Meeting Sponsor

Ordnance Survey

Closing Plenary

104th OGC Technical Committee
Southampton, United Kingdom
Scott Simmons
14 September 2017

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Making location count.

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Agenda

- Thanks and Welcome to new members
- TC Member presentations
  - GEO: Stuart Minchin
  - Towards an integrated standards based information model for 1D time series data within the water sector: Jade Haayen
  - D&I Workshop Summary: Iain Burnell
- Roll Call
- TC Motions
  - WPS Corrigendum: Benjamin Pross
  - Geocoding SWG: Jo Abhayaratna
  - GeoSciML Corrigendum: Eric Boisvert
  - Deprecate GeoPackage 1.1: Scott Simmons
  - (WCS SWG report +) Datacube DWG: Chris Little for Peter Baumann and Stephan Meißl
  - GRIB2 Coverage Encoding: Chris Little for Peter Baumann and Stephan Meißl
  - OGC WCS 2.0 Interface Standard – Earth Observation Application Profile: Chris Little for Peter Baumann and Stephan Meißl
  - IndoorGML Corrigendum: Jeremy Morley
  - TimeSeriesML 1.2: Paul Hershberg
- Upcoming TC Meetings
- TC Chair announcements and motions
  - Inactive Working Groups
- Working Group reports: 3 to Z

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Thank you sponsor

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Welcome new members!

- New Zealand Ministry for the Environment
- Cognitics, Inc.
- Dubai Electricity & Water Authority
- Victor Foster
- Rikkyo University
- Vivian Sultan
- National University of Singapore
- Uppsala University, Department of Earth Science
- Keiji Yamada
- Deutsches Klimarechenzentrum GmbH
- Shinsaku Kiyomoto
- David Malmgren-Hansen

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TC Member Presentations

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GROUP ON EARTH OBSERVATIONS

OGC TC Meeting

Dr. Stuart Minchin
Stuart.Minchin@ga.gov.au

Group on Earth Observations

An overview

What is GEO?

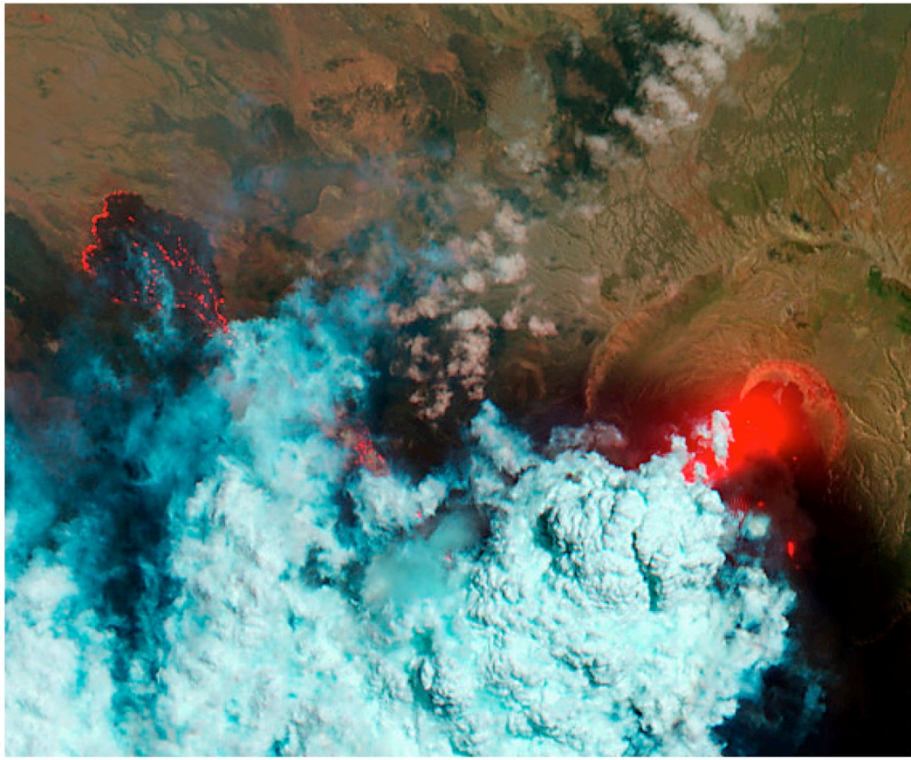
GEO is an intergovernmental organization working to improve the availability, access and use of Earth observations for the benefit of society.

