



Meeting Host



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New Zealand
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Ministry for the
Environment
Manatū Mō Te Taiao

Closing Plenary

105th OGC Technical Committee
Palmerston North, New Zealand

Scott Simmons

7 December 2017

Agenda



- Thanks and Welcome to new members
- Roll Call
- TC Member presentations
 - NIWA and Catalogs: Brent Wood
 - Implementing OGC standards for professional users: A geo startup's perspective: Hamish Campbell, Koordinates
 - Tod Dabolt, US Department of Interior Chief Information Officer
 - OpenFlight as a potential Community standard: David Graham
 - AgARS Council: Tulinda Larsen
- TC Motions
 - GeoPackage Extension for Tiled Gridded Coverage Data: Scott Simmons for Jeff Yutzler
 - Moving Features: NetCDF binary encoding: Kyoung-Sook Kim
- Upcoming TC Meetings
- TC Chair announcements and motions
 - New TC Policies and Procedures
 - Imagery Catalog Sprint
- Working Group reports with motions: Z to 3
- Burning issues

ATTENTION



- The structure of this Closing Plenary only includes reporting from Working Groups with motions
- Those working groups with no motions still wrote reports and those reports are on the portal in the Closing Plenary directors in the file **2017 Palmerston No Motion Reports**
- Please feel free to scan through these reports during the Closing Plenary break (*like I really believe you won't do so during the other presentations*)
- Then there will be some time at the end of structured presentations to ask questions about any other report
- The final open discussion will be on the top few topics upon which you voted this week

Thank you sponsors



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Thank you staff



- Greg Buehler – all day, all long
- Denise McKenzie – moderator of the century, chief Kiwi wrangler
- Gobe Hobona – making sense of what we do
- Rob Atkinson – making real what we do
- Mark Reichardt – not here now, but inspiring our members

Welcome new members!



- Australian Bureau of Statistics
- Brandon Whitehead
- University of Vigo
- SOFWERX
- Even Rouault
- Queensland University of Technology
- National Energy Board
- Hawke's Bay Regional Council
- DEIMOS Space S.L.U.
- Center for Innovative Technology
- Bochum University of Applied Sciences
- Unifly
- Perry Peterson



TC Member Presentations

A new OGC Catalog Service for the Web (CSW) toolset

Brent Wood

NIWA

A new OGC Catalog Service for the Web (CSW) toolset

Brent Wood

NIWA

Starting on a personal note, wearing several hats in addition to my NIWA one:

I have been an Open Source, Open Data and Open Standards enthusiast for some decades...

This is a good opportunity to thank the OGC for providing so much to be enthusiastic about!!



A new OGC Catalog Service for the Web (CSW) toolset



NZ Open Source Awards 2016 winner:

People's Choice: Brent Wood for services to geospatial open source

This was accepted on your behalf.

I can only do what I do because of the fantastic work the standards, software and data developers and providers do.

Thank you all!!



A new OGC Catalog Service for the Web (CSW) toolset

NIWA – National Institute for Water and Atmospheric Research

CRI – Crown Research Institute

Govt owned (shareholding Ministers) but operates as a company

Established under the CRI Act

Along with Manaaki Whenua (Landcare Research) and GNS (Institute for Geological and Nuclear Sciences) we are the “environmental CRI’s”



A new OGC Catalog Service for the Web (CSW) toolset

NIWA –

Makes extensive use of Open Source

Uses and provides Open Data

Applies Open Standards

Tries to be a contributing community member, not just a user...

A new OGC Catalog Service for the Web (CSW) toolset

Any information delivery system starts with discovery -

Metadata catalog(ue)s

A new OGC Catalog Service for the Web (CSW) toolset

NIWA has been using Geonetwork for >8 years: <http://dc.niwa.co.nz>

The screenshot displays the NIWA GeoNetwork OpenSource web interface. The header includes the NIWA logo (Taihoro Nukurangi) and the GeoNetwork OpenSource logo with the tagline "Geographic data sharing for everyone". Navigation links for Home, Contact us, Links, About, and Help are present. A search bar is located at the top left, and a "Show map" button is at the top right. The main content area shows search results for "ORGANIC CONTAMINANTS IN SENTINEL SHELLFISH: 2005 DATA". The results list includes abstracts, keywords, schema, and extent for three datasets. The first dataset is "ORGANIC CONTAMINANTS IN SENTINEL SHELLFISH: 2005 DATA", the second is "DIVERSITY OF ALGAE IN WETLANDS", and the third is "O TU WHAREKAI ALGAE SURVEY". Each result includes a "Logo" icon, an abstract, keywords, schema, and extent. The interface also features a "Simple Search" and "Advanced Search" tab, a "WHERE?" section with a map, and a "GeoRSS" section with a list of links.

NIWA
Taihoro Nukurangi

GeoNetwork™
OpenSource
Geographic data sharing for everyone

Home | Contact us | Links | About | Help |

Simple Search | Advanced Search

WHAT?
WHERE?

Search

Reset
Options

GeoRSS

- Habitat-forming Cold Water Corals in the New Zealand region
- Vulnerable marine ecosystems in the South Pacific Ocean region
- Surveyed Cross-Sections of Opuha River between dam and Ophi confluence
- Phodolith Beds in Northern New Zealand: Characterisation of Associated Niches

Find interactive maps, GIS datasets, satellite imagery and related applications

Aggregated results matching search criteria: 1-10/512 (page 1/52), 0 selected

Select: all, none | actions on selection

Sort by: Relevance

Logo

Abstract

Keywords

Schema

Extent

Metadata

Logo

Abstract

Keywords

Schema

Extent

Metadata

Logo

Abstract

Keywords

Schema

Extent

Metadata

A new OGC Catalog Service for the Web (CSW) toolset

Part of a national federation of Dublin Core metadata catalogs supporting data.govt.nz and geodata.govt.nz

(CKAN)

(Geonetwork)

GEODATA.GOV.T.NZ

Geodata.govt.nz

Search for data or other resources

Browse data or other resources

Describe the data or other resources you hold

Import existing metadata records

About geodata.govt.nz

FAQ

Home » Search for data or other resources

Search result for: NIWA benthic

Search the catalogue by entering keywords below.

Looking for other publicly-funded data? You can also try searching:

- [data.govt.nz](#) - for government agencies' data
- [Statsphere](#) - for official statistics
- [DigitalNZ](#) - for any digital content
- [Archway](#) - for government archives.

Please [tell us](#) how we could improve geodata.govt.

NIWA benthic

Search

New Zealand/Aotearoa

data.govt.nz

Discover and use data

Request dataset

Add dataset

Search

Datasets

Toolkit

Case studies

Community

Blog

Clear

NIWA

297 datasets found for "NIWA"

Order by: Relevance

NIWA Freshwater Fish Sites

A range of Environmental datasets for the GW Region, including fish distribution, ecological sites, land cover, geology, catchments, and contours.

[HTML](#) [Esri REST](#) [GeoJSON](#) [CSV](#) [KML](#) [ZIP](#)

NIWA New Zealand Bathymetry Contours (2016)


Bathymetry vector contour dataset. Compilation of data digitised from published coastal charts, digital soundings archive, navy collector sheets and digital multibeam data...


[CSV](#) [KML](#) [SHP](#) [GIS](#) [API](#) [PDF](#)

NIWA New Zealand Bathymetric Grid (2016)

NIWA's bathymetry model of New Zealand at a 250m resolution raster. The model is a compilation of data digitised from published coastal charts, digital soundings archive, navy...

[GIS](#) [API](#) [PDF](#)

NIWA
Taihoro Nukurangi



A new OGC Catalog Service for the Web (CSW) toolset

Part of a national federation of Dublin Core metadata catalogs
supporting data.govt.nz and geodata.govt.nz:

OGC CSW

(CKAN)

(Geonetwork)

The screenshot displays the data.govt.nz website interface. At the top, a blue header contains the site name 'data.govt.nz' with the tagline 'Discover and use data', a search bar, and buttons for 'Request dataset' and 'Add dataset'. Below the header, a navigation bar lists 'Datasets', 'Toolkit', 'Case studies', 'Community', and 'Blog'. The main content area is titled 'Search result for: NIWA benthic' and includes a search bar with the query 'NIWA benthic' and a 'Search' button. To the left, a sidebar for 'GEODATA.GOV.T.NZ' provides links to 'Search for data or other resources', 'Browse data or other resources', 'Describe the data or other resources you hold', 'Import existing metadata records', 'About geodata.govt.nz', and 'FAQ'. The search results section shows '297 datasets found for "NIWA"' and lists several datasets, including 'NIWA Freshwater Fish Sites', 'NIWA New Zealand Bathymetry Contours (2016)', and 'NIWA New Zealand Bathymetric Grid (2016)'. Each dataset entry includes a brief description and links to various data formats like HTML, Esri REST, GeoJSON, CSV, KML, and ZIP. A map of New Zealand is visible on the left side of the search results.

data.govt.nz Discover and use data

Request dataset Add dataset

Search

Datasets Toolkit Case studies Community Blog

GEODATA.GOV.T.NZ

Geodata.govt.nz

Search for data or other resources

Browse data or other resources

Describe the data or other resources you hold

Import existing metadata records

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Home » Search for data or other resources

Search result for: NIWA benthic

Search the catalogue by entering keywords below.

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Please [tell us](#) how we could improve geodata.govt.

NIWA benthic Search

297 datasets found for "NIWA" Order by: Relevance

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[GIS](#) [API](#) [PDF](#)

NIWA
Taihoro Nukurangi

OGC
Member

A new OGC Catalog Service for the Web (CSW) toolset

NIWA is managing ~12 Geonetwork metadata catalogs

- institutional, on behalf, project or domain specific
- meets requirements – but operationally complex
high redundancy/dupli

There has to be a better way!

A new OGC Catalog Service for the Web (CSW) toolset

Designed and built to solve 3 problems:

1. Harvesting domain specific records from an institutional catalog

Relevant energy related records from NIWA's catalog harvested into a global energy metadata catalog

2. Harvesting “sane” metadata records from an institutional GIS system

Metadata quality highly variable – only harvest valid records

3. Support multiple projects with a single catalog - virtualise

NZ's Science Challenges – share a single catalog rather than maintain multiple catalogs

A new OGC Catalog Service for the Web (CSW) toolset

Two part solution:

1. A CSW proxy/filter

A web tool which manages:

- A list of CSW endpoints (source catalogs)
- A set of simple filter rules

and based on these, provide a new CSW endpoint for the desired combinations of filters and sources (virtual catalogs)

A new OGC Catalog Service for the Web (CSW) toolset

Two part solution:

1. A CSW proxy/filter
2. A CSW (DC) data entry/search/browse tool, with:

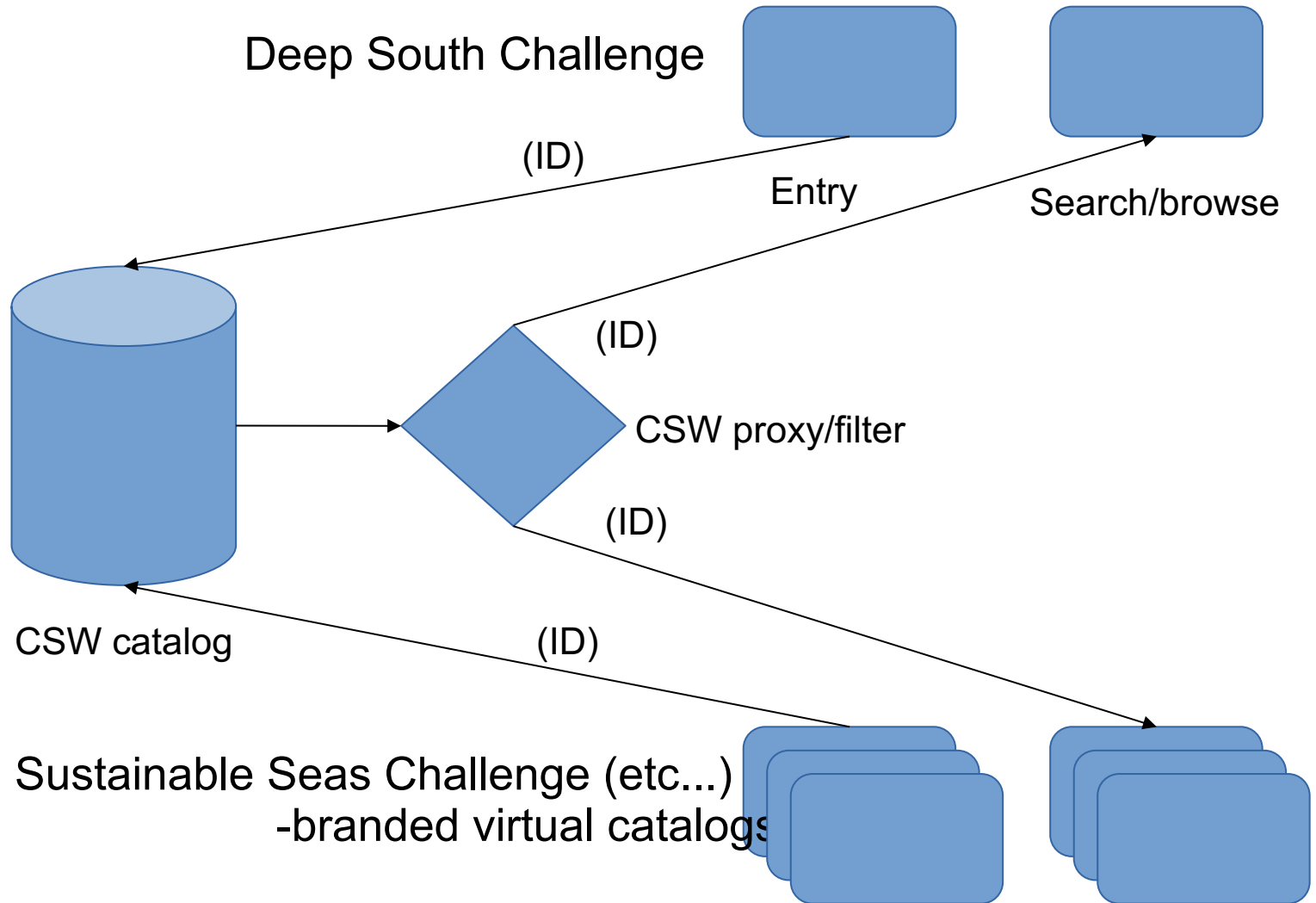
style page (parent – style, branding)

DC entry form (fully customisable, inherits style,
supports default keywords
and vocabulary services)

CSW search/browse tools (customisable,

inherits st

A new OGC Catalog Service for the Web (CSW) toolset



A new OGC Catalog Service for the Web (CSW) toolset

Detail:

All FOSS based - Silverstripe CMS
(Common Web Platform – CWP – NZ standard govt CMS
- currently 230 public sites from 60 agencies)

Customisable data entry form -

- Default values supported (including source ID/flag)
- Custom field names (for DC elements)
- Repeatable DC elements
- Custom element order
- Custom element help text
- External vocabulary services supported for pick lists

Form setup via CMS administration tool (including style – logo, etc)

A new OGC Catalog Service for the Web (CSW) toolset

To use:

1. Create a parent page for styling
2. Create child data entry form (pointing at the catalog)
3. Create proxy/filter entry (endpoint and rule,
new endpoint for virtual
4. Create child search/browse form (pointing at the virtual catalog)
5. Create links to entry & search pages in project web site

A new OGC Catalog Service for the Web (CSW) toolset

The screenshot displays the SilverStripe CMS 'Edit Page' interface for a page titled 'Sustainable Seas'. The browser address bar shows the URL: `https://postcard2-dev.niwa.co.nz/admin/pages/edit/show/167?Locale=en_NZ`. The interface is divided into several sections:

- Left Sidebar:** Contains navigation links under 'Pages', including 'Welcome', 'About Us', 'Contact Us', 'Page not found', 'Server error', 'Deep South', 'Sustainable Seas' (highlighted), 'Doug testing', 'Brent's DC Browser', 'Brent's BOI Browser', and 'New Metadata Postcard Entry Page'.
- Main Content Area:** Features a rich text editor with a toolbar. The page name is 'Sustainable Seas', the URL segment is `https://postcard2-dev.niwa.co.nz/sustainable-seas`, and the navigation label is 'Sustainable Seas'. The content area contains the text: 'People can enter metadata describing datasets captured under their Deep South Science Challenge project.'
- Right Preview Pane:** Shows the public view of the page. It includes the 'National Science Challenges' logo, the 'SUSTAINABLE SEAS' banner, and the title 'Science Challenge CSW Postcard'. Below this is a breadcrumb trail 'Home / Sustainable Seas', the page title 'Sustainable Seas', a description 'People can enter metadata describing datasets captured under their Deep South Science Challenge project.', and links for 'Print' and 'Subscribe'. The footer of the preview shows the 'NIWA Taihoro Nukurangi' logo.

