




Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Closing Plenary

112th OGC Technical Committee
Banff, Canada
Scott Simmons
12 September 2019

Agenda



- Thanks to Sponsors and Hosts
- Quorum confirmation
- TC Member presentations
 - Statistical DWG: Chris Gale
 - University of Maryland current agriculture activities: Mike Humber
 - Observations & Measurements SWG recharter: Ilkka Reine
 - Error Propagation standardization: Kumar Navulur
- TC Motions
 - Proposed GeoPose SWG: Jan-Erik Vinje
 - Proposed OGC API – Catalogues SWG: Peter Vretanos
 - CDB SWG new tasks: David Graham
 - SensorML 2.1: Eric Hirschorn
- Upcoming TC Meetings
- TC Chair announcements and motions
- Working Group reports with motions: 3 to Z
- “Important Things” discussion

Thanks to our Strategic Member support and sponsors



Natural Resources
Canada

Ressources naturelles
Canada

Canada



UNIVERSITY OF
CALGARY



esri Canada

OGC[®]

Copyright © 2019 Open Geospatial Consortium



TC Member Presentations

A satellite view of Earth at night, showing the curvature of the planet and the glowing lights of cities and continents against the dark background of space. The lights are concentrated in the lower half of the image, showing a dense network of urban areas.

OGC Statistics Domain Working Group

Chris Gale – UK Office for National Statistics

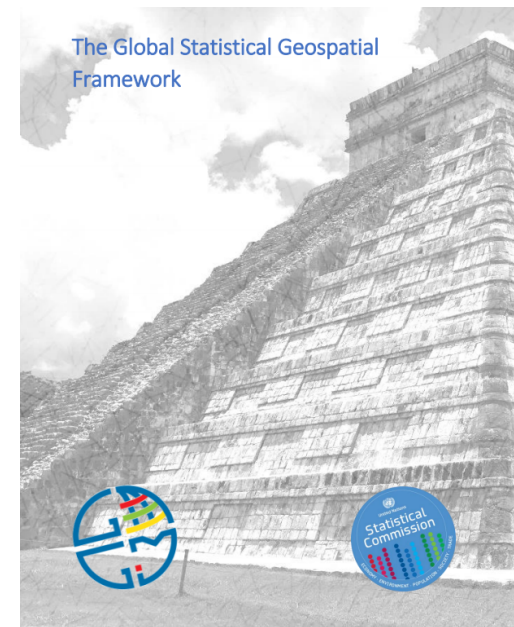
12th September 2019

Background

- Due to changes in personnel the Statistical DWG has been unable to start a work programme yet
- Developments in the geospatial and statistical world mean the group can focus (at least initially) on supporting these latest developments
- Initial goal of the group to identify pre-existing standards and use cases that can help standardise the integration of statistics and geography

The Global Statistical Geospatial Framework (GSGF)

- The GSGF was adopted by the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) in August 2019
- Produced by the UN Expert Group for the Integration of Statistical and Geospatial Information (EG-ISGI)
- Formed of five principles that support the production of harmonised and standardised geospatially enabled statistical data



The GSGF

PRINCIPLES

Accessible & usable

Statistical and geospatial interoperability

Common geographies for dissemination of statistics

Geocoded unit record data in a data management environment

Use of fundamental geospatial infrastructure and geocoding

KEY ELEMENTS

Standards and Good Practices

National Laws and Policy

Technical Infrastructure

Institutional Collaboration

Integration

Harmonised and standardised information

Interoperability Comparability

Diffusion

Decision making

Analysis

INPUT

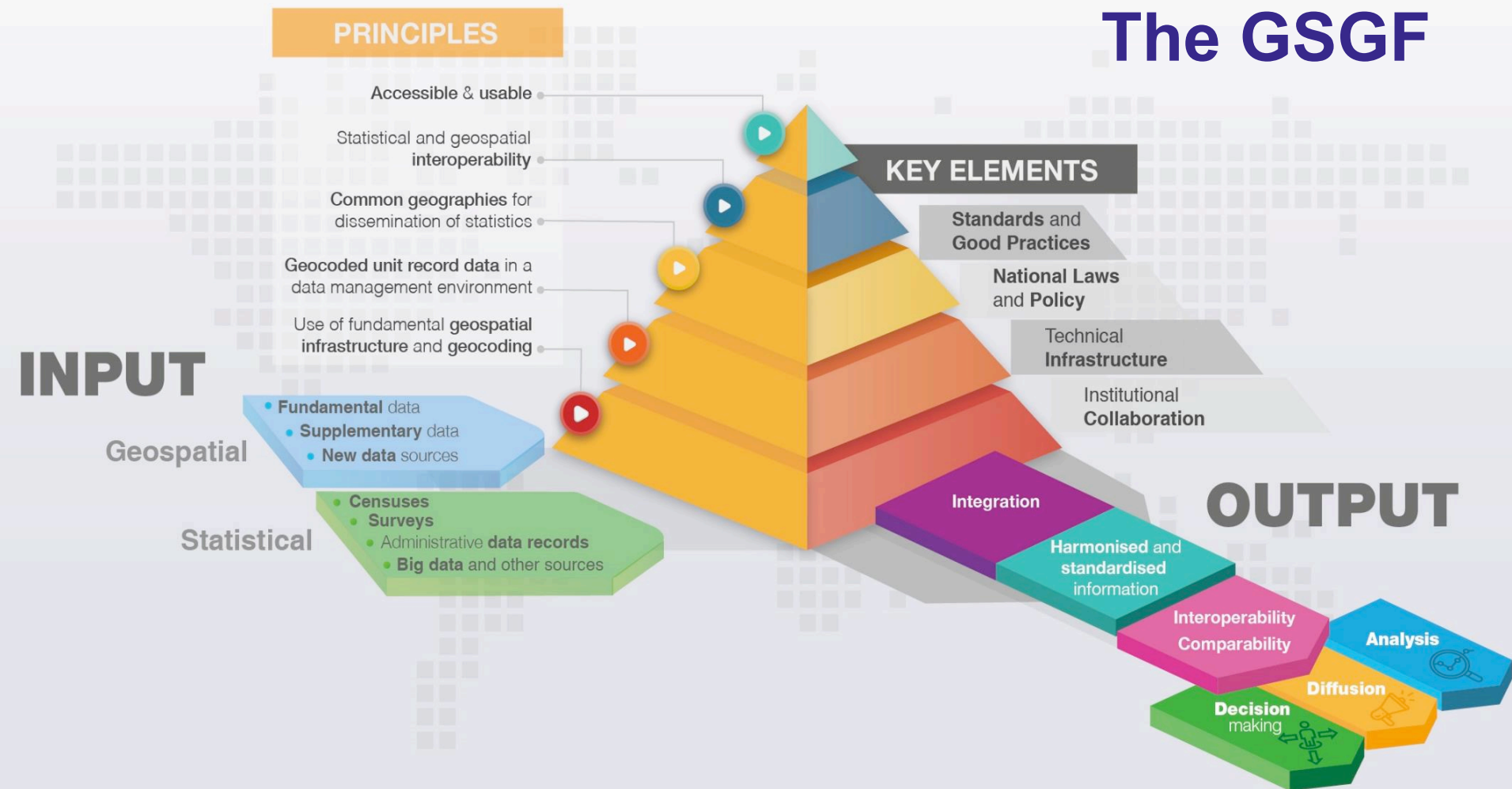
Geospatial

- Fundamental data
- Supplementary data
- New data sources

Statistical

- Censuses
- Surveys
- Administrative data records
- Big data and other sources

OUTPUT



Integrated Geospatial Information Framework (IGIF)

- The IGIF is a UN endorsed Framework that was developed in collaboration between the UN and the World Bank
- Has been developed as a reference guide for developing and strengthening arrangements in national geospatial information management
- Includes a Standards strategic pathway which has potential to intersect with parts of the GSGF



INTEGRATED GEOSPATIAL INFORMATION FRAMEWORK

A STRATEGIC GUIDE TO DEVELOP AND STRENGTHEN
NATIONAL GEOSPATIAL INFORMATION MANAGEMENT

Potential work programme

- The future work of EG-ISGI will focus on the implementation of the GSGF by national statistical institute's (NSIs)
- Opportunity for the Statistics DWG to be part of this work and feed in pre-existing OGC standards that are suitable in a statistical context
- The Statistics DWG can also look to identify best practice and use cases of methods that use existing OGC standards that integrate statistics and geography that support the GSGF

Potential tasks

- Review the GSGF
- Identify existing OGC standards that could have a statistical application within the GSGF
- Identify cases studies of existing OGC work being used to integrate statistics and geography. Possible examples include:
 - Discrete Global Grid Systems
 - Table Joining Service
- Review the relationship between the Standards pathway of the IGIF and the Statistical DWG

Desired outcomes

- Identify pre-existing OGC standards that can form part of NSIs implementation of the GSGF
- Highlight work already been done using OGC standards in a statistical context
- Highlight the value of the OGC to NSIs and encourage greater participation in OGC activities

How can the wider OGC community help?

Chairs of DWGs and SWGs

- Can you review the Global Statistical Geospatial Framework (http://ggim.un.org/meetings/GGIM-committee/9th-Session/documents/The_GSGF.pdf) and look where current standards/work could be applied to the GSGF and are relevant to statistical applications?
- Feedback would be required by the **8th October 2019** (before the SDWG meeting being held in Manchester, England on the 9th)

Joining the Statistics Domain Working Group

OGC Statistics DWG

12th September 2019

Participants and Chairs

- Further details on the DWG can be found here:
https://portal.opengeospatial.org/?m=projects&a=view&project_id=602
- If you are interested in being a member, please add yourself to the Contacts
- If you are interested in being a chair please e-mail
ssimmons@ogc.org

The next meeting

OGC Statistics DWG

12th September 2019

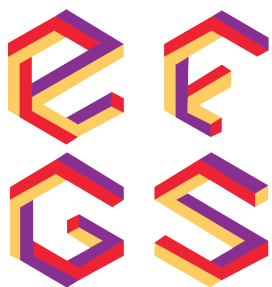
Statistics DWG 9th October Meeting

- A face-to-face meeting will be held on **Wednesday 9th October** in Manchester, England.
- This will be held after EG-ISGI's meeting and before the 2019 European Forum for Geography and Statistics Conference
- Further details on the location and time will be provided nearer to the meeting date

2019 European Forum for Geography and Statistics Conference

OGC Statistics DWG

12th September 2019



European Forum for Geography and Statistics Manchester 2019

9th to 11th October

Register at www.efgs2019.uk

Deadline for registration: 13th September 2019



Office for
National Statistics



Ordnance
Survey



EUROPEAN FORUM FOR
GEOGRAPHY AND STATISTICS



eurostat

Thank you

chris.gale@ons.gov.uk

OGC Statistics DWG


12th September 2019



Mike Humber

Overview of the NASA Harvest program at UMD



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

O&M SWG Recharter

112th OGC Technical Committee

Banff, Canada

Ilkka Rinne

12 September 2019

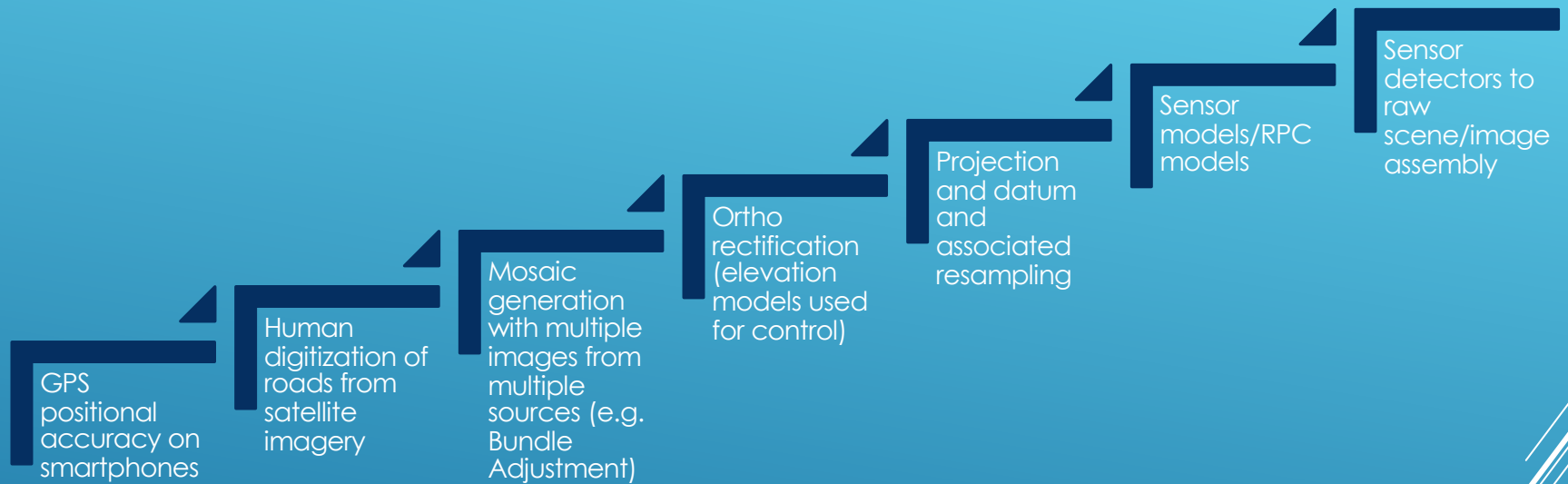
Observations & measurements - background



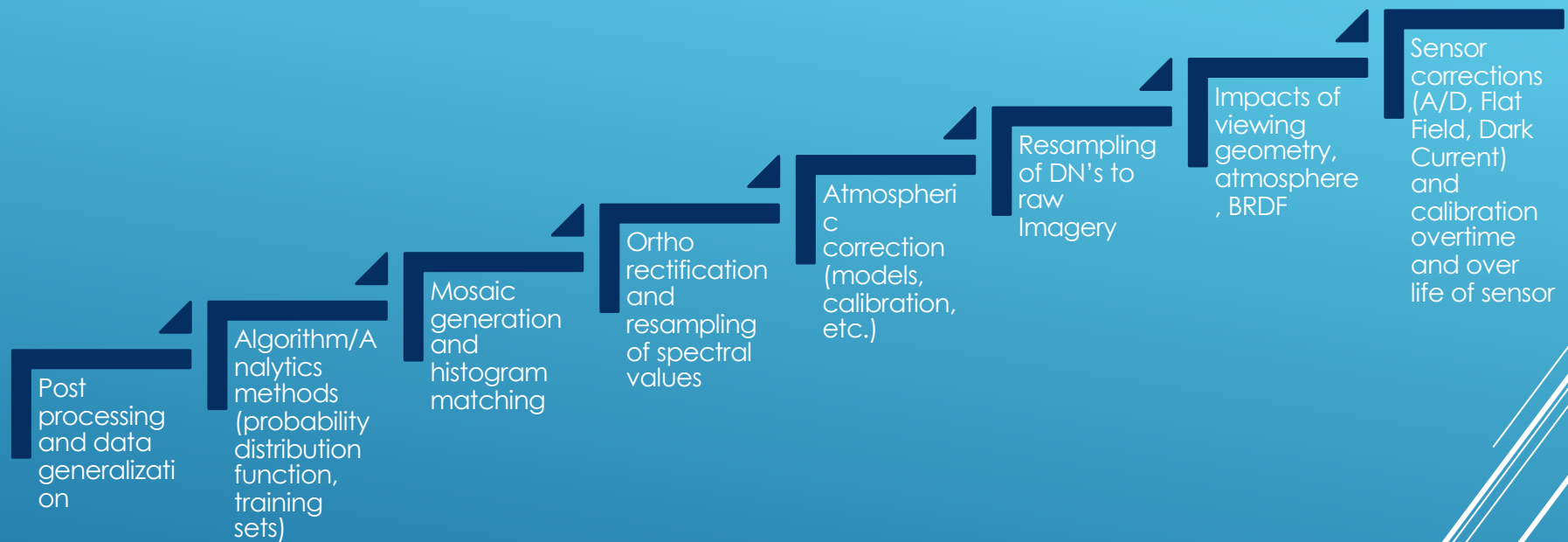
- The O&M standard(s) originally defined within the OGC Sensor Web Enablement Initiative in 2003-2007.
- Joint project with ISO/TC 211 for an O&M ISO standard started in 2008, the abstract model co-published as ISO 19156:2011 and OGC Abstract Topic 20 in 2010-13.
- The XML encoding published as the OGC Observations and Measurements - XML Implementation Standard (10-025r1) in 2011.
- ISO/TC 211 decided on a revision of 19156 in Jul 2018, the project team work finally started in summer 2019.
- OGC O&M SWG activated in June 2019 had an open session on the O&M revision in the Leuven TC.

