

Data Mesh-up and Mapping using Semantic Wiki

-- with use cases in RPI Map¹ and VSTO
Map²

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¹ <http://map.rpi.edu/> ² <http://onto.rpi.edu/wiki/vsto>

Tetherless Map Extension

Features

- Data presentation:
 - Map a coordinate
 - Map results of a semantic query
 - Displays information provided in a KML file.
 - Layer control.
- Navigation:
 - Location browser
 - Search and filtering

Two Parser Functions

Semantic query

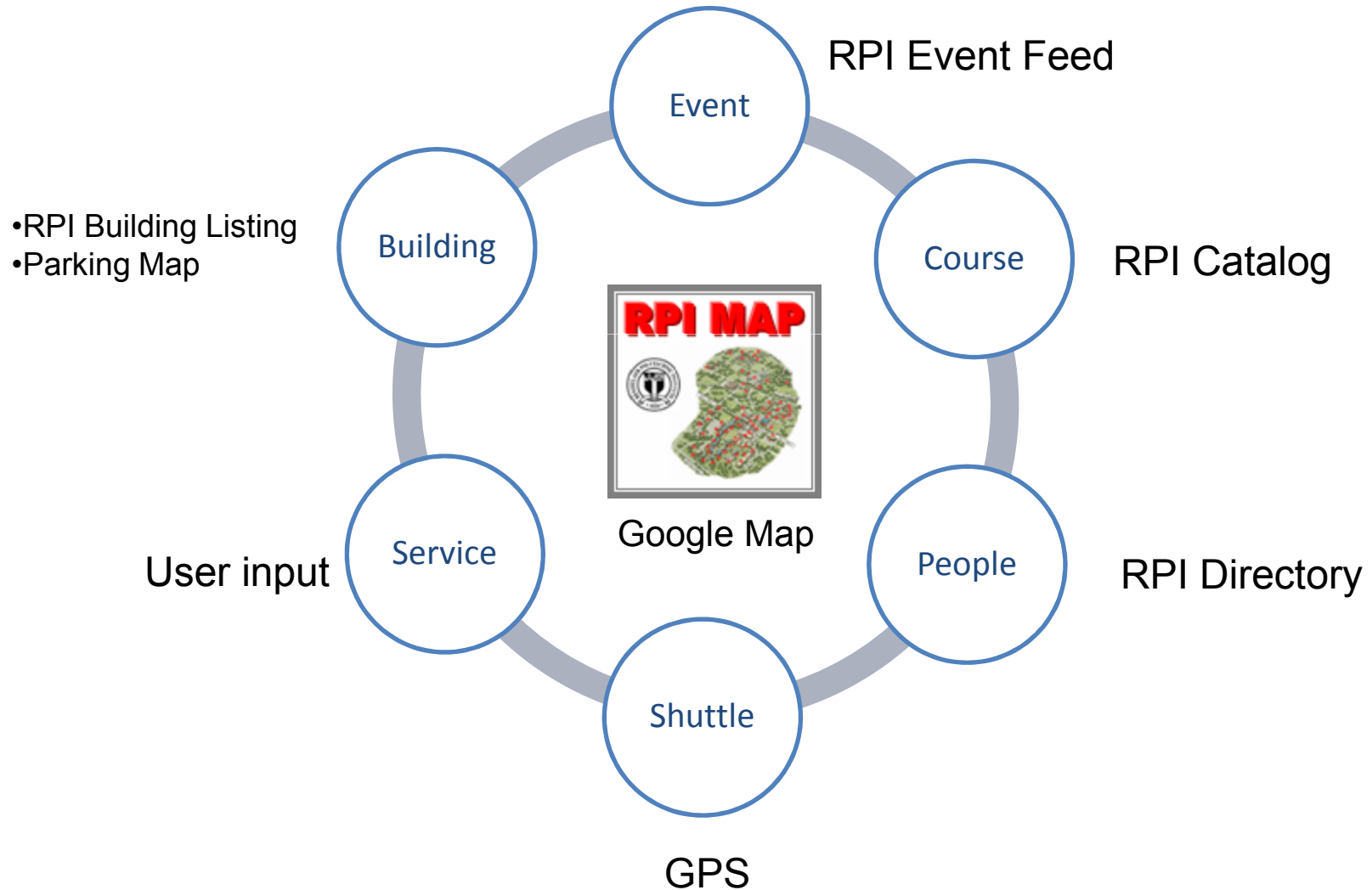
```
{{#map_objects: {{#ask:  
  [[Category:Location]]  
  | ?Has LatLong  
  | ?Has URL  
  | ?Has short name  
  | ?Has service  
  | ?FOAF:page  
  |limit=200  
  |link=none}}  
  |Route;http://shuttles.rpi.edu  
  /data/route.kml  
}}
```