At the bottom of the interface, there are status indicators for 'Saved' and 'Published', and a 'More options' dropdown menu.

Create a parent page – title, logo, etc

A new OGC Catalog Service for the Web (CSW) toolset

The screenshot displays the SilverStripe CMS interface for editing a page titled 'Deep South / Catalogue Form'. The browser window shows the URL `https://postcard2-dev.niwa.co.nz/admin/pages/edit/show/13?Locale=en_NZ`. The interface is divided into several sections:

- Left Sidebar:** Contains navigation links for 'Science Challenge CSW Postcard', 'Welcome', 'About Us', 'Contact Us', 'Page not found', 'Server error', 'Deep South', 'Catalogue Form', 'Sustainable Seas', 'Catalogue Form', 'Doug testing', 'Brent's DC Browser', 'Brent's BOI Browser', and 'New Metadata Postcard Entry Page'.
- Main Content Area:** Features a 'Content' tab and a 'Page Uri Parameters' section. The 'Page name' is 'Catalogue Form', the 'URL Segment' is `https://postcard2-dev.niwa.co.nz/deep-south/entry-form`, and the 'Navigation label' is 'Catalogue Form'. Below this is a rich text editor with a toolbar and a paragraph of text: 'Please use descriptions which contain words and phrases that will help others, who are not familiar with the item, to discover it using obvious and relevant terms.'
- Right Preview Pane:** Shows a preview of the 'Science Challenge CSW Postcard' page. It includes the 'National Science Challenges' logo, 'THE DEEP SOUTH Te Kōmata o Te Tonga', and the title 'Science Challenge CSW Postcard'. Below the title is a navigation bar with 'Home / Deep South / Catalogue Form' and a 'Catalogue Form' heading. The preview also shows the same paragraph of text as the main content area.

At the bottom of the interface, there are buttons for 'Saved', 'Published', and 'More options'. The right preview pane has buttons for 'Draft', 'Published', and 'Share draft'.

Create a data entry form – 1. DC element, label, help text, etc..

A new OGC Catalog Service for the Web (CSW) toolset

The screenshot shows the SilverStripe CMS interface for editing a page titled 'Catalogue Form'. The page is part of a 'Science Challenge CSW Postcard' for 'The Deep South'. The form includes the following fields and sections:

- Catalogue Push Url:** . Description: URL that will allow pushing of records in to the catalogue using a CSW transaction.
- Catalogue View Url:** . Description: URL to view records in a catalogue. The identifier of new records will be added to the end.
- Catalogue Username:**
- Catalogue Password:**
- From Email Address:** . Description: This is the address that email messages from this system appear to be from. It should include the domain of this website.
- Special variable in the success message is {LINK} which will display a link to the newly created record in the catalogue on the screen.**
- ☐ Display list of records added this session
- Push Success Message:**
- Special variable in the failure message is {ERROR} which will display the technical error message on screen.**

The right sidebar shows the page title 'Catalogue Form' and a link to the 'Challenge website'.

Create a data entry form – 2. define CSW endpoint parameters – etc...

A new OGC Catalog Service for the Web (CSW) toolset

Django administration WELCOME, DOUG. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

Home › CSW Proxy › Rule sets

Select rule set to change ADD RULE SET +

Action: 0 of 3 selected

<input type="checkbox"/>	ENDPOINT	NAME	CONSTRAINT SAMPLE	LINK
<input type="checkbox"/>	Science Challenges	Science Challenges - Deep South	(anyText=%Deep South%)	/api/services/1/3/
<input type="checkbox"/>	Science Challenges	Science Challenges - Sustainable Seas	(anyText=%Sustainable Seas%)	/api/services/1/2/
<input type="checkbox"/>	Science Challenges	Test		/api/services/1/1/

3 rule sets

Define the CSW endpoint & rule to create the virtual catalog

A new OGC Catalog Service for the Web (CSW) toolset

- working virtual metadata catalogs via OGC CSW service!

Questions?

IMPLEMENTING OGC STANDARDS

A DATA PLATFORM PERSPECTIVE



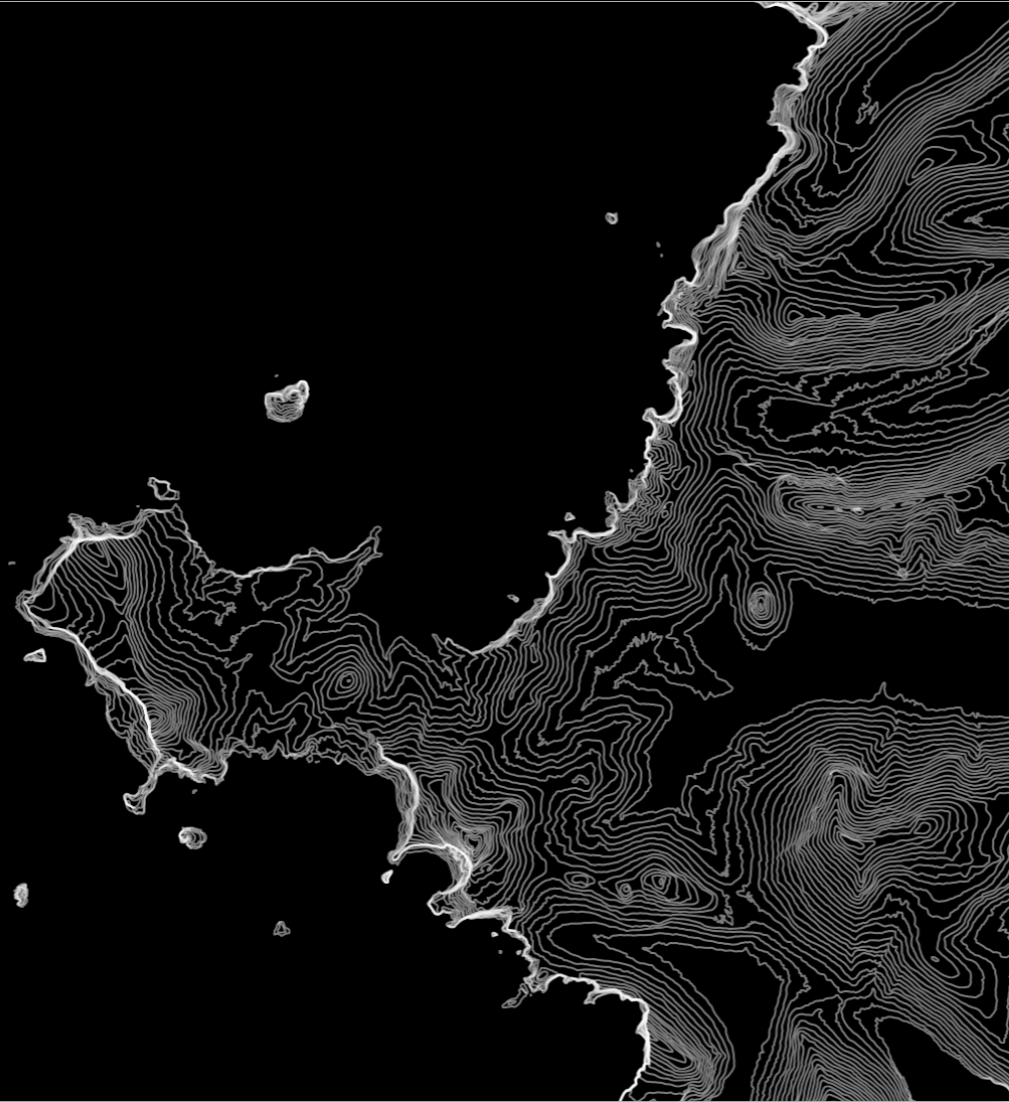
Palmerston North 0.125m Urban Aerial Photos (2012-13) Land Information New Zealand



Hamish Campbell
Product Manager
Koordinates



NZ Campbell Island Contours (Topo, 1:50k)
Land Information New Zealand / National Topographic
Office



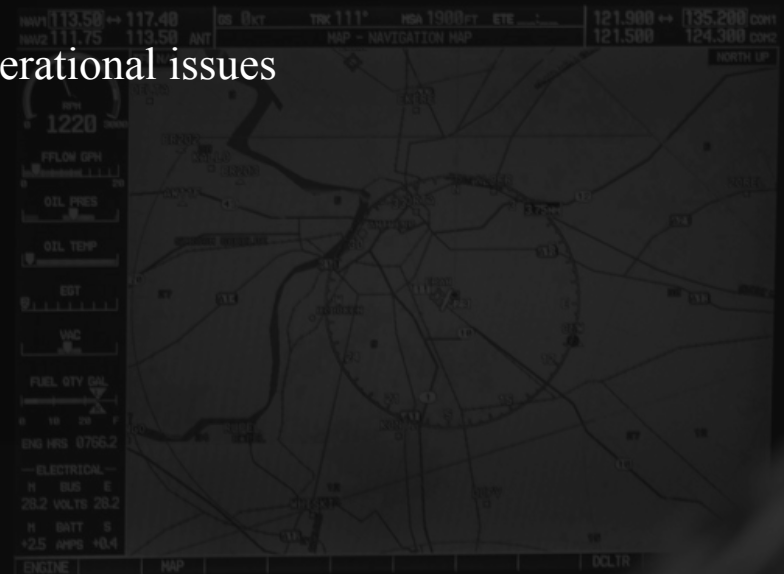
Koordinates exists to
eliminate the friction
between data publishers
and data consumers.



Canterbury 0.4m Rural Aerial Photos (2013-14)
Land Information New Zealand

Why Standards Work For Us

1. Diverse customers, diverse users, diverse technologies.
2. Government customers have a mandate to drive broad uptake, rather than supporting specific software packages.
3. Standards give us interoperability around our core proposition: connecting publishers to end-users, regardless of technology or channel.
4. Frees us to innovate on the usability and operational issues around data publication and consumption.



OGC Standards in Use

All customers, every dataset

Web Services

WFS 200 GB per month

WMTS 600k+ tiles per month

WMS

CS-W

GeoJSON APIs

Metadata

ISO 19115/19139

Import & Export

GeoPackage

GeoJSON

KEA (HDF)

KML

Implementation Examples

GeoPackage

- Added as a download option, implementing GeoPackage 1.01 via GDAL.
- Biggest issue: no support for a-spatial data.
- Able to add capability via extensions.
- Geopackage 1.2 (Aug 2017) standardised a-spatial table support.

Implementation Examples

GeoPackage

- GeoPackage spec is focused on limited functionality, which is relatively simple to implement.
- Leverages SQLite as the underlying database very effectively.
- Extensions framework makes it straight-forward to add capabilities as necessary.

Implementation Examples

WFS

- WFS implementation via Geoserver.
- 3 versions with significant differences.
- Very large spec, but only a small subset of capability is used.

Implementation Examples

WFS

We're still finding edge case implementation issues after 6 years.

WFS 2.0 joins:

- Difficult to figure out the correct query to create the join, or to get implementations to handle it correctly.
- Paid for a number of fixes to a compliant implementation.

Implementation Examples

WFS

Complying to specification incurs a performance penalty.

WFS 2.0 GML:

- Mandates a `numberReturned` attribute in the opening tag.
- Prevents performant implementation in important cases, by requiring pre-calculations or result buffering.

Standards!

- Standards are great, and we're better off for them.
- Smaller standards that are feasible for a reasonably sized team to implement would be ideal.
- More implementations means more bugs squashed.
- Implementation leads ratification, c.f. GeoJSON.

Roadmap

Starting Point

6-8 week turnaround, physical media, multiple intermediaries.

Current Situation

Weekly updates delivered automatically via changesets and downloads.

Future

Bi-directional Streaming — keeping everybody's local datasets up to date at any scale.

Open question: how do we standardise these technologies for spatial data?

Thank You

hamish.campbell@koordinates.com



NZ Road Centrelines (Topo, 1:500k)
Land Information New Zealand

The Geospatial Platform Discussion with OGC on Open Maps and Open Layers



GEOPLATFORM.gov

The Challenge

Today, government workers, citizens, industry, and academia face large volumes of distributed, diverse geospatial data, and services that lack logical consistency and coherence (machine-understandability). It is often difficult to find and exploit data on-demand for timely decision making. Most geospatial data, applications, and services are bottled up in enterprise silos and vendor-dependent technology stacks, which may meet the needs of select internal users, but these resources are not readily available to all who have the need for access. Cross-enterprise interoperability and collaboration capabilities are limited. The nation also has too few reliable, authentically open (e.g., OGC-compliant), interoperable services for users to exploit on-demand from their point of need. As such, users often resort to costly, labor-intensive, error-prone, and time-consuming data file sharing procedures, resulting in redundant, out-of-date, and hard-to-find copies of data.

Users spend too much time searching, copying, re-formatting, and trying to understand data provided by others. When they find it, they often discover that, while the data may meet the most basic needs for human understanding and use (and even this is often a struggle), it usually falls well short of meeting the requirements for direct machine processing and application. Thus, the potential for machine-to-machine automation and enhanced user productivity is greatly reduced. Users carry far too much of the burden for finding, copying and munging data, rather than understanding, deciding, and acting upon data. Furthermore, geospatial data must also come out of its silos, and be better integrated with non-geospatial data, to increase its value and relevance to the mission.

Better shared cyber-infrastructure and shared services are needed for the nation to overcome the aforementioned obstacles. GeoPlatform addresses this need.

Meeting the Challenge

Effective data-driven policy responses and support for missions ranging from emergency response, recovery and mitigation, to border security, targeted economic development, and streamlined permitting, require very significant levels of cross-governmental, multi-disciplinary collaboration. Efforts to quickly and cost-effectively share geospatial resources and streamline cross-enterprise collaboration require reliable shared cyber-infrastructure, effective policies, and practical procedures. This cyber-infrastructure must lower the barriers to resource availability and access, enhance resource reliability, increase interoperability (including geospatial with inter-linked non-geospatial), and provide secure, reliable on-demand service to all points of need, at all times. To succeed, this cyber-infrastructure must foster innovation and strong participation from all sectors of the economy. Geospatial data and services are a vital national asset needed by all.

GeoPlatform addresses the challenge by:

- Giving users a coherent seamless window into our national geospatial assets
- Providing the common, critical enabling technology required to streamline cross-agency collaboration, improve resource interoperability and integration, and enhance user productivity
- Vastly improving geospatial resource management, including addressing crucial reliability and security issues
- Taking an authentic vendor-independent open system-of-systems approach, fostering best-of-breed participation and innovation
- Enabling an interconnected ecosystem of geospatial and related non-geospatial resources, delivering greater value and mission relevance to end users
- Taking full advantage of the latest advances in robust, secure, scalable Cloud and open web services technology
- Tapping into the full potential of geospatial resources as a commodities, to deliver instantaneous location knowledge and value, when and where needed, across multiple enterprises.

Federal cross-agency cooperation and leadership is vital to the success of the GeoPlatform.