SPATIAL AND SPECTRAL ERROR PROPAGATION FRAME WORK

Kumar Navulur & Mark Abrams



EXAMPLE OF CONSUMER MAPS FOR NAVIGATION



EXAMPLE OF SPECTRAL ERRORS FOR AUTOMATED FEATURE EXTRACTION

- ▶ A technical evaluation of the implementation of a generalized positioning model (GPM-like) on 2D and 3D data for common sites against DGNSS ground control
- ▶ A technical evaluation of the implementation of a GIQE/SIQE error propagation model that accounts for time of day, sun angle, and bi-directional reflectance distribution functions (BRDF)
- ▶ A technical evaluation of the feasibility of a 'less than per-pixel' aggregation model for curating accuracy and fidelity as a function of data volume and cost.
- ▶ Community technical interface meetings to develop a common, standards-based, international framework for accuracy assessment and error propagation in location-based services community of practice

RECOMMENDATION


THANK YOU





TC Motions



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Proposed GeoPose SWG

Scott Simmons for Jan-Erik Vinje

The Proposal

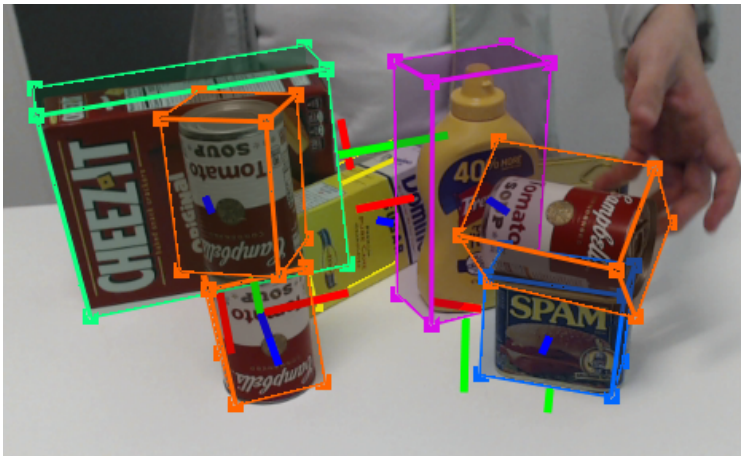
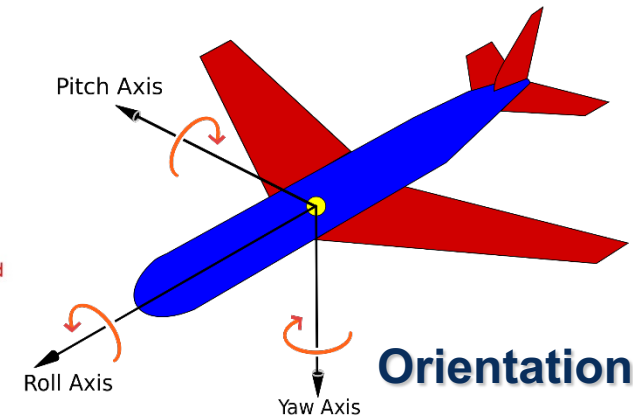
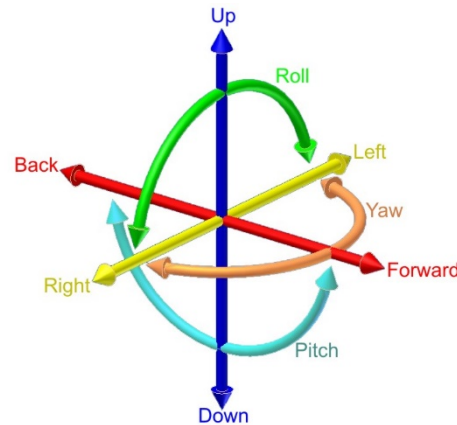
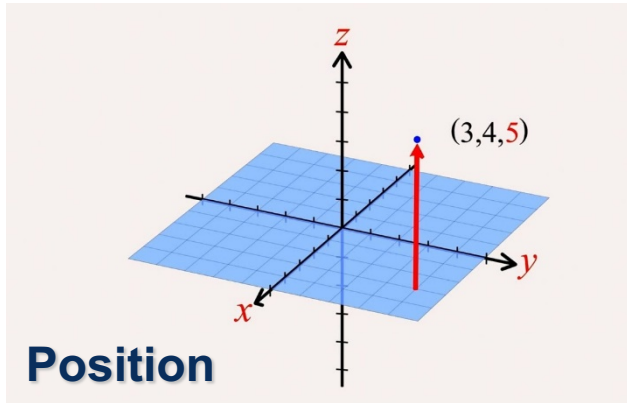


GeoPose is proposed as the standard for describing the 3D geospatial position and orientation of real and digital objects.

The same way the URL became the core way of connecting digital information in the web era, GeoPose can become the key way to connect the real world with the digital world in the spatial computing era.

Definitions

Cartesian 6DoF

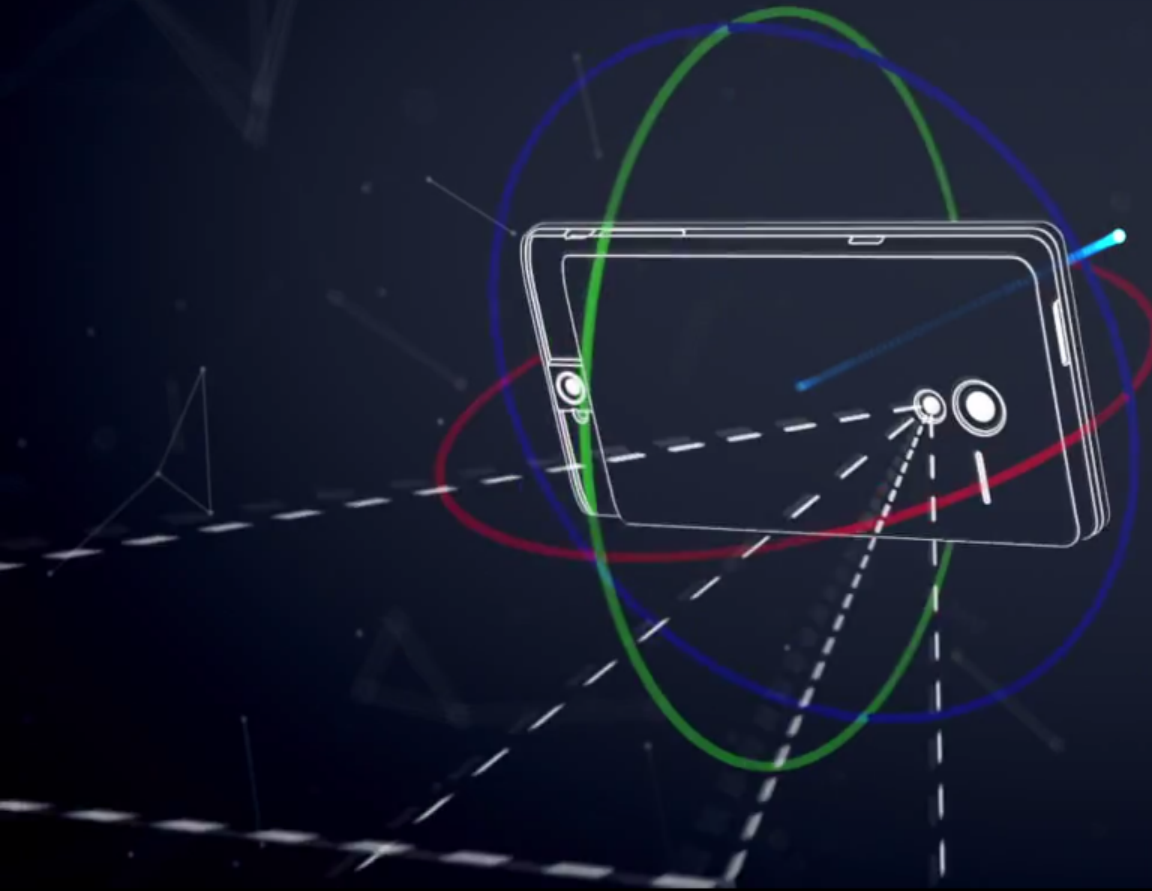


WIKIPEDIA
The Free Encyclopedia

Six degrees of freedom (6DoF) refers to the freedom of movement of a [rigid body](#) in [three-dimensional space](#). Specifically, the body is free to change [position](#) as forward/backward (surge), up/down (heave), left/right (sway) [translation](#) in three [perpendicular axes](#), combined with changes in [orientation](#) through [rotation](#) about three perpendicular axes, often termed yaw (normal axis), pitch (transverse axis), and roll (longitudinal axis).

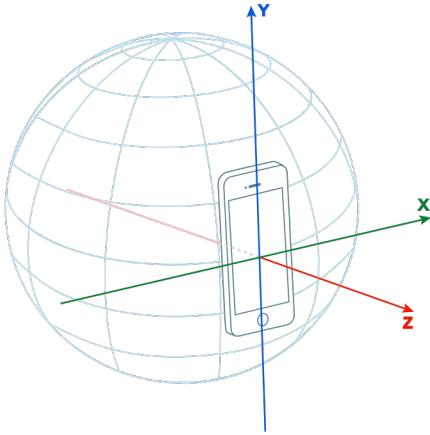
Definitions

Cartesian 6DoF



Position: [0.698m,0.660m,0.186m]
Rotation: [21°,205°,103°]

Purpose of GeoPose



Provide a standard, **interoperable** way to **express, visualize, record** and **share** the **geospatial position** and **orientation** of **real** and **virtual objects** in an entirely consistent manner across different applications, users, devices, services, and platforms.

Business Value of GeoPose

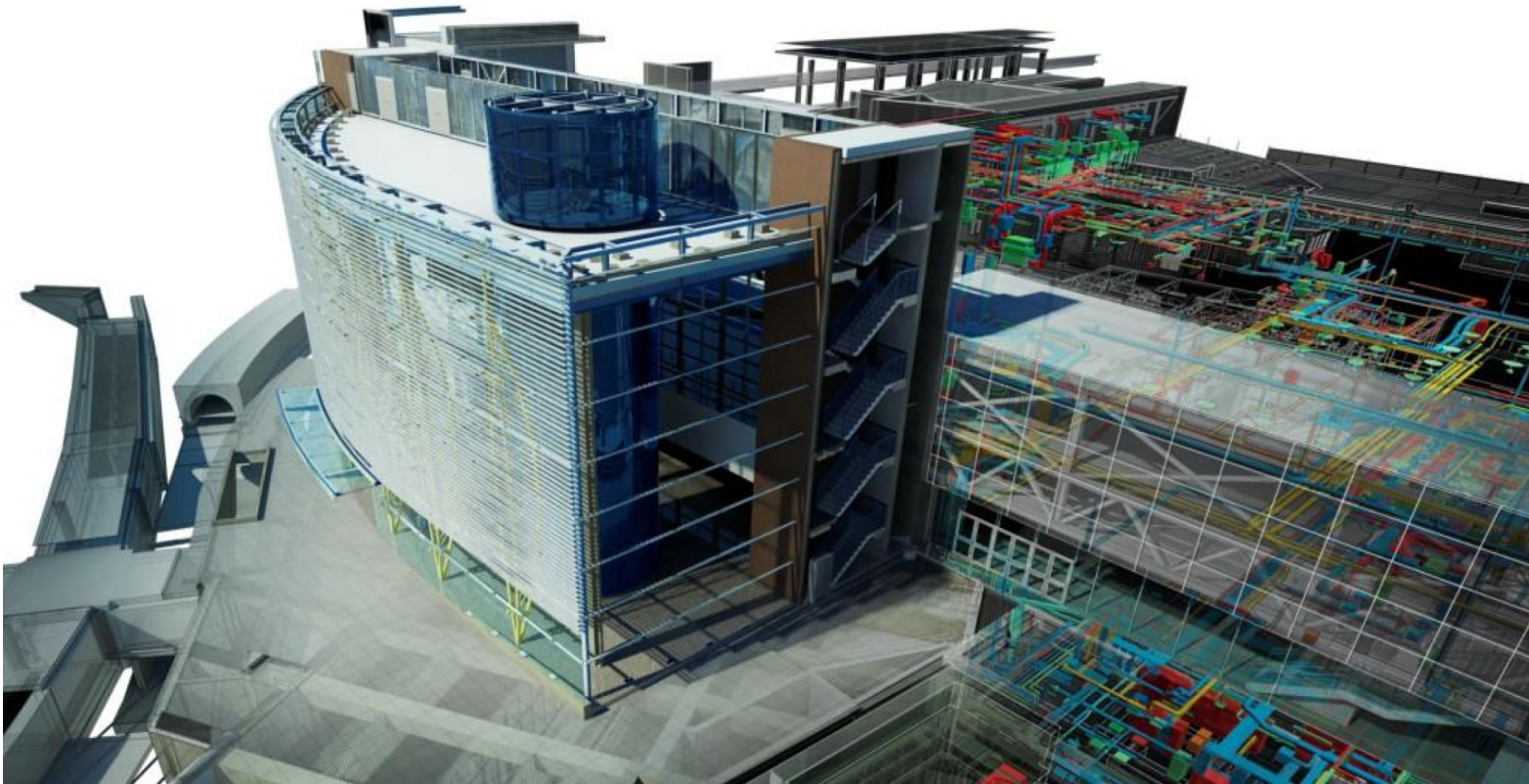


- The ability to capture GeoPoses and to store them in a consistent and non-proprietary manner, as well as to easily transmit the GeoPose of real and digital objects between users, apps, devices, services, and other systems will provide opportunities for a wide range of industries and use cases
- There are some unique generic advantages of standardizing a pose definition with a shared geospatial frame of reference, compared to a pose definition that has only a local frame of reference. These advantages will offer new value across many use cases.

Business Value of GeoPose



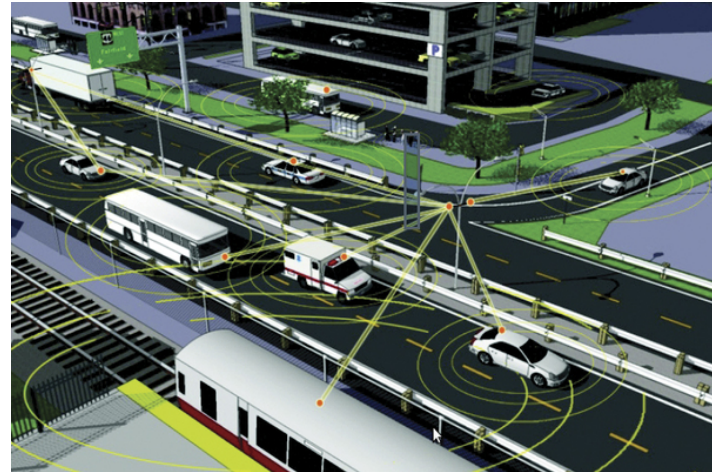
Use Case: Construction and engineering



Business Value of GeoPose



Use Case: Mobility/ transportation



Business Value of GeoPose



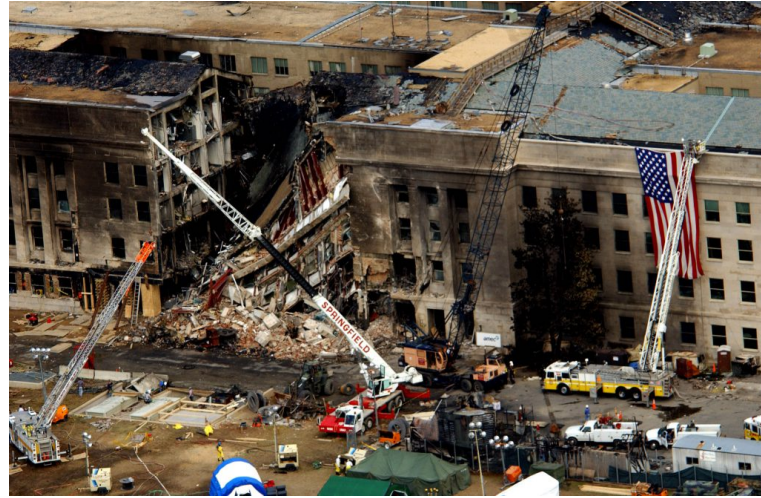
Use Case: Tourism & entertainment



Business Value of GeoPose



Use Case: Tactical / police / rescue operations



Existing Standards / Efforts



Examples of standard development efforts that are directly relevant for geopose

buildingSMART

- IDBE : Model Set Up Standard.
 - http://buildingsmart.org.au/wp-content/uploads/Vol-1-Geo-referencing-BIM_v1.2.pdf

W3C

- <https://www.w3.org/das/roadmap> (roadmap for devices and sensors working group)
- <https://w3c.github.io/orientation-sensor/> (Stable draft)
- <https://w3c.github.io/geolocation-sensor> (Working draft)

Existing Standards / Efforts



Prior standards and work on geospatial AR

OGC ARML 2.0: OGC's existing AR standard.

<http://www.opengeospatial.org/standards/arml>

BorderGo: An open source repository with some useful algorithms for synchronizing geographical pose with the local coordinate system of an AR SDK (Google Tango, in this case)

<https://github.com/kartverket/bordergo>

New Industry Association



GeoPose has the support of members of Open AR Cloud Association


- <https://www.openarcloud.org/>

GeoPose SWG request for vote



- The GeoPose Ad Hoc recommends that the OGC Technical Committee approve an electronic vote to approve formation of the GeoPose SWG under the charter of [OGC 19-028r1] “GeoPose SWG Charter.”
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

OGC API – Catalogues Ad Hoc Group

112th OGC Technical Committee
Banff, Canada

Panagiotis (Peter) A. Vretanos
12 September 2019

The most important thing for this WG is...



Form a new OGC API – Catalogues SWG and subsequently design, discuss and document a new version Web API that conforms to the principles of the OGC API framework.

