Open Geospatial Consortium

OGC GeoSPARQL SWG Charter

Copyright notice

To: OGC members & interested parties

A new OGC Standards Working Group is being formed. The OGC members listed below have proposed the OGC GeoSPARQL SWG. The SWG proposal provided in this document meets the requirements of the OGC Technical Committee (TC) Policies and Procedures.

The SWG name, statement of purpose, scope, list of deliverables, audience, and language specified in the proposal will constitute the SWG's official charter. Technical discussions may occur no sooner than the SWG's first meeting.

This SWG will operate under the OGC IPR Policy. The eligibility requirements for becoming a participant in the SWG at the first meeting (see details below) are that:

- You must be an employee of an OGC member organization or an individual member of OGC;
- The OGC member must have signed the OGC Membership agreement;
- You must notify the SWG chair of your intent to participate to the first meeting. Members may do so by logging onto the OGC Portal and navigating to the Observer page and clicking on the link for the SWG they wish to join and;
- You must attend meetings of the SWG. The first meeting of this SWG is at the time and date fixed below. Attendance may be by teleconference.

Of course, participants also may join the SWG at any time. The OGC and the SWG welcomes all interested parties.

Non-OGC members who wish to participate may contact us about joining the OGC. In addition, the public may access some of the resources maintained for each SWG: the SWG public description, the SWG Charter, Change Requests, and public comments, which will be linked from the SWG's page.

Please feel free to forward this announcement to any other appropriate lists. The OGC is an open standards organization; we encourage your feedback.

Chapter 1. Purpose of the Standards Working Group

The purpose of this SWG is to revise, and likely extend, the GeoSPARQL standard.

Its overall mission is to ensure that the features of GeoSPARQL remain up-to-date with the Semantic Web community whose needs now outstrip the current content of GeoSPARQL.

This revision will likely result in a major update of GeoSPARQL that will form a new base Semantic Web standard for people working with spatial data. This should include consideration of backwards-compatibility with GeoSPARQL 1.0 as part of its requirements.

Chapter 2. Business Value Proposition

Since the release of GeoSPARQL [1] in 2012, there has been growth of both the Semantic Web and spatial information represented in Semantic Web [2] form. GeoSPARQL is widely used for spatial Semantic Web data and systems so it is clearly a success.

As with many standards/systems that are developed and then see wide use, suggestions for enhancements and extensions are made by users as they extend beyond the domain of the original standard's creators. Perhaps also, new knowledge or technical developments since the initial standard allow for new possibilities.

2.1. Value to the OGC

To maintain its place as the premier way of representing spatial information in the Semantic Web, a major update of GeoSPARQL will need to be created to incorporate both ontology constructs that users have found useful but have had to implement elsewhere and, optimally, constructs that will allow for formulaic future extension and the use of GeoSPARQL with related domain ontologies, perhaps such as the OGC & W3C's Time ontology in OWL [3]. If it can do this, the GeoSPARQL update will assist the OGC in "advancing geospatial location information and services" for the Semantic Web and the related mechanics of Linked Data that are growing in their use.

2.2. Value to the OGC Membership

OGC members themselves are increasingly using Semantic Web approaches to answer questions involving the Internet and Internet data. For example, recent Testbed activity (Testbed 16: Discrete Global Grid System [4]) is considering RDF back-ends and data exchange mechanisms for DGGS implementations. Enhancing the OGC's own standard for spatial Semantic Web data will therefore assist OGC members to make the most use of spatial + Semantic Web. OGC members will not have to implement their own, non-standard, handling of spatial concept representation not handled by GeoSPARQL.

2.3. Value to the geospatial community

The larger geospatial community will benefit from the OGC continuing to lead in the spatial + Semantic Web space as this will provide a cohesiveness of approach (standardisation) to spatial + Semantic Web, and also the sharing of best practices where community members can learn from early implementers. Also, without this GeoSPARQL enhancement, the geospatial community using the Semantic Web will not have a clear indication that there is a lead body in this field (the OGC) and thus no obvious place to go for community discussion. Seen negatively: if the OGC is not seen to be continuing its leadership in the growth area of the Semantic Web, it will erode its member base as geospatial community members look elsewhere for leadership.

2.4. Value to the wider IT community

This wider IT community is growing its volumes of spatial data as spatially-enabled devices and services continue to grow. The wider IT community is also expanding its use of the Semantic Web

with large-scale initiatives such as schema.org, applying Semantic Web approaches to large numbers of Internet information publishers. Due to these two trends, the combination of spatial + Semantic Web is becoming more mainstream. This means the OGC can potentially grow its membership as new wider IT community members become spatial + Semantic Web community members.