Integrate KML file as a map layer

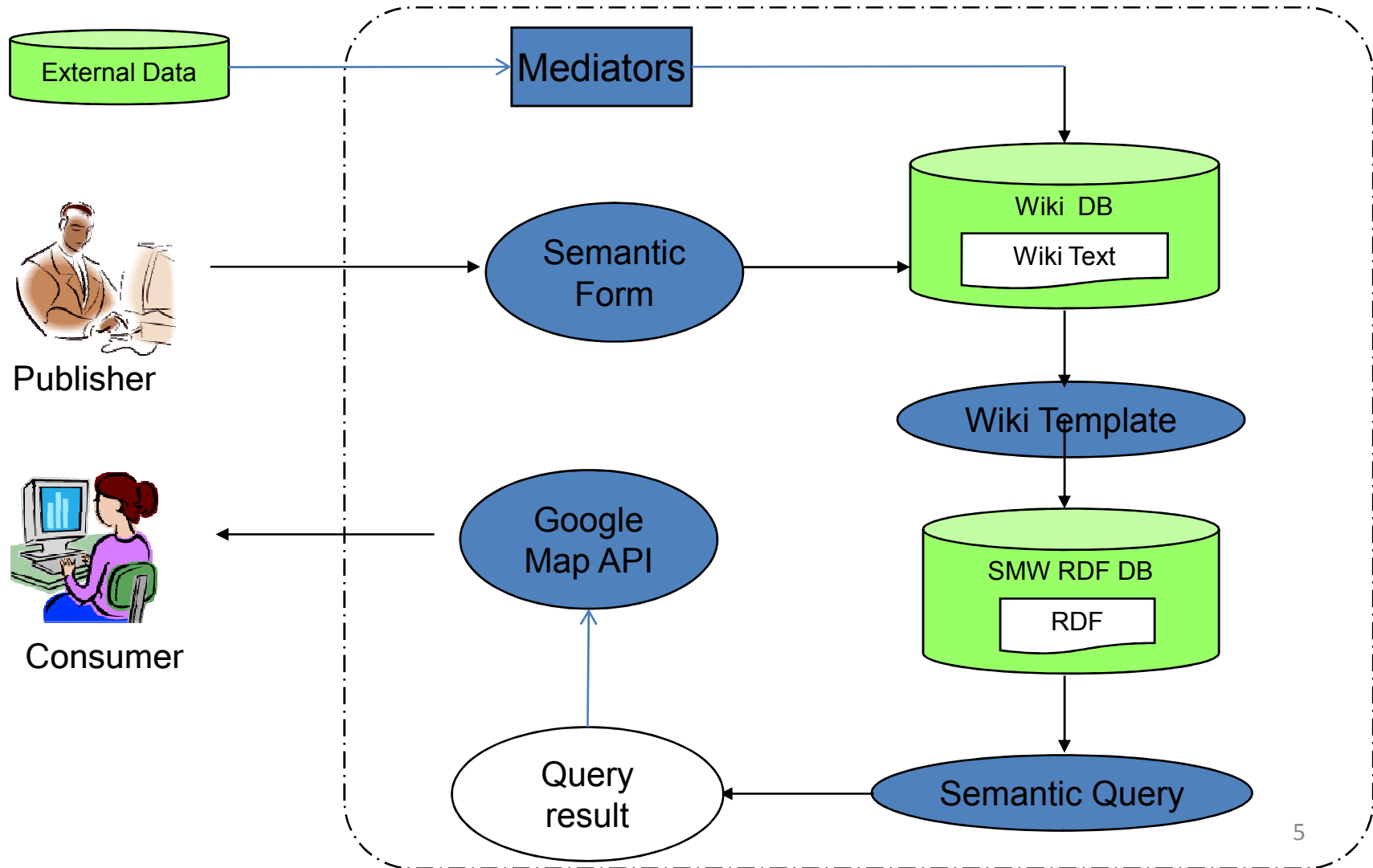
```
{{#insert_map:  
  17.3,17.8  
  |2  
  |G_HYBRID_MAP  
  |GLargeMapControl  
  |class1  
  |800 |600  
  |border: thin dotted#00FF00  
  |<b>This is an example</b>  
  |Empire Building  
}}
```

