

SWAD-Europe Deliverable 3.9: Developer Workshop Report 3 - A Virtual Workshop

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Abstract:

This report summarises the third SWAD-Europe developer workshop, which was conducted as a virtual online workshop through supporting a series of IRC/email meetings of the W3C RDF Interest Group, on RDF Geographic Information. The first published version was completed 2003-06-15; this second version was updated 2004-07-15.

This report may be updated during the life of the SWAD-Europe project. Readers should also consult the Resources section for newer information or material produced since this workshop report was published.

STATUS:

Completed

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Summary

The third SWAD-Europe workshop was held as a series of virtual sessions, discussing the use of geographic information in the Semantic Web. It brought together developers from a variety of organisations and from the United States and Japan as well as Denmark, France, Italy, the Netherlands and the United Kingdom including individuals who would not have been able to participate in a more traditional physical workshop.

It led to a number of development projects, brought existing developers in contact, and led to the creation or use of ongoing fora (a Wiki page and a mailing list) for discussion of the topic.

Workshop aims

- Investigate the possibility of collaborative work with outcomes comparable to those of a traditional face to face workshop, but without the required investment in travel and physical meeting facilities.
- Focus on the development of RDF for describing places and areas.
- Bring developers in contact with each other.
- Exploit the ease of extending RDF systems to add new information domains.

Outcomes

- After a preliminary discussion focussed on geographical work as part of the followup to the RDF Calendar workshop, three "virtual workshop sessions" took place

RDFIG/SWAD-Europe RDF Geo chats: -

1. 2003-04-16 RDFIG GEO chat [weblog notes](#), [raw IRC log](#)
Topics of discussion:
 - the best scale for GeoOnion and discussion of what 'near' might mean
 - mixing vocabularies for restaurant reviews
 - representing GML/OpenGIS in RDF
 - methods of describing a journey
 - update on Dan Connolly's travel tools
 - discussion of possible mailing list.
2. 2003-04-30 RDFIG GEO chat [weblog notes](#), [raw IRC log](#)
Topics of discussion:
 - SVG bus routes
 - GML and RDF
 - project ideas
 - Noderunner
 - mapping people locations
 - decision to use existing mailing list [\[Geo-List\]](#)
3. 2003-05-28 RDFIG GEO chat [Weblog notes](#), [raw logs](#)
Topic of discussion:
 - GML and RDF update

RDFIG/SWAD-Europe RDF Calendar chat, focussing on geographic issues -

- [weblog notes](#), [raw irc logs](#), [summary notes](#)
- The GeoInfo [\[GeoInfo\]](#) page in the ESW Wiki [\[ESWWiki\]](#) provides an ongoing record of interesting items.

- A decision to use a pre-existing community mailing list [\[GeoList\]](#) for discussing RDF Geographic information.
- A preliminary vocabulary describing geographic information in RDF [\[POS\]](#) which has gained some acceptance as a useful interchange format.

Use cases

Choosing a route

Traveling long distance involves passing through one or other waypoint. Are there ways of finding out what is interesting at each waypoint, to decide which route to select? In traveling long distance there are different possible routes to take. One way of choosing is based on what interesting waypoints are available.

[Opening hours of a thing that has a place](#)

In calendaring applications the use case of finding something that is open at a particular time is well established. An analogous question is finding something that is open in a particular area - for example "is there a restaurant that is open on sunday morning within 3 miles of my house?"

[Describing a journey](#)

When traveling from Melbourne to London by air, a person will stop somewhere. Similarly, when walking from home to a restaurant, a person will pass through many places, which may be of interest. How can we describe a journey so that we know where the person is going to be during their journey, as well as at the beginning and end.

Locating people with similar interests

Many Semantic Web developers were going to be present at the WWW2003 conference in Budapest. Is it possible to identify where in Europe there are people interested in Semantic Web development, or in Geographic information?

Finding a route - trust usecase

I have a friend who drives from Copenhagen to Malmö and back every working day. If I can select routes to Malmö I want to be able to include the possibility of him taking me there from Copenhagen. But neither of us want to offer this information to the world at large. Can I encode it in a route planning system, but require authentication before it is taken into account in creating options?

