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Open Geospatial Consortium

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OGC Observations and measurements Standards Working Group Charter

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To: OGC members & interested parties

A re-charter and re-naming of a OGC Standards Working Group is being proposed. The OGC members listed below have proposed to rename the "Observations and Measurements v2 Standards Working Group" to the "Observations and measurements Standards Working Group" (O&M SWG), and revise the SWG Charter to reflect the modified scope of the work. 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 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 O&M standard was originally conceived within the OGC Sensor Web Enablement Initiative in 2003-2007 and version 2.0 was co-published as the OGC Abstract Specification Topic 20 and ISO 19156:2011. The latest version of OGC Abstract Specification Topic 20 is from 2013, and among other things, it requires revising to accommodate technical issues discovered in various standard implementations and harmonization with recent W3C/OGC standardization work on sensor network terminology and concepts defined in the Semantic Sensor Network (SSN) and Sensor, Observation, Sample, and Actuator (SOSA) ontologies.

The revision work of OGC Abstract Specification Topic 20/ISO 19156 was agreed by both OGC and ISO/TC 211 in July 2018. This work will be carried out within ISO/TC 211 with support from the O&M SWG to ensure that:

- the concerns and requirements identified by OCG and ISO members are attended to;
- the final document is suitable as an OGC Standard as well as an ISO Standard; and
- the revised version of the ISO 19156 Standard gets published as a revised OGC Abstract Specification Topic 20 document.

In addition to supporting the ISO 19156 revision work of ISO/TC 211, the purpose of the OGC Observations and measurements SWG is to revise existing and draft new OGC Standards considering the encoding of the O&M conceptual models.

This Standards Working Group evaluates and resolves submitted Change Request Proposals (CRPs) considering the OGC O&M Implementation Standards and drafts new OGC Candidate Standards considering encoding of spatial data following the O&M conceptual models.

The SWG SHALL ensure that all changes are consistent with the OGC standards baseline and business plan.

Chapter 2. Business Value Proposition

Standards based exchange of observed, measured or modeled data are key enablers for many critical online consumer and governmental services. Examples of these data sets include weather, air quality and other kinds of environmental observations and forecasts, traffic monitoring data, health monitoring, building and construction safety measurements, various remote sensing data, and industrial process monitoring. The Observations and measurements Standard (OGC Abstract Specification Topic 20/ISO 19156:2011, O&M) defines a conceptual level data model for these datasets.

The OGC Observations and Measurements - XML Implementation (OGC 10-025r1) Standard defines an XML encoding for the concepts defined in OGC Abstract Specification Topic 20 and thus needs to be revised to accommodate the changes made in the revised OGC Abstract Specification Topic 20.

In addition to the revision of the O&M XML Implementation Standard, there is an identified need to standardize an O&M data encoding for the formats like JSON/GeoJSON preferred in modern Web APIs including the ones conforming to the OGC API - Features - Part 1: Core Standard (OGC 17-069).

Both the Observations and Measurements conceptual data model and its standardized XML encoding (OGC 10-025r1) are used extensively in Spatial Data Infrastructures such as in the EU INSPIRE. There is also an on-going work for providing INSPIRE O&M data sets also in JSON/GeoJSON based formats, but no standard has yet been identified describing an interoperable way of doing this.

Chapter 3. Scope of Work

The Scope of Work of the O&M SWG is described as follows.

- Review changes proposed to the standard and cooperate with ISO/TC 211 in a timely manner.
- Collect Change Request Proposals (CRPs) submitted by OGC members, evaluate each of these proposals, and handle of them in a manner which is consistent with OGC processes respecting the liaison arrangement with ISO/TC 211. This shall be achieved by either:
  - conferring on the change request content with the relevant group of ISO/TC 211 for processing if the CRP is found to impact the O&M conceptual model; or
  - considering the change request within the SWG if the CRP impacts an extension, encoding, or profile of the core O&M concepts.
- Define and document new OGC candidate standards for encoding O&M concepts defined in the OGC Abstract Specification Topic 20 applicable for use cases which not supported well by the existing encoding standards.

For the revised OGC Standards, the SWG will make edits to the standard documents based on CRPs and related decisions of the SWG membership. The SWG, at their discretion, may also ask the membership for any additional change requests that have not been previous submitted.

The final deliverables of the SWG SHALL be revisions of an existing OGC Standards and new Candidate OGC Standards for consideration by the membership for adoption.