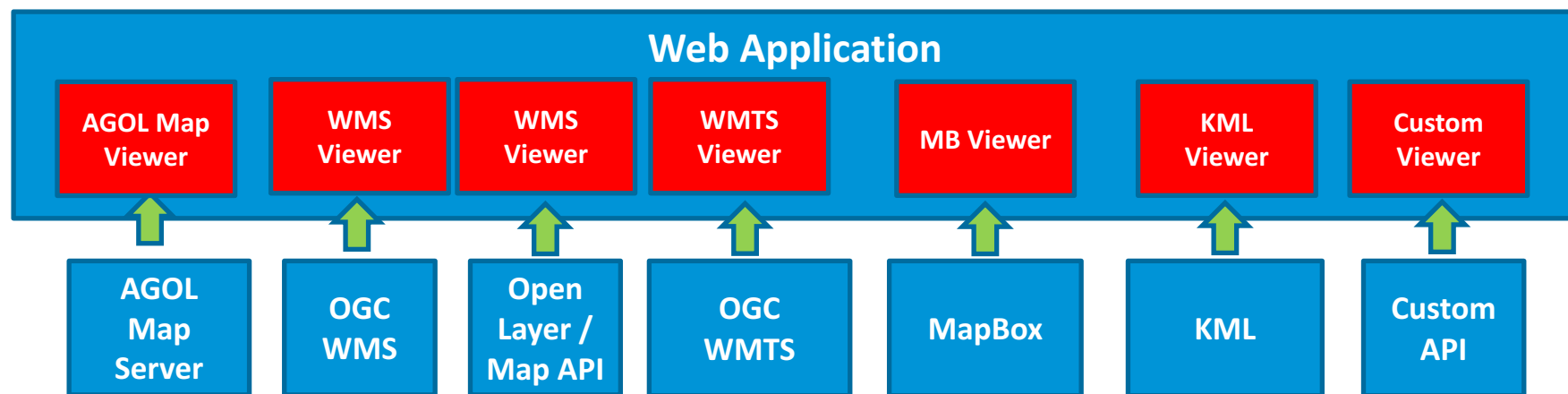
Evolution of Products – from data to answers

- First we had maps.
- Next we had WebMaps / Applications
- Then the Services revolution
- Analytic Products



Today's Closed and Disparate Map and Layer Problem

1. Can't find relevant layers and maps
2. Duplicated information (download a dataset)
3. Can't determine fit-for-use, provenance, lineage
4. Can't consistently portray / style layers for presentation



1. Different map and layer representations
2. No consistent metadata for layers /maps
3. Different APIs
4. No semantic grounding of concepts

5. No linking of concepts and resources
6. No standard portrayal models
7. Proprietary (not open-standard) = Vendor Lockin

What is Open Layer?

- An open, extensible, sharable digital map layer
- Independent of layer technology stack
- A 5★ Linked Open Data Representation of a Layer
 - Other representations are likely
- Open Layer model parts
 - (Core) Layer Metadata –All GeoPlatform resources share this profile. Every Open Layer has a uniform set of layer metadata. (See Registry+ specs.) This metadata exists to capture basic layer data properties to aid in search and description. Core metadata is used primarily to answer who, what, when, and where questions about a layer.
 - Open Layer Link – The URI to the rendered layer operating in its native technology stack.
 - Layer Object – The unified data model for all layer data parts, including Symbology and legend. This portion of the model exists to capture essential layer data for use in rendering a digital layer.
 - Layer Knowledge Graph (LKG) – The knowledge meta-model for an Open Layer that capture layer-maker tradecraft. The LKG is comprised of several elements, each which corresponds to a layer fact. The LKG helps end-users discover and appropriately use Open Layers. Thus, LKG is used to answer why and how questions about a layer.

What is Open Map?

Key Characteristics

- Technology-agnostic at the level of standards-based *GeoPlatform* service framework
- A 5★ Linked Open Data Representation of a Map
- Implemented in Web Map Viewer, Map Manager, etc
- Five information components:
 - Map Metadata, in accordance with Registry+ model
 - Map Object w/ layers, symbols, annotations, legend
 - Map Knowledge Graph (MKG)
 - Map Utility Stats (Future)
 - Map Social Context (Future)
- Built upon OGC/W3C standards and other defacto standards

Map Knowledge Graph

- Purpose
- Scope
- Fitness-for-use
- Social context

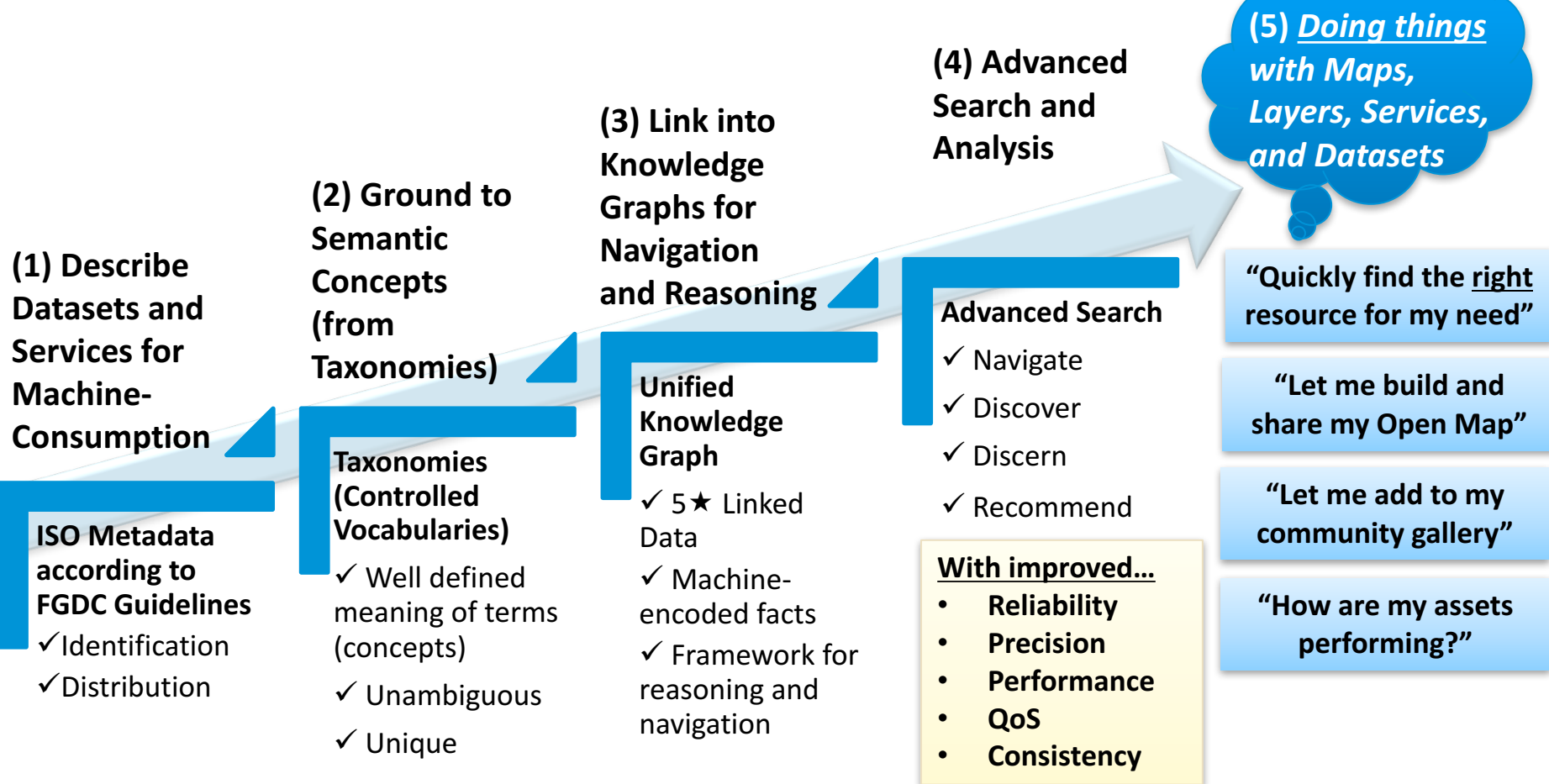
Key Standards:

- GeoPlatform APIs (*defacto*)
- OGC WMC & SLD
- OGC WMS, WMTS, WFS
- OGC KML
- W3C HTML5, CSS
- W3C RDFS, OWL, SKOS
- ESRI REST API, Shapefile (*defacto*)

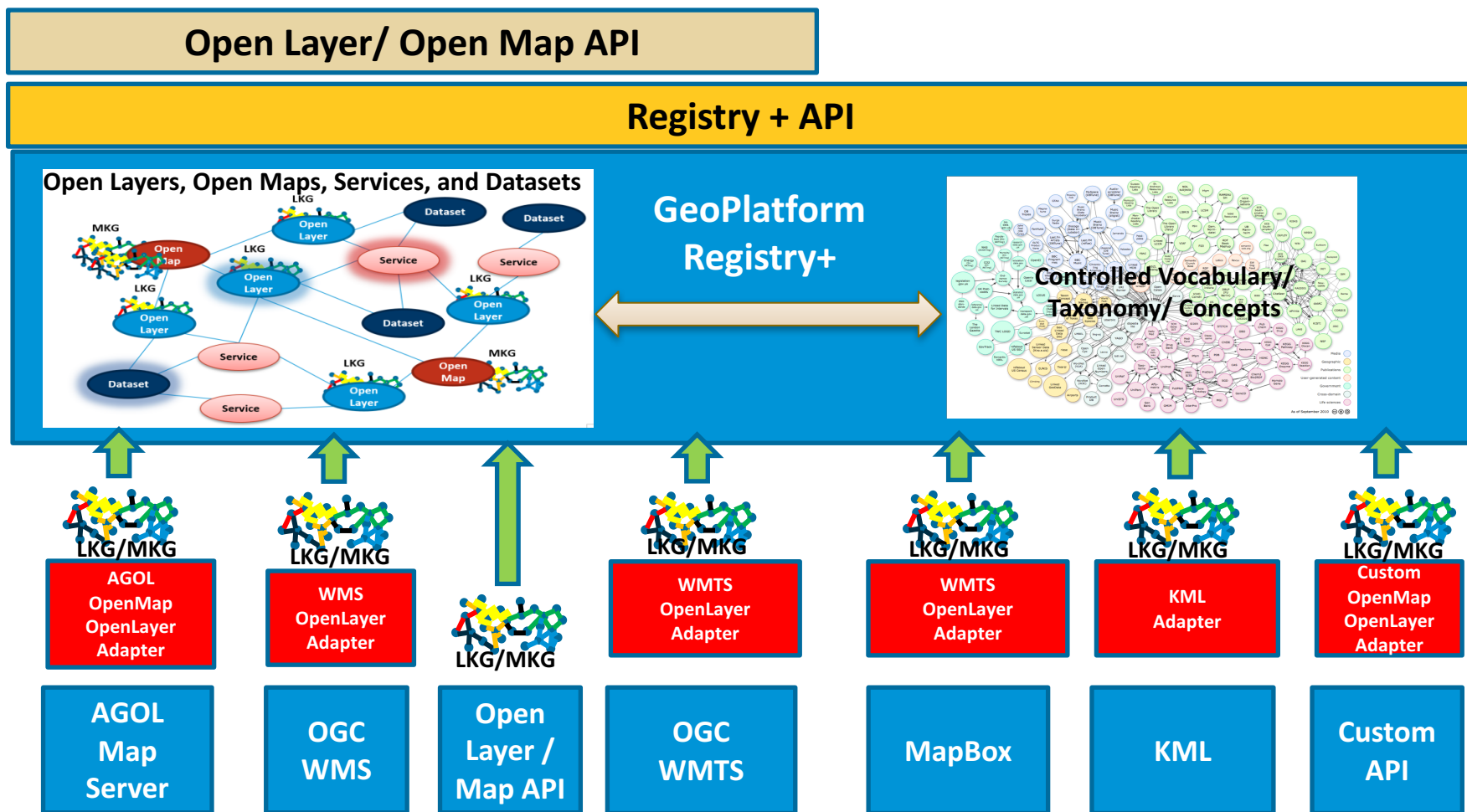
Why?

Connecting user-needs to data and services

Finding and remembering the good stuff, forgetting the bad stuff...

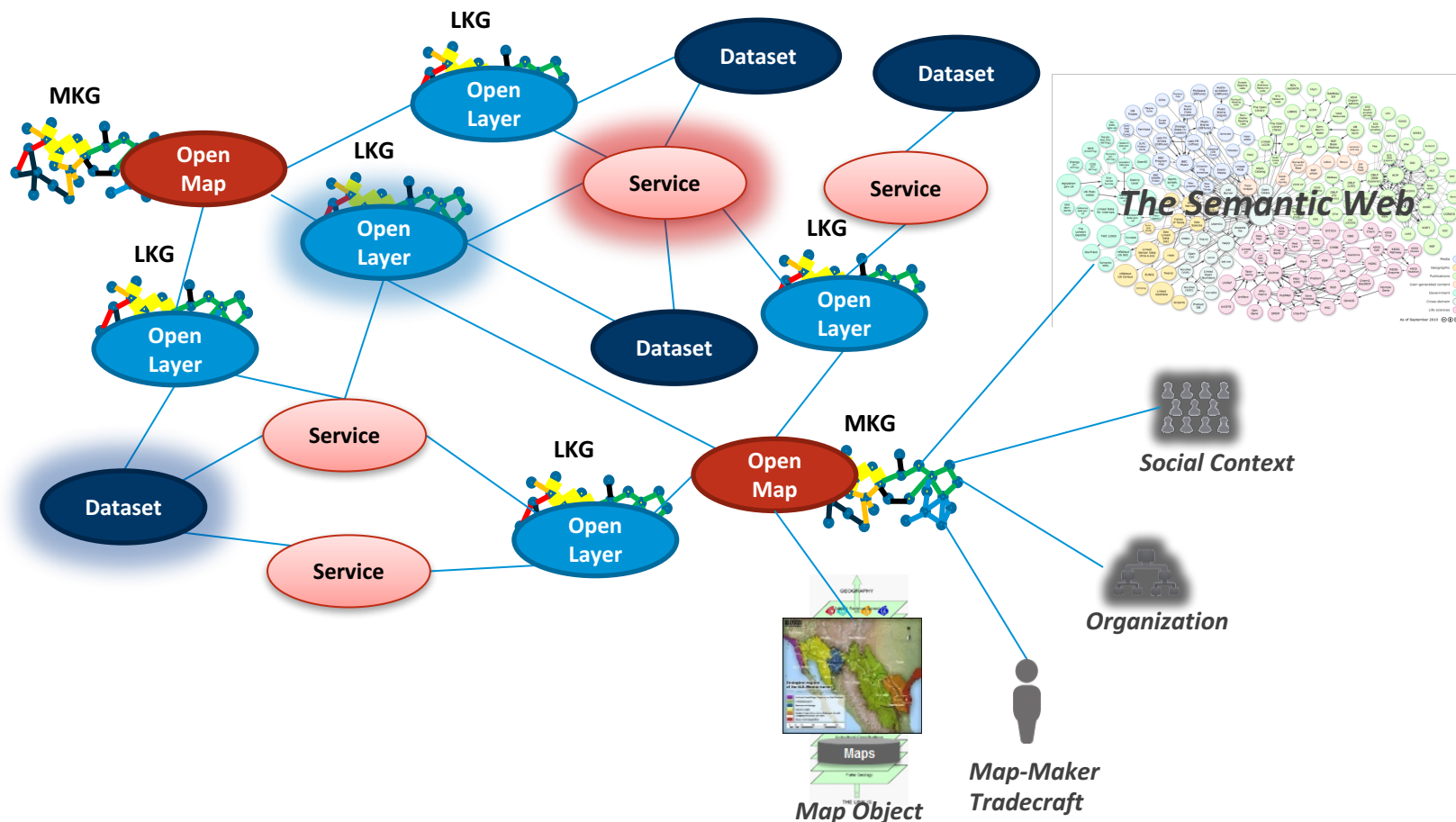


Open Map and Open Layer Web Ecosystem



The Unified Web of Open Layers and Open Maps

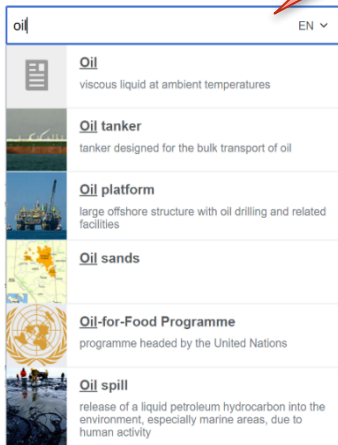
A Network of Maps, Layers, Services, Datasets, People, Organizations....



