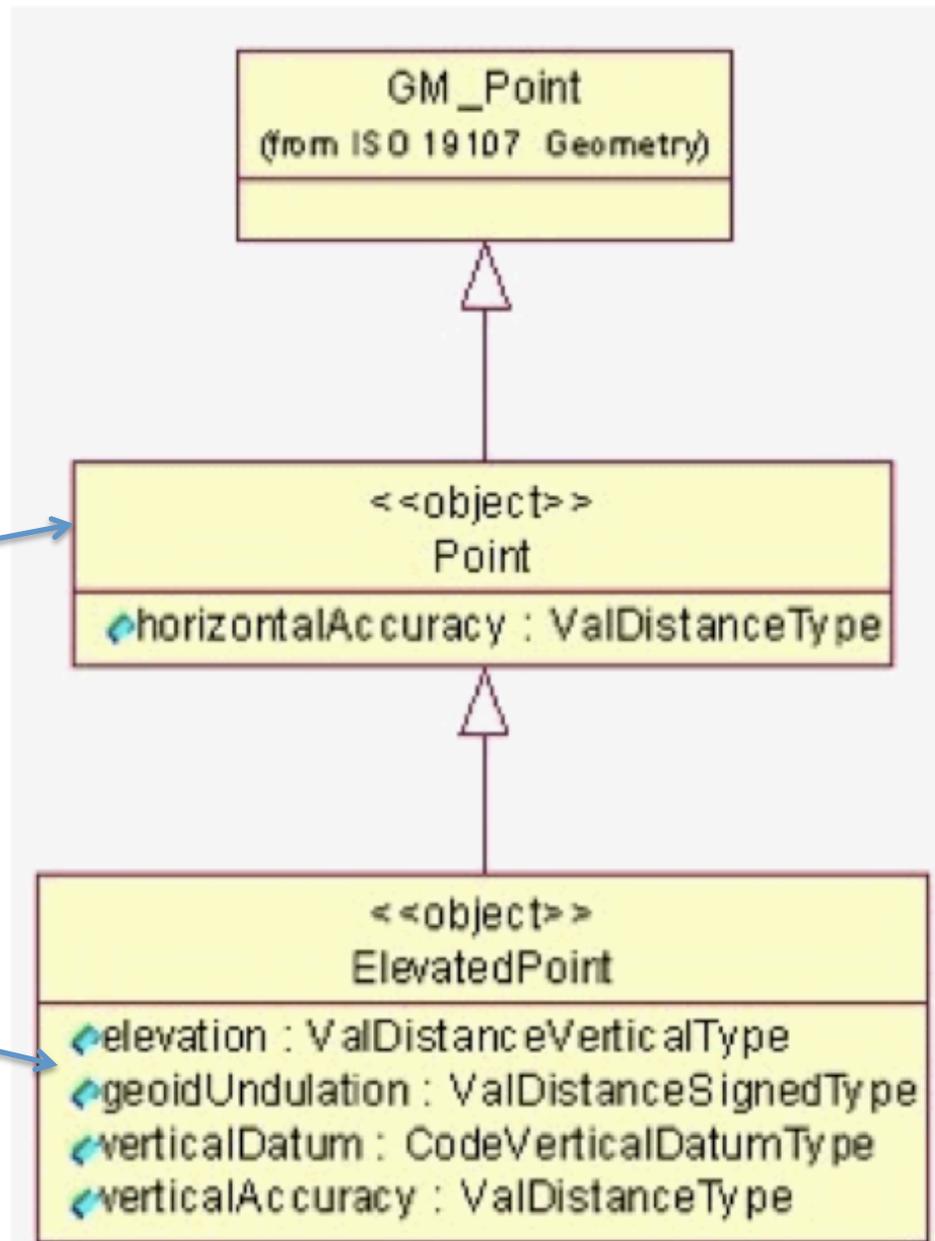
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GML

```
<Bridge>
  <span>100</span>
  <height>200</height>
  <gml:centerLineOf>
    <gml:LineString>
        <gml:pos>100 200</gml:pos>
        <gml:pos>200 200</gml:pos>
    </gml:LineString>
  </gml:centerLineOf>
</Bridge>
```