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

As regards to the revision of the OGC Observations and Measurements - XML Implementation (OGC 10-025r1) Standard, both the changes in the O&M conceptual model defined in the revised OGC Abstract Specification Topic 20 and any OGC CRPs targeting 10-025r1 and submitted before the cut-off date of 30 September 2019 will be considered. The Sensor Observation Service Interface Standard (SOS) directly refers to the OGC 10-025r1 and its XML Schemas. Revising the SOS standard is out-of-scope of the O&M SWG, but the O&M SWG will keep the SWE Umbrella SWG updated on the changes proposed for the O&M XML Implementation Standard.

Other encodings of the O&M concepts have been discussed in OGC Observations and Measurements – JSON implementation Discussion Paper (15-100r1) and informally in the OGC Observations and Measurements - Simple Feature model & encodings project (OMSF). OGC SensorThings API Part 1: Sensing (15-078r6) also includes an JSON encodings for O&M concepts defined in the OGC Abstract Specification Topic 20 conceptual model. These and any other documents considered relevant by the SWG membership will be used as inputs for drafting the OGC candidate standard O&M JSON encoding.

3.2. What is Out of Scope?

The scope of the O&M SWG is in data models and encodings. Thus activities aiming at

standardization of data access patterns or services is out of scope. In the cases where programmatic access and management O&M data requires or would benefit from special treatment within the context of a particular OGC APIs or other access methods, the O&M SWG SHALL raise these issues in discussions with the SWGs responsible for these APIs or other access methods.

The OGC Abstract Specification Topic 20 / ISO 19156 Standard is normatively referred to in several OGC Standards and other documents, including, but not limited to the following:

- Sensor Observation Service Interface Standard (12-006);
- SensorThings API Part 1: Sensing (15-078r6);
- SensorThings API Part 2: Tasking Core (17-079r1);
- Timeseries Profile of Observations and Measurements (15-043r3);
- OGC Abstract Specification Topic 21: Discrete Global Grid Systems Abstract Specification (15-104r5);
- OGC® WaterML 2.0: Part 1 - TimeseriesWaterML (10-126r4);
- OGC® WaterML 2.0: Part 2 - Ratings, Gaugings and Sections (15-018r2);
- OGC® WaterML 2: Part 3 - Surface Hydrology Features (HY_Features) - Conceptual Model (14-111r6);
- OGC WaterML 2: Part 4 – GroundWaterML 2 (GWML2) (16-032r2); and
- OGC® Geoscience Markup Language 4.1 (GeoSciML) (16-008).

The O&M SWG will summarize the changes made in the revised OGC Abstract Specification Topic 20 and make this information available to the OGC TC and/or SWGs responsible for maintaining these Standards. However, suggesting or making revisions to the existing OGC Standards normatively referring to the OGC Abstract Specification Topic 20, apart OGC Observations and Measurements - XML Implementation (10-025r1), is out-of-scope of the O&M SWG.

The O&M SWG may not consider Change Request Proposals submitted for the the Abstract Specification Topic 20 (10-004r3) or OGC Observations and Measurements - XML Implementation (10-025r1) after the cut-off date of 30 September 2019. Any CRPs submitted after the cut-off date will be regarded as future work unless the O&M SWG explicitly decides to address then as part of the revision work outlined in the Initial Deliverables.

3.3. Specific Existing Work Used as Starting Point

The following documents are relevant to the work of the O&M SWG (see References for precise reference information):

- OGC Abstract Specification Topic 20: Observations and measurements (10-004r3) also known as ISO 19156:2011;
- OGC Observations and Measurements - XML Implementation, version 2.0 (10-025r1);
- OGC Observations and Measurements – JSON implementation Discussion Paper (15-100r1);
- SensorThings API Part 1: Sensing (15-078r6);
- Timeseries Profile of Observations and Measurements (15-043r3);

- W3C Semantic Sensor Network Ontology specification (SSN);
- W3C Extensions to the Semantic Sensor Network Ontology proposal (SSN-extensions);
- OGC Observations and Measurements - Simple Feature model & encodings project (OMSF);
- OGC Engineering report of the Environmental Linked Features Interoperability Experiment (ELFIE); and
- OGC Engineering report of the Second Environmental Linked Features Interoperability Experiment (SELFIE, unpublished at the time of writing)

3.4. Is This a Persistent SWG

[x] YES

[ ] NO

Chapter 4. Description of Deliverables

The deliverables for the O&M SWG will consist of both revisions of an existing OGC Standards and new OGC Candidate Standards.