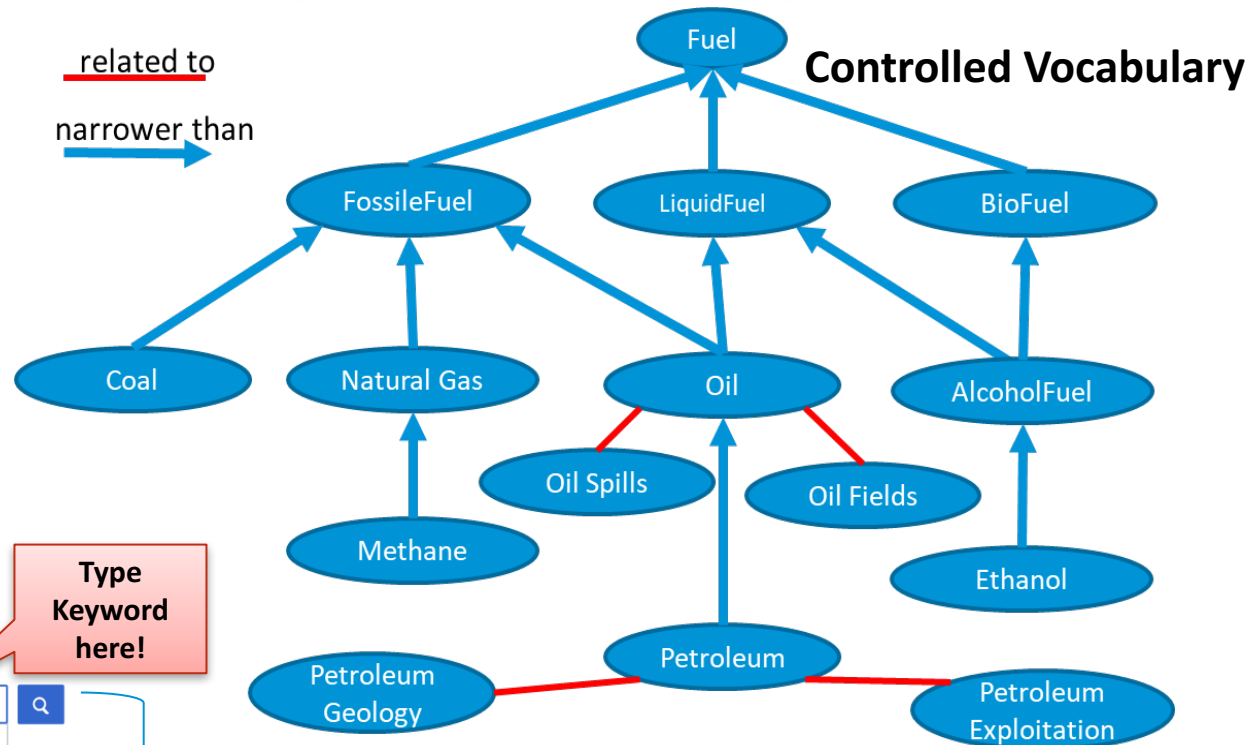
Building and Using Knowledge Graphs...

Use W3C SKOS for controlled vocabularies:

- Support alternate labels per concept (e.g., synonyms and aliases)
- Multilingual support
- Broader, Narrower, Related Concepts
- Support mapping between vocabularies:
 - ExactMatch, CloseMatch
 - BroaderMatch, Narrower Match



related to
narrower than
→



Type
Keyword
here!

Use the Knowledge Graph for...

- Keyword/Concept Disambiguation
- Spatial, Temporal, Lexical and Semantic Search
- Layer Recommendation (Layer like this)
- Map Recommendation (Map like this)

Adds a Missing *Knowledge* *Layer* Between Users and Data

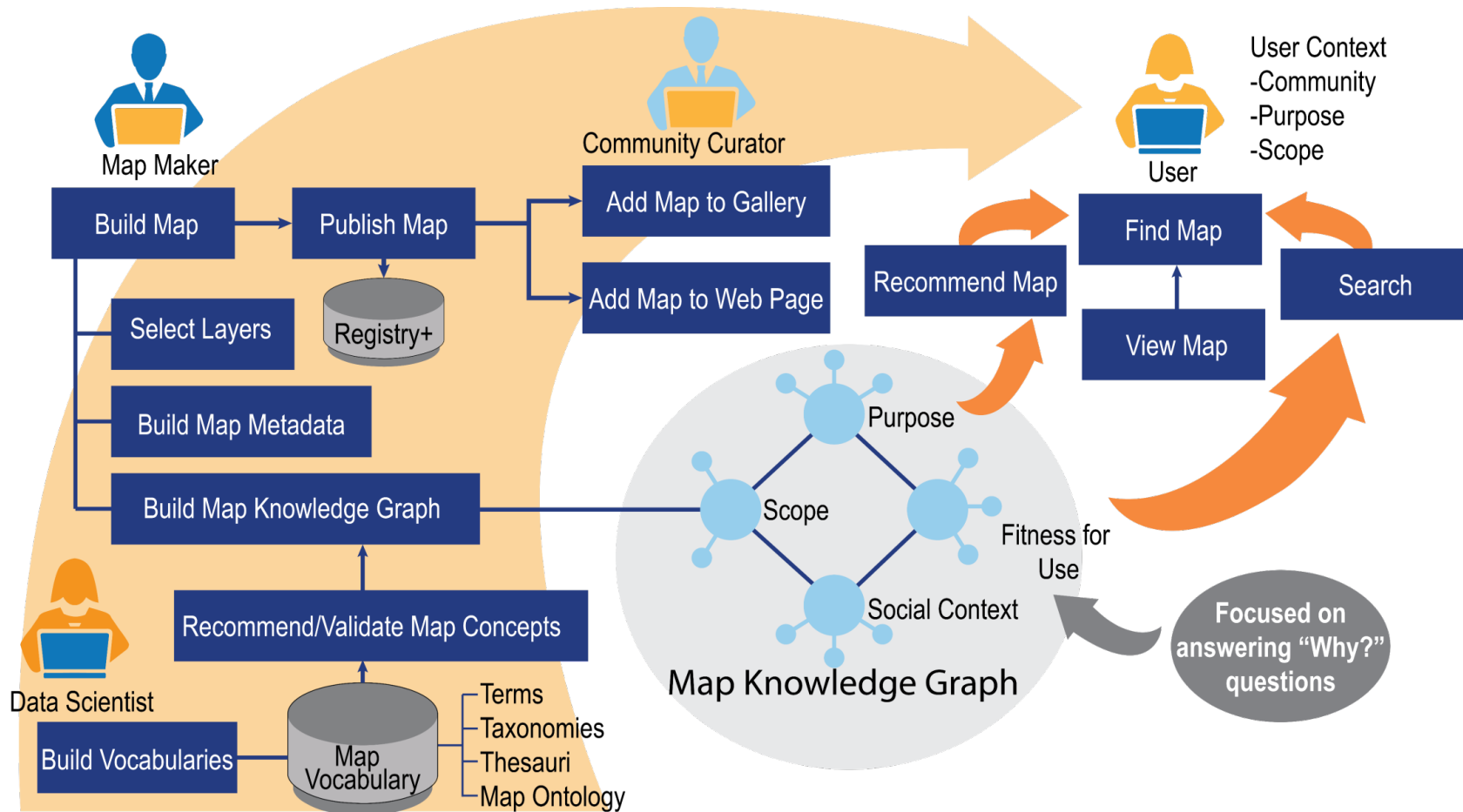
- Classic metadata approaches for geospatial resources answer basic questions about data and services, but lack the deeper understanding held by subject matter experts. This hinders the ability to find the right, relevant resource for use in a particular task. In order to apply geospatial resources correctly, users need to know their explicit meaning, significance, and relevance. Users also need improved search to pinpoint just the right resource for the task at hand. Thus, resource providers need more effective tools to add meta-knowledge to their resources, answering questions about resource purpose, scope, and fitness-for-use, for better discernment by downstream users.
- GeoPlatform's *Knowledge Layer* adds shared machine-encoded meta-knowledge about what is known and can be verified by a team of collaborating resource providers. The *Knowledge Layer* provides the basis for greater automation of search, interoperability, exploitation, assisting users with data overload situations and complex problem solving.

Benefit:

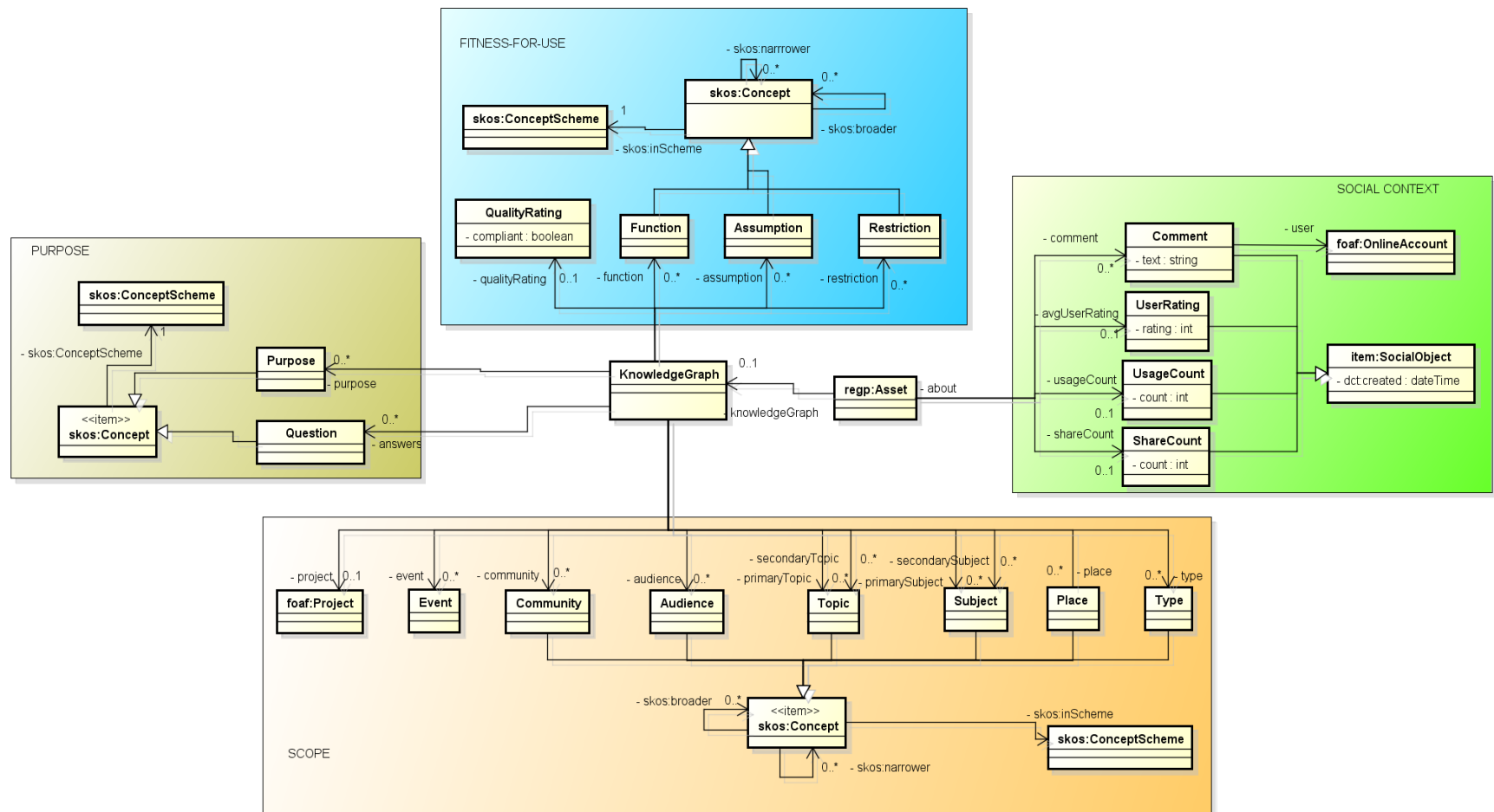
Users can quickly assess the meaning, significance, and relevance of interconnected geospatial resources, without the need for having the experts at hand. By machine-encoding and sharing meta-knowledge about geospatial resources, as understood through the perspectives of subject matter experts, users can leverage this meta-knowledge going forward. This also holds the key to enhanced workflow automation.

Enhanced interoperability, search, and exploitation

Structured meta-knowledge graphs are a key!



Knowledge Graph Model



The “Map Knowledge Graph” adds map context (meaning, significance and relevance) to the map. Map-makers create this “tracecraft” information so that others can easily discover just the right map that is fit for their purpose. A community also contributes rich social context, making the map a valuable social object in a shared geospatial experience.



AgARS

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Meeting Host



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OpenFlight Candidate Work Item OGC Community Standard

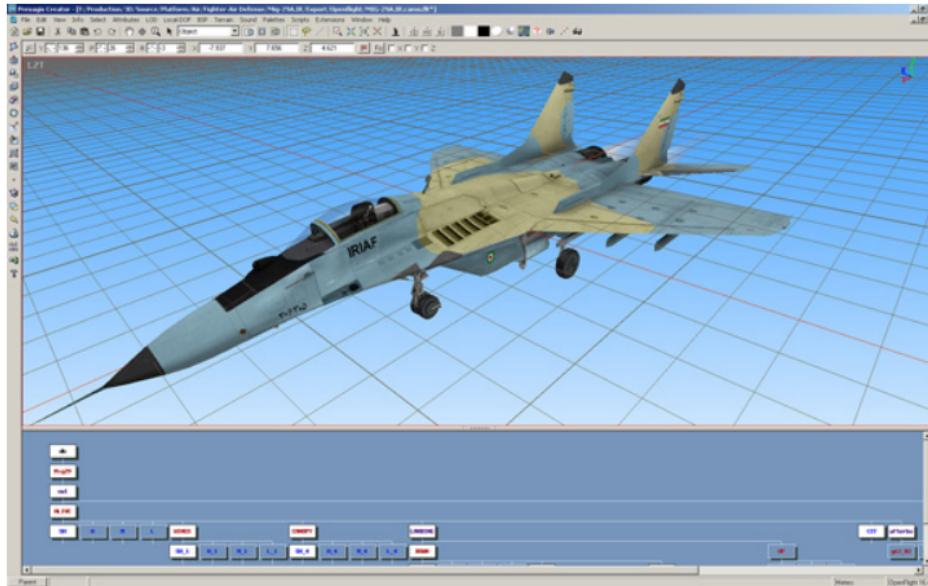
105th OGC Technical Committee

Palmerston North, New Zealand

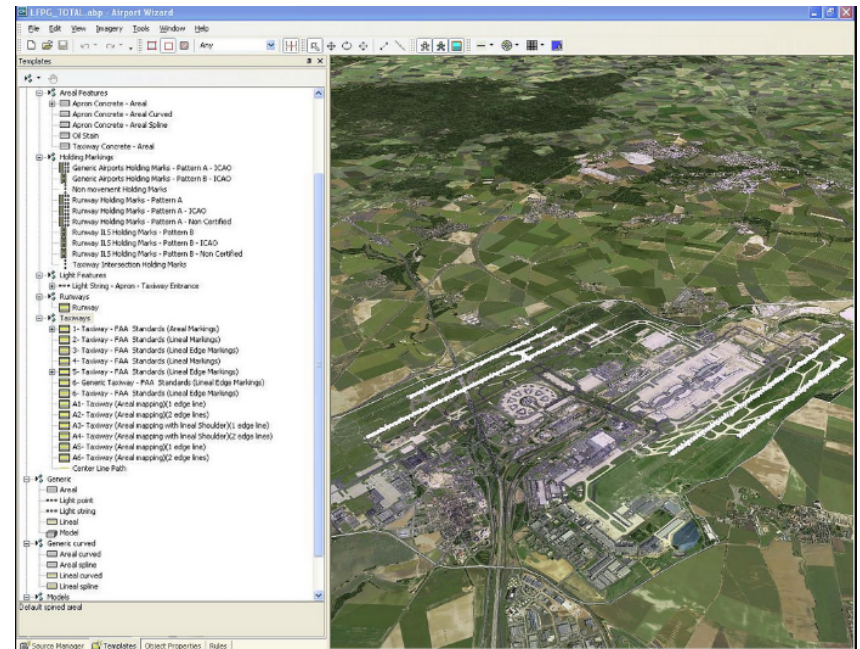
David Graham

06 December 2017

OpenFlight (.flt) ... what is it?