Earth Observations

Observations in, on and around the Earth

What is Earth Observation?

Earth observation is the gathering of information about physical, chemical and biological systems in, on, and around the Earth.

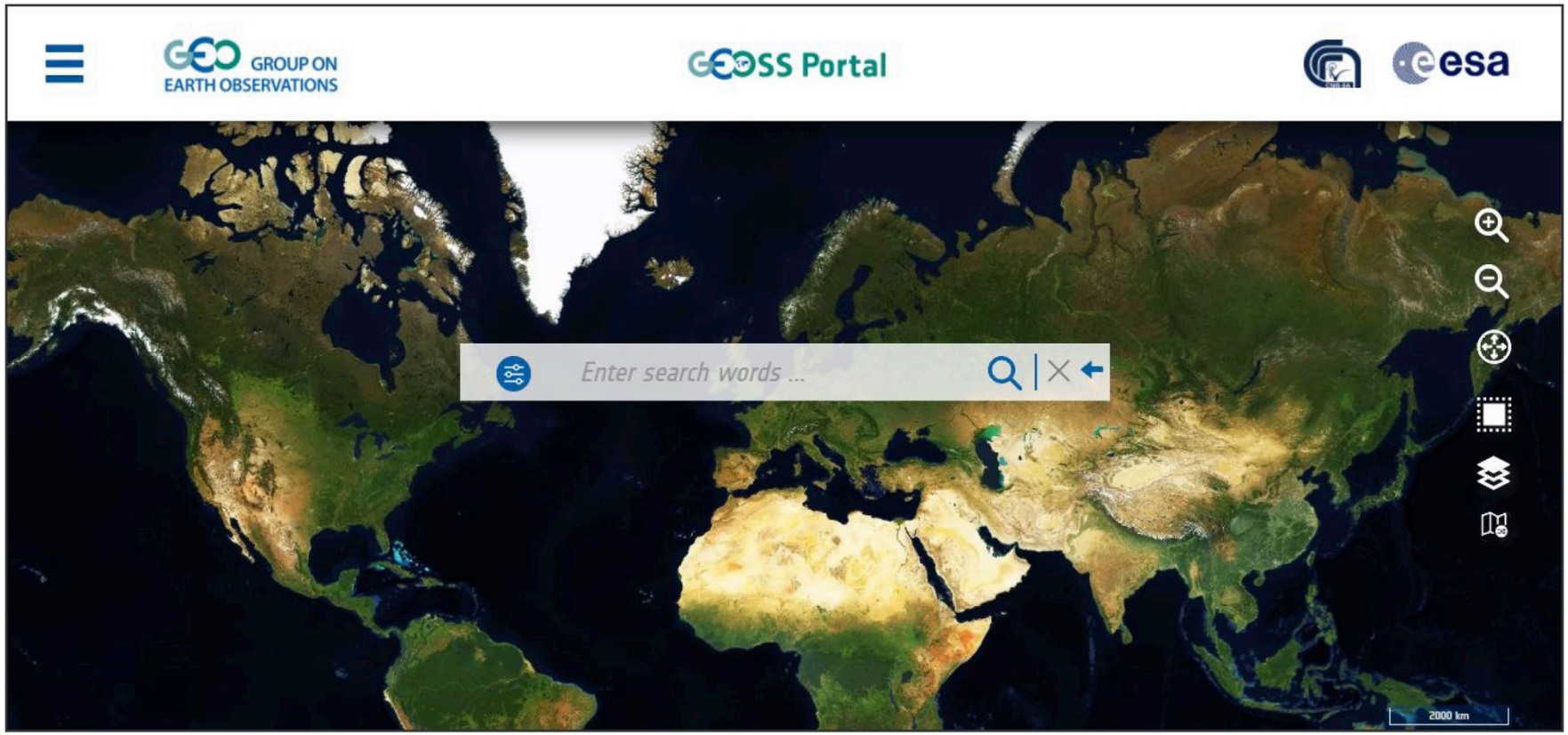


GEO GROUP ON EARTH OBSERVATIONS

@GEOSEC2025
www.earthobservations.org

GEOSS

Global Earth Observation System of Systems



www.geoportal.org

GEOSS

What is GEOSS?
GEOSS is a set of coordinated, independent and open Earth observation (EO) collection, information and processing systems.

What does GEOSS do?
GEOSS links observing systems to strengthen monitoring of the state of the Earth, ensuring that data is accessible and interoperable.

Why does GEOSS matter?
GEOSS increases our understanding of Earth processes, and enhances predictive capabilities that underpin sound decision-making.

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Investing in GEO

Global Earth information for local solutions

FOCUS ON: DIGITAL EARTH AUSTRALIA

Australia's DataCube is an analytical engine that has organized over 30 years of open Landsat data across the entire Australian continent into a tool for delivering information products of use to decision makers.