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Communities might disagree

Road
- Name: Rt 32
- Id: 0032

Street
- Label: Route 32
- Identifier: 0056
- width: 4m

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Conflation

Source Dataset

Target Dataset

Architecture

WPS Client
(Pyxis)

Conflation Services

Roadmatcher

WPS for
Geometry Conflation
(GMU)

XML

Main WPS including
Attribute Conflation
(52°North)

SPARQL Server for
Knowledge Base
(Envitia)

GetFeature by BBOX Requests

WFS
(Source Dataset)

WFS
(Target Dataset)

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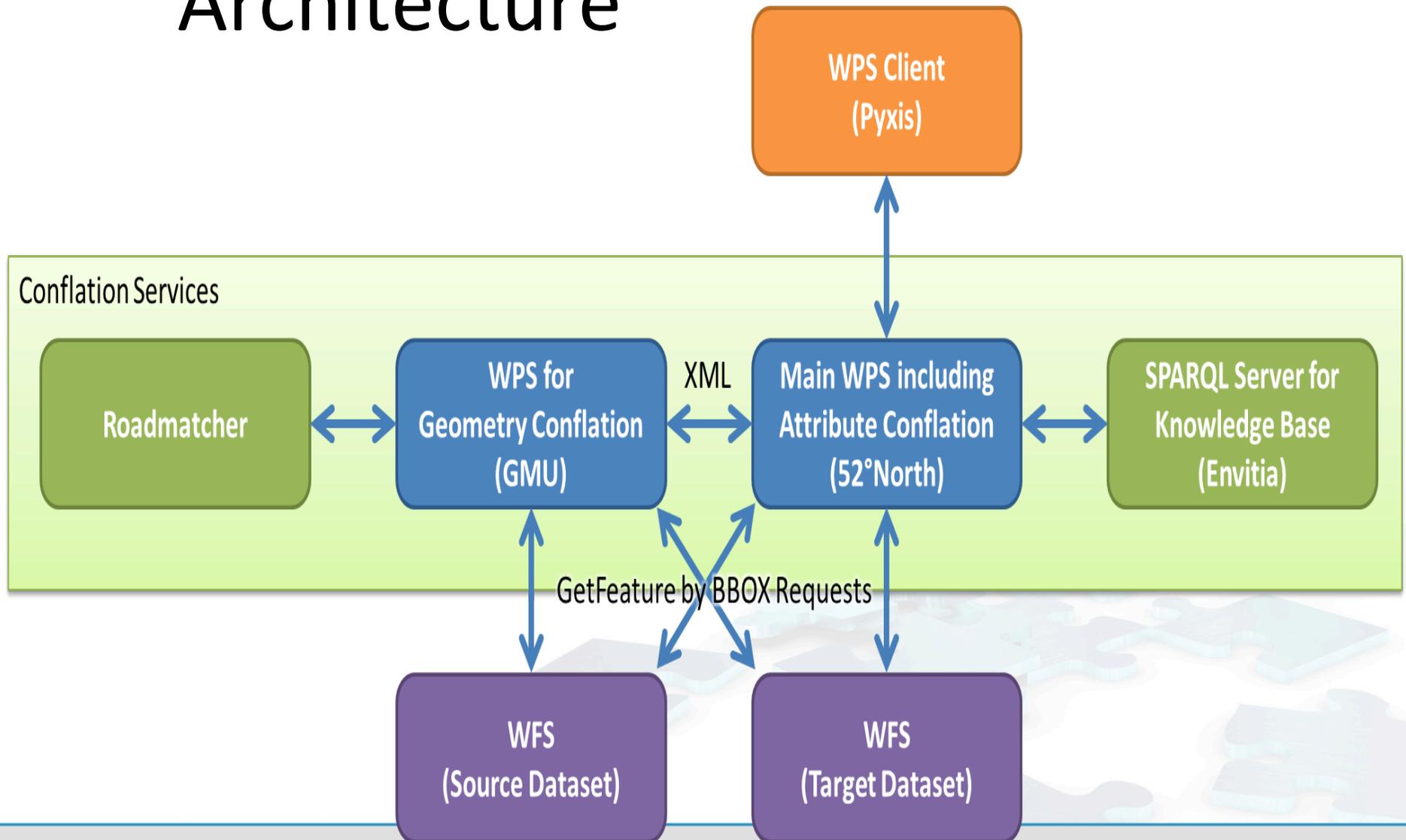
Web Processing Service (WPS)
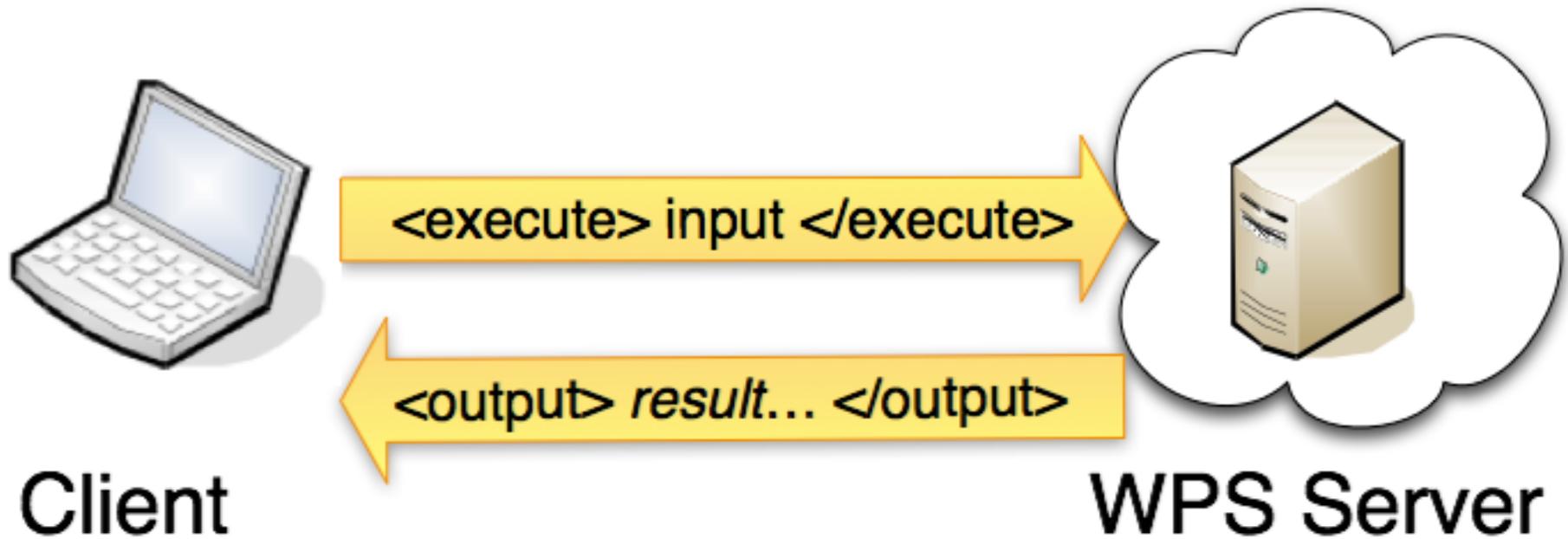
WPS Inputs