OpenFlight[1] (or .flt) is a 3d geometry model file format originally developed by Software Systems Inc. for its MultiGen[2] real-time 3d modeling package in 1988. Originally called Flight, the format was designed as a nonproprietary 3d model format for use by real-time 3d visual simulation image generators. *Wikipedia*



OpenFlight Implementations and Use U.S. Department of Defense



UNCLASSIFIED

Standard/Specification Comparison Matrix:

Organization	Terrain Generation Capability	Specification	Specification Category	Source Data Repository	Runtime Publishing Format	Standardized Schema & Attributes	Platform Independent	Operating System Independent	Transport Protocol Independent	Utilizes WGS-84 Earth Model	Geospatial Source & Formats				Industry Formats Utilized by the Specification											
											TIFF	DTED	OpenFlight	Shapefile	RGB/RGBA	JPEG	DDS	DXTn	FXTn	JPEG 2000	XML	Geo Packages	CityGML			
JS J7 Marines SOCOM	Terrain Generation Service (TGS) & SOFPREP	Common DataBase (CDB)	Open International Standard 6	Yes	Yes	Yes 8	Yes 9	Yes 9	Yes 10	Yes	Yes	Yes 5	Yes 4	Yes 3	Yes 1	Yes 1	Yes 1	Yes 1	Yes 1	Yes	Yes	No 2	No 2			
Army	Synthetic Environment Core (SE-Core)	Master Database (MDB)	Government Standard 7	Yes	No	Yes 8	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	Yes	Yes	No 11	No			
Air Force		Air Force Common Dataset (AFCD)	Government Standard 7	Yes	No	Yes 8	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes 1	Yes 1	Yes 1	Yes 1	Yes 1	Yes		No	No			
Navy		NAVAIR Portable Source Initiative (NPSI)	Government Standard 7	Yes	No	Yes 8	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes 1	Yes 1	Yes 1	Yes 1	Yes 1	Yes	Yes	No	No			

Excerpted from 'Enterprise Terrain Data Standards for Joint Training', March 10, 2017 DTIC AD1040231

OpenFlight Implementations



- OpenFlight with extensions is the (optional) encoding for 3D models in OGC CDB 1.0
- Commercial tools read and write OpenFlight
 - Presagis Creator
 - ESRI ArcGIS, ASCII Grid
 - Autodesk AutoCAD
 - SAFE FME
 - CityGML2Flt
 - Search returns hundreds of examples
- Open Source examples
 - FLTLIB

OpenFlight Version / Change History



Version	Date	Information
OpenFlight 16.6	January 2017; 10 months ago	OpenFlight Scene Specification for version 16.6 Covering: Presagis Creator Suite 16
OpenFlight 16.5	February 2016; 1 year ago	OpenFlight Scene Specification for version 16.5 Covering: Presagis Creator Suite 15
OpenFlight 16.4	June 2009; 8 years ago	OpenFlight Scene Specification for version 16.4 Covering: Presagis Creator v4.0
<i>Full Version of this table available on the Wikipedia OpenFlight entry</i>		
Flight 10.0	April 1991; 26 years ago	Flight Scene Specification for version 10.0 Covering: Software Systems MultiGen version 10
Flight 9.0 A	March 1991; 26 years ago	Flight Scene Specification for version 9.0 Covering: Software Systems MultiGen version 9
Flight 1.0	1988; 29 years ago	Flight Scene Specification for version 1.0 Covering: Software Systems MultiGen

OpenFlight and the Future



- **U.S. Army Sharing Format Consolidation**

- Table excerpted from Leidos presentation to CDB SWG on December 5, 2017

	Current Formats	Initial Migration	Long-term	Long-term
Imagery	GeoTIFF JPEG2000 Erdas Imagine LizardTech MrSID	JPEG2000 GeoTIFF LizardTech MrSID	JPEG2000 GeoPackage	GeoTIFF GeoPackage
Elevation	GeoTIFF .img DTED	GeoTIFF DTED	GeoTIFF GeoPackage	GeoTIFF GeoPackage
Vector Features	SDE Shapefile	SDE GeoPackage	GeoPackage	GeoPackage
Models	OpenFlight Filmbox	OpenFlight Filmbox	X3D GeoPackage	GeoPackage
Maps	CADRG GeoTIFF JPEG2000	CADRG GeoTIFF	CADRG GeoPackage	CADRG GeoPackage

There are literally millions of OpenFlight models in the inventory and libraries of real-time simulation archives



OpenFlight Summary



- Mature, widely implemented, ‘de-facto’ specification
- Despite the age of the specification, it remains the real-time 3D model interchange specification for every DOD service
- Actively maintained and regularly improved and updated by Presagis
- OGC CDB 1.0: Volume 6 OGC CDB Rules for Encoding Data Using OpenFlight
https://portal.opengeospatial.org/files/?artifact_id=72717



Upcoming TC Meetings

WELCOME !



Orléans April 2003 - OGC
TC

Long time no see!



Missing you!

Orléans March 2018 –
OGC TC

Here we go again !

Nice to welcome you back!



Upcoming Orléans TC meeting



BRGM and ATOS are happy to welcome you in Orléans



- Dates 19-22th March, 2018
- Centre Conférence - Orléans – France

Meeting logistics



Traveling to Orléans



From Paris airports to Paris,

- from Roissy Airport (>RER trains to Paris Austerlitz Station)
- from Orly Airport (> Orly Val & RER trains to Paris Austerlitz Station)

>>Then trains to Orléans Centre or Les Aubrais Orléans (main lines) stations

Or (recommended) Direct shuttles from/to airports also possible (negociated rate)

Plan your travel to Orléans :

- RER <https://www.ratp.fr/en/visite-paris/english/visiting-paris-and-its-surrounding-areas>
- Trains <https://uk.voyages-sncf.com/en/#/>

A list of hotels and accommodation will soon be provided

VENUE

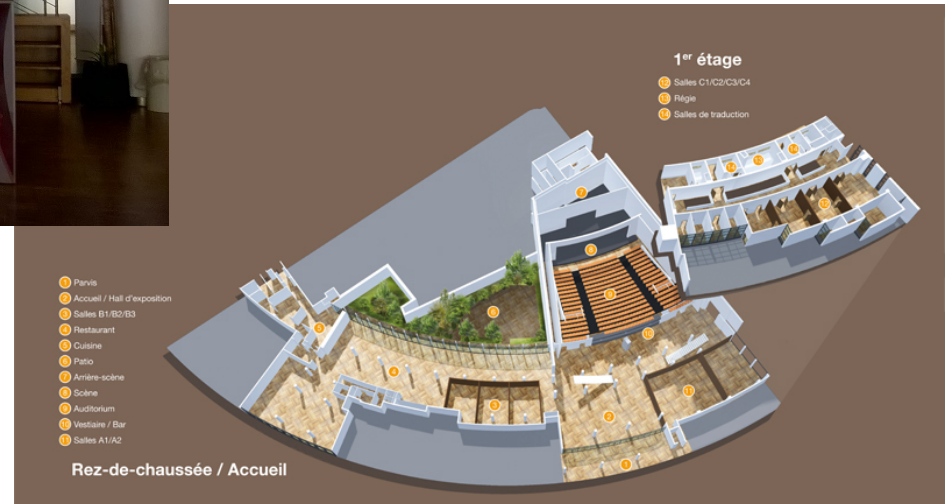


Meeting Location:

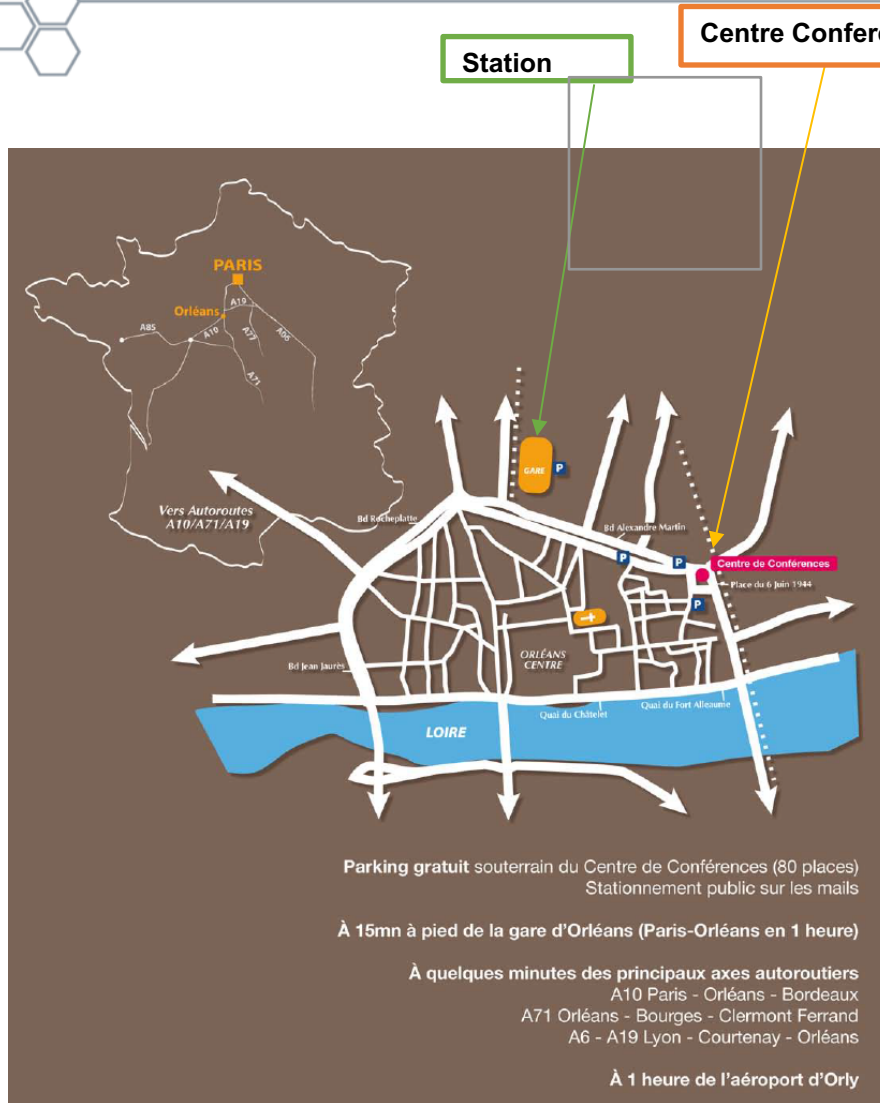
Centre de Conférence d'Orléans Val de Loire

<http://www.centre-conferences-orleans.fr/2011/09/plan-acces/>

Walking distance from the Orléans centre train station (15').



Location



Region Centre Val de Loire (RCVL)

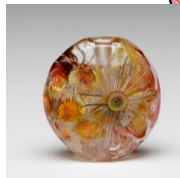


- An attractive region 1 hour South of Paris
 - 2,5M inhabitants,
- A dynamic economic area :
 - Aeronautics and defence,
 - Agriculture and environnement
 - Cosmetics, logistics,
 - A variety of industries, subcontractors
 - R&D, Research laboratories
 - Clusters and competitiveness centers,
 - Arts and crafts



<http://www.investinloirevalley.com/en/>

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COSMETIC VALLEY
FRANCE

FRENCH TECH
**LOIRE
VALLEY**

Region Centre Val de Loire (RCVL)



“Art de vivre” and quality of life in the French Kings’ valley

9 million tourists a year

- ❖ the Loire River : World heritage of UNESCO
- ❖ Chambord, Chenonceau, Amboise... more than 22 castles to discover
- ❖ Cycling the Loire : A 800km “freewheeling cruise”
<http://www.cycling-loire.com>
- ❖ Tarte Tatin, crottins de Chavignolles, Loire Valley wines : a renowned gastronomy



Orléans



TOURISM - HERITAGE

TOURISM



The Loire, world heritage of UNESCO

Navigate between islands and sandbanks, observe the aerial ballet of birds, wait for the beaver ...



tourist rides

Mills Olivet on the banks of Loiret or along the Loire by bike, many sites offer the ...



Parks and gardens



How to come ?



HERITAGE



City of Art and History

Orleans includes a national network prestigious circle currently has 184 certified.



The archeology center

Old Archaeological Service Municipal d'Orléans (SAMO), the Archeology Division manages and enhances the ...



Famous places

Places to know the city



Witnesses

Fifty Witnesses are to be discovered in the manner of a treasure hunt, a treasure hunt, or a ...

<http://www.orleans-metropole.fr/>

<https://www.tourisme-orleans.com/>

<https://www.tourismeloiret.com/>

New Orléans!



SIDE EVENTS



- A « special » OPEN DAY March 21st
- BIM WORLD March 28-29th , 2018 in Paris
 - International event on BIM



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horizons
regional council



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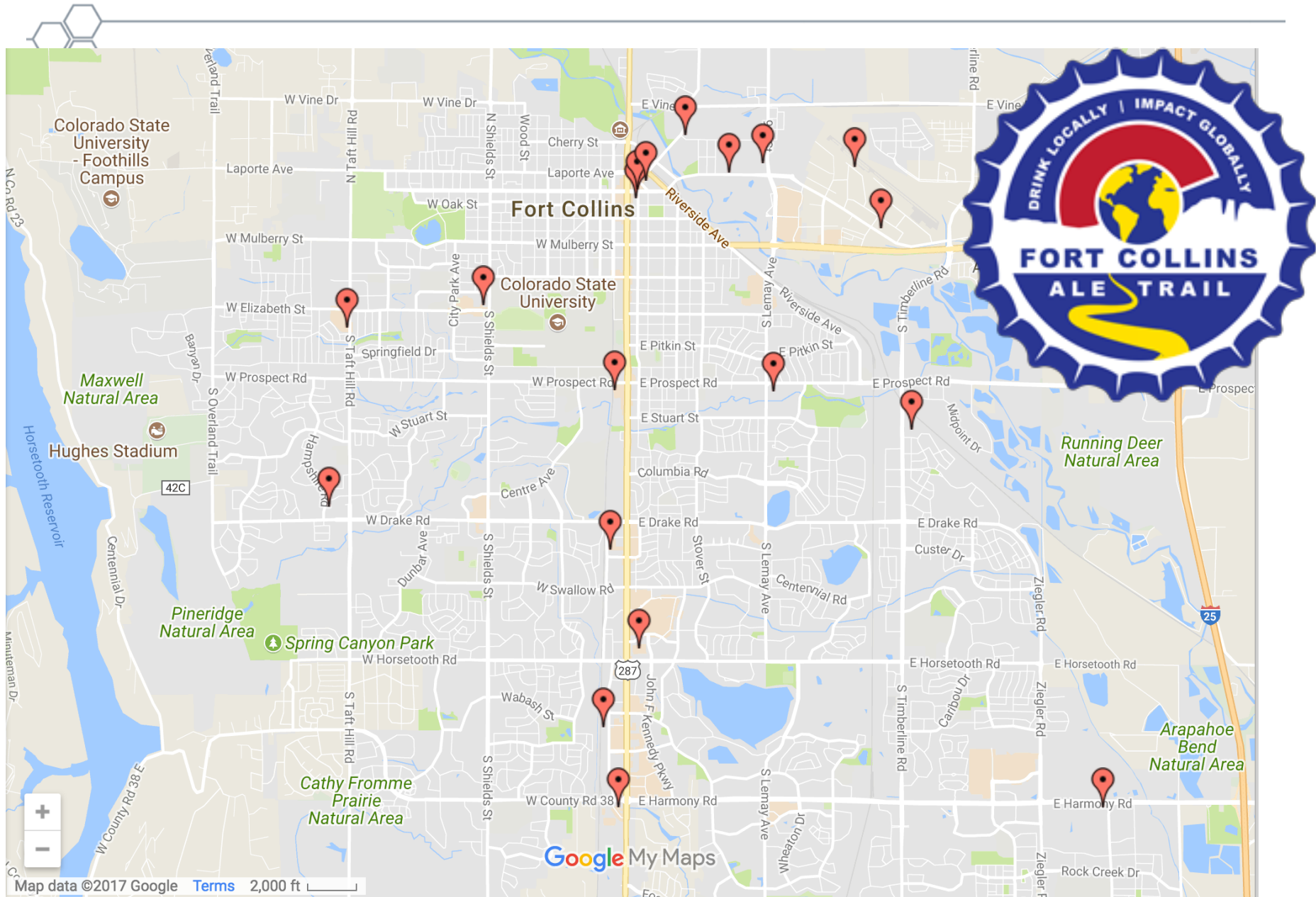
Beer, Bikes, and Bounding Boxes

TC Meeting – Fort Collins, Colorado USA
4 – 8 June 2018



OGC®

Brewery map



It's a bike shop... and a bar!