Without broad open data, the first two DataCube information products would have cost Australia an estimated **500 million USD**.

Digital Earth AUSTRALIA

GEO in Numbers

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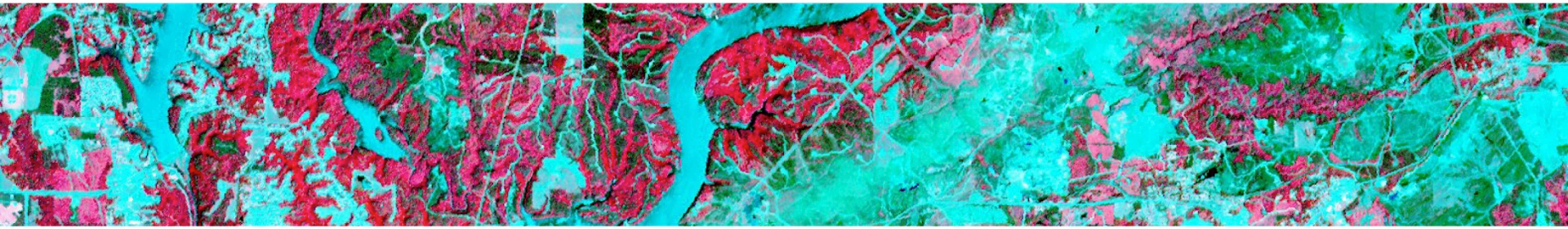
GEO in Numbers



Millions

of open data and information resources available on the GEOSS Portal.

The Global Earth Observation System of Systems (GEOSS) makes over 400 million Earth observation resources accessible for better decisions on a range of areas from food security, to protection of biodiversity, renewable energy and disaster resilience.

Hundreds

of GEO Member countries & Participating Organizations working together.

The GEO community is working across sectoral lines to solve global challenges and is collectively **investing hundreds of millions of dollars** in the GEO Work Programme every year.

Tens

of expert Communities of Practice working on the world's most pressing global issues.

Through GEO, multiple, disparate communities come together to share best practices, knowledge, and experience to drive forward data sharing and applications in a wide range of benefit areas.