Use cases which have both Geographic and Calendaring implications -

Meeting Dan

Two people who travel a lot, but would like to schedule a meeting, can try to find a time when they are both free of commitments and can travel to meet each other. However it may be easier to find a time when they are in the same place, whether that is "home" or not - an hour to meet is often easier to fit into an agenda than a day of travel each way plus an hour.

Applicable use cases from the RDF Calendaring Workshop -

Kal Ahmed's usecase - making it easy for the little guy to publish

Kal's usecase was to make it as simple as possible for people to write structured data to the web, at least a bare minimum, so that for example you could find out where and when small touring theatre companies are playing locally. A possible solution might be to create forms of html which could be translated to RDF (an example of this is immediately below).

Jan Grant's usecase - trust and security of information

Jan made a point about security and trust, by suggesting a query: 'find two people in a house worth 200,000 pounds where they're both away for a week'. Even knowing where you are might be valuable information, for example for a CEO. Dan Connolly commented that security is the main focus of a research project at W3C - policies about who gets to see the phone numbers of people going to a meeting and so on.

FAQs

Where are the people working on this field? -

The SWAD-Europe project has begun to gather information on [where Semantic Web developers are](#) - by collecting RDF made publicly available by the developers themselves.

How do I describe scale? -

Different regions are different sizes - and for different applications it is important to be able to specify the relevant scale. A discussion of scale in the ESW Wiki [\[GeoOnion\]](#) might provide some starting points.

How do I make two vocabularies describing places or areas interoperate? -

In the geographic case it seems that the common factor so far has been latitude, longitude, and elevation. Describing areas in common terms is difficult - it might be possible to describe the Vatican City with a single latitude/longitude at an appropriate scale, but it doesn't really make sense for Belgium or France.

One useful approach is to adapt vocabularies for describing polygons, using a latitude/longitude based scale. This can be created by using a mercator projection map of the world, which has a linear scale for latitude and longitude (but not for distance between two points), or plotted (after transforming the scale as appropriate) on almost any kind of map. Being able to work with partially overlapping areas is important.

What's a good way of describing people, locations, events, documents in RDF in an interoperable way? -

This is a tough question, because it's really about being good at modeling information, which itself is pretty difficult. An interesting [xml.com](#) article by Bob DuCharme and John Cowan [\[RDF-Friendly\]](#) illustrates a series of approaches that might be useful, especially if you are used to writing XML documents. Libby Miller wrote a short piece on three practical principles for creating interoperable data with RDF [\[ThreePP\]](#).

The other thing you can do is reuse RDF vocabularies (schemas) where they are available. So for example you could use Dublin Core [\[DC\]](#) to represent information about webpages and other documents; the Friend of a Friend [\[FOAF\]](#) vocabulary or vCard in RDF [\[VCARD\]](#) for people, addresses, relationships. Reusing vocabularies can be difficult if parts of a schema are similar to what you want, but do not quite represent it exactly. RDF has [subClassOf](#) and [subPropertyOf](#) relationships to accommodate these similarities interoperably. These are not currently processed in very many tools but are useful for fixing the meaning of classes and properties precisely, and will likely be used in the future.

How can I easily describe where I am? -

One common technique is to use "Nearest airport" information, like the following (change the **emphasised text** for your details):

```
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:foaf="http://xmlns.com/foaf/0.1/"
  xmlns:contact="http://www.w3.org/2000/10/swap/pim/contact#"
  xmlns:airport="http://www.daml.org/2001/10/html/airport-ont#">
  <foaf:Person>
    <foaf:name>Some Body</foaf:name>
    <foaf:mbox rdf:resource="mailto:me@example.com" />
    <contact:nearestAirport>
      <airport:Airport rdf:about='http://www.daml.org/cgi-bin/airport?AMS'>
        <airport:name>Schiphol, Amsterdam Interational Airport</airport:name>
        <airport:iataCode>AMS</airport:iataCode>
        <airport:icaoCode>EHAM</airport:icaoCode>
        <airport:lat>52.308611111111105</airport:lat>
        <airport:long>4.763888888888889</airport:long>
        <airport:elevation>-11</airport:elevation>
      </airport:Airport>
    </contact:nearestAirport>
  </foaf:Person>
</rdf:RDF>
```