Agenda



- Charter discussion
- Call for additional requirements
- Currently available resource (i.e. github repo, etc.)
- Currently available implementations (yes, there is 1)
- Review text of the TC motion

Activity Summary



- Discussion topics

- The agenda as presented previously
- Relation of this work to other OGC API activities (especially OGC API – Features and STAC)
- The name of the SWG (Catalogues, Records)
- Extensibility of the core queryables
- Possible extensions; Harvest, GetDomain, Transactions

- Upcoming deliverables

- Charter revision incorporating comments
- eVote to form SWG

- Coordination (ongoing and planned)

- OGC API – Common
- OGC API - Features
- STAC

- Future meetings

- Weekly SWG meetings (at first) once SWG is formed

Motion




- The OGC API – Catalogs Ad Hoc Group recommends that the OGC Technical Committee approve an electronic vote to approve the formation of the OGC API – Catalogues SWG pending revisions to the charter based on the comments gathered during the comment period that closed 04-SEP-2019.
- AOTUC: none, motion passes

Motion from meeting ...



- The OGC API – Catalogues Ad Hoc Group recommends that the OGC Technical Committee approve an electronic vote to approve the formation of the OGC API – Catalogues SWG pending revisions of the charter [OGC 19-060] based on the comments gathered during the comment period that closed 04-SEP-2019.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

CDB SWG Closing Plenary Report

112th OGC Technical Committee
Banff, Canada
David Graham
12 September 2019

Agenda




- **Turn on GTM recording**; Patent Call; roll call; quorum;
- Welcome new CDB SWG Voting Member:
Shehzan Mohammed, Cesium
- Overview: CDB Roadmap;
- Results of SWG Electronic Vote on SWG Tasks / Charter
- Review of Documents-in-progress;
- Review of CRP's
- Develop Consensus on CDB V1.2 package and scope freeze
- Roadmap / timeline / goal
- Short term meeting schedule

Revised SWG Charter Approval Motion



- The CDB SWG recommends that the OGC Technical Committee review OGC 15-008r4 for approval as a revised Charter for the CDB SWG.
 - Pending any final edits and review by OGC staff, and pending approval of 5 new SWG tasks previously briefed to the TC
 - There was no objection to unanimous consent
- Minor revision of the SWG charter for the new format and incorporating new SWG tasks.



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

SensorML 2.1 Review Prior to TC Vote

112th OGC Technical Committee

Banff, Canada

Eric Hirschorn

12 September 2019

Agenda



- The continuing relevance of OGC SensorML version 2
 - Review of a connection between SensorML and Grid Coverages
- SensorML 2.0 method for setting an array: `setArrayValues`
 - Review of an example from the standard document [OGC 12-000]
 - Looks great, but it does not validate!
 - A modified example that does validate is not that useful – too verbose
- SensorML 2.1 introduces `setEncodedValues`
 - `setEncodedValues` does what was claimed for `setArrayValues`
- Changes to the SensorML standard document and schema

Does not work as claimed: setArrayValues



Snip from OGC 12-000 (SensorML-2.0)

(see top of page 96)

```
<sml:configuration>
  <sml:Settings>
    <sml:setArrayValues
      ref="base/components/raingauge/parameters/steady-state-response">
      1,2,3,4,5 2,4,6,8,10
    </sml:setArrayValues>
  </sml:Settings>
</sml:configuration>
```

This example does not validate

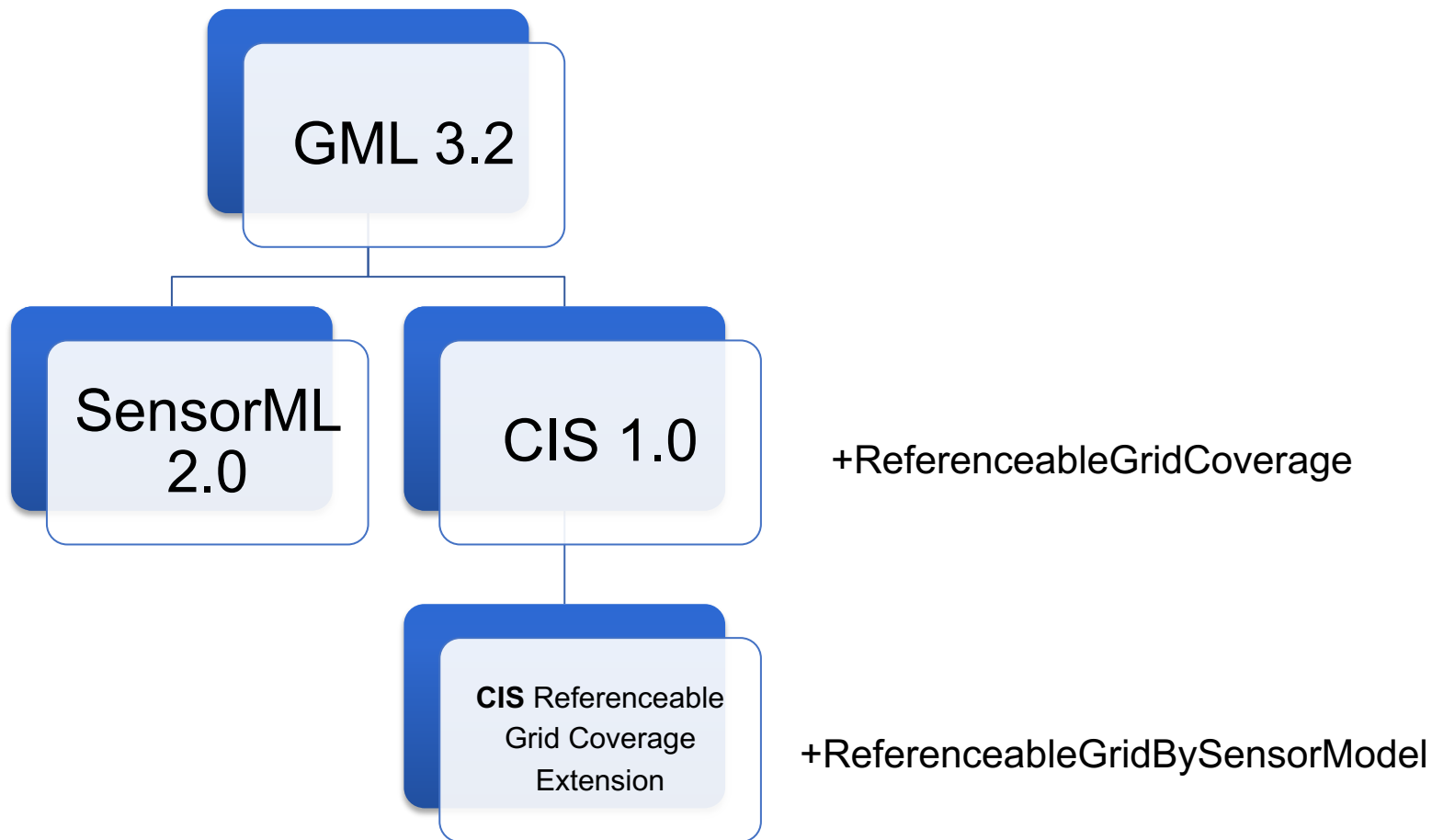
Working with the actual setArrayValues



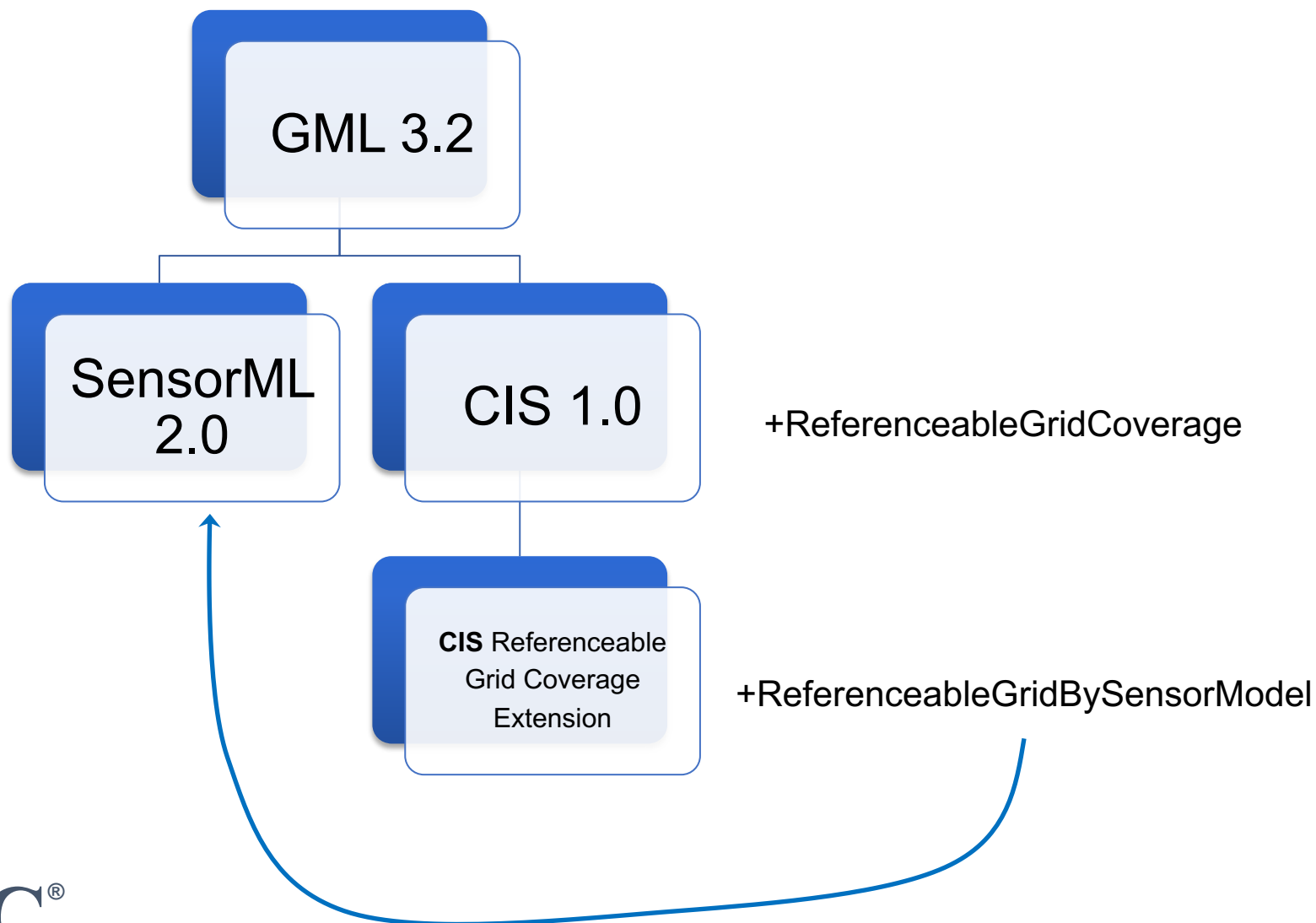
How to modify the example so it validates?

```
<sml:setArrayValues>
  <sml:ArrayValues>
    <sml:encoding>
      <swe:TextEncoding
        tokenSeparator="," blockSeparator="&#x0A;" decimalSeparator="." />
    </sml:encoding>
    <sml:value>
      ref="base/components/raingauge/parameters/steady-state-response">
        1,2,3,4,5 2,4,6,8,10
      </sml:value>
    </sml:ArrayValues>
  </sml:setArrayValues>
```

CIS ReferenceableGridCoverage Extension



Connection from Grid Coverages to SensorML 2



ReferenceableGridBySensorModel: sub-elements for specifying SensorML documents



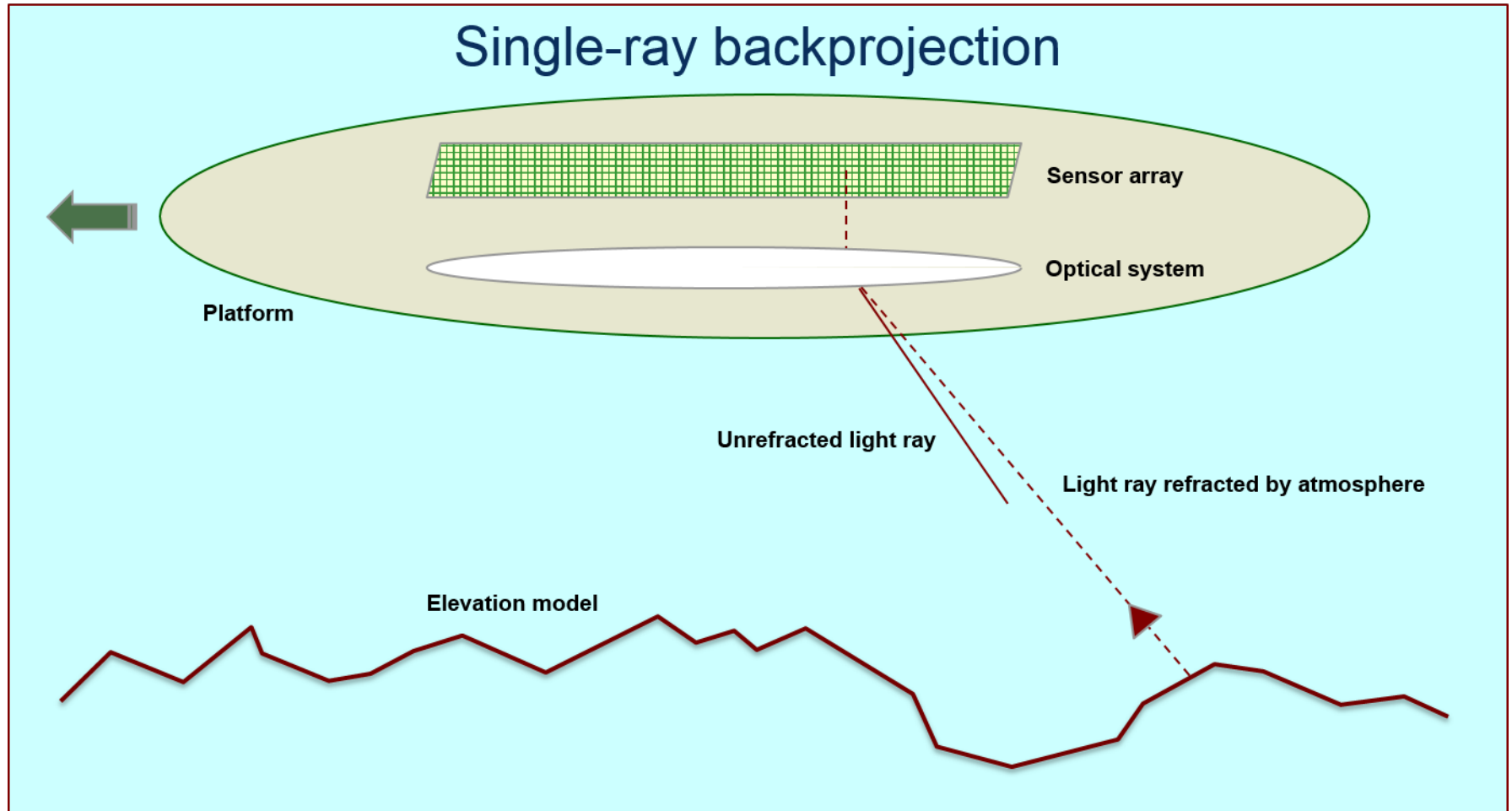
1. “sensorModel” – mandatory

- Defines the sensor model
 - Set of parameters
 - Can be used with or without values set to the parameters
 - May be specified via an href
 - 1 to an unlimited number allowed
 - » Remote sensing example: physics-based versus replacement models

2. “sensorInstance” – optional

- Defines the parameter values of a “sensorModel”
 - Tied to a single “sensorModel” using “sml:typeOf”
 - May also be specified via an href
 - 0 to an unlimited number allowed

ReferenceableGridBySensorModel: from sensor array to imaged points



Evolution of OGC standards for SensorML 2 support



- Developed by Mike Botts with NGA
 - Well-suited for modeling of imaging systems
 - Supports Community Sensor Model for Precise Geopositioning
- Supported by OGC Grid Coverage standards
 - GMLCOV / CIS 1.0 ReferenceableGridCoverage
 - ReferenceableGridCoverage Extension to CIS 1.0 (June 2017)
 - GMLJP2 version 2.1 (August 2018)
 - Supports perspective imagery via SensorML version 2
- Further support of SensorML v2 from OGC NA
 - OGC Name Type Specification – Sensor Models and Parameters
 - Repository for Sensor Model descriptions

Changes for the SensorML-2.1 Schema



Schema file configuration.xsd

```
<element name="Settings" substitutionGroup="sml:AbstractSettings" type="sml:SettingsType"/>
  <complexType name="SettingsType">
    <complexContent>
      <extension base="sml:AbstractSettingsType">
        <sequence>
          ...
          <element maxOccurs="unbounded" minOccurs="0" name="setArrayValues" type="sml:ArraySettingPropertyType">
            <annotation>
              <documentation>Allows the setting of array values for a particular property.</documentation>
            </annotation>
          </element>

          <element maxOccurs="unbounded" minOccurs="0"
            name="setEncodedValues" type="swe:EncodedValuesPropertyType">
              <annotation>
                <documentation>
                  Allows the setting of array values for a particular property. Encoding specification is expected to be located
                  in the "ref" attribute of swe:EncodedValuesPropertyType
                </documentation>
              </annotation>
            </element>

          ...
```

Changes for SensorML-2.1 Documents



Modify snip from OGC 12-000 (SensorML-2.0)

Just change setArrayValues to setEncodedValues

```
<sml:configuration>  
  <sml:Settings>  
    <sml:setEncodedValues  
      ref="base/components/raingauge/parameters/steady-state-response">  
      1,2,3,4,5 2,4,6,8,10  
    </sml:setEncodedValues>  
  </sml:Settings>  
</sml:configuration>
```

Modified example validates against proposed schema

Changes for the SensorML-2.1 Standard



1. Requirement 43

“The *setArrayValues* and *setEncodedValues* properties shall only reference and set array values for a *parameter* defined in a configurable process.”