Regional Initiatives

AfriGEOSS

AmeriGEOSS

AOGEOSS

EuroGEOSS

Balkan GEOSS

Himalayan GEOSS

Group on Earth Observations

115 Participating Organizations

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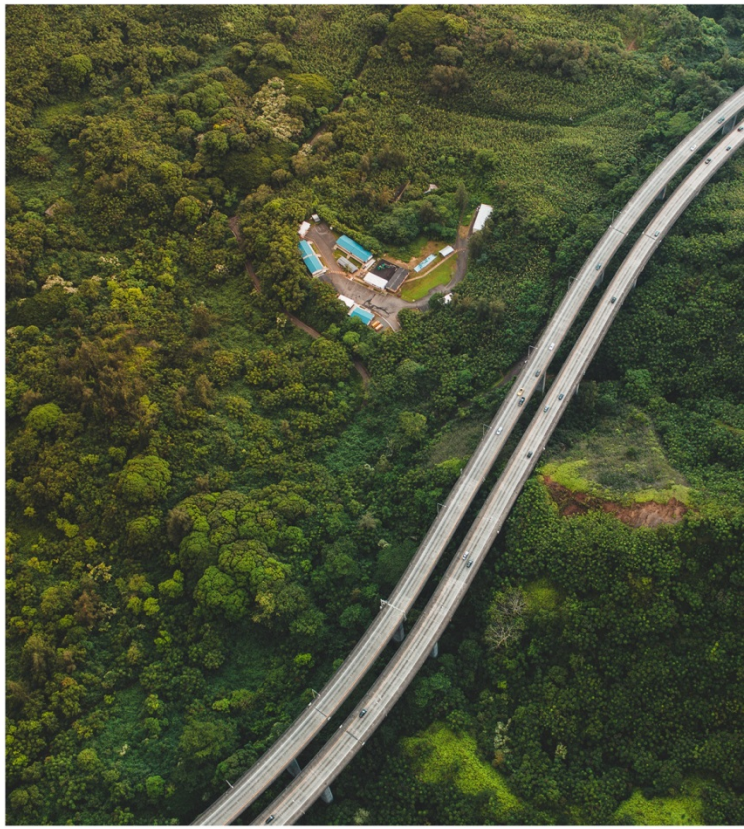
GEO & OGC

Working together to advance EO for impact.

- OGC standards underpin the GEOSS Common Infrastructure;
- OGC Architecture Implementation Pilots for GEO;
- OGC on GEO Programme Board;
- GEO on OGC Global Advisory Council;
- GEO Observations blog post on OGC collaboration;
- Common goals on openness, data access and sharing;
- NextGEOSS.



Societal Benefit Areas

GEO works across 8 Societal Benefit Areas (SBAs) to find solutions for global challenges.

Climate change and its impacts cut across all SBAs.

Group on Earth Observations

Our priorities

What are GEO's priorities?

GEO's global priorities include supporting the UN 2030 Agenda for Sustainable Development, the Paris Agreement on Climate Change, and the Sendai Framework for Disaster Risk Reduction.

SUSTAINABLE DEVELOPMENT GOALS

UN World Conference on Disaster Risk Reduction
2015 Sendai Japan

PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

GEO & the SDGs

Priority Engagement Area

Earth observations play a major role in achieving the SDGs.

Earth observations are used for monitoring goals, targets, and indicators, tracking progress and helping Member States and custodial agencies make decisions and ongoing adjustments.

GEO is instrumental in integrating Earth observation data into the methodology of measuring and achieving the SDGs.

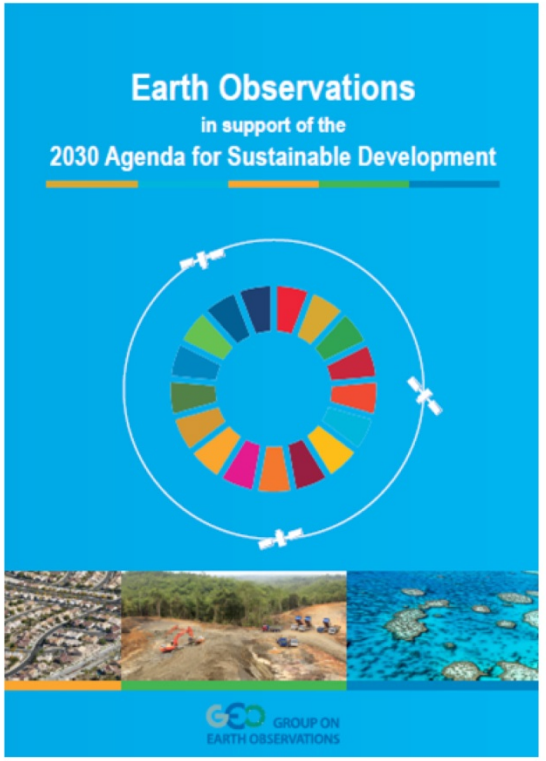
Agenda 2030

EO case studies

GEO is instrumental in integrating Earth observation data into the methodology of measuring, monitoring and achieving the SDG Indicators.