Chapter 3. Scope of Work

This Scope of Work is motivated by outstanding change requests for the existing OGC GeoSPARQL standard and a revision is required. The change requests have been submitted to the OGC Standards Tracker. Initially, review and prioritization of these change requests will be conducted by the SWG followed by work to create a candidate revision of the standard for public review. During and after public review, the SWG will consider submissions to further enhance GeoSPARQL and alignments with it to other, related, standards. A final GeoSPARQL revision will then be submitted for consideration by the OGC as a new or revised standard.

3.1. Statement of relationship of planned work to the current OGC standards baseline

The scope of this proposed SWG is only the revision of the current GeoSPARQL standard. This revision may result in both specific enhancements - to cater for community requirements - and also a revision of the "upper ontology" structuring of GeoSPARQL - to provide direction for future enhancements and alignments with other ontologies.

There are possible alignments of a future GeoSPARQL to other ontologies, perhaps the W3C and OGC's Time ontology in OWL.

There are possible relationships between a future GeoSPARQL and newer types of spatial referencing systems like Discrete Global Grid Systems (DGGSs).

There are possible alignments of a future GeoSPARQL with advancements in Coordinate Reference Systems that will need to be considered in consultation with related working groups.

3.2. What is Out of Scope?

Out of scope is work that does not result in a revised GeoSPARQL standard.

3.3. Specific Existing Work Used as Starting Point

- GeoSPARQL (https://www.opengeospatial.org/standards/geosparql)
- GeoSemantics DWG's White Paper on "OGC Benefits of Representing Spatial Data Using Semantic and Graph Technologies" (https://github.com/opengeospatial/geosemantics-dwg/tree/master/white_paper)

GeoSemantics DWG's suggestions for spatial ontology investigations:

- OGC & W3C's Time Ontology in OWL [3]
- CRMgeo v1.4 (https://github.com/erlangen-crm/ecrmgeo)
- GeoSPARQL Extensions Ontology [5]
- ISO's TC-211 Group on Ontology Management ontology repository (https://github.com/ISO-TC211/GOM/)

3.4. Is This a Persistent SWG

[x] YES

[ ] NO

3.5. When can the SWG be Inactivated

The SWG can be inactivated once the final standard has been developed and change requests become minimal or not applicable for consideration. The SWG can be re-activated at any time.

Chapter 4. Description of deliverables

This SWG aims to revise and extend the GeoSPARQL standard.

Initial goals of the working group are to incorporate several major and minor extension proposals to the GeoSPARQL standard which have been summarized in a published OGC white paper and were collected on the OGC Standards Tracker.

Some of the proposed extensions include support for additional geospatial literal types, and support for coverage data, spatiotemporal representations and different semantic representations of CRS.

To organize the working group we propose the following preliminary schedule:

- 1st meeting: Review and prioritization of issues submitted to the OGC Standards Tracker
- Next months: Work towards a candidate standard for public review
- Release of the candidate standard for public review
- Iterative approach to improve the candidate standard by considering comments and further upcoming issues
- Final revision of the standard
- Recommendation of the final standard to the OGC

4.1. Initial Deliverables

The initial deliverables are based on the initial selection and prioritization of issues from the OGC Standards tracker. This selection will be determined in the first meetings of the working group and subsequently updated in this working group charter.

After deciding on the initial issues to be worked on, each issue will become a deliverable and included in this charter document.

4.2. Additional SWG Tasks

Additional SWG tasks will be added iteratively when new change requests and issues become apparent or gain priority. The SWG is planned as a long term working group so that new change requests may arise during the development of the initial deliverables. These will be prioritized and periodically classified as additional SWG tasks.

Chapter 5. IPR Policy for this SWG

[x] RAND-Royalty Free

[ ] RAND for fee

Chapter 6. Anticipated Audience / Participants

The anticipated audience is:

- implementors of Semantic Web systems that support, or plan to support, spatial data

- integrators of spatial data on the web

- developers and data modellers using graph database systems for spatial data

We hope that this enhanced version of GeoSPARQL will be widely applicable as a spatial concepts and data representation model. It is expected to be of great interest to those implementing specialised or partly spatial Internet systems that need to share information with others due to its native web-based and inherently extensible form (as per all Semantic Web applications).

Chapter 7. Domain Working Group Endorsement

The Chairs of the Geosemantics Domain Working Group (DWG), Joseph Abhayaratna and Linda van den Brink, do formally endorse the formation of the GeoSPARQL Standards Working Group (SWG).

Chapter 8. Other informative information about the work of this SWG

8.1. Collaboration

The GeoSPARQL SWG will use

- Project Related Documentation;
- Creation and management of outstanding work items, using Standards Tracker as the authoritative register;
- Prioritisation of work items into iterations of work; and
- The Standard Document itself.

