

**TITLE: Groundwater Standards Working Group Charter**

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**CATEGORY: SWG Charter**

To: OGC members & interested parties

A new OGC Standards Working Group is being formed. The OGC members listed below have proposed the OGC Groundwater SWG. The SWG proposal provided in this document meets the requirements of the OGC 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 2007 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.

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## 1. Groundwater SWG

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A significant portion of the global water supply can be attributed to groundwater resources. Effective management of such resources requires the collection, management and delivery of related data, but these are impeded by issues related to data availability, distribution, fragmentation, and heterogeneity: collected data are not all readily available and accessible, available data is distributed across many agencies in different sectors, often thematically fragmented, and similar types of data are diversely structured by the various data providers. This situation holds both within and between political entities, such as countries or states, thereby impairing groundwater management across all jurisdictions. Groundwater data networks are an emerging solution to this problem as they couple data providers through a unified data delivery vehicle, thus reducing or eliminating distribution, fragmentation, and heterogeneity through the incorporation of standards for data access and data content. The relative maturity of OGC data access standards, such as the Web Feature Service (WFS) and Sensor Observation Service (SOS), combined with the rise of water data networks, have created a need for GroundWaterML2 (GWML2), a common groundwater data specification.

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## 2. Purpose of this Standards Working Group

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The Groundwater (GW) SWG aims to:

1. Develop a data exchange standard for the groundwater domain. The standard is to be known as GroundWater Markup Language 2 (GWML2) and will consist of conceptual and logical information models, as well as language specific implementations, which initially minimally include a GML-XML encoding specification.
2. Maintain and update the standard once established.

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## 3. Business Value Proposition

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GWML2 is part of the suite of water-related standards being designed by the Hydro Domain Working Group. It complements related standards, such as the WaterML2 suite, by providing a standard encoding of subsurface hydro features. This is vital to the representation of the water cycle, because it enables integration of these features with other key entities such as subsurface observations as well as corresponding surface water features and observations.

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## 4. Scope of Work

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This SWG builds on the results of the GroundWater 2 Interoperability Experiment (GW2IE), which was carried out by numerous prominent institutions from North America, Europe, and Australasia. In particular, the engineering report (OGC 15-082) developed by the GW2IE will serve as a draft specification for GWML2. As such the Scope of the Work (SoW) for this SWG involves:

- Response to existing change requests outstanding from the GW2IE;
- Revision of the GW2IE Engineering report for submission as an OGC specification;
- Submission for public comment;
- Collection, evaluation, and response to comments received;
- Submission of revised document for adoption by OGC membership;
- Maintenance and updating of standard, as required.

## **4.1 Statement of relationship of planned work to the current OGC standards baseline**

The intended scope of this standard does not overlap with existing OGC standards. It does re-use several standards via import of select components, thereby maintaining dependencies on these standards:

- Observations & Measurements (ISO 19156 / OGC 10-004r3)
- OMXML (OGC 10-025r1)
- sweCommon (OGC 08-094r1)
- GML ISO 19136:2007 (OGC 07-036)
- WaterML2: Part1 (OGC 10-126r4)
- TimeseriesML 1.0 (OGC 15-042r1)
- Timeseries Profile of Observations and Measurements (OGC 15-043r1)
- Modular Specification (OGC 08-131r3)
- Metadata (OGC )

Existing OGC standards do not focus on groundwater (i.e. hydrogeological) features. Rather, water-related standards focus on time series observations or hydrologic features.

## **4.2 What is Out of Scope?**

- Any items designated as out of scope, or deferred to future versions, in the GW2IE Final Report (OGC-15-082).
- Testing and implementation already carried out during GroundWater2 IE.
- Any features not central to the groundwater domain.

## **4.3 Specific Contribution of Existing Work as a Starting Point**

A complete draft specification for GWML2 is presented in the GW2IE Final Report (OGC 15-082). This draft specification has also been extensively tested and evaluated in the GW2IE by key international data providers. Thus, the existing work is at a mature stage for migration to an accepted OGC standard.

## **4.4 Determination of SWG Completion**

The GW SWG is persistent. Criteria for completion of the first version (as per section 2.1) involves:

- Development and circulation of a candidate standard for public comments;
- Public comments addressed to the satisfaction of the SWG;
- Approval of the candidate standard by the SWG;
- Approval of the candidate standard as an adopted standard by the OGC TC.
- Approval of the candidate standard as an adopted standard by the OGC PC.

Note: all approvals require that comments returned to the SWG by the approving bodies are adequately addressed.

## **4.5 Is this a persistent SWG?**

Yes  No

## **4.6 When can SWG be dissolved?**

Not Applicable.

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## 5. Description of Deliverables

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The SWG will deliver an initial standards specification for GWML2 conforming to the OGC modular specification, and further revisions as required. The specification will include a conceptual model, logical model, GML-XML encoding guidelines and tests, and example encodings.

Preliminary schedule:

- Dec 2015: Charter Acceptance (OGC TC in Sydney, AU) and begin Public Comment Period.
- Jan 2016: End Public Comment Period: 30 days immediately following Charter Acceptance.
- Feb 2016: Start Date: date of OGC SWG approval after Public Comment Period.
- April 2016: Revisions completed (60 days after Start Date).
- May 2016: Final submission to Membership
- June 2016: vote by membership at OGC TC Dublin.

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## 6. IPR Policy for this SWG

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RAND-Royalty Free.  RAND for fee

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## 7. Anticipated Participants

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The anticipated participants in the Groundwater SWG include submitters of the GW2IE Engineering Report OGC 15-082, which describes the draft GW2ML specification and its testing:

- a) Geological Survey of Canada (GSC-NRCan), Canada
- b) U.S. Geological Survey (USGS), United States of America
- c) Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia
- d) Bureau of Meteorology (BOM), Australia
- e) Federation University Australia (FedUni), Australia
- f) Bureau de Recherches Géologiques et Minières (BRGM), France
- g) Salzburg University (U Salzburg), Austria

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## 8. Other Informative Remarks about this SWG

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

The following standards and projects are related efforts, dedicated for use within specific communities, rather than having international reach:

- NRCan GWML1
- INSPIRE D2.8.II.4 Data Specification on Geology
- CGI-IUGS GeoSciML 3.2
- OGC GeoSciML SWG

The SWG intends to seek and if possible maintain liaison with each of the organizations above. In addition, this SWG will coordinate with other HDWG SWGs in the WaterML2 suite (e.g. Ratings and Gauges, HY\_Features) to ensure compatibility and integration.

b. Details of the First Meeting

The first meeting of the SWG will be held within the two weeks following approval to initiate the SWG. Call-in information will be provided to the SWG's e-mail list and on the portal calendar in advance of the meeting.

c. 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 OGC TC meetings as needed.

d. Supporters of the Proposal (Charter Members)

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. Extend the table as necessary.

Name	Organization
Boyan Brodaric Eric Boisvert	GSC
Jessica Lucido Nate Booth	USGS
Bruce Simons	CSIRO
Peter Dahlhaus	FedUni
Sylvain Grellet Laurence Chery	BRGM
Alexander Knoch	U Salzburg

e. Convener(s)

All supporters named in (d) above are also conveners of this SWG.