There is a project whose goal is to produce a graphic interface for creating RDF geographic data [\[GraphicGeo\]](#), and a graphic search engine providing a map of people [\[People-Map\]](#) whose location is known. The SWAD-Europe people map [\[SWAD-People-Map\]](#) documentation includes a more detailed discussion of how to create this kind of information, and make sure it can be found.

Conclusions

There is a great deal of interest around geographical data and mixing geographical data with other types of information, such as descriptions of images and events, descriptions of where a person are based and where they are traveling or have travelled. As the usecases described show, there is also interest in using this information, for displaying to the user things that are physically nearby, for displaying 'locative' data on maps, and for processing data to work out, for example, if a meeting is possible between two or more people.

This interest extends well beyond the Semantic Web community to the Web community, which is why work here has focussed on defining an extremely simple schema for latitude and longitude: its simplicity means that it is easy to understand and use for all users. Another focus of discussions has been how to mix this simple vocabulary with other Semantic Web vocabularies, because of the diverse usecases for geographical markup.

Further work would be to extend these usecases to the mobile world, where third generation systems in Europe and GPS technology in the US are pushing interest in mobile 'locative technologies'. Currently these datasources are closed and run as premium services by mobile operators; however as the handsets become more programmable with Java and Python, more opportunities for distributed, community based location and recommendation systems. Similarly, image annotation and mobile technologies together with location information suggest some very interesting applications.

Attendees

Over the three virtual Workshop sessions the following people attended:

1. [┌ Matt Biddulph](#)
2. [┌ Dan Brickley](#)
3. Dan Connolly
4. Ian Davis
5. Morten Frederiksen
6. [┌ Chris Goad](#)
7. Ted Guild
8. Dirk-Willem van Gulik
9. Kaoru Hiramatsu
10. [┌ Kake](#)
11. Bill Kearney
12. [┌ Cédric Kiss](#)
13. Jim Ley
14. [┌ Charles McCathieNevile](#)
15. [┌ Earle Martin](#)
16. Libby Miller
17. [┌ Alberto Reggiori](#)
18. [┌ Richard Soderberg](#)
19. Jo Walsh

Resources

NB: There are many more resources linked from the GeoInfo page [┌ \[GeoInfo\]](#) in the ESW Wiki [┌ \[ESWWiki\]](#).

Schemata and specifications -

Specifying locations

- A spatial ontology [┌ \[Space\]](#) based on the GNS classification codes used at NIMA [┌ \[NIMA\]](#).
- An Ontology of airports [┌ \[DAML-AIR\]](#) collected by Mike Dean from publicly available sources, which includes latitude, longitude, and IATA and ICAO codes.
- A CIA World Fact Book ontology [┌ \[WFB1\]](#) including many regions as classes, and another factbook ontology [┌ \[WFB2\]](#).
- A small ontology for countries [┌ \[Haglich1\]](#) from Peter Haglich which builds on his larger ontology for spatial relations [┌ \[Haglich2\]](#)

Describing Journeys

- A travel itinerary ontology by Jim Dean [\[DEAN\]](#).
- The CYC ontology of common sense transportation terms [\[CYC-Transport\]](#).

Things that have locations

- An English pubs [\[PUBS\]](#) ontology (but without location terms)

More resources are linked from the GeoInfo [\[GeoInfo\]](#) page in the ESW Wiki [\[ESWWiki\]](#).

Projects and tools -

Nearest airports

The nearest airport is one common way of roughly identifying where someone is. Jim Ley's airport locator [\[Jim-Air\]](#) can be used to show where a particular airport is, and his [\[People-Map\]](#) FOAF map of people shows people's location according to the nearest airport. This has been followed up by Cédric Kiss' work [\[GraphicGeo\]](#) on an authoring interface to produce location information.