2. Schema for Settings in Clause 8.5.3 updated

3. Conformance test A.8.6 title updated

“Only *parameter* array values can be set by *setArrayValues* and *setEncodedValues*”

4. Example for *setArrayValues* modified so it uses *setEncodedValues*

OAB Requested Changes for the SensorML-2.1 Standard



Updates to Normative References:

- Unified Code for Units of Measure (UCUM)
Version 2.1 (Nov 2011) from version 1.8
- The Unicode Standard
Version 10.0 (Dec 2017) from version 5.2
- Unicode Regular Expressions
Version 19 (Oct 2016) from version 13

SensorML 2.1



- Incremental update to a useful OGC standard
- Enables more concise documents (via SetEncodedValues)
- Update to supporting standards (UCUM and Unicode)

SensorML 2.1 request for an electronic vote



- The SensorML SWG 2.0 recommends that the OGC Technical Committee approve an electronic vote to approve release of 12-000r1 “OGC® SensorML: Model and XML Encoding Standard” as an OGC Adopted Standard.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent



Upcoming TC Meetings

Technical / Planning Committee Meetings



Date	Location	Host/Sponsor
9-13 September 2019	Banff, Canada	University of Calgary, NRCan
18-22 Nov 2019	Toulouse, France	Airbus
2-6 March 2020	Hong Kong (TBC)	Several, still sorting!
June 2020	Montreal, Canada	CAE
14-18 Sept 2020	Munich, Germany	TUM
30 Nov – 4 Dec 2020	Palo Alto, CA USA	EPRI
March 2021 (or 2022)	Offer from India (TBC)	NRSC, DST, SOI
June 2021	Madrid, Spain (TBC)	FOMENTO

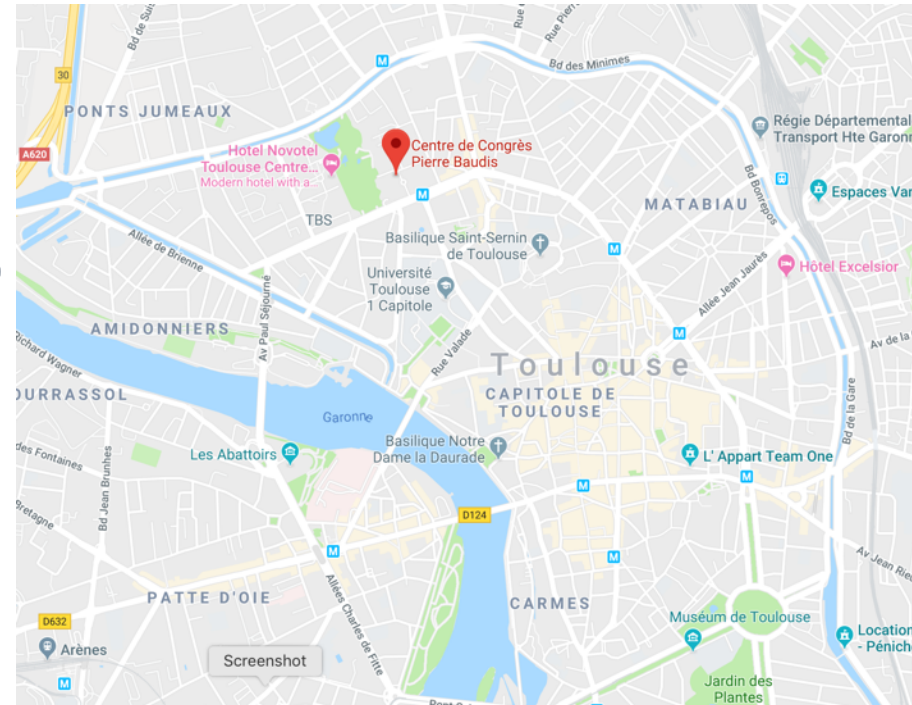


Toulouse

Logistics



- 18 – 22 November
- TC: Centre de Congrès Pierre Baudis
- PC: Radisson Blu Hotel Toulouse Airport
- Suggested hotels:
 - Mercure Toulouse Centre Compans (room block available)
 - Novotel Toulouse Centre Compans Caffarelli (room block available)
 - Hôtel de Brienne





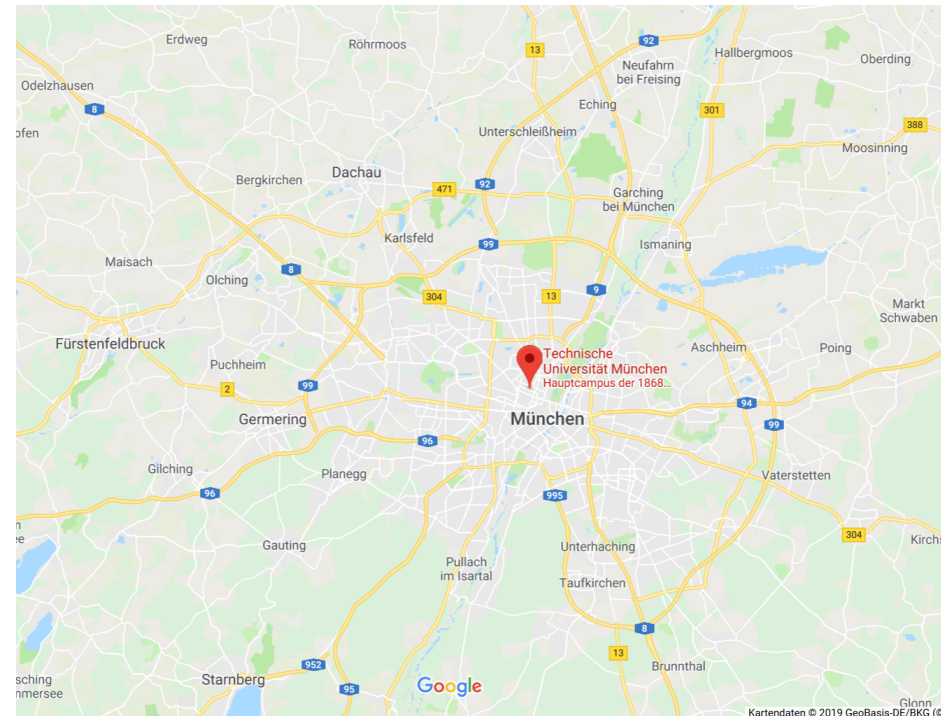
OGC TC Meeting in Munich, Germany

14.-18.9.2020

- The OGC TC Meeting takes place in the week before the Oktoberfest
 - If you plan to stay for the Oktoberfest, book your hotel room early enough, i.e. latest by the end of this year!
- Sponsorship positions are available

Host & Venue

- Technical University of Munich
Arcisstrasse 21
80333 München
- Main campus in the city center of Munich



Hotels



- Leonardo Hotel München City Center
 - <https://www.leonardo-hotels.com/leonardo-hotel-muenchen-city-center>
 - Room block available (Code „OGC Conference”)
- Atrium Hotel Munich
 - [https://www.atrium-hotel.de/seiten/home.html?lang=English](https://www atrium-hotel.de/seiten/home.html?lang=English)
 - Room block available (Code „OGC Conference”)
- Hotel Antares
 - <https://www.atares-muenchen.de/en/>
 - No room block, but they still have free rooms
- Additional room blocks are currently being investigated
- For further suitable accommodation please refer to the well-known hotel booking sites on the web.



TC Chair Announcements and Motions

Canada Forum

Meeting in: BÄNFF-AB - TRENTY 7 TERRITORY
Eyahey Totanga Woveyahgey Wokân
- Sleeping Buffalo Mountain

Que devrait faire la communauté ensuite? What should the community do next?

#OGC #OGC19CA #OGCAFORUM

112TH OGC TECHNICAL COMMITTEE
THE CANADA FORUM / LE FORUM CANADIEN
ON GEOSPATIAL STANDARDS / SUR LES NORMES GÉOSPATIALES
SEPT 10-2019

Natural Resources Canada, UNIVERSITY OF CALGARY, sensorup, esri Canada

Équipe Canada à la CONQUÊTE de la coupe STANLEY géospatiale!

ideas: where could we show leadership?
» AI/ML
» International collaborations
» Forests & water
» Indigenous & Northern Studies

canadian SUCCESS STORIES
PROTÉS INNOVANTS

IT'S AN EXCITING TIME < NEW sensors & datasets! >
ALSO SCARY... Hurricane Dorian
NEED INTEROPERABILITY, contribution & collaboration to manage the CHALLENGES

Coasts & oceans

Understanding is CRITICAL for:
» The Arctic
» Natural disaster preparedness
» Systemic issues, immediate mapping
» Marine shipping & maritime safety
» Economic development & benefit of indigenous & coastal communities
» Spatial info to the people who can use it
» Smart and sustainable communities

CLIMATE CHANGE

ARCTIC
TRUE NORTH strong & true
CLIMATE Affects 2-2.5X magnification in ARCTIC
» Smaller communities
» Sensitivity of permafrost to quality of life, infrastructure
» Changements climatiques
RESPOND during disaster, e.g. 1000+ in Canada - Focus on FIRE & FLOOD

Climate Data.ca
» a success in the making?
FEEDBACK NEEDED
» fill in through Portal
» UNESCO Capot map to 2004
» Canadian expertise & relationship building to develop regional capacity - future preparedness

FEDERAL GEOSPATIAL PLATFORM
We are EXPERTS at BRINGING LAND & SEA TOGETHER!
» Survey, Plan, Manage SDI
» Smart Cities CHALLENGE WORKERS
» Bridgewater, smart cities
» Microsoft Communities
» Google, Washington, etc.
» Montreal, Québec

Alphabet STREET VIEW LABS TORONTO

ACTION PLAN to MONTREAL
» academia
» update list of future
» whitepaper: state of geospatial education & research
» Survey different funding possibilities
» Build awareness of innovation programs - e.g. OGC

June 2020 MONTREAL
Bienvenue à la communauté géospatiale!
OGC #115
D'un océan à l'autre!
GRAPHIC REDUCED BY ALI MARSHALL @STPLX.CA

PORTALS, PLATFORMS & INFRASTRUCTURE
WHAT IS going on TODAY
» Arctic SDI GeoPortal > OSKARI
» Polar data catalogue > Waterloo
» CFS fire propagation modeling & monitoring
» Portals accessed through CCCS - Climate
» PAVICS - Conitae S
» ALSO: CCCS Citi
» NEW (1 year old) program @ NRCan
» Collaborations under
» Canada feeding in data to GEBCO Nippon 1x1 km Sea floor mapping
» \$1.5 B National Oceans Protection Plan > dynamic hydrographic products & services (using OGC web services)
» Mohawk Cow
» building new efficiency - resi
» Data layers
» Overlaps of
» Creating redi

MONTREAL

INNOVATION & ECONOMY
» INNOVATION Showcase
» "dry run" OGC #115
» Geosignite June 22-2020
» WORKING group, mailing LIST

Merci & Tha
VOLUNTEER CH
Aurelian Conita
Bradford Dean,
Andy Haggart
Tom Landrey, C
Cameron Wilson
OGC FACILITATOR

OGC

One of the ACTIONS was an Innovation Showcase

Request

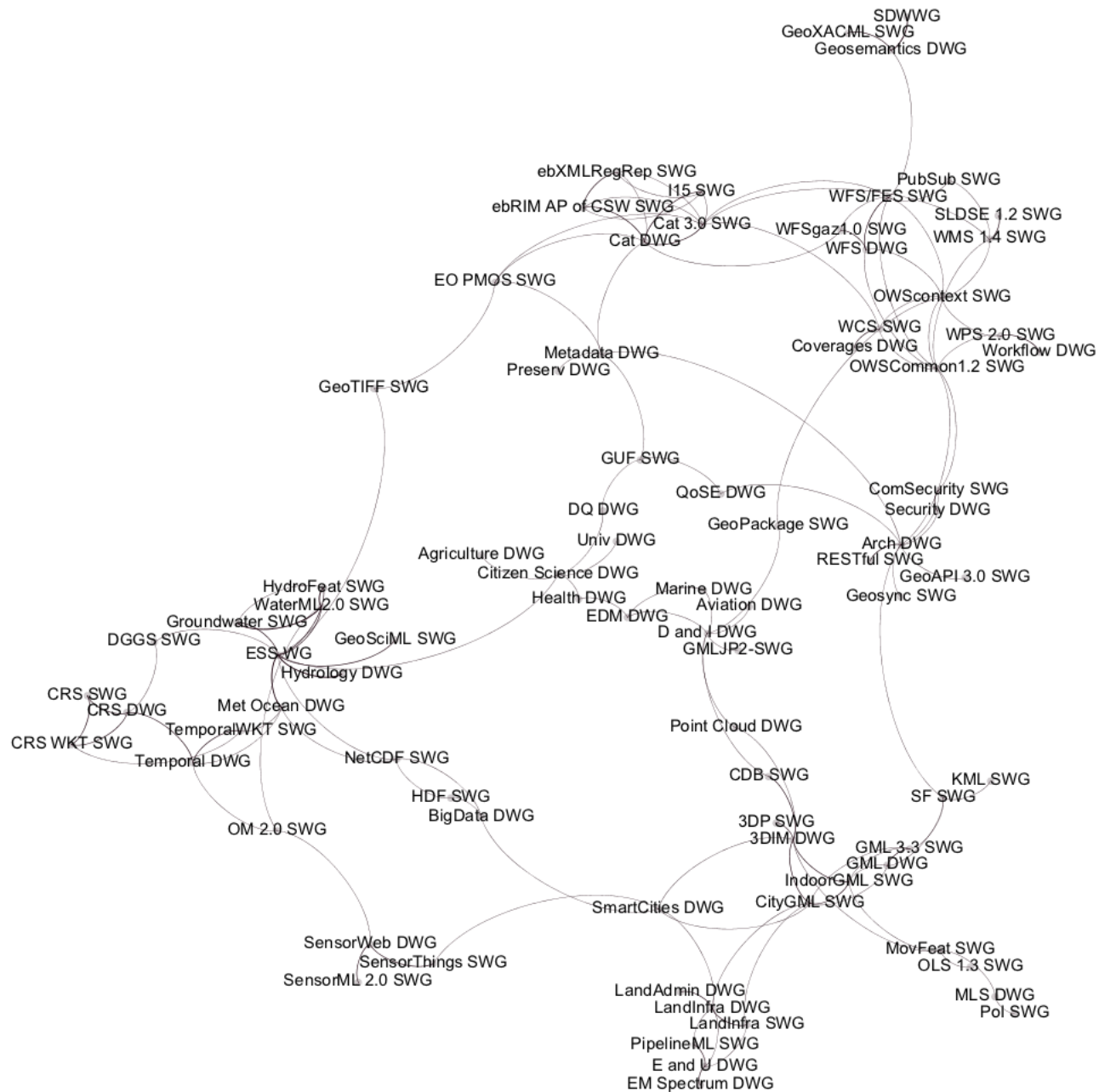


- Are you a Canadian company or organization that would like to take part in a Canadian Innovation Showcase at the Montreal TC, June 2020?
- If so would you be interested in joining the Canadian Innovation Showcase Steering Group to organize this activity?
- Contact andy.hoggarth@teledyne.com to get involved!

SWG-DWG relationships - background



- Action from 2015 Barcelona PC Meeting (!) to find a “home” DWG for every SWG
 - Be an open forum for discussion of use cases and requirements
 - Provide DWG guidance for collaboration between SWGs as needed
 - Be a home for Change Requests that are made on standards with inactive SWGs: make the decision whether to reactivate the SWG
- Action from 2017 Delft PC Meeting to develop a WG wiring diagram
 - See next slide
 - Used to guide clustering of DWGs
 - Based on common work/topical discussions, being expanded to include common attendance



ACTION



- We have a PC action to make the assignment



- I could **JUST DO IT.**
- But let's first ask YOU, who actually run the WGs, to suggest assignments
 - <https://forms.gle/gsNPKP44HhqnnnoJt7>



WG Reports not to be briefed

Not being briefed today, saving you **177** slides




- 3DIM DWG
- 3D Portrayal SWG
- Agriculture DWG
- Aviation DWG
- CITE SC
- Citizen Science DWG
- CityGML SWG
- Coverages DWG / WCS SWG
- CRS DWG/SWG
- Defense and Intelligence DWG
- DGGs DWG
- Features API SWG
- GeoAI DWG
- Geosemantics DWG
- GeoTIFF SWG
- IDBE SC
- ISG DWG
- Marine DWG
- MetaCat DWG
- MetOcean DWG
- MLS DWG
- Moving Features SWG
- Observations and Measurements SWG
- OGC Naming Authority
- OWS Common SWG
- Perspective Imagery DWG
- Portrayal DWG
- QoSE DWG
- Security DWG
- SensorThings API SWG
- Smart Cities DWG
- TimeseriesML SWG
- WMS SWG



3 - Z

WG Reports with TC Motions



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Architecture DWG

112th OGC Technical Committee

Banff, Canada

Joan Maso, Gobe Hobona

12 September 2019

The most important thing for this WG is...



