OGC Project Document 19-001r1

TITLE: Portrayal Domain Working Group Charter

Author (s) Name: Matt Sorenson

Organization(s): Strategic ACI

Email(s): msorenson@strategicaci.com

Date: 01 January 2019

CATEGORY: Domain Working Group

# Introduction

This Domain Working Group charter defines the role for OGC activities within the geospatial data portrayal community to provide an open forum for the discussion and presentation of interoperability requirements, use cases, pilots, and implementations of OGC standards in this domain. This Charter is to be presented to the OGC’s Technical and Planning Committees for consideration.

Domains are distinct Information Communities that defines a user domain where:

1. A distinct market, application or business approach exists;
2. Common data definition, structure, syntax, and definitions exists;
3. Common user requirements exist; and
4. Common approach to vendors exists.

## Working Group

Operation of OGC Domain Working Group follows the policies and procedures of the [Technical Committee](http://portal.opengeospatial.org/files/?artifact_id=23325) . The following definitions from the Technical Policies and Procedures apply to this DWG Charter template.

Definition of a Domain Working Group: A group (organizationally, a subgroup of the TC) of individuals composed of members of the TC and invited guests, with the specific intent of solving some particular interoperability problem or problems in a particular technology domain for recommendation to the Technical Committee.

Functions of a Domain Working Group:

* Provide a forum for discussion and documentation of interoperability requirements for a given information or user community;
* Provide a forum to discuss and recommend document actions related to Interoperability Program Reports.
* Develop Change Requests Proposals (CRPs) for existing OGC Standards.
* Develop engineering reports with the intent seeking approval by the TC for release of these documents as OGC White Papers, [Discussion Papers](#_Discussion_Papers) or [Best Practices Papers](#_Best_Practices_Documents).
* Informational presentations and discussions about the market use of adopted OGC Standards.
* Have a formal approved charter that defines the DWGs Scope of Work and estimated timeline for completion of the work.
* have all-member voting policies (unless otherwise stated).
* Have missions and goals defined by the TC.

A DWG Does Not work on RFC submissions, candidate standards, or revisions to existing OGC Standards. However, a DWG can develop change requests as document interoperability requirements that can then be submitted as work items to a SWG.

A DWG may determine that they wish to have public collaboration, such as in teleconference, email discussions, or a public wiki. In this case, the DWG shall make a motion to the TC to approve public participation in the DWG. Voting in DWGs is by simple majority of OGC Members present at the WG meeting, not just Voting TC Members, with the caveat that no OGC Member organization may cast more than one vote in a WG vote

# Purpose of Working Group

This charter represents an acknowledgment of the gap in the current OGC baseline regarding standardization of portrayal rules, registry data, styles, and encoding formats. This working group is motivated by the expanding and diverse applications for portrayal of geospatial information without a well-documented portrayal framework and enabling interoperability standards. Current efforts in the portrayal focus area are not well integrated and lack a unifying perspective. Other domains which focus on functional issues or specific applications are attempting to address portrayal as a unique solution within their domains. The Portrayal Domain Working Group provides a community to better define a common portrayal framework, provide direction to portrayal standards working groups, and provide guidance to other DWGs on portrayal concerns. Based on these considerations this charter defines the OGC Portrayal Domain Working Group (DWG).

# Problem Statement

OGC defines portrayal as “the presentation of information to humans, e.g., a map. In the context of the Web, portrayal refers to how data is presented for the user. Map portrayal, for example, is concerned with shape and color of symbols representing features, rules for displaying text labels, rules for showing/not showing symbols based on zoom extent, etc.” (OGC glossary [www.opengeospatial.org/ogc/glossary](http://www.opengeospatial.org/ogc/glossary)). Portrayal is an essential activity to make geospatial information relevant. The first sentence in the OGC definition mirrors that in ISO 19117 while the remainder of the definition is focused heavily on maps and symbols. While these represent a key aspect of the traditional cartography, they represent only a portion of the expanding portrayal domain with increased demands for geospatial-referenced visualization in areas such as 3D, augmented reality, and gaming and simulation. Multi-dimensional portrayal is rapidly expanding as advances in information technology and computer graphics make more visualization alternatives available.