ROAD **34**
FORT COLLINS, COLORADO

www.road34.com



**10 minute walk from
the TC Meeting**



Host city for OGC TC Meetings in 1995, 1996, 1997







FORT COLLINS, COLORADO





Why go to Disneyland?



**Disney's architect modeled
Main Street USA on Fort Collins
(we just have bluer skies)**

OGC[®]

Copyright © 2017 Open Geospatial Consortium



French culture!

Including double-entendres



**Keep your dam hands
off my Poudre!**

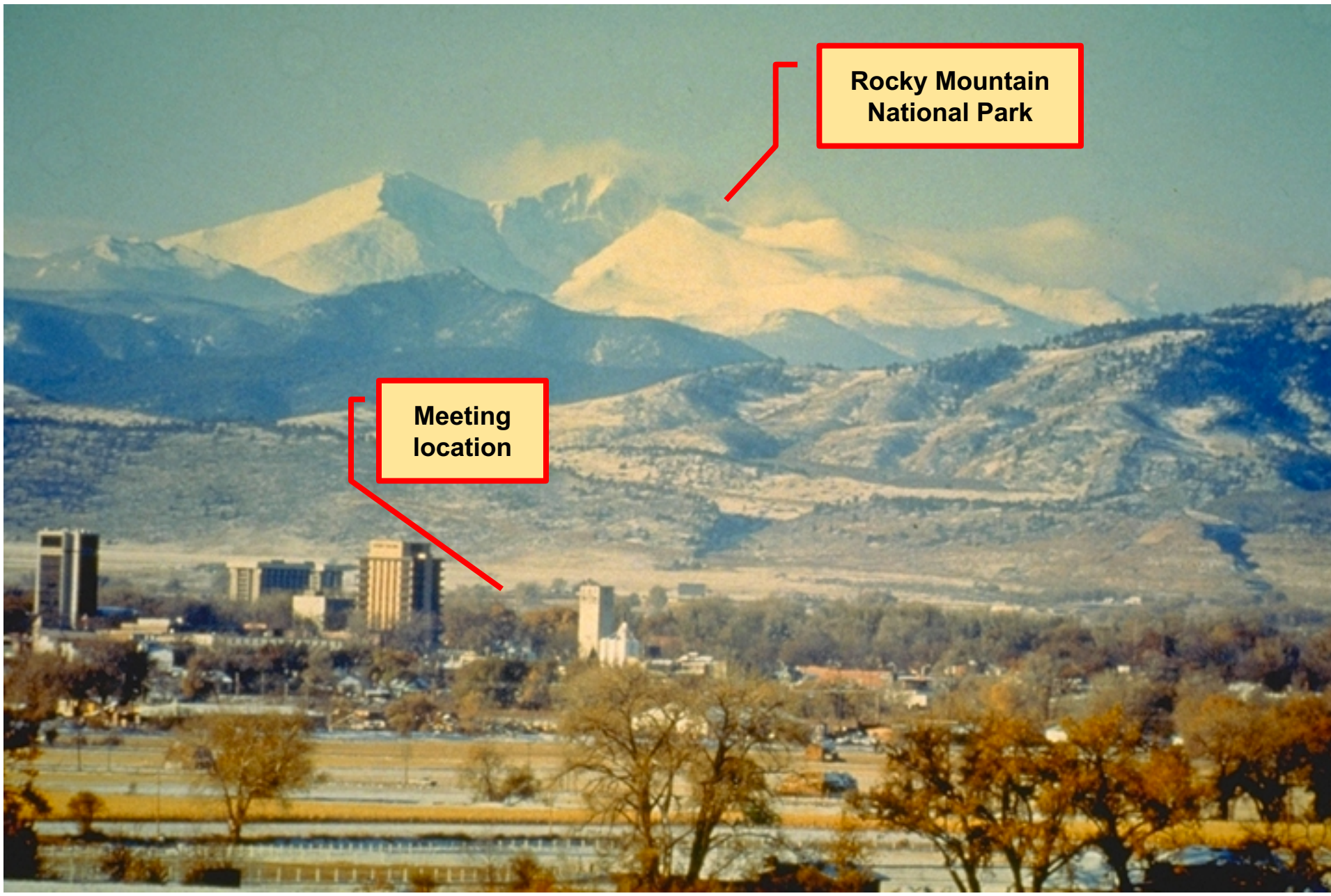
savethepoudre.org





Get Outside!

Take a hike



**Rocky Mountain
National Park**

**Meeting
location**

Easy

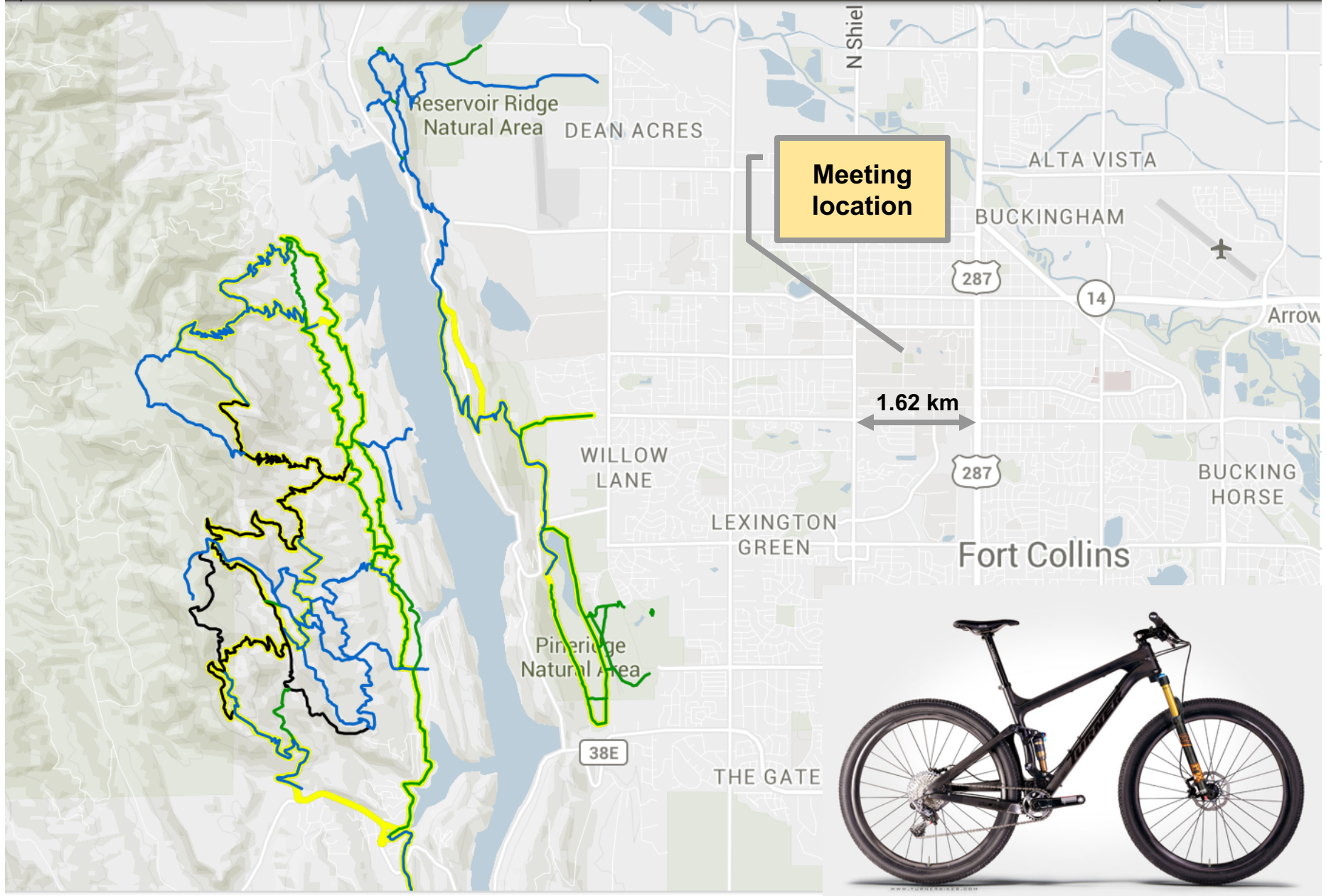


Difficult

0 mi



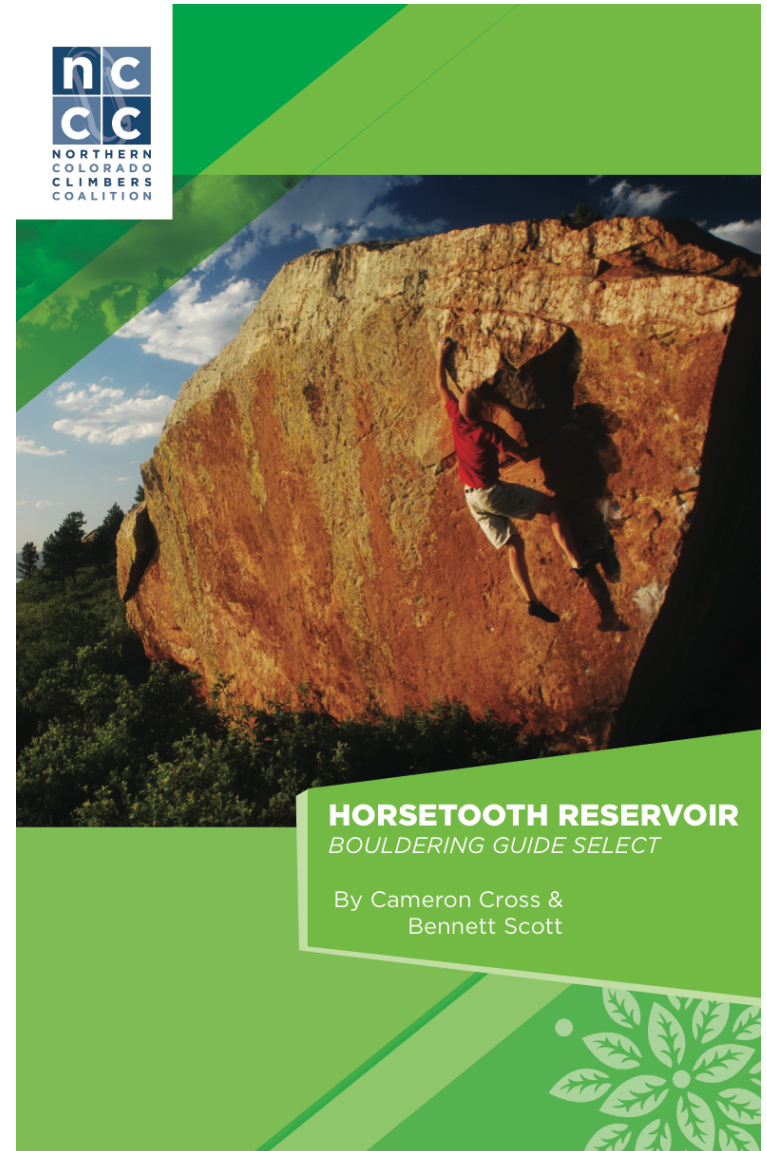
40+ mi



Climb



- Invented here!
 - Competitive bouldering
 - Use of chalk in climbing







A-Basin*

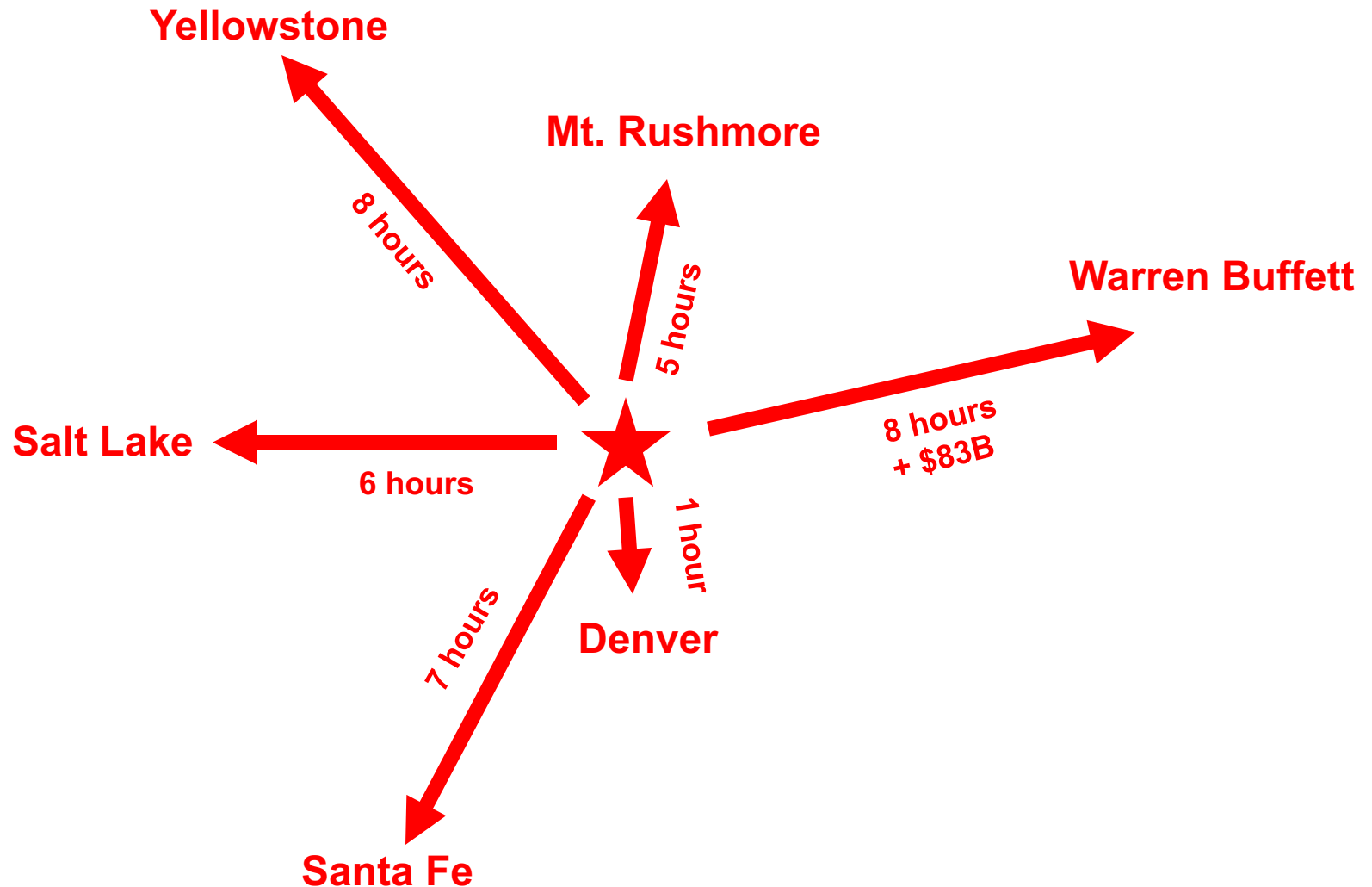


**SUMMER SKIING?
SURE, WHY NOT?!**
JUNE 6-8, JUNE 13-15 & JUNE 20-22

<http://arapahoebasin.com/>

* Disclaimer: this ad was from 2014, A-Basin closed June 11 in 2017

Start driving





Logistics

Transportation to FoCo

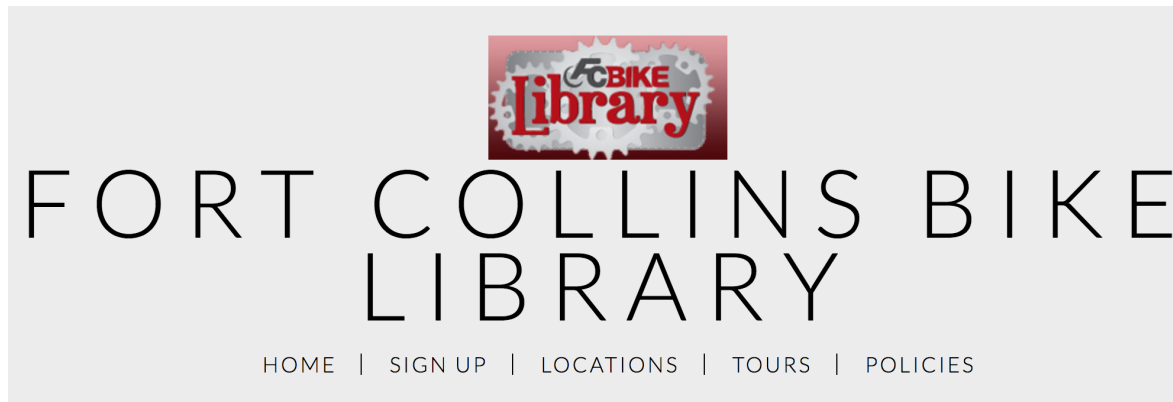


- Fly to Denver International Airport – www.flydenver.com
 - Direct flights to nearly everywhere in the US/Canada/Mexico as well as London, Frankfurt, Munich, Reykjavik, Tokyo
- Car rental
 - Slightly more than 1 hour drive from the airport to Fort Collins
- Shuttle services
 - Green Ride: <http://greenrideco.com/>
 - drop at CSU Transit Center
 - About hourly schedule
 - \$28 each way