Who is going to administer and coordinate all of the OGC APIs? If it's the OAB how are they going to do it?

Agenda



- Discussion Paper - JSON Encodings for EO Coverages (19-042r1) - Lewis John McGibbney (NASA)
- Location Analytics for Smart Grid Reliability- Vivian Sultan (Claremont Graduate University)
- OGC API Hackathon Engineering Report (19-062) – Gobe Hobona (OGC)
- Dutch API Best Practices - Linda van den Brink (Geonovum)
- Draft OGC JSON Best Practice – Joan Maso (CREAF)
- Discussion on interrelations of emerging OGC APIs – Joan Maso (CREAF)

Activity Summary



- Discussion topics

- JSON Encodings for EO Coverages
- Smart Grids as a use case for event-driven APIs
- OGC API Hackathon report and findings
- Web API Guidelines may need to be updated to support coordination
- Lessons from Dutch API work (e.g. need for content negotiation by CRS; a recommendation transferred to OWS Common: issue 64)

- Coordination (ongoing and planned)

- For the OGC API development:
 - WPS SWG, WCS SWG, WMS SWG, WFS SWG

- Upcoming deliverables

- OGC Best Practice on JSON going into a final push of editing
 - You can contribute

- Future meetings

- Next TC Meeting

Key activities



- Sharing of lessons between SWGs working on OGC APIs
- Development of an OGC Best Practice document for JSON

Motion for release of OGC 19-042r1 “JSON Encodings for EO Coverages” as an OGC Discussion Paper




- The Architecture DWG recommends that the OGC Technical Committee approves public release of OGC 19-042r1 “JSON Encodings for EO Coverages” as an OGC Discussion Paper.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent
- This discussion paper was submitted to the ESDIS Standards Office (ESO) by the NASA Earth Science Data System Working Group focused on exploring JSON Encodings in Earth Observation Coverages currently used by NASA.

Motion for release of OGC 19-062 “OGC API Hackathon 2019 Engineering Report” as an OGC Public Engineering Report



- The Architecture DWG recommends that the OGC Technical Committee approves public release of OGC 19-062 “OGC API Hackathon 2019 Engineering Report” as an OGC Public Engineering Report.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent
- The subject of this engineering report is a hackathon event that was held from June 20th to 21st, 2019 to advance the development of OGC Application Programming Interface (API) specifications. The engineering report captures the results, findings and recommendations of the hackathon.



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

DGGS SWG

112th OGC Technical Committee

Banff, Canada

Matthew Purss

12 September 2019

Agenda




- ISO 19170 Update
 - Robert Gibb – (~30 min)
- Update and discussion on the proposed New SWG tasks/roadmap
 - Matthew Purss – (10 min)
- Discussion of Relevant Issues/Topics raised during the DGGs DWG Session
 - Everyone – (30 min)
- Other Business

DGGS SWG Motion



- The DGGS SWG recommends that the OGC Technical Committee take note of the need to update Abstract Specification Topic 21 [OGC 15-104r5] to accommodate the requirements of both static and dynamic datums in the specification of the DGGS Reference Frame. The proposed informative changes will include:
 - That an appropriate static or dynamic CRS is needed as part of the definition of the DGGS Reference Frame.
 - If the specified CRS is dynamic, then an epoch is necessary in order to fix the DGGS Reference Frame in space and time.
 - The quantization method defined for a DGGS needs to accommodate the same level of specification with respect to the static and/or dynamic CRS defined in the metadata of external source data to be mapped to a DGGS.
 - There was no objection to unanimous consent



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



UNIVERSITY OF
CALGARY



Earth Observation Exploitation Platform Domain Working Group Report

112th OGC Technical Committee

Banff, Canada

Christopher Lynnes

12 September 2019

The most important thing for this WG is...



There is a variety of Earth Observation Exploitation Platforms that benefit from the use of interoperable standards both within the platforms and potentially between platforms.

Agenda



- Proposed revision (r2) to the Federated Clouds Engineering Report OGC 19-090
- EO4GEO: Developing innovative and integrated EO-learning tools
- Preview of the ESA-NASA Multi-mission Algorithm and Analysis Platform

Activity Summary



- Discussion topics

- Single sign-on in and between federated platforms
- Learning as a form of Earth Observation Exploitation
- Federations NASA and ESA resources in the ESA NASA Multi-mission Algorithm and Analysis Portal

- Upcoming deliverables

- 18-090r2: Revision 2 of Federated Clouds Engineering Report (Motion to release)

- Coordination (ongoing and planned)

- WPS (planned)
- OpenSearch (planned)
- OGC API Common (observing)

- Future meetings

- Drill down on ESA NASA Multi-mission Algorithm and Analysis Platform (Toulouse)


Engineering Approval Motion



The Earth Observation Exploitation DWG recommends the release of the revised Federated Clouds Engineering Report OGC 18-090r2.

- There was no objection to unanimous consent
- The near term goal of the Federated Clouds task in T14 is to demonstrate a specific data-sharing scenario among two or more administrative domains using existing security tooling.. Revision 2 adds more context, including additional ongoing examples of federation.



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



EDM Closing Plenary Report

112th OGC Technical Committee
Banff, Canada

Rob Thomas/Don Sullivan

12 September 2019

The most important thing for this WG is...



The most important thing for this working group is facilitating getting the right information to the right responsible individual(s) at the right time.

Agenda Item 1



- Laura Salisbury, NRCan/CCMEO will give a presentation on the CCMEO water and flood-related initiatives, overall vision, and where the opportunities are for collaboration with the OGC.

Agenda Item 2



- Jeff Siarto, of Element84, will give a presentation titled "Why Standards Matter: Improving Disaster Response Data Pipelines".

Agenda Item 3



- Josh Lieberman, OGC, will give a short update on the SCIRA Pilot.

Agenda Item 4



- A riveting discussion by Rob Thomas on the Disasters Resilience Pilot and Demonstration Event, and the User Guides developed.

19-048	OGC Disasters Resilience Pilot User Guide: Image Matters GeoPlatform User Guide	Image Matters
19-049	OGC Disasters Resilience Pilot User Guide: HSR Health SDI: Facilitating Public Health During a Disaster	Health Solutions Research
19-050	OGC Disasters Resilience Pilot User Guide: Landslide - Early Response and Evacuation Under Limited Bandwidth	GIS.FCU
19-051	OGC Disasters Resilience Pilot User Guide: Interoperability to Optimize Resource Allocation Across Flood Disaster Timeline	RSS-Hydro
19-053	OGC Disasters Resilience Pilot User Guide: Using Web Enterprise Suite for Flood, Wildfire and Hurricane Disaster Response	Compusult
19-058	OGC Disasters Resilience Pilot User Guide: Rapid Assessment for Flood, Hurricane, and Agriculture Condition	GMU
19-059	OGC Disasters Resilience Pilot User Guide: Enable Disaster Information Interoperability with Ontologies Among Information Communities	GeoThings
19-061	OGC Disasters Resilience Pilot User Guide: Flood - Emergency Response and Impact Assessment	Wuhan University
19-063	OGC Disasters Resilience Pilot User Guide: Connecting Communities During Disasters for Timely Impact Analysis	Esri

Request for an electronic vote




- EDM DWG recommends to the TC that an electronic vote be initiated to approve Documents:
 - 19-048 OGC Disasters Resilience Pilot User Guide: Image Matters GeoPlatform User Guide
 - 19-049 OGC Disasters Resilience Pilot User Guide: HSR Health SDI: Facilitating Public Health During a Disaster
 - 19-050 OGC Disasters Resilience Pilot User Guide: Landslide - Early Response and Evacuation Under Limited Bandwidth
 - 19-051 OGC Disasters Resilience Pilot User Guide: Interoperability to Optimize Resource Allocation Across Flood Disaster Timeline
 - 19-053 OGC Disasters Resilience Pilot User Guide: Using Web Enterprise Suite for Flood, Wildfire and Hurricane Disaster Response
 - 19-058 OGC Disasters Resilience Pilot User Guide: Rapid Assessment for Flood, Hurricane, and Agriculture Condition
 - 19-061 OGC Disasters Resilience Pilot User Guide: Flood - Emergency Response and Impact Assessment
 - 19-063 OGC Disasters Resilience Pilot User Guide: Connecting Communities During Disasters for Timely Impact Analysisfor public release as User Guides.
- Pending any final edits and review by OGC staff
- There was no objection to unanimous consent

Next Quarter WG Communications Plan



- Pilot official release 18 September, USGS Reston
- Next DWG meeting Toulouse



Strategic Member Support by
 Natural Resources Canada / Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



Environmental Data Retrieval API Ad Hoc Working Group Report

112th OGC Technical Committee

Banff, Canada

Chris Little

12 September 2019

The most important thing for this WG is...



Establish EDR API SWG

What is EDR API ?



Environmental Data Retrieval (EDR) API
formerly known as Weather on the Web API

- Point
- Timeseries at a point
- Polygon
- Vertical Profile
- Trajectory 2/3/4D
- Corridor
- Plume 2D
- Tile/Cubelet from Tileset

EDR API Ad Hoc WG Agenda



- Welcome, Introduction, Technology struggles
- Charter discussion
- Proposed Working arrangements
- Proposals for Chair, Co-Chairs and document editors
- Motion to TC
- Any Other Business.

Charter Members



Chris Little

UK Met Office

Steve Olson

US National Weather Service

Frédéric Guillaud

Météo-France

Dave Blodgett

US Geological Survey

Tom Kralidis

Meteorological Service of Canada

Roope Tervo

Finnish Meteorological Institute

Bruce Bannerman

Individual

Chris Lynnes

NASA

Ethan Davis

UCAR

Cristiano Lopes

ESA

Iain Burnell

DSTL

ERD API Ad Hoc WG Activity Summary



- Charter Discussion topics

- Clarify distinctions between
 - Resource types
 - Search Patterns
 - Dynamic creation of resources
- API Building blocks
- Generic vs Domain specific name

- Upcoming deliverables

- Agreed Charter
- Work plan:
- Point, Timeseries drafts by Toulouse
- ?? by Hong Kong
- ?? by Munich

- Coordination (ongoing & planned)

- OGC API – Features
- OGC API - Core
- W3C SDWIG ?
- WMO

- Future meetings

- GTM telco
- Toulouse TC
- Hong Kong TC

Work Plan for Draft Documents



- By Toulouse TC 2019-11
 - Point – Mark Burgoyne
 - Timeseries at a point – Mark Burgoyne
- By Hong Kong TC 2020-03
 - Polygon – who edits?
 - Vertical Profile –who edits?
- By Montreal TC 2020-06
 - Trajectory 2/3/4D – who edits?
- By Munich TC 2020-09
 - ?
 - Corridor
 - Plume 2D
 - Tile/Cubelet from Tileset
- In 2021: Ensembles of any above?

ERD API Ad Hoc WG Key activities



- Process outstanding comments for current public review (finishes 19 Sept 2019)
 - Editorial
 - More Charter members
- Revise Charter, including comments from Ad Hoc meeting in Banff, 12 Sept 2019.
 - Clarify Initial Deliverables and Additional Work
 - Clarify collaboration
 - API Building Blocks, not just API
 - Clarify data patterns, resource types, query patterns
- Initiate electronic vote for approval

No Motions just yet




- The ERD API Ad Hoc WG recommends that the OGC Technical Committee approve release of OGC 19-055r1 “Environmental Data Retrieval API SWG Charter” pending any final edits and review by OGC staff

Next Quarter WG Communications Plan



- Advertise Latest Draft charter for review, comment and electronic approval



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

GeoPackage SWG Working Group Report

112th OGC Technical Committee

Banff, Canada

Jeff Yutzler

12 September 2019

Agenda




- GeoPackage Capability Gaps (19-047)
- Discussion

Document Approval Motion



- The GeoPackage SWG recommends that the OGC Technical Committee approve release of 19-047 “Proposed GeoPackage Enhancements” as an OGC Discussion Paper.
 - Pending any final edits by Carl and Jerome and review by OGC staff
 - There was no objection to unanimous consent
- GeoPackage stakeholders have observed persistent interoperability issues, particularly with regards to metadata, extensions, and portrayal. This paper presents the operational need, proposed approach, and way ahead for addressing these interoperability issues.



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

IndoorGML SWG Report to TC

112th OGC Technical Committee

Banff, Canada

Ki-Joune

12 September 2019

Agenda




- Role Call and Progress report (5 min.)
- Presentations
 - A. OGC Indoor Mapping and Navigation Pilot ER by Charles Chen (15 min.)
 - B. Challenges, results and lessons learned applying model-based/ETL transformation approaches to 3d building data for the IndoorGML pilot by Dean Hintz (15 min.)
 - C. Proposal of the Discussion Paper on Indoor Point of Interest (Indoor POI) Extension in IndoorGML By Kyoung-Sook Kim and Jiyeong Lee (15 min.)
- SWG Voting for OGC Indoor Mapping and Navigation Pilot Engineering Report (10 min.) - https://portal.opengeospatial.org/files/?artifact_id=89612&version=1
- IndoorGML 2.0 – Progress report by Abdoulaye Diakite (15 min.) and discussion (25 min.)

TC Motion



- IndoorGML SWG recommends that the OGC Technical Committee approve release of [18-089r1] “OGC Indoor Mapping and Navigation Pilot Engineering Report” as an OGC Engineering Report
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent
- Summary: Report on the OGC Indoor Mapping and Navigation Pilot Project funded by NIST, which aimed at PoC for constructing indoor maps for public safety in CityGML and IndoorGML from point cloud and providing indoor navigation turn-by-turn instructions to first responders.



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

LandInfra DWG/SWG

112th OGC Technical Committee
Banff, Canada
Leif Granholm
12 September 2019

Agenda Joint with SWG



- **Cadastre and Land Administration Thesaurus** – *HC Gruler / Gobe Hobona*
- **ISO TC 127 - Earth Moving Machinery** – *Leif Granholm / HC Gruler*
- **Feedback from Trimble Civil about InfraGML and its low adoption rate and name recognition** – *Leif Granholm*
- **bSI and IFC Road** – *Johnny Jensen*
- **LADM Activities** – *HC Gruler*
- **Ambassador for new implementations** – *ALL – discussion*
- **LandInfra 2.0** – *ALL – discussion*

Approval Motion




- The LandInfra DWG recommends that the OGC Naming Authority adopts the Cadastre and Land Administration Thesaurus (CaLAThe) version 3 as a representation of some of the concepts from the LandInfra standard. It is expected that additional concepts will be added over time to include future versions of the thesaurus.

https://portal.opengeospatial.org/files/?artifact_id=86637

- Pending any final edits and review by OGC staff
- There was no objection to unanimous consent



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



UNIVERSITY OF
CALGARY



esri Canada

Temporal Domain Working Group Report

112th OGC Technical Committee

Banff, Canada

Chris Little

12 September 2019

The most important thing for Temporal DWG is...



An OGC Abstract Temporal Model and analysis of existing
OGC standards

Temporal DWG Agenda



- Welcome, Introduction, Technology struggles (5 min)
- Newly discovered ISO temporal work
- Items delegated to DWG from OAB & OGC Naming Authority:
 - Review and recommendation of geological time scale authoritative reference (15 min);
 - How to progress an Abstract Temporal Model and review current OGC standards for their approach (20 min).
- Volunteers for Co-chairs (5 min).
- Any Other Business.

Temporal DWG Activity Summary



- Discussion topics
 - Use of ISO code lists for WKT
 - Geological Timescale authorities

- Upcoming deliverables
 - Recommendation and documentation for OGC NA
 - Liaison agreement with ISO TC154
 - Abstract Spec?
 - BP ?

- Coordination (ongoing and planned)
 - W3C SDWIG
 - ISO TC 154 WG5

- Future meetings
 - Toulouse TC

Temporal DWG Key activities



- Get more volunteers, co-chair
- Increase liaison with ISO TC154 WG5
- Start drafting Abstract Model
 - Review OGC Standards
 - Cannibalize ancient draft Best Practice for Time

Motion to Update the Datum for Geologic Time



- The Temporal DWG recommends that the OGC Naming Authority register both geological timescales as discussed:

Change the datum on

<http://www.opengis.net/def/crs/OGC/0/ChronometricGeologicTime> to match <http://resource.geosciml.org/classifier/cgi/geologicage/ma> IUGS Commission for Geoscience Information “Geologic time - millions of years”

Add a new CRS for ‘BP’, starting at 1950, and counting backwards in years

- There was no objection to unanimous consent

Motion to Request a Liaison Agreement with ISO TC 154




- The Temporal DWG recommends that the Technical Committee requests the Planning Committee to establish a liaison agreement with ISO TC 154.
 - Discussion: TC 154 Working Group 5 ‘Date and Time’ is producing code lists of timescales and calendars.
 - There was no objection to unanimous consent
- TC154: Processes, data elements and documents in commerce, industry and administration, WG5 Date and time.