Many of these technology advances are being considered across several current OGC DWGs and SWGs but the OGC lacks a coherent organization to ensure a common framework and approaches to portrayal issues. OGC has several Working Groups to discuss issues relating to services, domain communities, and various data formats. However, they often consider only a portion of the portrayal challenge or address a portrayal solution tailored to a specific issue and not a broader approach within a unified framework. Existing OGC SWGs relating to portrayal include the Styled Layer Descriptor/Symbol Encoding (SLD/SE) SWG and the 3D Portrayal Service (3DPS) SWG. Portrayal has been explored in OGC Innovation initiatives including multiple testbeds and pilots. A recently completed Portrayal Concept Development Study assessed the current state of feature portrayal and determined that current capabilities are insufficient to meet industry needs. The OGC Innovation Program continues to investigate portrayal with a planned testbed thread on developing an Open Portrayal Framework.

OGC membership has registered a concern that without a portrayal framework with updated consensus standards and Best Practices, divergence will continue in the community and interoperability will be inhibited. External to OGC, multiple communities of interest such as the Defence Geospatial Information Working Group (DGIWG), the U.S. National System for Geospatial-Intelligence (NSG), the American, British, Canadian, Australian, and New Zealand (ABCANZ) Armies program, the meteorological and oceanographic community, and the International Hydrographic Organization (IHO) have advocated to increased portrayal capabilities supported by OGC standards.

# Charter

The Portrayal DWG is being established to address the gap in the OGC standards baseline with regards to portrayal. Although this group will not be the platform for creating new standards, it will be the platform to discuss and understand any issues, concerns, or barriers to interoperability for the portrayal community.

## Charter Members.

The initial membership of the Portrayal DWG will be open to both OGC members and those outside of OGC in order to learn about the requirements from the entire community. It is being chartered by the following members and individuals with extensive education and experience in portrayal issues, namely:

| **NAME**  | **AFFILIATION** |
| --- | --- |
| Stan Tillman | Hexagon |
| Keith Ryden | Esri |
| Jeff Harrison | AGC |
| Matt Sorenson | Strategic ACI |
| Glenn Gumpel | USGS |
| Iain Burnell | DSTL |
| Chris Little | Met Office UK |
| Sly Hagler | NGA |
| Dimitri Sarafinof | IGN |

## Key Activities.

The Portrayal DWG is being established to address interoperability challenges with portrayals. This group will facilitate discussion of the requirements that define a common portrayal conceptual model and examine modular applications for differing technologies, examine portrayal encodings and/or optimization formats to support diverse user communities, and determine how interoperability between content can be better achieved. Specifically, the Portrayal DWG will pursue the following activities.

1. Consider proposed activities for the DWG expressed at the Portrayal ad hoc meetings held at multiple OGC Technical Committee meetings in 2018 and in the Portrayal Concept Development Study.
2. Define requirements for a common portrayal framework and conceptual model to address 2D, 3D, and n-dimensional portrayal and also address portrayal metadata requirements (see ISO 19115).
3. Define areas for standardization and create necessary Standards Working Groups to address the gaps in the OGC standards baseline. Identify required updates to existing standards for portrayal and symbology.
4. Validate encoding or domain specific extensions and Best Practices for portrayal and symbology standards.
5. Sponsor and encourage applications of different portrayal encodings and formats providing implementation flexibility while providing core interoperability tied to the conceptual model.
6. Coordinated issues with other domains to ensure common portrayal approaches in functional areas (e.g. Emergency & Disaster Management (EDM), Interoperable Simulation & Gaming (ISG), Defense & Intelligence (D&I)) and leveraging emerging technologies (e.g. semantics, tiled data).