This brochure gives graphic illustrations of EO data allowing decision-makers to help identify the status of conditions they need to report, as well as visualize solutions.

https://www.earthobservations.org/documents/publications/201703_geo_eo_for_2030_agenda.pdf



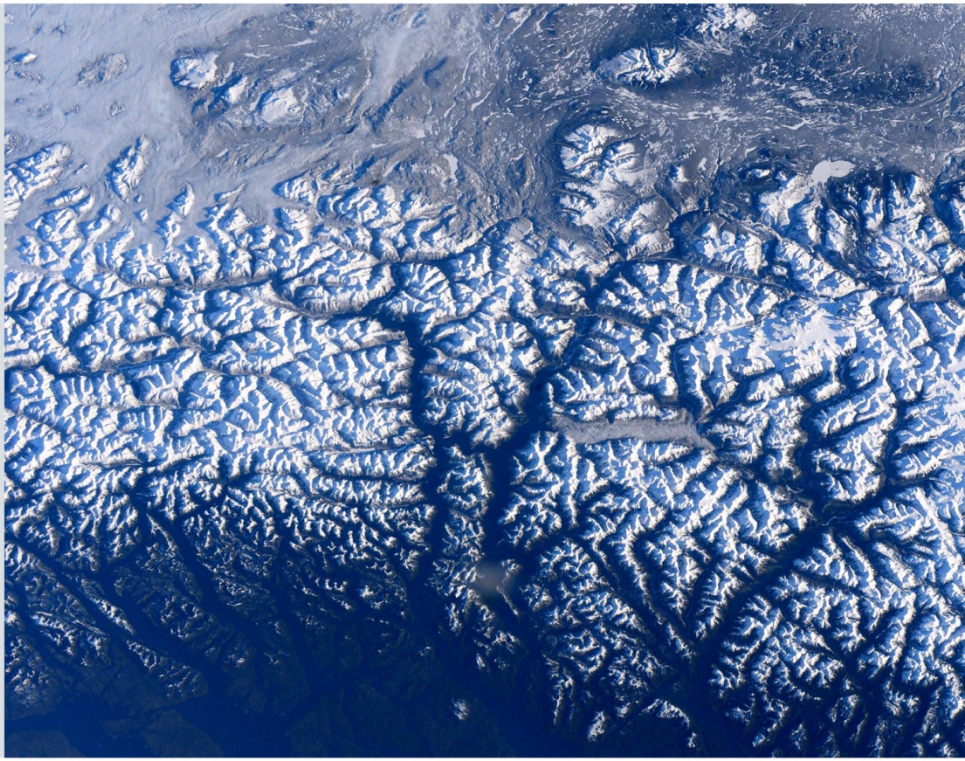
GEO & Climate Change

Priority Engagement Area

Climate change and its impacts cut across all areas of GEO's work.

GEO makes available Earth observations in support of effective policy making for climate change adaptation and mitigation, working with partners to enhance global observation systems in order to strengthen resilience and adaptive capacity to climate-related hazards.

PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11



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GEO & Climate Change

Responding to the Paris Agreement

Articles 4 & 13: National Reporting

- Reported five-yearly by parties, successive reductions in emissions
- Using existing methods and guidance; not validation

Article 5: Mitigation

- Knowledge of evolution of sinks and sources

Article 7: Adaptation

- (7.6) Strengthening cooperation,
- (7.7c) Research, systematic observation

Article 10: Technology Transfer

Article 11: Capacity Development

Article 14: Global stocktaking

- in the light of equity and the best available science: 2023, 2028…

Article 15 Compliance

GEO PB Action (August 2017):
Organize a workshop on the EO response to climate change.

PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

GEO & Disaster Risk Reduction

Priority Engagement Area

GEO supports disaster resilience by increasing coordination of Earth observations to forecast and prepare for disasters, to reduce damage and to better manage and recover from disasters.

UN World Conference on Disaster Risk Reduction
2015 Sendai Japan

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Disaster Resilience

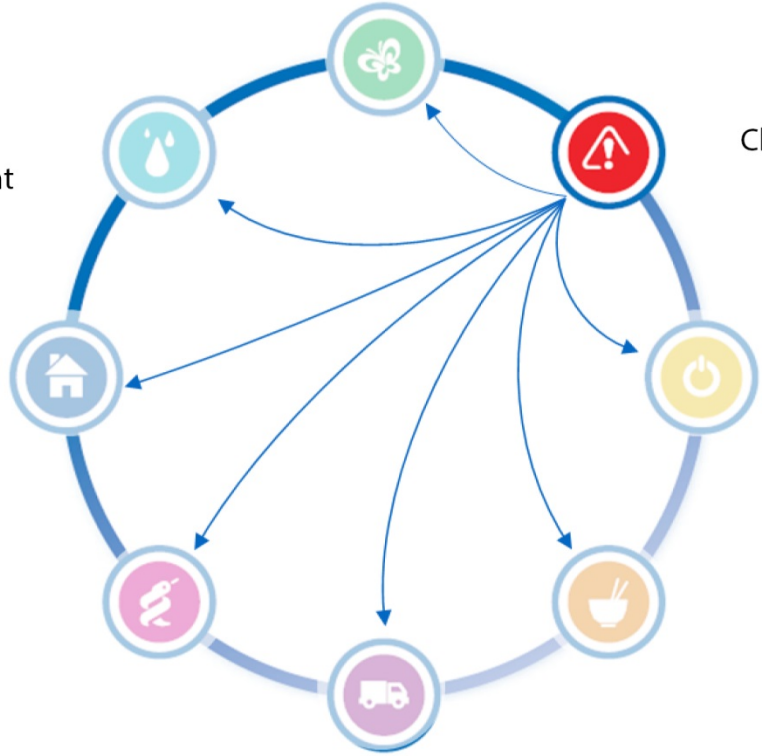
GEO Initiatives

GEO DARMA
Data Access for Risk Management

GSNL
Geohazard Supersites and Natural Laboratories

GWIS
Global Wildfire Information System

GDIS
Global Drought Information System



Community Activities

Chinese tsunami mitigation system

Earth Observations for Disaster Risk Management

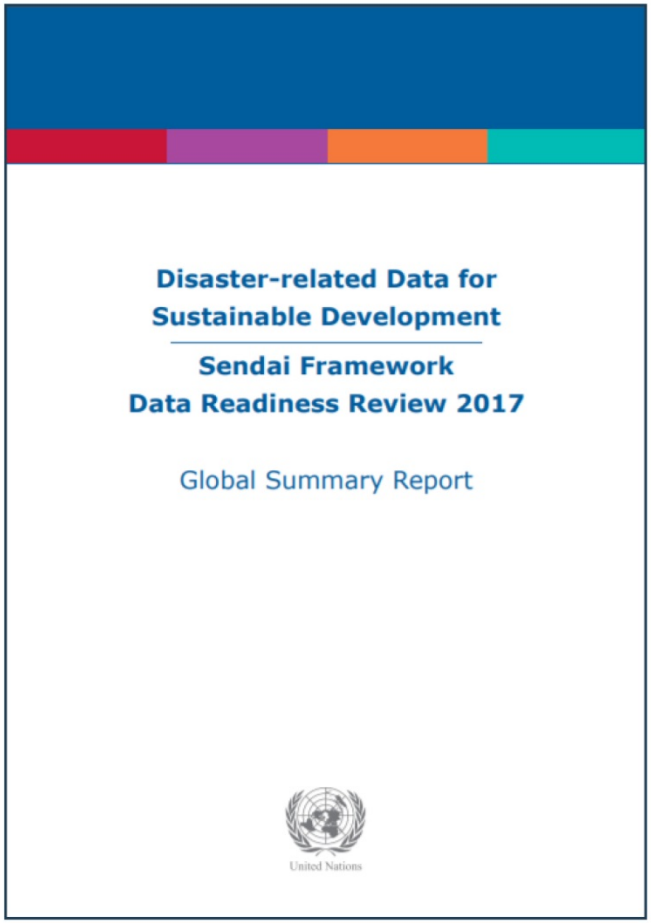
EO for Geohazards, Land Degradation and Environmental Monitoring