Next Quarter Temporal DWG Communications Plan



- ISO TC154 WG5 has published two useful controlled vocabularies:
 - ISO/PWI 34300:2019(E) Date and time — Codes for calendar systems
 - ISO/PWI 34100:2019(E) Date and time — Physical time scales
- The W3C OWL-Time Recommendation (2016) is being used and cited, and extensions and updates being proposed



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Joined WPS/Workflow meeting

112th OGC Technical Committee

Banff, Canada

Benjamin Pross, Stan Tillman

12 September 2019

Agenda



- WPS Routing API ER, Christian Autermann, 52° North
- (OGC API – Processes: Status and next steps, Benjamin Pross, 52° North)
- AOB


Request for an electronic vote



- The Workflow DWG recommends that the OGC Technical Committee approve an electronic vote to approve release of 19-040 “WPS Routing API ER” as an OGC Public Engineering Report.
 - Pending any final edits and review by OGC staff and members in the next three weeks
 - There was no objection to unanimous consent

The goal of this OGC WPS Routing API Engineering Report (ER) is to document the specification of an Application Programming Interface (API) which supports geographic routing. The specification includes two alternative approaches to such an API, one based on the current draft of the OGC API - Processes specification and another based on the OGC API principles (and a future OGC API - Common standard). Both approaches facilitate a common Route Exchange Model.



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



UNIVERSITY OF
CALGARY



UxS Closing Plenary Report

112th OGC Technical Committee
Banff, Canada
Don Sullivan
12 September 2019

The most important thing for this WG is...



The most important thing for this WG continues to be the coordination with other US and International groups like the Earth Science Information Partnership (ESIP) and the Research Data Alliance (RDA), and, as new groups are discovered, working with them.

Agenda



- A triple treat, with presentations from Jane Wyngaard and Charles F. Vardeman II from the University of Notre Dame, and Lewis John McGibbney from NASA's Jet Propulsion Laboratory (JPL): Update on the Linked And Networked DRoneS project: APIs, and Ontologies
- Scott Simmons and Mark Reichardt OGC: A notification to members about the ANSI standards compendium and opportunities for members to participate

Next Quarter WG Communications Plan



- RDA's 14th Plenary - Helsinki, Finland - LANDRS Hackathon2: Building an Open Data Web Native Tool Stack for Drones
 - <https://www.rd-alliance.org/rda-14th-plenary-side-meetings-collocated-events>
- ESIP Winter Meeting
 - <https://2019esipwintermeeting.sched.com/info>
- OGC Toulouse Meeting




“Important Things” discussion

Topics



- Developing additional parts of OGC API Features to support coordinate reference systems, filter/query capabilities and simple transactions
- Dynamic CRS - what are our next actions?
- Is there a "Dark OGC"? How do we share awareness and transparency between long range planning activities, rapid developments in the Innovation Program, and the detailed work in the Standards Program? Has OGC or a subset of members predetermined future paths that should be shared will all?



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



Closing Plenary – reports without motions


112th OGC Technical Committee

Banff, Canada

Scott Simmons

12 September 2019



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

3DIM DWG

112th OGC Technical Committee
Banff, Canada

C Roensdorf, D Graham, J Stoter
12 September 2019

The most important thing for this WG is...



Lots of activity in underground space to be coordinated without loosing view on wider 3D topics.

Agenda




- A Use-Case of CityGML for Handling Geo-Referenced Multimedia, Sung-hwan Kim, Pusan National University
- Underground- current state of MUDDI and other developments,
 - ASCE As-built standard to be published - Phil Meis
 - MUDDI – Update - Josh Lieberman
 - Initial Findings NSF Subsurface workshop - Debra Laeffer
- IndoorGML - CityGML/3DIM: follow-up from discussion from telcon on 28 August 2019
 - Presentation on CityGML space concept – Tatjana Kutzner

Activity Summary



- | | |
|---|--|
| <ul style="list-style-type: none">• Discussion topics<ul style="list-style-type: none">– Multimedia – CityGML integration– Underground | <ul style="list-style-type: none">• Upcoming deliverables<ul style="list-style-type: none">– none |
| <ul style="list-style-type: none">• Coordination (ongoing and planned)<ul style="list-style-type: none">– Across OG | <ul style="list-style-type: none">• Future meetings<ul style="list-style-type: none">– Toulouse, November 2019 |



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



3D portrayal SWG

112th OGC Technical Committee

Banff, Canada

G. Gesquière


12 September 2019

Agenda



- Speaker: Shehzan Mohammed (Cesium)
 - 3D Tiles Ecosystem Update (15 min)
- Speaker: Barry Jenkins (Primal Space Systems)
 - 3D Tiles Nav: Proposed Extensions Bringing Occupancy Grids and Potentially Visible Sets to 3D Tiles (15 min)
- V. Jaillot, S. Servigne, G Gesquière (Univ. Lyon- LIRIS)
 - Visualization and personalization of multidimensional City models (15 min)
 - ***This last presentation has been postponed to the next TC meeting due to lack of time***



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Agriculture DWG

112th OGC Technical Committee
Banff, Canada
12 September 2019

Agenda



- **Session 1 00 – 2 30**
- Karel Charvat Plan4all Conclusion from Leuven meeting
20 minutes
- Jim Wilson AGgateway standardization effort 20
minutes
- Christoph Ramshorn meteoblue climatic data and API
remotely 20 minutes remotely
- Karel Jedlicka EUXDAT climatic services 20 minutes
remotely
- Karel Charvat OGC Precision Farming pilot preparation
10 minutes

Agenda



- **Session 2 45 – 4 15**
- Karel Charvat EO4Agri recommendation for utilization of EO for Agriculture 20 minutes
- Peter Baumann Agri Datacubes: Results, Experiences, and Lessons Learnt 30 minutes
- Karel Charvat Discussion about future of EO for Agriculture and OGC Precision Farming Pilot

OGC and Agriculture



- Metadata
- IoT
- Data integration
- Downloading
- Visualization
- Location
- Data modeling
- Analysis
- Big Data
- AI
- EO
-

We need close cooperation of Technical Groups and Domain Groups

Not only OGC, what we will select



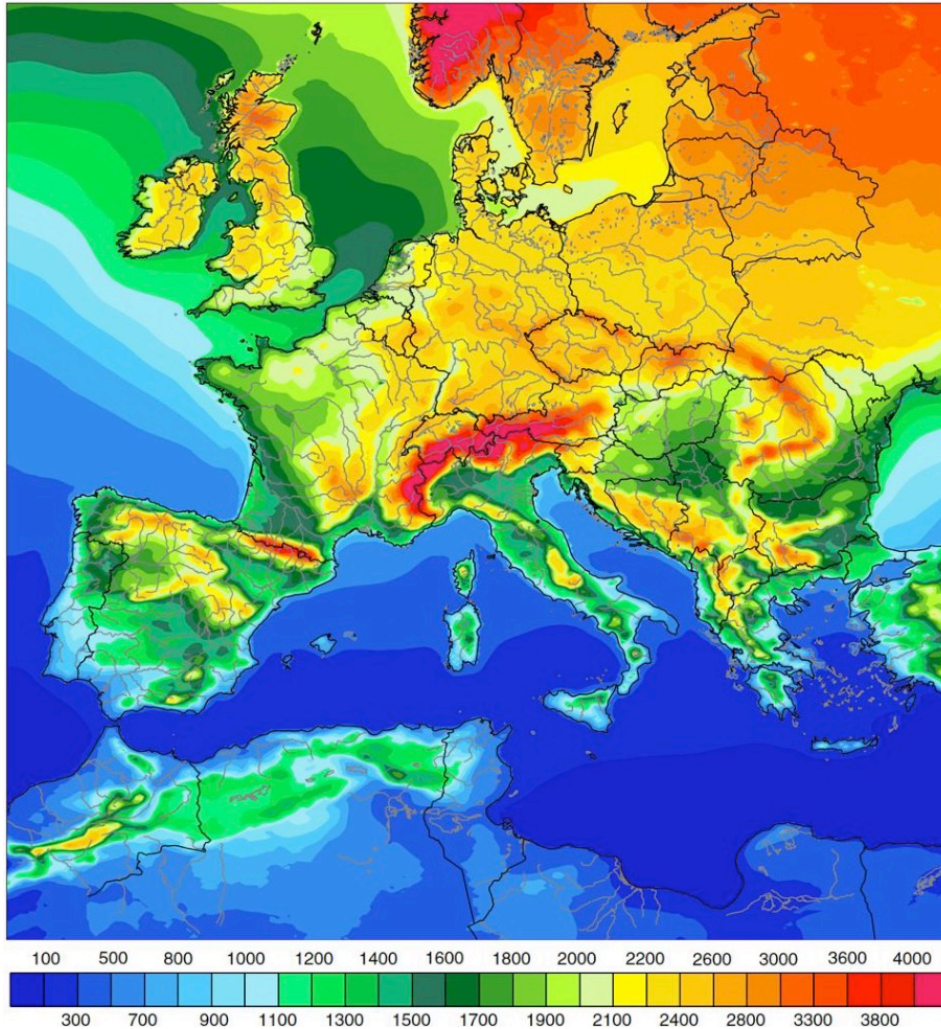
AND ON AND ON...

Many models



- American Farm Bureau Federation's Transparency Calculator
- New Zealand Farm Data Code of Practice
- FOODIE
-

Weather everywhere



Need to combine with
other data including IoT
Need to use HPC
Need need to use AI

Observation




- Needs for EO in four sectors
 - Agro-Industry Sector
 - Agricultural Finance Sector
 - Public Sector
 - Food and Nutrition Security

What next



- Agriculture Pilot can work in synergy with number of other activities of OGC
- Europe is ready
- Potential collaboration with IGAD RDA
- Potential collaboration with GODAN and GEO
- What about rest of World
- EO as candidate for first pilot
- Till now low interest of Industry
- How we can attract them to run Precision Agriculture Pilot



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Aviation DWG Report

112th OGC Technical Committee
Banff, Canada

Don Sullivan, NASA

Hubert LEPORI, EUROCONTROL

12 September 2019

Agenda



- A-DWG co-chairmanship - open co-chair position
- Plans for a new OGC Pilot Project in 2020 on WFS-TE
- AoB

Activity Summary



- Discussion topics

- Election of new Aviation Co-chair: Mr. Don Sullivan, NASA, has been elected.
- Delivering an OGC “WFS temporal extension” Best practice for reference by ICAO
- Involvement of airlines in the A-DWG

- Upcoming deliverables

- “WFS temporal extension” as OGC Best practices for reference by ICAO
- GML Profile for Aviation, as OGC Best practice


- Coordination (ongoing and planned)

- [Opsgroup](#)
- UxS DWG

- Future meetings

- During the next TC Meeting



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



UNIVERSITY OF
CALGARY



esri Canada

CITE SC

112th OGC Technical Committee
Banff, Canada
Chuck Heazel
12 September 2019

The most important thing for this WG is...



An Executable Test Suite for GeoTIFF is under development

Agenda



- OGC Validation Tools – Status Report (Bermudez)
- OGC Validation Tools – Introduction (Bermudez)
- GeoTIFF ETS Status (Heazel)
- The AGC Node (Youmans)

Activity Summary



- Discussion topics

- Introduction to the OGC Validation tools – how to build an ETS
- Status of the GeoTIFF ETS and its' deployment strategy
- Use of representative systems for conformance and interoperability testing

- Upcoming deliverables

- GeoTIFF ETS initial capability – current compliance tests ported to the current TeamEngine.

- Coordination (ongoing and planned)

- TBD

- Future meetings


- <November 2019 TC Meeting>

Key activities



- Development of the GeoTIFF ETS
 - Port existing ETS to the current TeamEngine platform
 - Validate that the port performs properly
 - Incremental development of the more complex tests required by GeoTIFF 1.1



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



Cit Sci DWG

112th OGC Technical Committee

Banff, Canada

Joan Masó

12 September 2019

The most important thing for this WG is...



End of the first phase of the CitSci IE (we have some conclusions) and
start of the second phase (we are defining new objectives)

Agenda



- Citizen Science Interoperability conclusions
 - Joan Masó
- Public Participation in Scientific Research (PPSR)
Metadata Schema and role of OGC Definitions Server in supporting Implementation
 - Rob Atkinson
- What can we do in the next IE
 - Joan Masó

Activity Summary



- Discussion topics

- What is needed for accelerating SOS in web browsers: JSON
- How can we use the definitions server in CitSci to help in harmonizing observation measurements?

- Upcoming deliverables


- CitSciE phase one ER is being written
- Objectives of the next phase of the IE

- Coordination (ongoing and planned)

- Future meetings

- next f2f TC Meeting



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

CityGML SWG

112th OGC Technical Committee
Banff, Canada

Carsten Rönsdorf, Claus Nagel, Steve Smyth
12 September 2019

Agenda




- Welcome members/observers/OGC staff
- Patent call
- Sign-in/Roll Call – Do we have quorum?
- Patent call
- Quorum determination
- Announcements
- CityGML spaces
- IndoorGML / 3DIM discussion

Agenda



- Review of progress since Leuven
- Remaining work to finish Conceptual Model
- Modelling Subgroup Report
 - “Completeness” of the Conceptual Model
 - Open GitHub issues summary
 - Issues to for SWG review
 - CodeLists
 - Profiling
 - 2.0 -> 3.0
- Future model and sample data releases
- Timeline best estimate



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Coverages.DWG & WCS.SWG

112th OGC Technical Committee

Banff, Canada

Stephan Meißl

12 September 2019

Agenda




Coverages.DWG

- MetOcean Application Profile for WCS 2.1 suite of standards vote outcome, Chris Little, UK Met Office

WCS.SWG

- Unified OGC API. How to make the same collection available as features, maps, tiles and a coverage, Joan Masó, UAB-CREAF



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

CRS Working Group Report

112th OGC Technical Committee

Banff, Canada

Roger Lott

12 September 2019

The most important thing for this WG is...



All OGC specs that reference a CRS – both future and existing – have the attribute *coordinate epoch* added as soon as possible and TC policy promulgates this.

Agenda



- Welcome, General DWG/SWG business
 - Keith Ryden
- Web mapping & Technical issues with dynamic CRSs
 - Joel Haasdyk and Roger Lott

Activity Summary



- Discussion topics

- Problems with data integration in Australia exposed by web mapping
- Awareness of problems and their causes
- Discussion of options available
- How can OGC help?

- Upcoming deliverables

- Web map / dynamic CRS presentation to Open OAB

- Coordination (ongoing and planned)

- TC211 19115 metadata standard update
- ? IAG ? velocity grid standardisation

- Future meetings


- next TC Meeting

Dynamic CRSs



- Dynamic CRSs are spatial but, because of tectonic plate motion, coordinates in a dynamic CRS change with time
 - example: WGS 84
 - For high accuracy (1 to 3m or better), data referenced to a dynamic CRS requires coordinate epoch to be recorded
 - For high accuracy, transformations to/from a dynamic CRS use time-dependent methods
- User problems need to be addressed
 - data integration issues, exposed in web mapping
 - coordinate epoch attribute missing in standards/specifications
 - time-dependent transformations not being applied
 - May require EPSG codes
 - Better access to velocity grids required
 - education of users and of geospatial software providers
 - choice of CRS for users e.g. low v high accuracy requirements.
- Integration of the above into standards and software as soon as possible, given imminent datum modernisation in multiple regions



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



Defense & Intelligence Domain Working Group Report

112th OGC Technical Committee

Banff, Canada

Roy Rathbun

12 September 2019

The most important thing for this WG is...



1. D&I DWG to membership to begin mapping emerging technologies against DGIWG requirements.
2. D&I DWG members to coordinate their engagement with OGC Interoperability Initiatives to move emerging technologies forward in a way that they will address DGIWG requirements.
3. DGIWG maintains a Use Case registry. It does not have any content. Explore using this resource to help bring new capabilities and requirements into the DGIWG process.

Agenda



- Open Routing API Pilot Update and Demo
 - Sam Meek, HELYX
- 19-041r2 - OGC Open Routing API Pilot Engineering Report
- US Army Geospatial Center's compliance testing
 - Amy Youmans, AGC
- DGIWG Overview
 - Dimitri Sarafinof, IGN

Activity Summary



- Discussion topics

- AGC
- TC Approval of Routing Pilot ER

- Upcoming deliverables

- ✓ OGC 19-041r2 to Pending Documents
- Electronic Vote to TC
 - 3wks from today

- Coordination (ongoing and planned)

- w/Mobile Location Services (MLS) DWG on 19-041r2 “Routing Pilot ER”
- CRS SWG on Time-Dependent CRS
- CDB SWG on formats
- IGS DWG

- Future meetings

- DGWIG Technical Panel Meeting, Tallinn, EST, 7-11 Oct
- Location Powers: Data Science Summit, Palo Alto, CA, 13-14 Nov
- Toulouse TC, Nov 19

Key activities




- Demonstration of OGC Routing API Routing Pilot
- Motion for Requesting TC approval for Electronic vote for OGC Routing API Routing Pilot ER, 19-041r2

Notification of an upcoming electronic vote



- The Defense and Intelligence DWG recommends that the OGC Technical Committee hold an electronic vote to approve release of 19-041r2 “Routing Pilot ER” as an OGC Engineering Report.
 - Pending any final edits and review by OGC staff
 - Some graphics and text editing to occur, then final posting to Pending Documents
 - Final document will reside on Pending Documents for 3 weeks before vote
 - There was no objection to unanimous consent



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

DGGS DWG

112th OGC Technical Committee
Banff, Canada
Matthew Purss
12 September 2019

The most important thing for this WG is...



Discussion and scoping of Domain topics related to DGGS including DGGS APIs, DGGS applications, DGGS Implementation Profiles and the DGGS Registry.