RPI Map

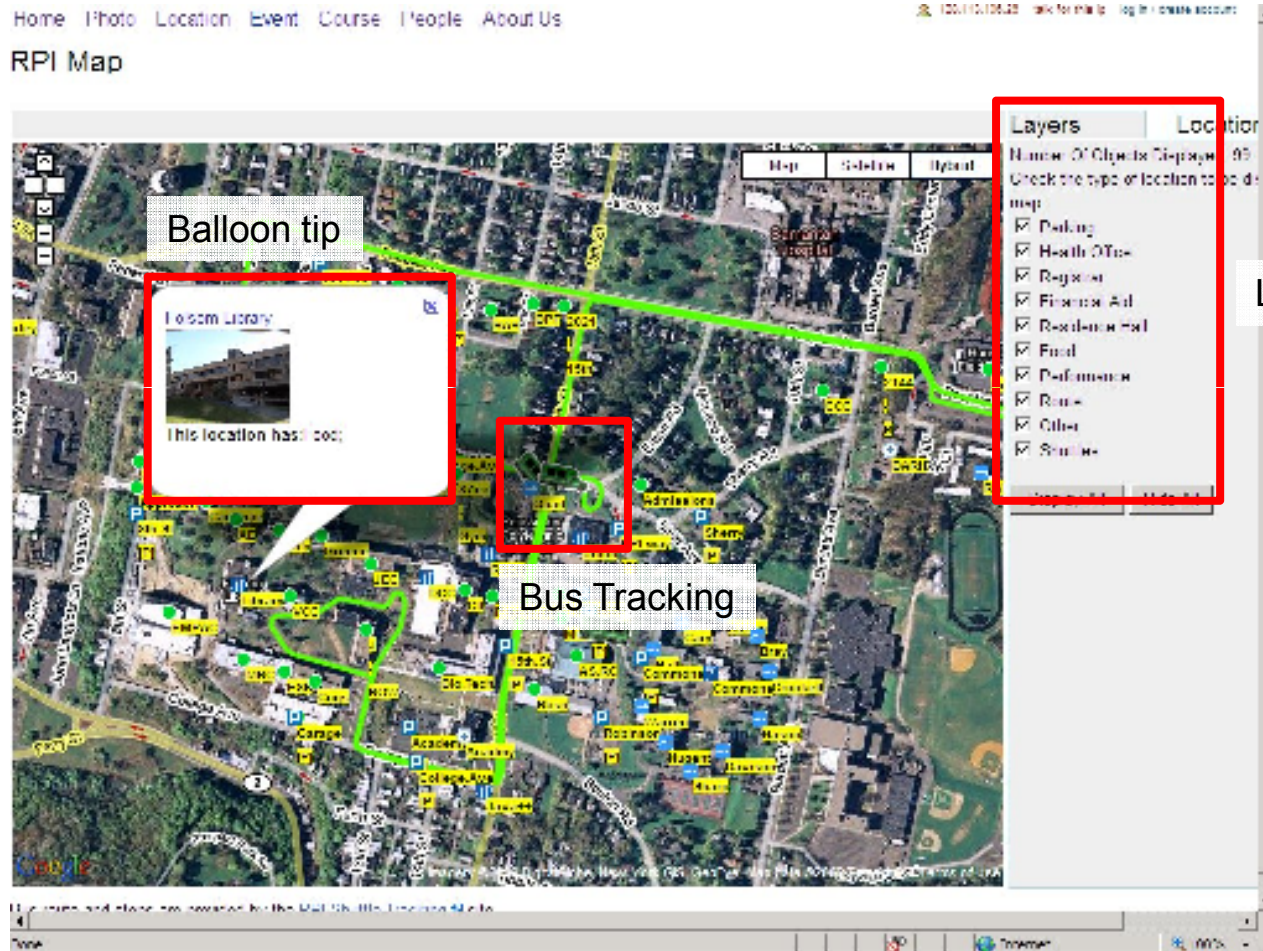
<http://map.rpi.edu>



RPI Map



RPI Map



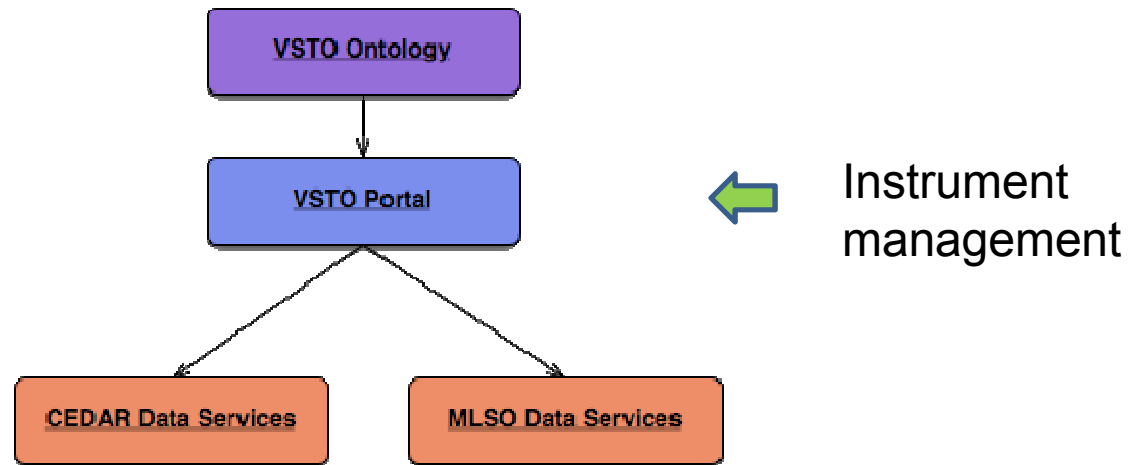
Main interface

RPI Map

- Why semantic wiki helps?
 - Lessen naming heterogeneity:
 - where are Incubator Center, Peoples Ave Complex J, J Building, or J Bldg ?
 - Data can flow (by semantic query)
 - E.g., Today's events, Events at a building, Person in the same building
 - (a little bit) reasoning
 - All seminars are also meetings (and events)
 - The wiki-way to improve data
 - Anybody, anytime, anywhere, anything

