

Open Geospatial Consortium

Submission Date: 2024-05-30

Approval Date: <yyyy-mm-dd>

Internal reference number of this OGC® document: OGC 24-011r1

Category: OGC® Standards Working Group Charter

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OGC Geospatial Observation Needs And Requirements (GONAR) SWG Charter

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To: OGC members & interested parties

A new OGC Standards Working Group is being formed. The OGC members listed below have proposed the OGC Geospatial Data Requirements (GDR) SWG Charter. 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

For the purpose of this charter, *Data requirements* are the specifications describing datasets that a project needs to collect, store, analyze, and present to achieve the objectives of such a project. Datasets and their data requirements are derived from the scope and objectives of the project and condition the feasibility of the results of the project. During a study on previous existing models for describing geospatial data requirements ^[1], the authors of this charter were not able to detect any specific standard that consider data requirements that focus on observations and uses the point of view of the user, neither in the Open Geospatial Consortium nor in any other standardization body. The closer standard found was the ISO 19131 that defines data product specifications from the point of view and level of detail of the producer. There is also the Analysis Ready Data (ARD) SWG that also deals with product specifications (producer point of view) for a selected group of harmonized remote sensing products. The lack of data requirements from the point of view of the user need description with focus on observations is identified as a gap and represents an opportunity for the **Geospatial Observation and Needs and Requirements** standardization.

The purpose of this SWG is:

- to develop open Standards that enable the robust, transparent, and consistent use of geospatial observation user needs and requirements and their FAIRness
- to set a common background that satisfies current developments on geospatial data requirement systems and enable interoperable new ones.

[1] <https://doi.org/10.3390/rs15061589>

Chapter 2. Business value proposition

Understanding data user requirements is a crucial initial step for producing data that fits its intended purpose. However, often data providers create geospatial dataset that they believe are feasible and useful, based on product specifications, but they might not completely know the real needs of users, resulting in reduced effective utilization of data. Requirements can be collected and used to define and provide a single data product, or can be used to define a collection of datasets that cover a particular thematic domain.

The Business value proposition of this SWG is:

- to contribute to the creation of a marketplace where user needs are connected to data producers. This way, when a requirement for observations can not be covered with existing datasets or product specification (e.g. Air quality data is not updated every hour, so a pollutant plume cannot be tracked), data producers can fill the gaps in the current data products by deploying new sensors and extend their product specifications to satisfy user needs (e.g. A new Air quality dataset is produced every hour, just in case a pollution plume needs to be tracked).
- to specify a set of observations needed to be created, maintained and curated to fulfill the needs of a community working in a particular thematic domain (for example, the Essential Climate Variable products are specified in terms of their spatial and temporal resolution, timeliness).
- to specify the sets of observations that a software process of model needs as an input.

Potential target users for this initiative are: Group on Earth Observations (GEO), Earth Observation networks, in-situ Research infrastructures, users of observations (including scientists, innovators, modelers, digital twins, decision makers) and data providers (including cartographic institutes, public organizations and private companies), etc.

Chapter 3. Scope of work

The Scope of Work of the GONAR SWG encompasses the following activities:

- Identification of core needs for Geospatial Observation Needs And Requirements.
- Standardization of a data model to describe data and observational user need and requirements. While no preexisting standard was detected, some implementations of data requirements systems exist and will be used as a baseline to define a new OGC standard (see Section 3.3: Specific existing work used as starting point)
- Standardization of a OGC API to create, modify, retrieve and delete descriptions of data needs and requirements. The group will study the possibility to associate a requirement to the concept of "feature" and use OGC API Features or OGC API Records as a baseline for the new OGC API
- Promotion of the use of standardized requirements by data users (e.g. projects using observational data) and data producers.
- Collaborate with the thematic DWG (such as MUDDI, WaterML, etc) to test the generic approach for Geospatial Observation Needs And Requirements in their domains.

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

A data model for Geospatial Observation Needs And Requirements can be designed using metadata that describes the dataset. While metadata standards are not commonly defined by OGC, there are precedents of OGC standard reusing metadata and extending metadata such as the Catalogue Service for the Web (CSW) and the Geospatial User Feedback (GUF).