Getting around in FoCo



- This is the USA, so cars
- MAX bus between downtown-campus-midtown
- But... Fort Collins is great for walking and cycling
- Fort Collins Bike Library
 - FREE for up to 5 days
 - <https://www.fcbikelibrary.org/>



Venue



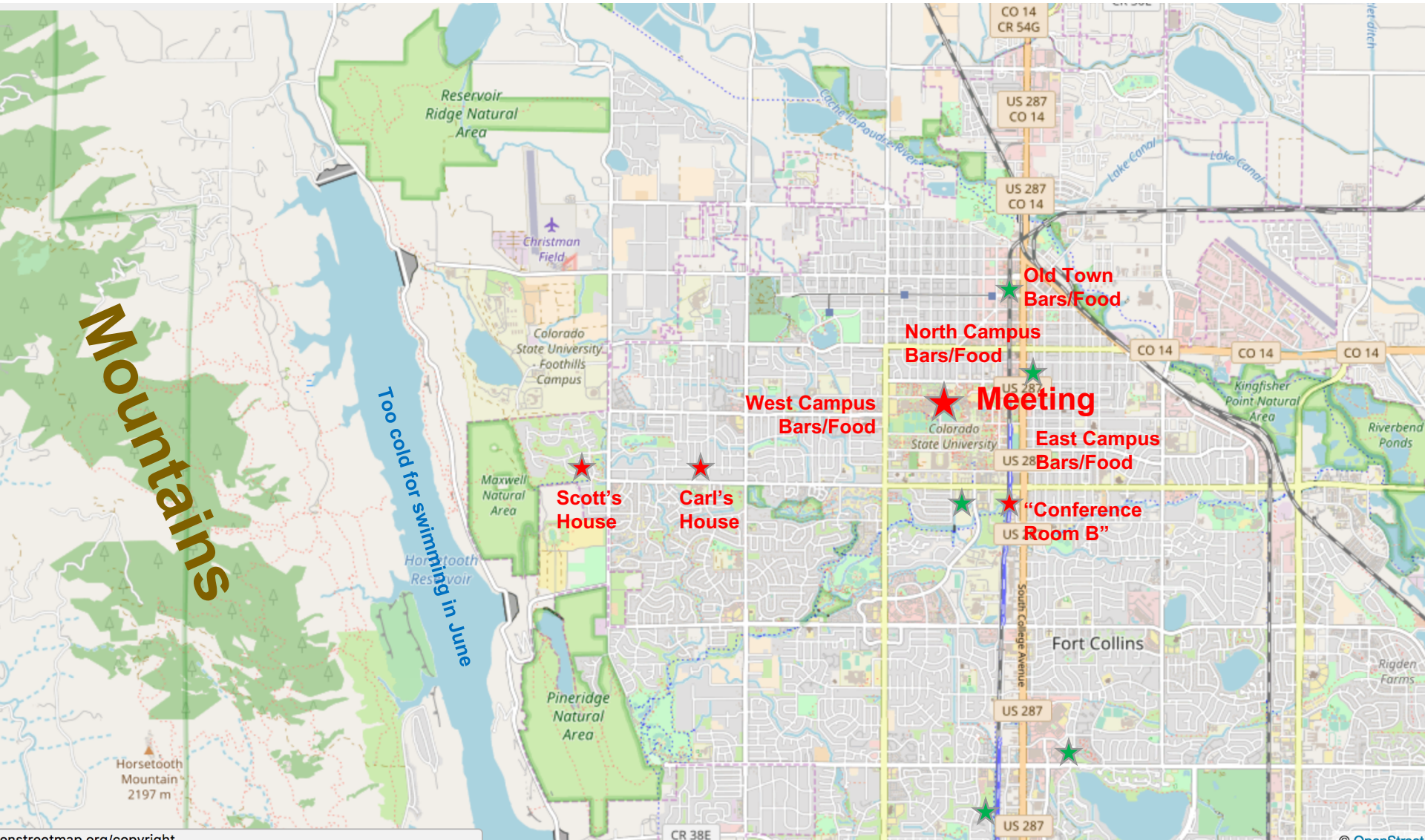
Colorado State University



NoPro FoCo NoCo and other landmarks



★ Hotel (walking distance or on the MAX)



Be careful



Technical / Planning Committee Meetings



Date	Location	Host/Sponsor
3-7 Dec 2017	Palmerston North, New Zealand	Landcare Research NZ
19-22 March 2018	Orleans, France	BRGM
4-8 June 2018	Fort Collins, CO USA	CO State Univ. plus more
10-14 September 2018	Stuttgart, Germany	HTF Stuttgart
10-14 December 2018	Charlotte, NC USA	EPRI
March 2019	Asia-Australasia	

Who wants to host or sponsor? We are particularly looking for sponsorship assistance (\$,€,£...) for upcoming meetings.



TC Chair Announcements and Motions

Congratulations to the HY_Features SWG



- Congratulations to the HY_Features SWG! **OGC WaterML 2 Part 3 - Surface Hydrology Features (HY_Features) [14-111r6]** is now an official OGC standard. The document is in the process of being published.
- Special thanks to the editors: David Blodgett and Irina Dornblut
- And to the submitters: U.S. Geological Survey (USGS), USA • Federal Institute of Hydrology (BfG), Germany • CSIRO Land and Water, Australia • Bureau of Meteorology, Australia • Metalinkage, Australia • French Geological Survey (BRGM), France • University of Texas at Austin, USA • Eurecat, Spain • INCLAM S. A., Spain • 52° North, Germany

Congratulations to the Table Joining Service SWG



- Congratulations to the Table Joining Service SWG! The SWG has been rechartered under the TJS SWG Charter [OGC 17-054].

Congratulations to the LAS 1.4 submitters



- Congratulations to the LAS 1.4 submitters! **LAS 1.4** [OGC17-030r1] is now an official OGC Community standard. The document is in the process of being published.
- Special thanks to the submission lead: Stan Tillman
- And to the submitting organization: ASPRS

Congratulations to the GeoAPI SWG



- Congratulations to the GeoAPI SWG! The SWG has been rechartered under the GeoAPI SWG Charter [OGC 17-052].

Congratulations to the Geocoding API SWG



- Congratulations to the Geocoding API SWG! The SWG has been chartered under the Geocoding API SWG Charter [OGC 17-070].
- Special thanks to the charter editors: Joseph Abhayaratna, Michael Gordon
- And to the supporting organizations: PSMA Australia, Ordnance Survey, Boundless, Geoscience Australia

Please comment



- ISO 19107 completed DIS vote, will go to FDIS
- Read and comment so that changes can be considered
- Find it here:
https://portal.opengeospatial.org/files/?artifact_id=77282



New TC Policies and Procedures

Please review latest TC PnP



- Section 6.2: (Substitute voters) Deleted as duplicated in Section 6.3.4
- Section 6.3.4: Proxy rules refined to allow for proxy from same member organization to be expressed verbally to the TCC.
- **Section 6.5: Quorum for a SWG explicitly set at $\frac{1}{2}$ unless otherwise voted by the SWG. Such a quorum has been common practice for many SWGs.**
- Section 7.1: WGs can no longer close their voting membership for “particular items” as the potential for abuse of voting membership closure is as great as that for vote packing... not an issue of real concern.
- **Section 7.5.3.1: DWGs now require the same electronic vote to form as SWGs per PC guidance. The PC recommends that DWGs get the same attention and consideration in their founding as SWGs.**
- **Section 7.5.4: Recharter of a WG has been streamlined. Minor charter changes (as determined by the TCC) or continuation of work already in progress in the WG can be rechartered by a simple Closing Plenary or 2-week TC email vote. A major change of WG scope require the full approval process of a new WG. The TC can override the TCC decision on the nature of the vote when the recharter is presented to the TC.**

More changes in TC PnP



- Section 7.7.3: (Opting in to a SWG) includes merged content from Section 7.7.6.
- **Section 8.7.5.2: Deprecation of a standard now requires a 60-day public comment period in advance of a request to deprecate. The PC feels that the current deprecation process does not adequately assess the impact of deprecation on the installed base of the standard.**
- Section 9.4.6.5: OGC-NA will also review the candidate standard to ensure that template and Knowledge Management conventions are followed. This will assist in rapid publication and overall knowledge management.
- **Section 9.5: Abstract Specification Topics no longer have a special relationship only to ISO. Other “Authoritative Standards Development Organizations” may be approved by the PC as sources for foundational Standards which may be included in the Abstract Specification. Likely examples include W3C and IETF.**
- Minor editorial changes, spelling corrections, and formatting are also present.



Scott Simmons on behalf of Chris Holmes (OGC BoD / Planet)

Boulder Imagery Catalog Sprint

Imagery Catalog Sprint



- 3 day ad-hoc collaboration between 14 different organizations in Boulder in October
 - Including Planet, DigitalGlobe, Harris (ENVI), Erdas, Google, Amazon, Boundless, Humanitarian OpenStreetMap Team, Dev Seed
 - Developer focused: a majority of attendees spend their day coding
 - Goal to align interoperability in search of satellite imagery
 - Most organizations had already built their own RESTful JSON API's for search
 - Needs not met by OGC, but passionate about open standards
- Sponsored by Radiant Earth (non-profit bringing imagery to NGO world) with help from DigitalGlobe & Planet
- Full record of plans and notes available at <https://github.com/radianteearth/boulder-sprint>

SpatioTemporal Asset Catalog (STAC)

<https://github.com/radianteearth/stac-spec/>



- Main outcome was a small core spec for searching geospatial 'assets'
 - imagery, but also derived raster data, point clouds, mosaics, hyperspectral, etc.
 - Has an API specified in OpenAPI, but also a 'static catalog' structure to crawl links of JSON on S3 or other object stores.
- Static Catalogs are a key feature
 - Unmatched reliability, no imposition to keep a service running, just make it so data is exposed / can be crawled
- Inspired by Spatial Data for the Web Best Practices
 - Though there is still additional work for the HTML profile – JSON is core.
- Aim to keep core tight and small, grow extensions and best practices through community implementations.
 - Working code required, spec built by developers for developers

STAC & OGC



- Aim is to align the OpenAPI spec with WFS 3.0
 - STAC API would be a WFS 3.0 implementation. STAC itself could become OGC standard
- Ideally OGC has a 'static feature collection' specification that is a more general version of static catalogs
 - A 'level 0' to WFS 3.0, no querying – just crawling / exposing data online, as HTML & JSON
- Able to link to OGC services from STAC records
 - WMTS, even WCS, etc, the core is flexible enough to work with others
- Hope to help evolve the geo spec process to be more open and developer centered
 - Build software, OpenAPI specs & test engines first
 - Evolve on github, with 'sprints' in person to make real progress
 - Lock in standard (1.0 only after significant industry adoption
 - Simple, well thought out core that is easy to implement & extend
- Hope for STAC & OGC collaboration on common components – query, filter, paging, rel links, json-ld / schema, html, etc
- Come say hi - <http://gitter.im/Imagery-Catalog-API-Team/Lobby>



Z – 3

WG Reports with TC Motions



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CDB SWG Closing Plenary Report

105th OGC Technical Committee
Palmerston North, New Zealand

David Graham

7 December 2017

Agenda



- Turn on GTM recording; Patent Call; roll call; quorum determination;
- Approval of minutes from last meeting
- SWG Roadmap update
- Testbed 13 Review; ER Report and Demo Presentation
- OAB review of multi-spectral imagery extension, actions
- CDB 1.1: Carl
- Other / CRPs
- Short term meeting schedule

Document Approval Motion



- The CDB SWG recommends that the OGC Technical Committee approve release of 17-042r1 “Testbed 13 CDB Feasibility Study Engineering Report” as an OGC Engineering Report.
 - Pending completion of final comment responses, final edits and review by OGC staff
 - There was no objection to unanimous consent
- Testbed 13 CDB Feasibility Study Engineering Report; NAS Profile of CDB; Distribution of NAS Profile CDB through OGC Web Services; 3D Streaming Performance experimentation.



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WPS/Workflow

105th OGC Technical Committee
Palmerston North, New Zealand
Stan Tillman, Benjamin Pross
7 December 2017

Agenda



- WPS 2.0 REST/JSON Extension - status and roadmap for release, Benjamin Pross
- Testbed-13 Workflows ER, Benjamin Pross
- Testbed-13 Application Deployment and Execution Service ER, Peter Vretanos

Motion for Testbed 13 ER



- The **Workflow DWG** recommends that the OGC Technical Committee approve release of “**OGC Testbed 13 Workflows ER - #17-029r1**” as public ER.
 - Pending any final edits and review by OGC staff
 - Editorial changes were done and revision 17-029r2 was created
 - There was no objection to unanimous consent
- Description of creating, cataloging, executing geospatial workflows. Description of security in geospatial workflows.

Motion for Testbed 13 ER



- The **Workflow DWG** recommends that the OGC Technical Committee approve release of “**OGC Testbed 13 Application Deployment and Execution Service ER - #17-024**” as public ER.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent
- This ER lists the requirements fulfilled by Cloud APIs in order to allow an automation of the application package deployment and execution workflow and capture implementation process experiences.



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WMS SWG

105th OGC Technical Committee
Palmerston North, New Zealand
Joan Masó and Satish Sankaran
7 December 2017

Agenda



- NATO feedback on WMS/WMTS. Dimitri Sarafinof DGWIG
- NSG WMTS 1.0 profile [1] in GeoServer [2] and the correspondent conformance executable test suites using CITE tools Nuno Oliveira, geo-solutions.it
- MetOcean best practice for WMS1.3 , PeteTrevelyan
- Tilematrixset document approval to go to the OAB
- MapML ER motion

17-019 OGC Testbed-13: MapML ER Motion



- The WMS.SWG recommends that the OGC Technical Committee approve release of 17-019 OGC Testbed-13: MapML ER as an OGC Public Engineering Report.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent
- This ER explores how MapML can be harmonized with the OGC standards mainstream and contribute to the progress of the specification avoiding unnecessary duplication. In particular, the ER proposes Web Map Service (WMS) or Web Map Tile Service (WMTS) as services that can be used to deliver MapML documents with small modifications. Another consideration on the ER is the inclusion of the time dimension and directions operation in MapML.



