OGC Project Document 14-040r1

|  |  |
| --- | --- |
| TITLE: | Agriculture Domain Working Group Charter |
| Authors:  |  |
|  | Name: | Organization: | Email: |
|  | Joshua Lieberman | Tumbling Walls | jlieberman@tumblingwalls.com |
|  | Rob van de Velde | Geonovum | r.vandevelde@geonovum.nl |
|  |  |  |  |
| Date: | 11 June 2014 |
| CATEGORY:  | Domain Working Group |

# Introduction

This Domain Working Group charter defines the role for OGC activities within the Agriculture discipline in order 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.

Agriculture is in the midst of becoming a distinct, significant,  and rapidly evolving domain and community of large-scale geospatial information exchange:

1. Distinct geospatial entities such as farms and fields that characterize its practice
2. Common needs to exchange data on the extent and utilization of farmland, soil and crop characteristics, water availability, environmental impacts, and many other aspects of agriculture
3. Characteristic agricultural data user roles, from growers and consultants to landowners and foodstuff processors, as well as regulatory and support roles at all levels of government.
4. An increasing need for information standards to support transparency in the agricultural technology goods and services market.
5. Growing complexity in food-chains and the societal needs for tracking and tracing of agriculture products for purposes of food safety, tax collections, and customs operations efficiency
6. Major challenges to traditional agricultural practice such as climate change, increasing population, shortage of water and arable land, pollution, and changing diets that are driving the rapid evolution of information technology in agriculture.

## Working Group

Operation of the OGC Agriculture Domain Working Group (DWG) will follow the policies and procedures of the [Technical Committee](http://portal.opengeospatial.org/files/?artifact_id=23325).

# Purpose of the Agriculture Domain Working Group

The purpose of this Working Group will be to:

* 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 Request proposals (CR’s) for existing OGC Standards.
* Develop engineering reports with the intent seeking of approval by the TC for release of these documents as OGC White Papers, [Discussion Papers](#_Discussion_Papers) or [Best Practices Papers](#_Best_Practices_Documents).
* Provide a forum for development of concepts relating to testbed, pilot, and interoperability experiment activities in the agricultural domain
* Host informational presentations and discussions about the use of adopted OGC Standards in the agricultural market.

# Problem Statement

Few activities are more tied to location, geography, and the geospatial landscape than farming. The farm business, farm supply chain, and public agricultural policies are increasingly tied as well to quantitative data about crops, soils, water, weather, markets, energy, and biotechnology. These activities involve sensing, analyzing, and communicating larger and larger scale geospatial data streams. How does farming become more, not less, sustainable as a business and as a necessity for life in the face of climate change, growing populations, scarcity of water and energy. Matching precision agricultural machinery with precision agricultural knowledge and promoting crop resiliency at large and small scales are becoming global challenges.

Agriculture now touches many aspects of the work that OGC is doing to promote interoperability of geospatial data and geographic analysis. In the near future, for example, a significant part of the Internet of Things will consist of farm Things that measure weather, soil moisture, plant fungus attacks, irrigation rates, and dozens of other parameters critical to understanding the health and potential of crops. As agriculture becomes another significant and rapidly evolving domain of large-scale geospatial information exchange, it seems timely to create a forum to represent this domain in the form of an OGC Domain Working Group.

# Charter

Everything geo-agricultural is within scope of consideration by this domain working group, with the exception that any work on new OGC standards relating to agriculture will be carried out by a Standards Working Group chartered expressly for such purpose.

## Charter Members.

The initial membership of the Agriculture DWG will consist of the following members and individuals with extensive education and experience in agriculture issues, namely:

| **NAME**  | **AFFILIATION** |
| --- | --- |
| Joshua Lieberman | Tumbling Walls |
| Liping Di | GMU |
| Paul Janssen | Geonovum |
| Leif Granholm | Trimble |
|  |  |

## Key Activities.

While the scope of this DWG is broad, it will emphasize certain key activities:

1. Determine OGC goals and organizational issues that impact agricultural data, technology and markets.
2. Define the business issues and approaches for OGC to incorporate so that agricultural considerations are brought into proper focus within OpenGIS specification initiatives. The approach includes defining business objectives, requirements, tasks, and schedules.
3. Define approaches for engaging with the agricultural community to enlist their support.

## Business Case

The following business cases characterize many of the geospatial interoperability issues that confront the agriculture community:

1. Government and societal support for agriculture relies on the efficient exchange of information with growers on the geographic extent and status of agricultural resources and activities.
2. Many large and small firms are providing a wide range of agricultural data collection, analysis, and exploitation products and services. An efficient and transparent marketplace requires standards for accurate and straightforward interchange of data between diverse vendor platforms
3. Trends such as climate change and population growth pose regional challenges and can only be addressed through capabilities for precision data-driven cultivation and for sharing information, problems, and solutions on a regional scale.
4. The growing ubiquity and importance of agricultural sensors – on tractors and other equipment, as part of in situ observation meshes, or collecting aerial and satellite imagery – is bringing agriculture face to face with the promise and challenges of the Internet of Things and its need for enabling geospatial standards.

# Organizational Approach and Scope of Work

## Agriculture Domain Working Group Business Goals

The Agriculture Domain Working Group will establish a set of business goals that frame the basis for determining the nature and type of recommendations made to OGC, framed around the above mentioned business issues. Examples of the types of discussion for framing goals include

1. Focus on working agriculture issues and problems that result in a net gain for the community.
2. Minimize technical distinctions between agricultural data processing systems that use geography, as this can lead to artificial barriers that limit the potential of all segments of the information community to come together and fully prosper.
3. Avoid placing artificial technical barriers on use of agriculture data.
4. Establish the means by which OGC can address information interoperability in agriculture and yet preserve the privacy and propriety needs of agricultural geodata users.
5. Define the supporting infrastructure that the agricultural community will require to achieve these goals.

## Agriculture Domain Working Group: Mission and Role

The Agriculture DWG will concern itself with technology and technology policy issues, focusing on geodata information and technology interests as related to agriculture as well as the means by which those issues can be appropriately factored into the OGC standards development process.

1. The **mission** of the Agriculture Working Group is to identify geospatial interoperability issues and challenges within the agriculture domain, then examine ways in which those challenges can be met through application of existing OGC standards, or through development of new geospatial interoperability standards under the auspices of OGC.
2. The **role** of the Agriculture Working Group is to serve as a forum within OGC for agricultural geo-informatics; to present, refine and focus interoperability-related agricultural 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 agricultural domain.

## Activities planned for Agriculture Domain Working Group

Activities to be undertaken by the Agriculture DWG include but are not limited to:

1. Examination of the possibilities for agricultural information exchange standard alignment and harmonization between UN/CEFACT, ISO TC 23, ISOBus, AgroXML, OGC, etc.
2. Development of a reference architecture for use of OGC encoding and interface standards in common agricultural activities.
3. Coordination with IUSS on SoilML.
4. Coordination with the agricultural interest groups within ESIP and RDA.
5. Organization of an Agricultural Geoinformatics Summit at a future OGC TC.

# References