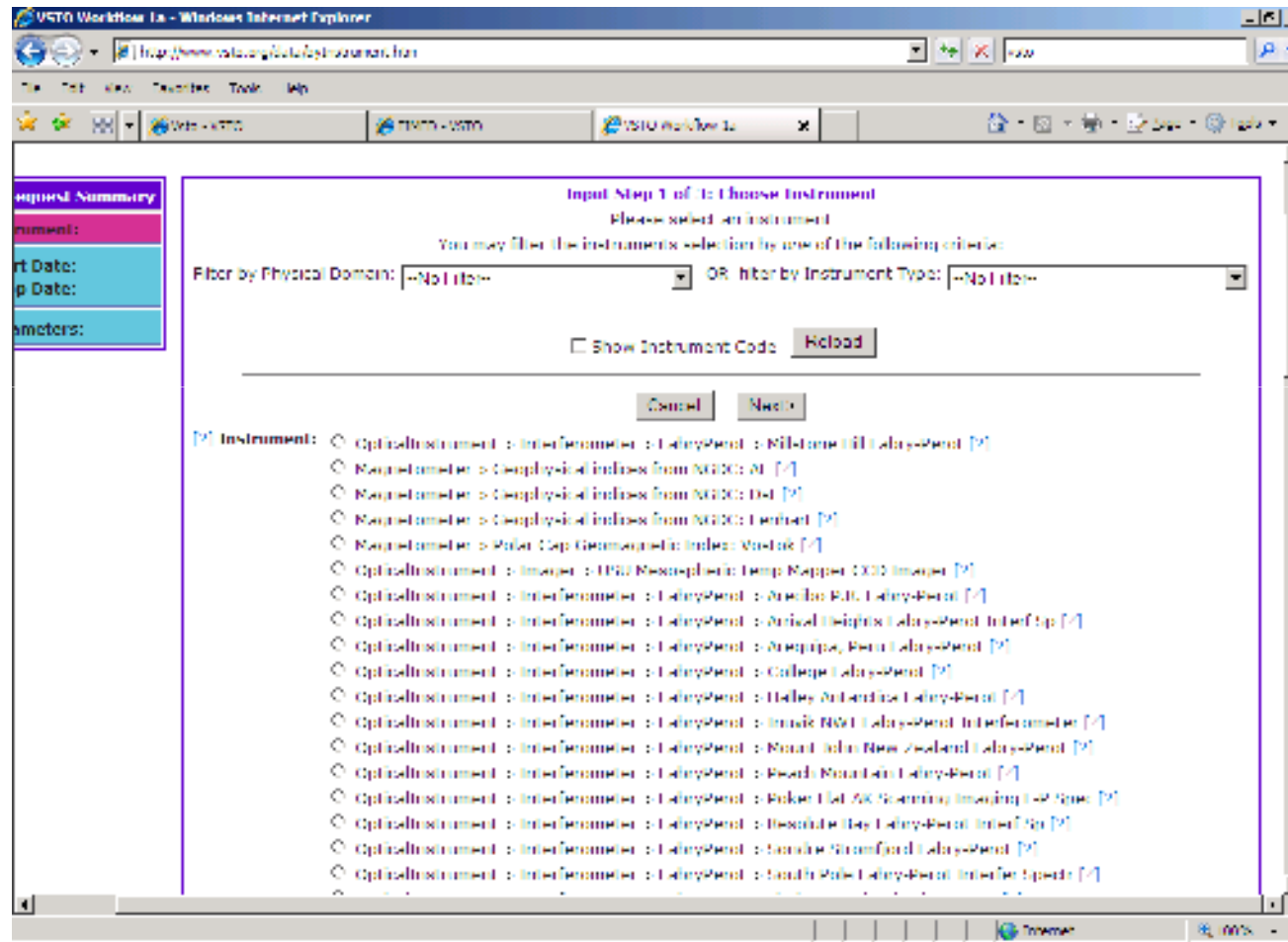
VSTO

VSTO = Virtual Solar Terrestrial Observatory
vsto.hao.ucar.edu, www.vsto.org



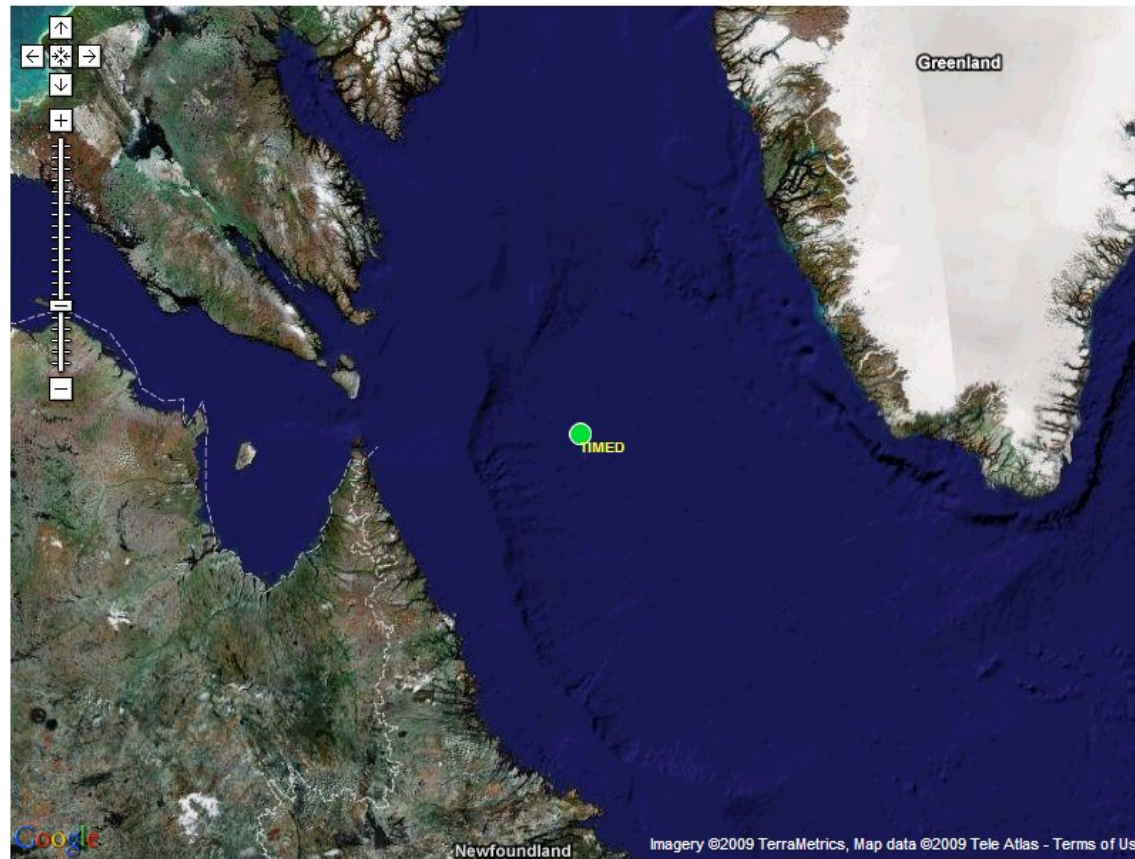
Goal: a unified semantic environment serving data from diverse data archives in the fields of solar, solar-terrestrial, and space physics

VSTO Instrument List (the traditional way)



VSTO Instrument Map

Current Location: 60.71332060, -57.88073222 ([refresh](#))



Real time satellite tracking
Data source: real time query to n2yo.com

Lessons Learned

- Data Integration is the most difficult part
 - Heterogeneity everywhere
 - Data agent/mediator/convertors critical
 - As parser function/shell script/javascript reload/KML feed, etc.
 - Semantic wiki makes it easier
- Both semantics and wiki should be invisible to users
 - Wiki as a light-weight RDF database
 - By Semantic Forms, Templates, Skin and other UI tricks
 - But recoverable if user needs