



The Sixth Session of the Committee of Experts on Global Geospatial Information Management

SIDE EVENT **New Enabling Technologies**

Monday, August 1, 2016
3:30 pm - 5:00 pm
Venue: Conference Room 2 (CR 12), GA Building
United Nations, New York

Background

A Joint Study Group comprising of OGC, ISO/TC 211 and IHO have been considering developing some guidance for the use of geospatial standards in supporting the measurement and monitoring of the Sustainable Development Goals recognising the importance of geospatial information standards in decision making processes, measurement and monitoring of global efforts towards sustainable development.

The establishment of the Working Group on Geospatial Information in the Inter-agency and Expert Group on Sustainable Development Goal Indicators (IAEG-SDGs) offered opportunities to ensure that existing and emerging standards and interoperability tools are deployed to better measure and monitor progress of the 17 Sustainable Development Goals.

Thus the Sustainable Development Goals and its global indicator framework present opportunities for modified, new and emerging standards. Equally, new and emerging geospatial technologies are also enabling and creating approaches and methodologies to better measure and monitor these global efforts and these new emerging technologies in turn create possibilities for modified and new standards.

Objectives

This side event aims to engage and inform Member States on a selection of key enabling technologies, trends and standards in the geospatial industry that are creating possibilities to better measure and monitor global efforts towards sustainable development. The event should also facilitate discussions on the value of these new enabling technologies and how they may be deployed in the implementation of the 2030 Agenda for Sustainable Development.

The side event also aims to engage and inform Member States on an emerging standard for Discrete Global Grid Systems and progress of some preliminary work carried out through case studies highlighting the value of geospatial standards for the global indicator framework.

“This is an open workshop and all Session Attendees are invited”



Moderator: Ms. Denise McKenzie, Open Geospatial Consortium (OGC)

PROPOSED AGENDA

- 1) Welcome, Introduction and Overview (10min)
Ms. Denise McKenzie, Open Geospatial Consortium (OGC)
Ms. Gemma van Halderen, Co-Chair, UN-GGIM Expert Group on Integrating Statistical and Geospatial Information, Australia
- 2) Presentations (45min)
 - Emerging Technology in the Geospatial Industry*
Mr. George Percivall, Open Geospatial Consortium (OGC)
 - A free, high-accuracy global Digital Elevation Model (DEM)*
Mr. Guy Schumann, Remote Sensing Solutions, Inc.
 - Candidate OGC Standard – Discrete Global Grids Systems (DGGS)*
Perry Petersen, PYXIS Innovation
 - Australian Geoscience Data Cube (AGDC)*
Dr Stuart Minchin, Australia
- 3) Open Discussion (30min)
Moderated and interactive discussion with participants and presenters
- 4) Closing Remark (5min)
Ms. Denise McKenzie, Open Geospatial Consortium (OGC)

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Outline of Presentations

Emerging Technology in the Geospatial Industry

George Percivall,
Chief Technology Officer & Chief Engineer, Open Geospatial Consortium (OGC)

The geospatial technology industry is constantly evolving and innovating, and as each new innovation emerges new standards are required. The OGC is an international standards organisation dedicated to the development of open geospatial standards and its role is to nurture and develop these standards and to help them evolve with each technology advancement. With a focus on Big Data, George's presentation will take a look at some of the key emerging technology areas being developed in the OGC that are highly relevant to the work of the UN-GGIM in the areas of statistics with geospatial, environment, smart cities, analytics and processing.

A free, high-accuracy global Digital Elevation Model (DEM)

Guy Schumann,
Scientist, Remote Sensing Solutions, Inc.

Natural disasters account for many tens of billions of \$US annually, with flooding from rivers, storm surges, hurricanes and predicted sea level rise being the costliest disaster. Annual losses due to flooding of coastal cities alone are predicted to reach US \$1 trillion by 2050. For flood hazard mapping and prediction, accurate topography of floodplains and low-lying coastal areas is the main accuracy driver. Yet, at the global scale, freely accessible digital elevation models (DEM) have errors in the vertical of several meters which does not meet even the basic requirement for adequate flood hazard modelling and prediction. Using a number of case studies, this talk will present existing technologies (LiDAR, stereo-pair satellite imagery and advanced airborne radar) to create a free high-resolution, high accuracy global DEM and make the case to open negotiations to free up the necessary financial support to achieve this. Producing such a DEM at the global scale would be the environmental equivalent of the Human Genome Project and would have enormous impacts on finance (e.g., flood re-insurance), humanitarian services (disaster relief services, disease prevention, etc.) and scientific research.

Discrete Global Grid System (DGGS) – OGC candidate standard

Perry Petersen,
President and CEO, PYXIS Innovation

Discrete Global Grid System - Humanity's ability to measure, monitor, and communicate over the vastness of the entire Earth is unprecedented. Satellites swarm the Earth observing and measuring the events below. A web of sensors monitors and controls the changes and movement of at least a billion things each second. Silos of important statistics that describe and compare places and their features continue to grow within millions of organizations. People, from scientists to citizens, expect this information in a form that can answer their pressing questions...instantly. At the same time, we are experiencing rapid and unprecedented changes in our environment, society and the way we interact with each other. It is anticipated that the data and information describing these changes can be transformed into the knowledge and decisions that will mitigate the cost. However, promised societal benefits are difficult to realize

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due to the difficult task of integrating this big Earth data and information across the many scales, formats, systems, and locations. The Open Geospatial Consortium (OGC) has released a new candidate Earth reference system standard that promises to solve these challenges. Known as a Discrete Global Grid System (DGGS), it is designed with the specific intention of integrating these silos of data independent of its source for fast and accessible geospatial statistical analysis. The Standardization of DGGS is being led through the OGC by Australia, New Zealand and Canada. DGGS are currently being used in OGC interoperability testbeds supported by NASA, USGS, and Natural Resources Canada and pilot projects with the International Union for the Conservation of Nature, Global Biodiversity Information Facility, the Intergovernmental Group on Earth Observations, and Environment and Climate Change Canada.

Australian Geoscience Data Cube (AGDC)

Dr Stuart Minchin,

Chief, Environmental Geoscience Division, Geoscience Australia

The Australian Geoscience Data Cube (AGDC) is a new development in the handling and analysis of big geospatial data at fine scale across entire continents. The AGDC has been successfully prototyped by Australia and successfully transforms multi-resolution satellite data in an innovative, high performance toolset at multi-petabyte scale. The AGDC allows you to objectively compare changes in agriculture, flood footprint, bushfire impact, forest cover, water quality, shallow water bathymetry and coastal change over the past four decades and provides a platform for monitoring changes into the future in an unambiguous and standardised way.

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