Journey visualisation

Several people have been developing RDF tools for mapping journeys. Tools to convert a travel agent's information to RDF and then to SVG by Charles McCathieNevile [\[Flight\]](#), travel tools by Dan Connolly [\[Travel-Tools\]](#) (who also wrote and presented a tutorial on his tools [\[Travel-Tutorial\]](#)). A number of visualisation tools have been developed by Jim Ley [\[Jim\]](#).

More resources are linked from the GeoInfo [\[GeoInfo\]](#) page in the ESW Wiki [\[EswWiki\]](#).

References

[GeoInfo]

GeoInfo ESW Wiki page

[\http://esw.w3.org/topic/GeoInfo

[\[ESWWiki\]](#)

ESW Wiki

[\http://esw.w3.org/topic/FrontPage

[\[GeoList\]](#)

Geo mailing list

[\http://lists.burri.to/mailman/listinfo/geowanking

[\[POS\]](#)

Simple RDF Geo schema

[\http://www.w3.org/2003/01/geo/

[\[GeoOnion\]](#)

GeoOnion wiki page

[\http://esw.w3.org/topic/GeoOnion

[\[RDF-Friendly\]](#)

Make Your XML RDF-Friendly, by Bob DuCharme, John Cowan

[\http://www.xml.com/pub/a/2002/10/30/rdf-friendly.html

[\[DC\]](#)

Dublin Core Vocabulary

[\http://purl.org/dc/elements/1.1/

[\[FOAF\]](#)

Friend of a Friend Vocabulary (FOAF)

[\http://xmlns.com/foaf/0.1/

[FOAF-Map]

FOAF People Map, by Jim Ley (SVG)

└ <http://jibbering.com/2002/8/foaf-people-map.svg>

[SPACE]

spacenamespace - Spacial Ontology by Jo Walsh

└ <http://frot.org/space/0.1/index.rdf>

[NIMA]

NIMA

└ <http://earth-info.nga.mil/gns/html/>

[DAML-Airport]

DAML airport ontology by mike Dean

└ <http://www.daml.org/2001/10/html/airport-ont>

[WFB1]

CIA World Fact Book Ontology

└ <http://www.daml.org/ontologies/129>

[WFB2]

CIA World Fact Book Ontology

└ <http://www.daml.org/ontologies/245>

[Haglich1]

A small ontology for countries by Peter Haglich

└ <http://isx.com/~phaglic/countries2.rdf>

[Haglich2]

A larger ontology for spatial relations by Peter Haglich

└ http://ontologies.isx.com/onts/isx_basic_onts/isxlocusont.daml

[DEAN]

A travel itinerary ontology by Jim Dean

└ <http://www.daml.org/ontologies/178>

[CYC-Transport]

The cyc ontology of common sense transportation term

└ <http://www.cyc.com/cycdoc/vocab/transportation-vocab.html>

[PUBS]

An English pubs ontology

└ <http://www.daml.org/ontologies/180>

[Jim-Air]

Jim Ley's airport locator

└ <http://jibbering.com/foaf/airports.1?LHR>

[Flight]

Tools to convert a travel agent's information to RDF and then to SVG

└ <http://www.w3.org/2002/08/flight/>

[Travel-Tools]

RDF Travel tools by Dan Connolly

└ <http://www.w3.org/2000/10/swap/pim/travel>

[Travel-Tutorial]

RDF Travel Tools tutorial by Dan Connolly

└ <http://www.w3.org/2003/Talks/0520-www-tf1-d3-travel/>

[ThreePP]

Three practical principles for creating interoperable data with RDF

└ <http://ilrt.org/discovery/2002/04/query/#one>

[VCARD]

vCard in RDF

└ <http://www.w3.org/TR/vcard-rdf>

[GraphicGeo]

A graphic interface for creating RDF geographic data by Cedric Kiss

└ <http://www.w3.org/2001/sw/Europe/200306/geo/>

[SWAD-People-Map]

SWAD-Europe people map documentation

<http://www.w3.org/2001/sw/Europe/200303/geo/intro.html>

[Jim]

Jim ley's website

<http://jibbering.com>