- **source-wfs** – a WFS GetFeature request providing the source dataset

- **target-wfs** – a WFS GetFeature request providing the target dataset

- **bbox** – an optional bounding box where the conflation should be applied

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WPS Outputs

- wps:Output - "**result**" a link to the GML

- wps:Output - "**provenance**" a link to the GML with provenance
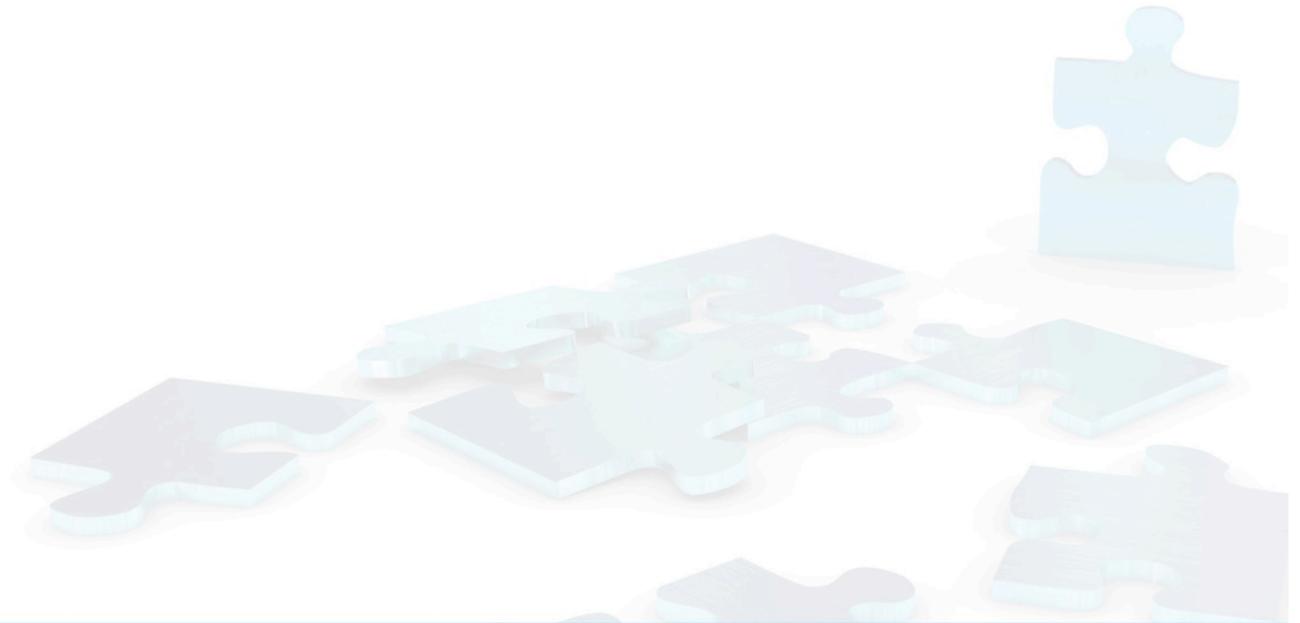
Provenance

Process: simpleProvenanceExample_v4.gml

Field	Value
gml_id	usgsToNga10000
geometrySource	inputTargetDataset
conflation_startTime	2001-12-17T09:30:47Z
conflation_endTime	2001-12-17T09:30:47Z
processStep_1	Geometry Conflation by GMU WPS
processStep_1_inputSourceDataset	http://portal.cubewerx.com
processStep_1_inputTargetDataset	http://www.interactive-instruments.de
processStep_2	Attribute Conflation by 52North WPS
processStep_2_input	Geometry Conflation by GMU WPS
inputSourceDatasetFeature	CWFID.TR_ROADS.0.15940
inputTargetDatasetFeature	TransportationCurves1178
nearness	3.2000000000000001e-007
nearness_uom	m
maxdist	5.3999999999999998e-005
maxdist_uom	m
trimdist	0.00020000000000000001
trimdist_uom	m
adjsize	0.00029999999999999997
adjsize_uom	m

Ontologies

- Mappings of Attributes
- Mappings of Feature Type names
- Available in a knowledge base via SPARQL

ONTOLOGIES
and
MAPPINGS
OWL, SKOS

SPARQL

Find any Feature Types that map to NGA Road
Curves

DESCRIBE ?a WHERE
   {
   ?a <env-mapping:sourceFeatureType>
       <nga:RoadGeocurve>
   }

OWS 9 Conflation Report

OWS-9 Conflation with Provenance ER	Matthes Rieke, Benjamin Pross	12-159

https://portal.opengeospatial.org/files/?artifact_id=51818

Questions

Contact Information

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