4.1. Initial Deliverables

- New version of the OGC Abstract Specification Topic 20: Observations and measurements content-wise identical to the revised ISO 19156. The role of the O&M SWG in this task is to coordinate the co-publication with the ISO/TC 211 and the OGC Staff.
- New version of the OGC Observations and Measurements - XML Implementation Standard document and the XML Schema. The version number of the new version will be decided after evaluating the backwards compatibility of the included changes.
- New OGC Candidate Standard for OGC Observations and Measurements - JSON Implementation Standard document and the possible validation rules for JSON content.

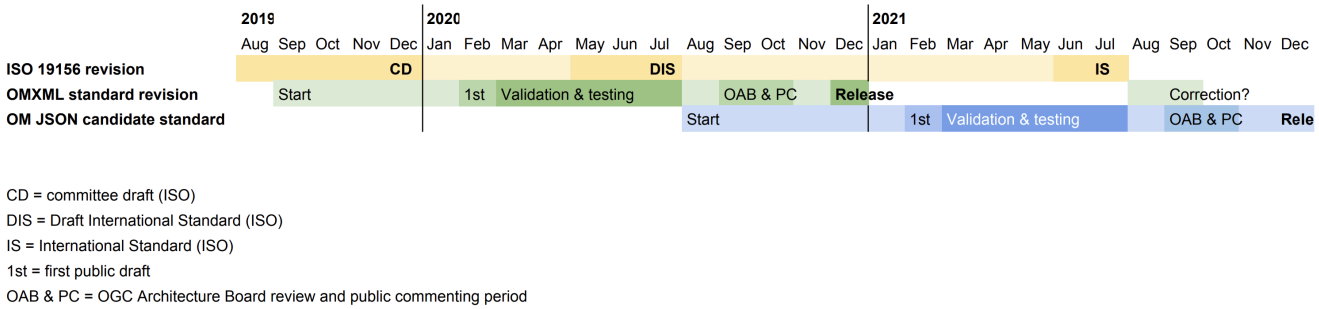

Image 1: Overview timeline for the initial deliverables

4.1.1. ISO 19156 / OGC Abstract Specification Topic 20 revision

The current ISO/TC 211 target dates for the revision of ISO 19156 are as follows:

- End of December 2019: Committee draft (CD) registered;
- July 2020: Draft International Standard (DIS) registered; and
- July 2021: International Standard (IS) published.

It is expected that the final version of the OGC Abstract Specification Topic 20 will be ready for publishing in summer 2021.

4.1.2. O&M XML Implementation Standard revision

The preliminary timeline for the revision of the O&M XML Implementation Standard (10-025) is as follows:

- September 2019: Start of the revision work;
- February 2019: First draft version made publicly available;
- April - July 2020: Validating the feasibility of the proposed changes in an OGC Innovation

Program activity;

- September 2020: OAB review and release of the revised standard for the public comment period;
- October 2020: Public commenting period comments consolidated;
- November 2020: Final edits made based on the public commenting period and the experiences and feedback from the OGC Innovation Program activity;
- December 2020: Target date recommending the release of the revised Standard referring to the DIS version of the revised ISO 19156; and
- September 2021: Corrigendum with references to the DIS version changed to point to the IS version of the revised ISO 19156.

4.1.3. O&M JSON Implementation Candidate Standard

The preliminary timeline for the revision of the O&M JSON Implementation Candidate Standard is as follows:

- August 2020: Start of the drafting work;
- February 2021: First draft version made publicly available;
- April - July 2021: Validating the feasibility of the proposed encoding(s) in an OGC Innovation Program activity;
- September 2021: OAB Review and release of the standard for the public comment period;
- October 2021: Public commenting period comments consolidated;
- November 2021: Final edits made based on the public commenting period and the experiences and feedback from the OGC Innovation Program activity; and
- December 2021: Target date recommending the release of the Candidate Standard.

4.2. Additional SWG Tasks

To be added with each new task approval request per the OGC TC Policies and Procedures.

Chapter 5. IPR Policy for this SWG

[x] RAND-Royalty Free

[ ] RAND for fee

Chapter 6. Anticipated Audience / Participants

People interested in capturing and exchange observed, measured or modeled data. This includes data modelers, data owners and users of observation data from multiple sources and interfaces, including historical and near-real time data visualization, analytics and phenomenon detection.

It is important to involve experts with experience from the using the OGC Abstract Specification Topic 20 conceptual models and its XML implementation as defined in the OGC 10-025r1 as well as people familiar with the modern Web API use cases.