Agenda



- Round Table Discussion of General DGGS Topics of note in our growing community
 - Everyone – (10 min)
- Update on Digital Earth Canada DGGS activities
 - Perry – (10 min)
- From Computer Graphics to DGGS
 - Faramarz – (55 min)
- Update on the Location Index Project
 - Matthew Purss – (15 min)
- Discussion on DGGS Outreach Activities
 - Chair – (~5 min)
- Wrap-up and topics for further discussion during the DGGS SWG Session
 - Chair – (~5 min)

Activity Summary



- Discussion topics

- Dynamic Datums and how they impact on DGGS
- Developing DGGS APIs
- Volumetric DGGS

- Upcoming deliverables

- DGGS Registry implementation and integration with OGC CITE infrastructure – next milestone target is November TC

- Coordination (ongoing and planned)

- Coverages DWG, OWS Common, CRS SWG/DWG, Simple Features, Big Data/Datacubes DWG, CDB DWG, Interoperability and Model Simulation DWG, JAG, NA, OAB, CITE
- ISO/TC 211

- Future meetings


- Telecon: 9 October 2019
- Next TC: Toulouse TC (Nov 2019)

Key activities



- DGGS APIs
- DGGS Registry
- Engagement with UN-GGIM through the Global Statistical Geospatial Framework initiative
- Engagement with the Marine community on DGGS applications through the GEBCO 2030 Project



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Features API SWG


112th OGC Technical Committee
Banff, Canada
Clemens Portele
12 September 2019

Agenda



- Status of Part 1, Core, in OGC and ISO/TC 211
- New SWG charter overview
- Process for extension proposals
- Open discussion of additional parts of OGC API Features
- Planned Query/Filter Sprint



Strategic Member Support by
 Natural Resources Canada / Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

GeoAI DWG

112th OGC Technical Committee
Banff, Canada

Kyoung-Sook Kim, Tien-Yin (Jimmy) Chou, Anneley Hadland, Dimitris Kotzinos
12 September 2019

The most important thing for this WG is...



- Setup communication tools
- geoai.dwg@lists.opengeospatial.org
- Github
 - <http://www.github.com/opengeospatial/geoai> (Private)

Artificial Intelligence in Geoinformatics DWG

Return to List

General Contacts Files Tasks Actions Issue Tracker Attendance

Artificial Intelligence in Geoinformatics DWG

Abbreviation: GeoAI DWG

Start Date: 2019-05-13

Target End Date:

Actual End Date:

*Target Budget: \$0

Project Director: Scott Simmons

Status: In Progress

Progress: 0.0%

Active: Yes

Last Updated: 2019-07-31 08:48:17 By Scott Simmons

* Only seen by project managers

Artificial Intelligence in Geoinformatics DWG

Edit Project | Request New List | Github | Tagging

Primary Email List

(List Archives | View Members) geoai.dwg@lists.opengeospatial.org | (subscribed)

Click Here to Manage All List Subscriptions

Charter

https://portal.opengeospatial.org/files/?artifact_id=84162

Information Resources

Access Controlled Github Repositories (View Opted-In Users)

Only users listed under the Contacts tab with individual role assignments and a defined Github Username have access.

geoai (Opt Out)

Your Role in Project

Your individual role assignment for this project is **Co-Chair**. A complete list is available under the **Contacts** tab.

Project Description

Agenda



16:30 - 18:00, Mon. Sep 9 @ KC 205 (local time)

- 16:30 - 16:35 Introduction
- Presentations
 - 16:35 - 16:45 Report of ISO/IEC JTC1/SC42: Kyoung-Sook Kim (AIST)
 - 16:45 - 17:00 Lake-river discrimination using Deep Learning in Earth Observation & Clouds Workflows: Tom Landry, Pierre-Luc St-Charles, and Francis Migneault (CRIM)
 - 17:00 - 17:15 Beyond interchange – Why we need semantic standards to facilitate AI technologies: Jake McGregor (Minerva Intelligence Inc.)
 - 17:15 - 17:30 CCTV Streaming Dataset for Near Real-time Urban Flooding Recognition: Chen-Yu Hao(How) (GISFCU)
 - 17:30 - 17:45 Activities in Anno.ai: Ashley Antonides (Anno.ai)
- 17:45 – 18:00 Discussion for future activities

Activity Summary



- Discussion topics

- Report of Testbed15 updates (WPS for ML, Workflow, etc.)
- Semantic interoperability of domain-dependent ML datasets
- How to support workflow for preparing training datasets (Platforms, resources, etc.)

- Upcoming deliverables

- Collect open datasets for ML/DL (https://docs.google.com/spreadsheets/d/1AUulrMxKARS2rBKPYPDa__wf9zcEOFwP8RkH2-9qD24o/edit?usp=sharing)
- Discussion paper?

- Coordination (ongoing and planned)

- ISO/IEC JTC1 SC42
- SensorThings SWG?

- Future meetings


- Continuous offline discussion through TC meeting and online discussion via ML
- TC meeting @ Toulouse, France

Scope of Interest for Next Meeting



- Training model
- Spatial uncertainty
- Trajectory (timeseries) tracking, mining
- Explainability V/s Interpretability In Artificial Intelligence
- AI domain is humongous... any thought about braking it into sub-domains to help make things more manageable
- Other events to share
 - [The 3rd ACM SIGSPATIAL International Workshop on AI for Geographic Knowledge Discovery \(GeoAI 2019\)](#)
 - [The 2nd International Workshop on Artificial Intelligence for 3D Big Spatial Data Processing \(AI3D 2019\)](#)



Strategic Member Support by
 Natural Resources Canada / Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

GeoSemantics DWG

112th OGC Technical Committee

Banff, Canada

Linda van den Brink

12 September 2019

The most important thing for this WG is...



We established a need for a GeoSPARQL 2.0 > SWG
formation needed

Agenda



- Hans-Christoph Gruler (Leica) : Cadastre and Land Administration Thesaurus (CaLATHe) (15 min)
- Ingo Simonis (OGC) : Summary W3C Graph workshop (15 min)
- Jake McGregor (Minerva Intelligence): From assertion to inference, how attribute based taxonomies can clean up messy codelists (15 min)
- Linda van den Brink (Geonovum): GeoSPARQL 2.0 change requests (discussion) (60 min)

Activity Summary



- Discussion topics

- GeoSPARQL change requests
- Possible GeoSPARQL 2.0 SWG startup

- Upcoming deliverables

- White paper on spatial & graph

- Coordination (ongoing and planned)

- Possibly W3C

- Future meetings


- Toulouse meeting

Key activities



- Upon receiving many new GeoSPARQL change requests, the DWG discussed a possible GeoSPARQL 2.0 SWG startup
 - However, discussion in the room pointed out disappointing uptake on Linked Data so far – more marketing activities are needed before starting on a new version of GeoSPARQL.
 - There is more marked value for GraphQL than for SPARQL. It might be possible to extend GraphQL with spatio-temporal features and this might be a better way to go than a new GeoSPARQL version.
 - Decision: before starting SWG, write a white paper about (geo)spatial ontologies / (geo)spatial querying of graphs, to get people interested
 - Describe identified user communities
 - Describe success stories



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

GeoTIFF SWG


112th OGC Technical Committee
Banff, Canada
Emmanuel Devys
12 September 2019

Agenda



- Status of GeoTIFF 1.1
- GeoTIFF 1.1 ballot results and comments resolution
- OGC CITE for GeoTIFF 1.1 ETS development - Luis
- GeoTIFF 1.1 testing – Chuck
- GeoTIFF.SWG: way forward: initial discussion for a POW and roadmap



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



Integrated Digital Built Environment SC

112th OGC Technical Committee
Banff, Canada

Jim Plume, Carsten Rönsdorf
12 September 2019

The most important thing for this WG is...



Publishing paper on overlaps between IFC, LandInfra and CityGML + interoperability approaches and launch this at GeoBIM conference in Amsterdam on 12 November 2019

Agenda



- Introduction (Carsten)
- Update on recent bSI activities (Jim)
- Discussion (all)
- Planning for GeoBIM workshop (Jim, Carsten)

Activity Summary



- Discussion topics

- bSI projects
- Differences between how bSI and OGC work

- Upcoming deliverables

- ‘IFC/LandInfa/CityGML + interoperability approaches’ paper

- Coordination (ongoing and planned)

- Various bSI projects
- IndoorGML/CityGML discussion on spaces is relevant for IDBE as well

- Future meetings

- No f2f currently planned, though potential for meeting in Sydney in early 2020

Key activities




- Identifying interoperability targets in the AEC/geospatial domain
- Discuss and adjust recommended approaches

Next Quarter WG Communications Plan



- Published paper
- Workshop at GeoBIM, tied into keynote at GeoBIM (ideally jointly by bSI and OGC)



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

ISG DWG Closing Plenary Report

112th OGC Technical Committee
Banff, Canada
David Graham
12 September 2019

The most important thing for this WG is...



What is the most useful role OGC can play in developing/fostering a modern feature attribution architecture that will work for NGA, each of the DOD components and COCOMs, the modeling / simulation / planning / rehearsal, and real-time operational community....and all of their international counterparts?

Agenda



10:15 - 10:20am	Introductions, Admin Setting the Stage	ISG DWG Chairs	Confirmed
~:30 minutes	U.S. Army / OWT	Isaac Zaworski, VRICON	Invited
~:30 minutes	Open Source Tools/Library: Inception at Cognitics	Kevin Bentley, Cognitics	Confirmed
~:30 minutes	Use of OGC Innovation Programs to Advance ISG Interoperability: Khronos; the ISG Pilot	Susan Raymie, US SOCOM and Luis Bermudez, OGC IP	Confirmed
11:50 - 12:00	CDB SWG Update	David Graham, CDB SWG	Confirmed

Activity Summary



- Discussion topics

- Open Source tools and libraries
- The really big problem of projections, especially when combining game engines with ‘traditional’ simulation and rehearsal architectures
- OGC/Khronos ISG Pilot

- Upcoming deliverables

- Co-chair plan for following on OWT briefing at this DWG, with follow on work on feature attribution at our upcoming meetings

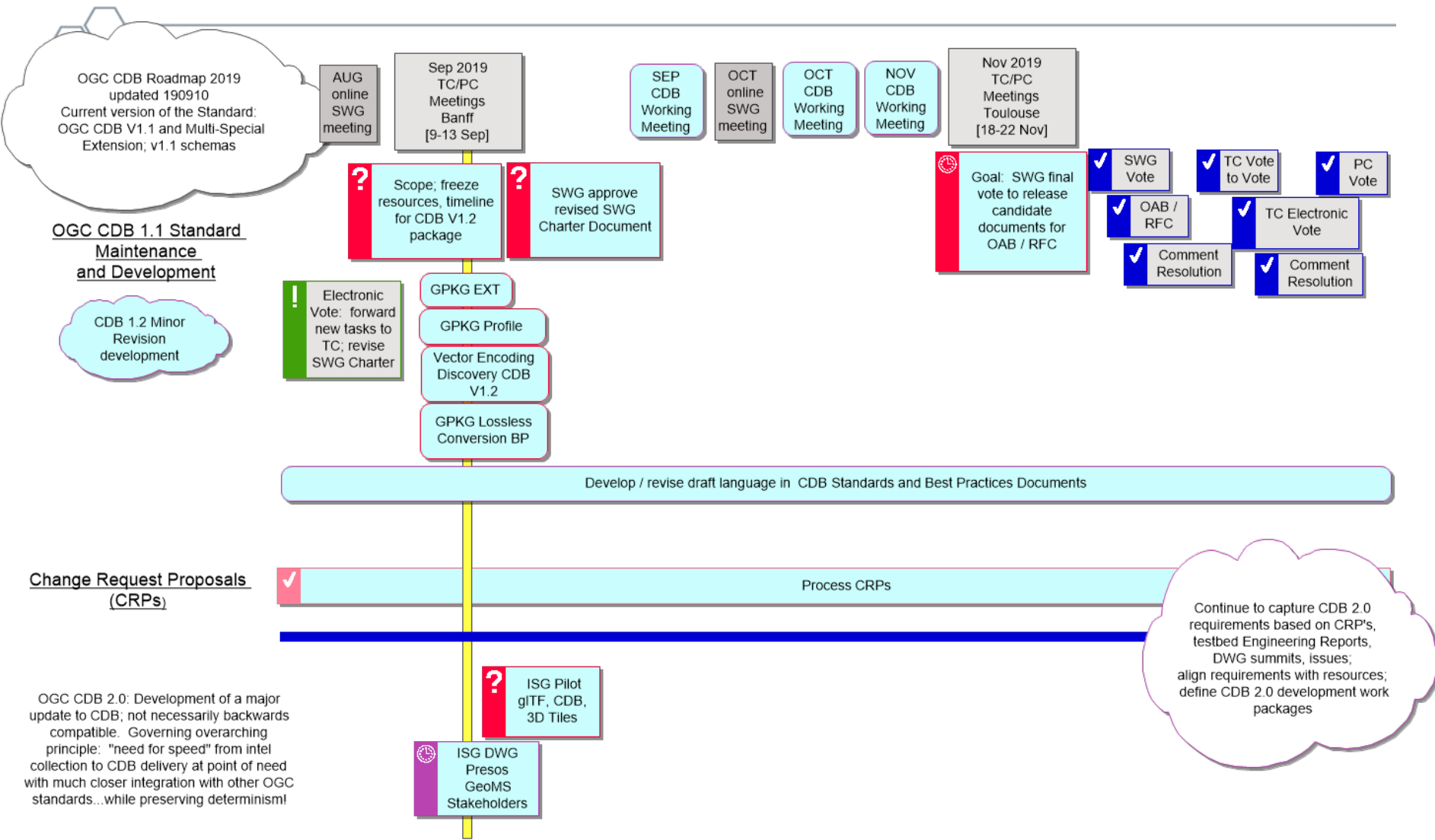
- Coordination (ongoing and planned)

- NGA with OWT, especially about attribution
- OGC/Khronos ISG Pilot


- Future meetings

- F2F and online meetings at TC weeks
- Possible working meetings/discussions about coordination of feature attribution work: OGC / SISO / Khronos

CDB SWG Roadmap





Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



Marine DWG

112th OGC Technical Committee
Banff, Canada
12 September 2019

Agenda




- S-121 update, overall initiative and Canada perspective
- Marine SDI CDS update (+IHO)
- Canada MSDI (CHS)
- Layman's guide on Marine standards for UN-GGIM
- Marine Geopackage

Activity Summary



- Discussion topics
 - Relevance of epoch based CRS to Maritime Limits and Boundaries S-121 standard
- Upcoming deliverables
 - Maritime Limits and Boundaries (S-121) Project Phase 1 first draft of the engineering report. End of Sept.
- Coordination (ongoing and planned)
- Future meetings
 - Toulouse TC



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

MetaCat DWG

112th OGC Technical Committee

Banff, Canada

Frédéric Houbie

12 September 2019

The most important thing for this WG is...



Analyze evolution of metadata encoding, linked to open data
and future Catalogue API

Agenda



- Metadata in GeoPackage - Jeff Yutzler
- Good Practice guide for ISO 19115-1 - Byron Cochrane
- General discussion on Metadata - All

Activity Summary



- Discussion topics
 - GeoDCAT
 - Cataloguing

- Upcoming deliverables

- Coordination (ongoing and planned)
 - OGC Testbeds
 - WFS3 SWG
 - W3C DXWG
 - DGIWG for DMF
 - CSW(4), STAC, ...


- Future meetings
 - Toulouse meeting

Key activities



- We had a short but interesting discussion about Metadata and why it is complex to have "good" metadata.
- Proposal to have presentations on how companies, government are dealing with this issue of convincing human that metadata is important or how to automate the process



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



Met Ocean Domain Working Group Report

112th OGC Technical Committee

Banff, Canada

Chris Little

12 September 2019

The most important thing for this WG is...



Establishing an
Environmental Data Retrieval API SWG

Met Ocean DWG Agenda



1. Welcome, Introduction, Technology struggles
2. Vote result: WCS Met Ocean Application Profile & Extensions
3. Charter & plan for Environmental Data Retrieval API SWG (was WotW API) Ad Hoc session Thursday 08:55
4. Progress on WotW Engineering Report, OWS Common API and OGC API-Features
5. Outcomes of Met Office API Hackathon, M Burgoyne
6. Plan for Environmental Data Retrieval API Best Practice for the meteorological domain
7. Any Other Business.

Met Ocean DWG Activity Summary



- Discussion topics

- Safety critical aspects of OGC standards, including APIs
- 2D plume is a common, tractable pattern, cf Moving Features
- ER is what we did. BP is what you should do!