## Business Case

As the proliferation of portrayal implementations and applications across multiple and diverse communities increases, it is important to begin defining common models, best practices and standards to improve the interoperability. Examples of issues that might be discussed include the following:

1. The Portrayal DWG is focused on defining best practices for the portrayal community in order to promote increasing capabilities and business opportunities based on a commercial ecosystem that uses open standards for exchange and visualization of geospatial information.
2. Many diverging activities are currently occurring in the portrayal community. This DWG will provide a forum to allow both OGC members and those outside of the OGC to bring requirements and discussions into a collaborative environment where the community can learn from each other. Bringing discussions about portrayal requirements, gaps, and solutions into the Portrayal DWG will benefit the existing community by providing guidance and best practices that can be used to improve interoperability.

# Organizational Approach and Scope of Work

## Portrayal DWG Business Goals

This working group has these broad goals.

1. Understand implementation barriers for portrayal communities and document them in a format that can guide future technology design.
2. Identify a common portrayal framework and conceptual model that can better align portrayal standards development, leverage emerging technologies, and ensure the framework, standards, and encodings are well suited to modern computer architectures. (i.e. where appropriate, intensive rendering can be off loaded to the client GPU).
3. Identify interfaces and information encodings that complement the existing OGC standards but are directly tailored to the requirements discovered in understanding the needs of the portrayal user communities.
4. Promote the development of OGC best practices and standards to meet the portrayal objectives. Candidate standards may come from external, market-established standards or from anticipatory standards developed in OGC initiatives.
5. Promote the sharing of portrayal content across user communities and reuse of symbology and styles.
6. Efforts should focus on working Portrayal issues and problems that result in a net gain for the community.

## Portrayal DWG: Mission and Role

The Portrayal DWG will concern itself with technology and policy issues, focusing on geodata information and technology interests as related to portrayal applications and services as they relate to location and the means by which those issues are appropriately factored into the OGC standards development process.

1. The **mission** of the Portrayal DWG is to broaden the understanding of portrayal interoperability requirements and use cases and to help drive activities to improve interoperability in the portrayal user community.
2. The **role** of the Portrayal DWG is to serve as a forum within OGC for portrayal of geospatially-referenced data; to present, refine and focus interoperability-related portrayal issues to the Technical Committee; and to serve where appropriate as a liaison to other industry, government, independent, research, and standards organizations active within the portrayal domain

## Activities planned for the Portrayal DWG

The Portrayal DWG is a working group to discuss issues and barriers to achieving improved interoperability. Progress in this domain will be achieved as follows.

1. Discuss and define a portrayal framework and conceptual model to unify diverse portrayal approaches and align current and proposed standards development.
2. Discuss the variety of portrayal encoding formats to better understand the requirements for encoding and sharing portrayal content.
3. Make recommendations for adoption of best practices and standards for use by the portrayal community.
4. Make recommendations for discovery and sharing of portrayal content across user communities and reuse of symbology and styles.
5. Additional discussions related to portrayal data will also take place within this group. Some of these topics include:
	* 1. Format specific portrayal challenges (e.g. GeoPackage)
		2. Portrayal of tiled feature data and 3D tiles.
		3. Indexing, tiling, hierarchical decomposition
		4. Simple metadata models for portrayal
		5. Application of portrayal framework to other domains (e.g. ISG, EDM)
		6. Best practices for storing and accessing portrayal rules and symbols and management of community portrayal resources in registries and web services.

# References

1. ISO 19115, Geographic Information – Metadata
2. ISO 19117, Geographic Information – Portrayal
3. OGC 17-094, Portrayal Concept Development Study
4. OGC 05-078r4, OGC OpenGIS Styled Layer Descriptor Profile of the Web Map Service Implementation Specification <http://portal.opengeospatial.org/files/?artifact_id=22364>
5. OGC 05-077r4, OGC Symbology Encoding Specification <http://portal.opengeospatial.org/files/?artifact_id=16700>
6. OGC 15-001r4, 3D Portrayal Service 1.013 Sep 2017, <http://docs.opengeospatial.org/is/15-001r4/15-001r4.html>
7. OGC 18-067, OGC Symbology Conceptual Model: Core (draft)
8. OGC-18-029. OGC Testbed-14: Symbology Engineering Report (draft)
9. OGC 18-086, OGC Vector Tile Pilot Summary Engineering Report (draft)
10. OGC 18-071r1, Use of CG as a basis for OGC Portrayal Conceptual Model