In order to ensure seamless mutual co-operation and information flow in making the requested changes in OGC Abstract Specification Topic 20 and its OGC Implementation Standards, the O&M SWG chair is also acting as the project lead in the ISO 19156 revision project. The O&M SWG also encourages those of its members interested in the revision the O&M conceptual models to also join the ISO 19156 project team either via nomination through their national standardization bodies or the OGC - ISO/TC 211 liaison agreement.

Chapter 7. Other informative information about the work of this SWG

7.1. Collaboration

The O&M SWG document drafting and issue management will be done using public Github repository at https://github.com/opengeospatial/om-swg. The minutes and recordings of the SWG meetings will be uploaded into O&M SWG project folder of the OGC Portal and made publicly available.

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

See Chapter 3.3

7.3. Details of first meeting

The first meeting the O&M SWG will take place on 14 August 2019 at 10:00 AM EEST (03:00 AM EDT) using GoToMeeting. Call-in information will be provided to the SWG's e-mail list and on the portal calendar in advance of the meeting.

7.4. Projected on-going meeting schedule

The work of the SWG will be carried out primarily by email and bi-weekly conference calls, with face-to-face meetings at each of the OGC TC meetings. The conference call times will be coordinated with the ISO/TC 211 project team responsible for revising the ISO 19156 Standard to ensure timely sharing of information and efficient use of the time and resources of the involved group members.

7.5. 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.

Name	Organization
Ilkka Rinne	Spatineo Oy
Kathi Schleidt	DataCove
Alistair Ritchie	Landcare Research New Zealand Limited
Andrew Mcleod	Federation University Australia
Hylke van der Schaaf	Fraunhofer-Gesellschaft
Sylvain Grellet	BRGM

Name	Organization
Steve Liang	University of Calgary / SensorUp
Clemens Portele	Interactive Instruments
Alexandre Robin	Airbus Defence & Space

7.6. Conveners

Ilkka Rinne, Spatineo Oy

Chapter 8. References

- OGC Abstract Specification Topic 20 – Observations and Measurements (OGC 10-004r3, also ISO 19156:2011), 2011, https://portal.opengeospatial.org/files/?artifact_id=41579
- ISO/AWI 19156 Geographic information — Observations and measurements, https://www.iso.org/standard/75680.html
- OGC Observations and Measurements - XML Implementation v2.0 (OGC 10-025r1), 2011, http://portal.opengeospatial.org/files/?artifact_id=41510
- Semantic Sensor Network Ontology, W3C Recommendation, 19 October 2017, https://www.w3.org/TR/vocab-ssn/
- Extensions to the Semantic Sensor Network Ontology, W3C Editor's Draft, 05 August 2019, https://w3c.github.io/sdw/proposals/ssn-extensions/,
- OGC Observations and Measurements – JSON implementation Discussion Paper, (OGC 15-100r1), 2015, https://portal.opengeospatial.org/files/64910
- Geography Markup Language (GML) simple features profile (with Corrigendum) (OGC 10-100r3), 2012, http://portal.opengeospatial.org/files/?artifact_id=42729
- RFC 7946: The GeoJSON Format, IETF, 2016, https://tools.ietf.org/html/rfc7946
- RFC 7159: The JavaScript Object Notation (JSON) Data Interchange Format, IETF, 2014, https://tools.ietf.org/html/rfc7159
- D2.9 Draft Guidelines for the use of Observations & Measurements and Sensor Web Enablement-related standards in INSPIRE Annex II and III data specification development, version 2.0rc3, INSPIRE Cross Thematic Working Group on Observations & Measurements, 2013, https://inspire.ec.europa.eu/documents/Data_Specifications/D2.9_O&M_Guidelines_v2.0rc3.pdf
- OGC API - Features - Part 1: Core (version 1.0.0-draft.3), OGC 17-069r3), 2019, http://docs.opengeospatial.org/DRAFTS/17-069r3.html
- OGC SensorThings API Part 1: Sensing (OGC 15-078r6), 2016, http://docs.opengeospatial.org/is/15-078r6/15-078r6.html
- OGC® Sensor Observation Service Interface Standard, version 2.0 (OGC 12-006), 2012, https://portal.opengeospatial.org/files/?artifact_id=47599
- OGC Observations and Measurements - Simple Feature model & encodings project (OMSF), https://github.com/opengeospatial/omsf-profile
- OGC Environmental Linked Features Interoperability Experiment Engineering Report (OGC 18-097), 2019, https://docs.opengeospatial.org/per/18-097.html