- Upcoming deliverables:

Now

- ERD API SWG Charter
- (WCS Met Ocean AP & Extensions)

Soon

- Weather on the Web ER

Later

- ERD API SWG BP for Met domain

- Coordination (ongoing and planned)

- WCS SWG for Met Ocean AP & Extensions
- OGC API Features, Core SWGs
- WMO for when API work progressed

- Future meetings

- Regular GTM telcos
- Toulouse TC , 2019-11
- EGOWS possible hackathon at KNMI deBilt, Netherlands, 2019-11

Met Ocean DWG Key activities




- Environmental Data Retrieval API SWG (ERDAPI)
- Formerly known as Weather on the Web (WotW)
 - Point,
 - Timeseries, Vertical Profile,
 - Trajectory (2,3,4D), Corridor,
 - Polygon, Tile from Tileset
 - ... (Plume2D?)
- ERD API SWG up and running at Toulouse
 - ‘Speclets’ / standards start coming in 2020
- WotW ER by end of 2019
- ERD API Best Practice for meteorology early 2020

Next Quarter WG Communications Plan



- Establish Environmental Data Retrieval API (ERDAPI) SWG formerly known as Weather on the Web (WotW) API
- Progress of WCS 2.1 Met Ocean Application Profile and Extensions for GetPolygon and GetCorridor



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



UNIVERSITY OF
CALGARY



Mobile Location Services (MLS) DWG

Banff TC Closing Plenary

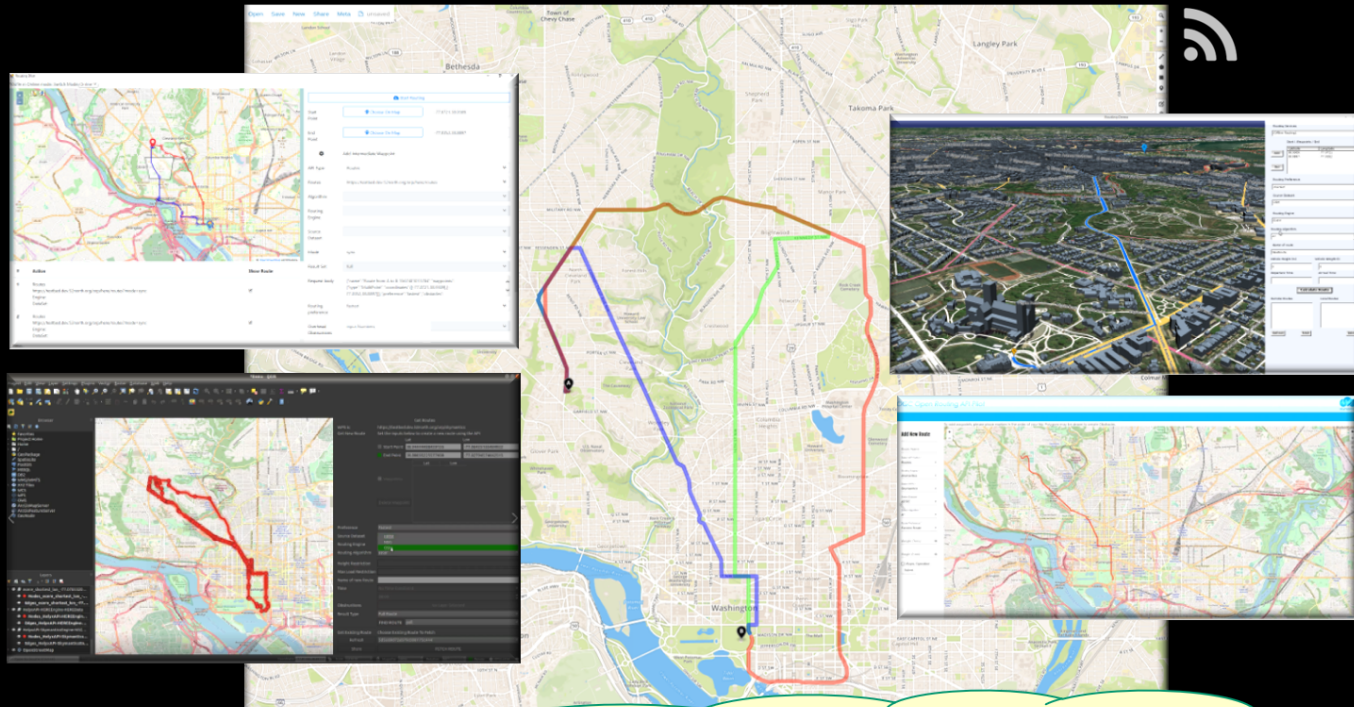
Jeff Harrison

US Army Geospatial Center (AGC)

Successful Open Routing API Pilot Demo



Open Routing API and Route Exchange Model...




Need routes from National Cathedral to Washington Monument... using any data

Many thanks to the Participants! ...Helyx, GIS-FCU, Skymantics, Ecere, 52North, Interactive Instruments





Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Moving Features SWG

112th OGC Technical Committee
Banff, Canada

Nobuhiro ISHIMARU, Kyoung-Sook KIM
12 September 2019

Agenda



13:00-14:30 Tuesday September 10 @ KC205


- Roll call & Introduction; Nobuhiro Ishimaru; Hitachi; [5 min]
- Preparation for OAB review of Moving Features JSON; Kyoung-Sook Kim; AIST; [20++ min]

– 20+ members presented, Quorum has been established

14:45-16:15 Tuesday September 10 @ KC305

- Closed OAB



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



NetCDF SWG Closing Plenary Report

112th OGC Technical Committee

Banff, Canada

Ethan Davis


12 September 2019

Agenda



- Welcome and Introduction
 - Event Announcement: Coverage Analytics Sprint, 6-7 Jan 2020
- Update on CF Workshop in July
- NetCDF and Linked Data
- CAMPS Data: Case Study for CF, netCDF-LD, and O&M
- NetCDF and Zarr
- Discussion of Future Activities
- Any Other Business



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

O&M SWG

112th OGC Technical Committee

Banff, Canada

Ilkka Rinne


12 September 2019

Agenda



1. Check for quorum, patent call
2. O&M SWG Charter revision status
3. OGC - OGC/TC 211 collaboration (ISO 19156/
OGC Abstract Specification Topic 20)
 - An OGC "wish list" for issues registered as change request proposal in the OGC Standards Tracker by the cut-off date?
4. Change request/issue status and tasking
5. Project organization: timelines, meetings, collaboration



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



OGC Naming Authority Subcommittee

112th OGC Technical Committee

Banff, Canada

Gobe Hobona

12 September 2019

The most important thing for this WG is...



What are the use cases and scenarios for the OGC Definitions Server that is managed by the OGC Naming Authority?

Agenda



- **Call for co-chairs (2nd campaign)** - Gobe Hobona (OGC)
- **Definitions Server Update** - Rob Atkinson (Metalinkage)
- **Use cases of sharable definitions** - Gobe Hobona (OGC)
- **Presenting an Ontology Data Model - binary array linked data** - Mark Hedley (Met Office, UK)
- **Work plan for Q4** - Gobe Hobona (OGC)

Activity Summary



- Discussion topics

- Motivation for documenting use cases for the definitions server
- How to represent binary array data as linked data (i.e. netCDF Linked Data)
- Recent enhancements to the OGC Definitions Server
- An update from the Temporal DWG review of proposal from CSIRO

- Upcoming deliverables

- Updates to OGC-NA Policies and Procedures

- Coordination (ongoing and planned)

- netCDF SWG
- Temporal DWG
- LandInfra DWG

- Future meetings


- next TC Meeting

Key activities



- Updates to the OGC-NA Policies and Procedures, looking to add:
 - Incubation step
 - Delegation to SWGs and DWGs during review of proposals
- Identifying use cases to help OGC members build projects (including bids) that include the Definitions Server
 - UC1: Harmonizing observational data collected by different sensors from different manufacturers
 - UC2: Conflation of pipeline data from different Utilities networks
 - UC3: Authentication of OGC web services across an enterprise federation
 - UC4: Collection and annotation of user generated content for Citizen Science applications in Precision Agriculture
 - ...*plus more!*



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

OWS Common SWG

112th OGC Technical Committee
Banff, Canada


Chuck Heazel and Joan Masó
12 September 2019

Agenda



- Changes to align with the current OGC API-Features draft
 - https://github.com/opengeospatial/oapi_common/tree/September-2019-re-sync
- Open Issues and their categories.
 - https://github.com/opengeospatial/oapi_common/projects/1



Strategic Member Support by
 Natural Resources Canada / Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Perspective Imagery DWG Closing Plenary Report

112th OGC Technical Committee

Banff, Canada

Eric Hirschorn

12 September 2019

The most important thing for this WG is...



We need to decide on the underlying OGC web-based standard for the discussed perspective imagery collections work. Possibilities are: 1) WMS using Extensions (via the Capability & Request elements), 2) EO-WCS, or 3) a new standard.

Agenda



- Discussion of “Perspective Imagery Overview and Suggestions” Paper from SDFE (Eric Hirschorn)
- SDFE update on web-based collections
- Discussion

Activity Summary



- Discussion topics

- Critique of paper introduced by SDFE at Leuven
- What's the best web standard to base the collections work on?
- How to document current and future collections work (GitHub, Discussion Paper)?

- Upcoming deliverables

- Updated SDFE discussion paper incorporating discussions at this session.
- OGC GitHub repository for documenting collections work. Gobe Hobona said he would help set this up.

- Coordination (ongoing and planned)

- WCS.SWG and Coverages.DWG for better understanding EOWCS.
- WMS.SWG for using the WMS extensions mechanism.

- Future meetings

- Toulouse, France

Key activities




- Critique of using generic WMS solution for clients receiving perspective imagery, which was proposed in the SDFE report. Potential interoperability issues.
- Options are to extend WMS, use EOWCS (which we don't yet understand well), or a new standard.
- We need input from Stephan Meissl on how and whether to use EOWCS (ReferenceableEOCoverages together with the ReferenceableGridCoverage Extension of GMLCOV)
- We need to document what are the requirements and unit tests needed for the solution. Suggestion to have OGC set up a GitHub repo to keep track of this work.

Actions



- Continuing work on a discussion paper for perspective imagery collections
 - Transferring the SDFE report to the OGC DP template
 - Transferring the SDFE report formatting to Ascii-Doc
 - Setting up a GitHub repo as a common location for collections work documentation. (Gobe Hobona to set up)
- Ask the TC (via discussion list) for recommendations on whether to use extended WMS, EOWCS, or something new for web-based collections.



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Portrayal DWG

112th OGC Technical Committee

Banff, Canada

Matt Sorenson

12 September 2019

The most important thing for this WG is...



- Discussed development of an OGC abstract portrayal specification.
- Reviewed existing ISO 19117 for potential use in informing DWG effort.
- While the ISO standard is useful and informative, an OGC abstract specification is needed to more completely address the breadth of the portrayal environment and challenge.

Agenda



- Portrayal Abstract Specification
 - Keith Ryden
- T15 Styles Conceptual Model
 - Andrea Aimee, GeoSolutions
- Styles API update
 - Clemens Portale, interactive instruments
- Portrayal in GeoPackage
 - Jeff Yutzler, ImageMatters
- Visual Style Editor
 - Stefano Bovio, GeoSolutions
- Wrap Up and Future topics

Activity Summary



- Discussion topics

- Portrayal Abstract Specification
- T15 Styles Conceptual Model
- Styles API update
- Portrayal in GeoPackage
- Visual Style Editor

- Upcoming deliverables

- OGC Portrayal Abstract Specification
- Testbed 15 Open Portrayal Framework ERs review
- OGC API Styles SWG Charter

- Coordination (ongoing and planned)

- SLD/SE SWG
- 3DP SWG
- DGIWG

- Future meetings


- Web meetings focused on Abstract Specification
- Next TC Meeting: Toulouse, Nov 2019

Portrayal Abstract Specification Discussions



- Expand ISO 19117 concepts for processes, associations with data and objects, symbology, and catalogs
- Need to address both coverages and vector features
- Harmonize terminology
 - Assess existing work (ISO, SLD, 3DPS, SymCore) and emerging efforts (Testbed 15, Vector Tile Pilot, etc)
- Define use cases to validate concepts and completeness
- Address multiple environments:
 - Static and dynamic resources
 - Online (services/APIs) and offline solutions
- Ensure specification remains broad and adaptive
 - 2D, 3D, nD
 - Representations as symbols, images, audio, etc



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



UNIVERSITY OF
CALGARY



esri Canada

Quality of Service and Experience DWG

112th OGC Technical Committee

Banff, Canada

Ilkka Rinne

12 September 2019

The most important thing for this WG is...



The SLA of OpenAPI Initiative specification provides an interesting way to express the expected QoS for OpenAPI based OGC APIs. More discussion and testing needs to be done verify the applicability and the possible gaps in the current SLA4OIA specification.

Agenda



1. Pablo Fernandez (ISA Research Group, Universidad de Sevilla): SLAs in the OpenAPI Initiative
2. Cindy Mitchell (Natural Resources Canada): Web Services Best Practices Implementation at Federal Geospatial Platform
3. Discussion: Essential QoS metadata content

Activity Summary



- Discussion topics

- should SLA metadata be a separate end point (path) or just a specific property in the OpenAPI description
- How can we get more organizations and involved in creating a best practice for ensuring the QoE for OGC Web Services?

- Upcoming deliverables

- None at the moment


- Coordination (ongoing and planned)

- Active discussions needed with the OpenAPI SLA Specific Interest Group
- Discussion with the OWS Common SWG on the best way to integrate the SLA/QoS metadata in the OGC APIs

- Future meetings

- Face to face meeting at the Toulouse TC in November



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



Security DWG - Report to the TC -

112th OGC Technical Committee

Banff, Canada

Andreas Matheus

12 September 2019

The most important thing for this WG is...



Data Centric Security (at the moment)

Agenda



- TB15 - Federated Clouds Security ER (20 min)
 - Héctor Rodríguez (Deimos)
- TB15 - Data Centric Security ER (20 min)
 - Michael Leedahl (Maxar Technologies)
- TB15 - Data Centric Security Demonstration (20 min)
 - Andreas Matheus (Secure Dimensions)
- TB15 - GeoXACML Policies in ALFA (20 min)
 - Andreas Matheus (Secure Dimensions)

Reminder: OGC Testbed Policies require that each ER is “vetted” in an OGC DWG / SWG.

Please take some time to review and provide feedback

- Data Centric Security ER
- Federated Clouds Security ER require review

Activity Summary



- Discussion topics
 - Federation Manager
 - Digital Signatures in FeatureCollection

- Upcoming deliverables
 - Review TB15 ERS with possible motion to release as public ER at the next TC meeting in Toulouse
 - 1. Federated Cloud ER
 - 2. Data Centric Security ER

- Coordination (ongoing and planned)
 - none


- Future meetings
 - next TC Meeting

Key activities



- Federated Security
- Data Centric Security
- ALFA for GeoxACML



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

SensorThings API SWG

112th OGC Technical Committee

Banff, Canada

Hylke van der Schaaf


12 September 2019

Agenda



- ISO TC 211 19130-3 Working Draft – Douglas O'Brien
 - Ready for review
- SensorThings API v1.1
 - Status
 - Discussion



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



**UNIVERSITY OF
CALGARY**



esri Canada

Smart Cities DWG

112th OGC Technical Committee

Banff, Canada

Dimitri Sarafinof

11 September 2019

The most important thing for this DWG is...



Quote:

"If I have been able to see farther than others, it was because I stood on the shoulders of giants" – Isaac Newton

Purpose:

Create a curated package of knowledge (best practices and playbooks) to support Smart Cities initiatives to “build on the shoulders of giants”.

Reach out to Smart Cities to promote the package

Agenda



- **Practices and Operations of 3D Geospatial Data for Smart Cities related Decision Support** – Ravi Nishesh Srivastava / Sai Ramesh (Cyient Limited) – 15 min
- **Smart and resilient communities from Asian countries perspective** - Dr. Chen-Yu Hao (GIS FCU) – 15 min
- **3D IoT Platform for Smart Cities Pilot** – Luis Bermudez (OGC) – 15min
- **Smart Villages - Attractive Places in Rural Areas** – Joe (Thunyathep Santhanavanich) (Hochschule für Technik Stuttgart) – 10min
- **Building Energy Mapping and Analytics Concept Development Study** – Jessica Webster (NRCan) – 5min
- **SCIRA Pilot update** – Josh Lieberman (OGC) – 5min
- General discussions – All (5 min)

Activity Summary



- Discussion topics

- Purpose of the group(s)
 - Create a package of knowledge which communicates the value of geospatial information and standards to Smart Cities
 - Outreach to cities
 - Provide support for LandInfra implementations

- Upcoming deliverables

- Coordination (ongoing and planned)

- 3D and the Built Environment cluster (3DIM, E&U, IDBE SC, Interoperable Simulation and Gaming, Land Admin, LandInfra, Point Cloud)
- SensorThings API SWG
- ISO/IEC JTC 1 WG 11

- Future meetings

- Future joint meeting at next TC



Strategic Member Support by
Natural Resources Canada / Ressources naturelles Canada

Canada

Sponsors



UNIVERSITY OF
CALGARY



TimeseriesML SWG Closing Plenary Report

112th OGC Technical Committee

Banff, Canada

Paul Hershberg/Steve Olson

**National Oceanic and Atmospheric Administration
(NOAA)**

National Weather Service (NWS)


12 September 2019

Agenda



- Recap on TimeseriesML Versions 1.3 (Proposal)
 - Side presentation (https://portal.opengeospatial.org/files/?artifact_id=90162)
 - Request For Change #577. Proposal submitted for consideration by TC
 - OGC Ver 1.3 Document status
 - OGC Blog
- TimeseriesML Version 2.0 Requirements
 - Github area created to list these
- NASA's Time Series Working Group Final Report Completed
- Harmonizing Differences in TimeseriesML/O&M with WCS Coverage model/CIS1.1 and OGC
- Development on the new Proposed OGC Temporal Abstract Specification
- Other Issues



Strategic Member Support by
 Natural Resources Canada Ressources naturelles Canada

Canada

Sponsors



UNIVERSITY OF
CALGARY



esri Canada

WMS SWG

112th OGC Technical Committee

Banff, Canada

Joan Masó

12 September 2019

Agenda



- Vote to accept the review of Testbed-15 Quebec Model MapML Initial Engineering Report
 - Scott Serich (OGC)
- Maps and tiles API from the Hackathon to the Testbed 15
 - Joan Masó (UAB-CREAF)