The planned work for GONAR will rely upon the existing OGC and ISO standards, such as the following:

- ISO 191** metadata family, such as 19115 (OGC abstract Topic 11 - Metadata) and the 19131 (product specifications) as well as other metadata standards such as STAC, DCAT and DCAT-AP.
- OGC abstract Topic 20 - Observations, measurements and samples
- Analysis Ready Data standards elaborated by the ARD.SWG
- OGC API Records
- OGC Geospatial User Feedback

3.2. What is out of scope?

The following activities are out of scope for this GDR SWG:

- Define software or interfaces user requirements and its corresponding technical requirements.
- Define product specifications at the producer level.
- Define a list of domain specific geospatial data products.
- Define another metadata standard to describe existing datasets.

3.3. Specific existing work used as starting point

The reference work relevant for this GONAR SWG is the following:

- Copernicus In Situ Component Information System (CIS²) ^[1]
- National Oceanic and Atmospheric Administration - User Observation Requirements Information ^[2]
- USGS Requirements Capabilities & Analysis for Earth Observations (RCA-EO) ^[3]
- World Meteorological Organization - Observing Systems Capability Analysis and Review Tool (WMO OSCAR/Requirements) ^[4]
- Geospatial in-situ requirements (G-reqs) ^[5]

The intention of the group is to analyze and extract commonalities in the previous work as starting point for the new Standards.

3.4. Is this a persistent SWG

☐ YES

☒ NO

3.5. When can the SWG be inactivated

When the two planned standards (needs and requirements model and OGC API) have been approved and there are not pending issues the group will be inactivated.

[1] <https://cis2.eea.europa.eu/about>

[2] <https://www.nesdis.noaa.gov/node/11226>

[3] <https://www.usgs.gov/rca-eo/rca-eo>

[4] <https://space.oscar.wmo.int/observingrequirements>

[5] <https://doi.org/10.3390/rs15061589>

Chapter 4. Description of deliverables

4.1. Initial deliverables

The following deliverables will be included in the initial results of the GONAR SWG:

- provision of common standard needs and requirements model for Geospatial Observation Needs And Requirements
- make the Geospatial Observation Needs And Requirements FAIR by means of the new OGC APIs.

This two deliverables will be done in sequence starting by defining the needs and requirements model for geospatial data and observations. The initial objective of the group is to be able to write the first complete standard draft in 9 month and present it to the OAB for consideration. Once the needs and requirements for data and observations requirements is drafted and submitted to the OAB, the second deliverable will be started.

4.2. Additional SWG tasks

No additional tasks are foreseen at this point.

Chapter 5. IPR Policy for this SWG

☒ RAND-Royalty Free

☐ RAND for fee

Chapter 6. Anticipated audience / participants

Any actor that is involved in using observations and in-situ data in general in their activities that have previous experiences in defining potential datasets from the user point of view are invited to participate in this group.

In particular, activities related with preparing observational data and processing data are welcome to contribute to this work. Examples are Analysis Ready Data (ARD) and OGC API Processes. Thematic DWGs and SWGs that know the needs of their communities can also usefully contribute such as MetOcean, MUDDI, etc.

Chapter 7. Domain Working Group endorsement

The Metadata and Cataloguing DWG (MetaCat.DWG) is the right DWG to endorse this group.

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

8.1. Collaboration

The SWG would like to use GitHub as the collaboration environment for management of Standard document and related content and make the repository public.

This draft was initially started in <https://github.com/joanma747/CharterDataRequirements> and will be move to the "opengeospatial" GitHub as the work progresses. It has been submitted to the "pending document" for its consideration in the 129th OGC Members meeting where it was approved by the TC and feedback was collected and incorporated

8.2. Similar or applicable standards work (OGC and elsewhere)

No international standards that is specific ofr observations and considers the user perspective was detected.

8.3. Details of first meeting

Next OGC 130th Members Meeting or telephone conference call before.

Previous to the first meeting, two ad-hoc sessions took place:

- 128th OGC Members Meeting https://portal.ogc.org/index.php?m=projects&a=view&project_id=82&tab=2&artifact_id=107409
- 129th OGC Members Meeting https://portal.ogc.org/index.php?m=projects&a=view&project_id=82&tab=2&artifact_id=107891

8.4. Projected on-going meeting schedule

The GONAR SWG will progress its work through:

- Regular monthly online meetings; and
- Organization of SWG sessions at the OGC Member Meetings.

8.5. 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. Charter Members are shown on the public SWG page.

Name	Organization
Joan Maso and Alba brobia	CREAF
Alex Ramage	Scottish Government

Non-members of OGC also contributed this charter and plan to support the work, as follows.

- European Environmental Agency
- Group of Earth Observations

8.6. Conveners

Joan Maso and Alba Brobia are starting the SWG process but others are more than welcome.

Chapter 9. References

See footnotes included in this document.