It is proposed that the work of this SWG be conducted openly on GitHub, as the work of the motivating GeoSemantics DWG is.

8.2. Similar or Applicable Standards Work (OGC and Elsewhere)

The following standards and projects may be relevant to the SWG's planned work, although none currently provide the functionality anticipated by this working group's deliverables. The SWG intends to seek and if possible maintain liaison with each of the organizations that manage these activities.

8.2.1. W3C Linked Building Data Community Group

Scope of Activity

This group brings together experts in the area of building information modelling (BIM) and Web of Data technologies to define existing and future use cases and requirements for linked data based applications across the life cycle of buildings. A list of recommended use cases will be produced by this community group. The envisioned target beneficiaries of this group are both industrial and governmental organisations who use data from building information modelling applications and other data related to the building life cycle (sensor data, GIS data, material data, geographical data, and so forth) to achieve their business processes and whom will benefit from greater integration of data and interoperability between their data sets and the wider linked data communities. [15]

Web Site(s)

- https://www.w3.org/community/lbd/

Source Repositories

- https://github.com/w3c-lbd-cg/lbd

Liaisons

- Mathias Bonduel
- Kris McGlinn
- Anna Wagner

8.2.2. ISO/IEC JTC 1/SC 32/WG 3

Scope of Activity

SC 32 provides enabling technologies to promote harmonization of data management facilities across sector-specific areas. Specifically, SC 32 standards include:

reference models and frameworks for the coordination of existing and emerging standards; definition of data domains, data types, and data structures, and their associated semantics; languages, services, and protocols for persistent storage, concurrent access, concurrent update, and interchange of data; methods, languages, services, and protocols to structure, organize, and register metadata and other information resources associated with sharing and interoperability, including electronic commerce. [16]

Web Site(s)

- TBD

Source Repositories

- TBD

Liaisons

- Joseph Abhayaratna
- Nicholas Car

8.3. Other Related Work

This proposed SWG is to enhance an existing OGC standard - an ontology - however the Best Practices for ontology publication have changed since the original GeoSPARQL publication. The ontology publication methods of other standards bodies, particularly the W3C who continuously generates new standard ontologies, will be considered to determine appropriate, Best Practice, ontology publication.

This may include the use of tools to automatically generate human-readable ontology versions from the technical ontology artifact, such as those used by inputs to this work, for example the GeoSPARQL Extensions Ontology.

It may also include the description of a next version of GeoSPARQL as a **profile** (of GeoSPARQL 1.0 and perhaps other ontologies) as well as an ontology, in line with recent work by OGC members and others to establish standard ways of indicating the dependencies between standards, as per The Profiles Vocabulary.

8.4. Details of first meeting

The first meeting of the SWG will be held by telephone conference call at 6AM EDT on the first Thursday immediately following the week of Technical Committee approval of this Charter. Call-in information will be provided to the SWG's e-mail list and on the portal calendar in advance of the meeting.

8.5. Projected on-going meeting schedule

The work of the SWG will be carried out primarily by email and conference calls, possibly every two weeks, with face-to-face meetings perhaps at each of the OGC TC meetings.

8.6. Supporters of this Charter

The following people support this proposal and are committed to the Charter and projected meeting schedule. These members are known as SWG Founding or Charter members. The charter members agree to the SoW and IPR terms as defined in this charter. The charter members have voting rights beginning the day the SWG is officially formed. Charter Members are shown on the public SWG page.

J. Abhayaratna	PSMA Australia
N.J. Car	SURROUND Australia Pty Ltd
T. Homburg	Mainz University Of Applied Sciences
F. Knibbe	
L.E. van den Brink	Geonovum

8.7. Conveners

Name	Organization
J. Abhayaratna	PSMA Australia
L.E. van den Brink	Geonovum

Chapter 9. References

[1] Web: OGC: OGC GeoSPARQL - A Geographic Query Language for RDF Data, http://www.opengis.net/doc/IS/geosparql/1.0 (2012)

[2] Web: W3C: Semantic Web, https://www.w3.org/standards/semanticweb/

[3] Web: OGC & W3C: Time ontology in OWL, https://www.w3.org/TR/owl-time/

[4] Web: OGC: OGC Testbed-16: Call for Participation (CFP) - 2.7. Discrete Global Grid System (DGGS), https://portal.ogc.org/files/?artifact_id=91644#DGGS

[5] Web: Car, Nicholas J. & Cox, Simon J.D.: GeoSPARQL Extensions Ontology, http://linked.data.gov.au/def/geox