



## Data Mesh-up and Mapping using Semantic Wiki -- with use cases in RPI Map<sup>1</sup> and VSTO Map<sup>2</sup>

#### Joint Work of Jie Bao, Zheng Jin Guang, Rui Huang, Li Ding Jan 22, 2009

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

## **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 llimit=200 llink=none}} Route;http://shuttles.rpi.edu /data/route.kml }}

Integrate KML file as a map layer

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Main interface

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**RSS** Feed

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- internet

- 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)

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#### **VSTO Instrument Map**



VSTO instrument Map Data source: imported from VSTO instrument ontology http://onto.rpi.edu/wiki/vsto

#### **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