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WFS/FES SWG

105th OGC Technical Committee
Palmerston North, New Zealand
Panagiotis (Peter) A. Vretanos
7 December 2017

Agenda



- 1) Presentation from Compliance Testing Thread (COT)
- 2) Discussion about time base versioning, random pagination and WFS request timeout
- 3) OGC Test Bed 13 Engineering Reports
- 4) Status of WFS 3.0 work

ER Document Approval Motion



- The WFS/FES SWG recommends that the OGC Technical Committee approve release of [OGC 17-038] “Testbed 13 - Fit-for-Purpose Engineering Report” as an OGC Engineering Report.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent

ER Document Approval Motion



- The WFS/FES SWG recommends that the OGC Technical Committee approve release of [OGC 17-037] “Testbed 13 - SWAP Engineering Report” as an OGC Engineering Report.
 - Pending any final edits and review by OGC staff
 - Discussion: SWAP defined as “Size, Weight, And Power”
 - There was no objection to unanimous consent

ER Document Approval Motion



- The WFS/FES SWG recommends that the OGC Technical Committee approve release of [OGC 17-078] “Testbed 13 - Concepts of Data and Standards for Mass Migration Engineering Report” as an OGC Engineering Report.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent

ER Document Approval Motion



- The WFS/FES SWG recommends that the OGC Technical Committee approve release of [OGC 17-028r1] “OGC Testbed-13: Asynchronous Services ER” as an OGC Engineering Report.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent

ER Document Approval Motion



- The WFS/FES SWG recommends that the OGC Technical Committee approve release of [OGC 17-043r1]
“Executable Test Suites and Reference Implementations for NSG WMTS 1.0 and WFS 2.0 Profiles with Extension” as an OGC Engineering Report.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent



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Security DWG

105th OGC Technical Committee
Palmerston North, New Zealand

Andreas Matheus

4 December 2017

Agenda



- TB13 Security ER with expected motion to release as public ER

https://portal.opengeospatial.org/files/?artifact_id=76487&version=1

- Discussion: Does it make sense / is it required to have an OGC Abstract Specification on Security?
- Discussion: Modern (IT) security in Spatial Data Infrastructures

Motion for Testbed 13 ER



- The **Security DWG** recommends that the OGC Technical Committee approve release of “**OGC Testbed 13 Security ER - #17-021r2**” as **public ER**.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent
- Description of security in workflows and authentication plugins for SAML2 ECP and OAuth2 for QGIS.



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Oblique Imagery DWG

105th OGC Technical Committee

Palmerston North, New Zealand

Scott Simmons

7 December 2017

Agenda



- The case for reactivating the Oblique Imagery DWG – Andrew Flatman
- Open discussion

Activity Summary



- Discussion topics

- Discuss use cases for oblique imagery and derived products
- Consider scope of reactivation
- Call for chairs

- Upcoming deliverables

- Coordination (ongoing and planned)

- UxS DWG
- D&I DWG
- SWE DWG

- Future meetings

- Next TC meeting

Key activities



- The Oblique Imagery DWG currently has no chairs
- Please let Scott Simmons know if you are interested in chairing or co-chairing



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Geosemantics DWG Report

105th OGC Technical Committee

Palmerston North, New Zealand

Josh Lieberman

7 December 2017

The most important thing for this WG is...



Domain models, vocabularies and semantic mediation across communities are becoming more important to implement and govern for all OGC groups as their reach expands

Agenda



- Gobe Habona, Stephen McCann, How - DCAT / SRIM Semantic Registry ER [draft](#)
- Charles Chen - Geospatial Taxonomies for Aviation ER [draft](#)
- Gobe Habona & Rob Atkinson - Vocabularies in OGC Knowledge Management
- Joseph Abhayarata - Importance of Social Architecture to Publishing Linked Data
- Discussion - Spatial Data on the Web Interest Group

Activity Summary



- Discussion topics
 - No time!

- Upcoming deliverables
 - TB-13 Portrayal ER

- Coordination (ongoing and planned)
 - Spatial Data on the Web IG
 - OGC NA and definition server activity

- Future meetings
 - Webconference in January to review TB-13 Portrayal ER and other topics such as naming update

Document Approval Motion



- The Geosemantics DWG recommends that the OGC Technical Committee approve release of OGC Document 17-040r2 “DCAT/SRIM Semantic Registry ER” as an OGC Engineering Report.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent

Document Approval Motion



- The Geosemantics DWG recommends that the OGC Technical Committee approve release of OGC Document 17-036 “Geospatial Taxonomies for Aviation ER” as an OGC Engineering Report.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent



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EDM Domain Working Group Report

105th OGC Technical Committee
Palmerston North, New Zealand

Don Sullivan

7 December 2017

The most important thing for this WG is...



Some of the things most important for this WG are getting increased involvement from other WGs, and finalizing the merge of the EDM and LEAPS DWGs

Agenda



- David Arctur: Hurricane Harvey before, during, and after
- Guy Schumann: Testbed-13 NASA data and modeling focused ER entitled "NA001 Climate Data Accessibility for Adaptation Planning"
- Tien-Yin (Jimmy) Chou: Application on disaster prevention in Taiwan and Viet Nam
- Don Sullivan: Briefly discussed the NASA Disasters Program and provided the URL: <https://disasters.nasa.gov>

Activity Summary



- Discussion topics
 - None

- Upcoming deliverables
- The EDM DWG recommends that the OGC Technical Committee approve release of [OGC 17-022] “Climate Data Accessibility for Adoption Planning” as an OGC Engineering Report.

- Coordination (ongoing and planned)

- Future meetings
 - Next TC Meeting Orleans

ER Document Approval Motion



- The EDM DWG recommends that the OGC Technical Committee approve release of [OGC 17-022] “Climate Data Accessibility for Adoption Planning” as an OGC Engineering Report.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent



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No motion, but a heads-up...

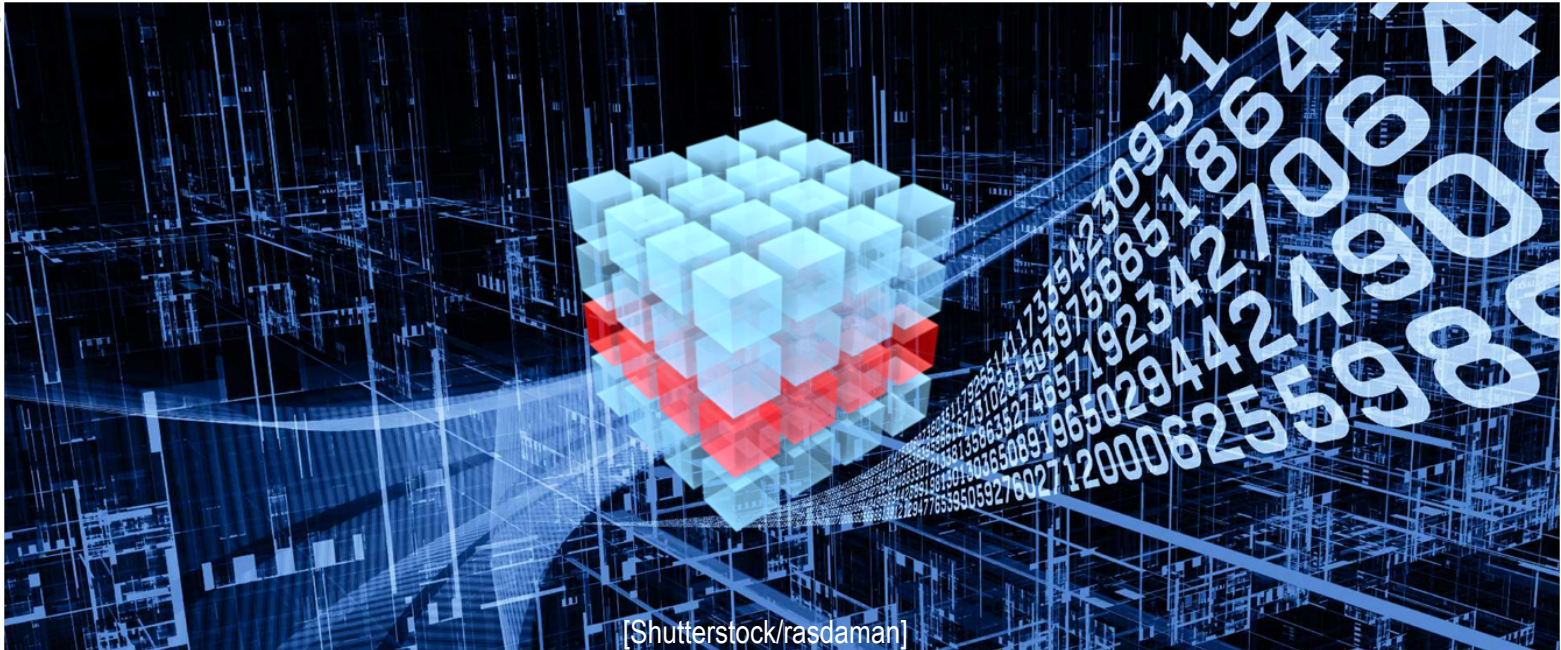
Coverages.DWG / Datacube ad-hoc WCS.SWG

105th OGC Technical Committee
Palmerston North, New Zealand

Peter Baumann

7 December 2017

The most important thing for this WG is...



With the OGC **Coverage data & service model** (CIS & WCS)
there is a flexible, function-rich, Petascale-proven suite for
spatio-temporal datacubes
supported by a growing tool set (latest: GDAL),
continuously advanced across several WGs and beyond OGC.

Agenda



- Coverages.DWG / Datacube ad-hoc
 - Welcome, tech fiddling, status report (P. Baumann)
 - Datacubes: State of Technology and Standardization (P. Baumann)
 - Datacube.DWG Charter (P. Baumann)
 - Datacubes in HDF (T. Habermann)
 - Digital Earth Australia / Open Data Cube (A. Hicks)
 - Design, Scope and Status of QB4ST, and into to RDF-Datacube (R. Atkinson)
 - The encoding of MetOcean coverages using the CIS1.1 encoding (P. Trevelyan)
 - Update on the MetOcean profile of WCS2 (P. Trevelyan)
 - closing plenary poll topic (P. Baumann)
- WCS.SWG
 - Welcome (to closed session), status report (P. Baumann)
 - WCS REST Extension (P. Baumann)
 - A proposal for additional operation known as "GetPolygon" (P. Trevelyan)
 - A first draft for a WCS Polygon/Raster Clipping Extension (P. Baumann)
 - Examples of MetOcean extraction patterns using WCS's GetCoverage (P. Trevelyan)
 - closing plenary poll topic (P. Baumann)

Key activities



- Coverages.DWG meeting hosted Datacube ad-hoc
 - Large number of talks, all on datacubes, reflecting increasing # of implementations
 - Coverages describe „bare“ datacubes, metadata needed in addition (ex: SWE)
 - Datacube.DWG? General interest in topic, but opinions vary on implementation
 - Re-charter BigData.DWG, etc.
 - **Revised charter coming soon and to be sent to public comment**
- Adoption pipeline:
 - WCS 2.1 core NO votes → rewritten (crisper) → OAB+vote
 - GRIB2 extension under RFC → **VOTE TODAY!**
 - EO-WCS 1.1 app profile under RFC → **VOTE TODAY!**
 - WCS REST Extension motion → entering adoption process



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CITE Sub-Committee

105th OGC Technical Committee
Palmerston North, New Zealand

Chuck Heazel

7 December 2017

The most important thing for this WG is...



What impact will the OGC Web Service Security Standard have on compliance testing?

Agenda



- Testbed 13 NSG Profiles
- TEAM Engine Monitoring Service
- HTTPS TEAM Engine Feature
- OWS Common Security and TEAM Engine

Activity Summary



- Discussion topics

- Testbed 13 compliance tests
- Extension of Team Engine to also monitor compliance with SLA
- Team Engine mods to support HTTPS and compliance testing

- Upcoming deliverables

- Ongoing updates to the Team Engine and compliance test suites

- Coordination (ongoing and planned)

- OGC Web Services Common Security SWG

- Future meetings

- One or more telecons will be scheduled to discuss how CITE will accommodate OGC Web Services Security

Approval Motion



- The CITE SC recommends that the OGC Technical Committee approve release of OGC 17-043 “*Executable Test Suites and Reference Implementations for NSG WMTS 1.0 and WFS 2.0 Profiles with Extensions*” as an OGC Engineering Report:
 - There was no objection to unanimous consent
- This ER describes:
 - The implementation of the NSG profiles for WFS and WMTS in GeoServer and the implementation of the corresponding CITE tests suites.



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Catalog DWG

105th OGC Technical Committee
Palmerston North, New Zealand

Scott Simmons

7 December 2017

The most important thing for this WG is...



Scoping the merged Catalog and Metadata DWG.

Agenda



- ISO Metadata Application Profile of CSW that supports the newer ISO19115-1:2014 metadata standard - Aaron Sedgman, Geoscience Australia
- Proposed merger of Catalog and Metadata DWGs
- Call for chairs

Activity Summary



- Discussion topics

- Aaron's presentation highlighted the continued need to maintain CSW
- The DWG agrees to a merger with the Metadata DWG

- Upcoming deliverables

- New Charter of merged DWG

- Coordination (ongoing and planned)

- Merger with Metadata DWG
- Take over as parent of GeoDCAT Subgroup

- Future meetings

- next TC Meeting

Merge Catalog and Metadata DWGs



- The Catalog and Metadata DWGs recommend that the OGC Technical Committee approve merger of the two DWGs into a single DWG.
 - There was no objection to unanimous consent
- The new DWG will initially operate referencing the Charters of each original DWG
- An initial duty of the DWG will be to develop a new Charter
- The new DWG name may change from “Catalog and Metadata”

Call for chairs



- Both the Catalog and Metadata DWGs are currently unchaired
- Please notify Scott Simmons if you are interested in being a Chair or Co-chair of the new DWG



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Architecture DWG

105th OGC Technical Committee
Palmerston North, New Zealand
Gobe Hobona & Joan Maso
7 December 2017

The most important thing for this WG is...



- Lessons learnt from Testbed-13 in the areas of Cloud computing, asynchronous services and vector tiles.

Agenda



- Testbed-13 Vector Tiles ER by Stefano Cavazzi (Envitia) and Jérôme Jacovella-St-Louis (Ecere)
- Understanding the Unstructured Information Management Architecture by Gobe Hobona (OGC)
- Unified Mapping Service by Jérôme Jacovella-St-Louis (Ecere)
- Testbed-13 Asynchronous Services ER by Benjamin Pross (52 North)
- Testbed-13 Cloud ER by Charles Chen (Skymantics)
- M:N Relationships Discussion by Jeff Yutzler (Image Matters)

Activity Summary



- Discussion topics

- Vector tiles
- Geo-enabled cloud computing
- Asynchronous services
- M:N relationships

- Upcoming deliverables

- E-vote on the Testbed-13 Vector Tiles ER

- Coordination (ongoing and planned)

- DGGS DWG regarding a registry

- Future meetings

- Orleans TC Meeting

Motion to approve OGC 17-035



- The Architecture DWG recommends that the OGC Technical Committee approves the release of OGC 17-035 “OGC Testbed-13: Cloud ER” as an OGC Public Engineering Report.
 - Pending any final edits and review by OGC staff
 - There was no objection to unanimous consent
- Abstract: This OGC Engineering Report (ER) will describe the use of OGC Web Processing Service (WPS) for cloud architecture in the OGC Testbed 13 Earth Observation Cloud (EOC) Thread. This report is intended to address issues in lack of interoperability and portability of cloud computing architectures which cause difficulty in managing the efficient use of virtual infrastructure such as in cloud migration, storage transference, quantifying resource metrics, and unified billing and invoicing. This engineering report will describe the current state of affairs in cloud computing architectures and describe the participant architectures based on use case scenarios from sponsor organizations.



Burning issues

Two parts



1. Any questions about reports not briefed?
2. Discussion of top few items identified this week.