Global Flood Risk Monitoring

GloFAS: Global Flood Awareness System

Space & Security

Disaster Resilience



UNISDR
The United Nations Office for Disaster Risk Reduction

Disaster-related Data for Sustainable Development: Sendai Framework Data Readiness Review 2017

Section 2.2

http://bit.ly/drrreport

22-26 MAY, 2017 | CANCUN, MEXICO
2017 GLOBAL PLATFORM
FOR DISASTER RISK REDUCTION

UN-GGIM

UN-GGIM Working Group on Geospatial Information and Services for Disasters
http://ggim.un.org/UN_GGIM_wg5.html

Kunming Forum on UN-GGIM "Cities of the Future: Smart. Resilient and Sustainable" May 2017
Strategic Framework on Geospatial Information and Services for Disasters.
http://ggim.un.org/Kunming_Forum.html

UN-GGIM International Forum on Geospatial Information and Services for Disasters September 2016
http://ggim.un.org/Barbados%20Disaster%20Forum.html

Chengdu Forum on UN-GGIM "Development & Applications in Urban Hazard Mapping" October 2013
Disaster managers and geospatial experts.
http://ggim.un.org/Chengdu%20Forum.html

UN-GGIM
UNITED NATIONS INITIATIVE ON GLOBAL GEOSPATIAL INFORMATION MANAGEMENT

GEO Observations Blog

News

New Zealand Government thanks ChinaGEOSS, CODATA and IRDR for their help following 2016 Kaikoura Earthquake.

New Zealand was hit by a 7.8 magnitude earthquake in Kaikoura in November 2016, and the government has expressed thanks to ChinaGEOSS, CODATA and IRDR for their timely and free provision of satellite data that helped with damage and loss estimation following the disaster.

Damage and loss estimation is often difficult in the hours and days after a natural disaster as data and information are not available. During the Kaikoura earthquake, IRDR's Disaster Loss DATA project and the CODATA Task Group Linked Open Data for Global Disaster Risk Research (LODGD) worked together with environmental and engineering consulancy Tonkin +Taylor in New Zealand to provide TripleSat , Jilin-1A and FY satellite images of the affected Hurunui District.

As both the technical manager of ChinaGEOSS Portal and a member of CODATA LODGD Task Group, Professor Li Guoqing organized the above emergency response data sharing activity under the leadership of China GEO Office.

thinkhazard.org

About FAQ

ThinkHazard!

Identify natural hazards in your project area
and understand how to reduce their impact

GFDRR

GFDRR
Global Facility for Disaster Reduction and Recovery

Commercial Sector Engagement

Data providers

Value added providers

Downstream users

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INSIGHT FOR A CHANGING WORLD

GEO WEEK 2017

23-27 OCTOBER 2017

Thank You

Communicate and Collaborate with GEO:

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TOWARDS AN INTEGRATED (OGC) STANDARDS BASED INFORMATION MODEL FOR 1D TIME SERIES DATA WITHIN THE WATER SECTOR

TU Delft

M.J. Haayen

jadehaayen@gmail.com

HydroLogic

Main Mentor:
Prof. Dr. Ir. P.J.M. (Peter) van Oosterom
Second Mentor:
Prof. Dr. Ir. N. (Nick) van de Giesen

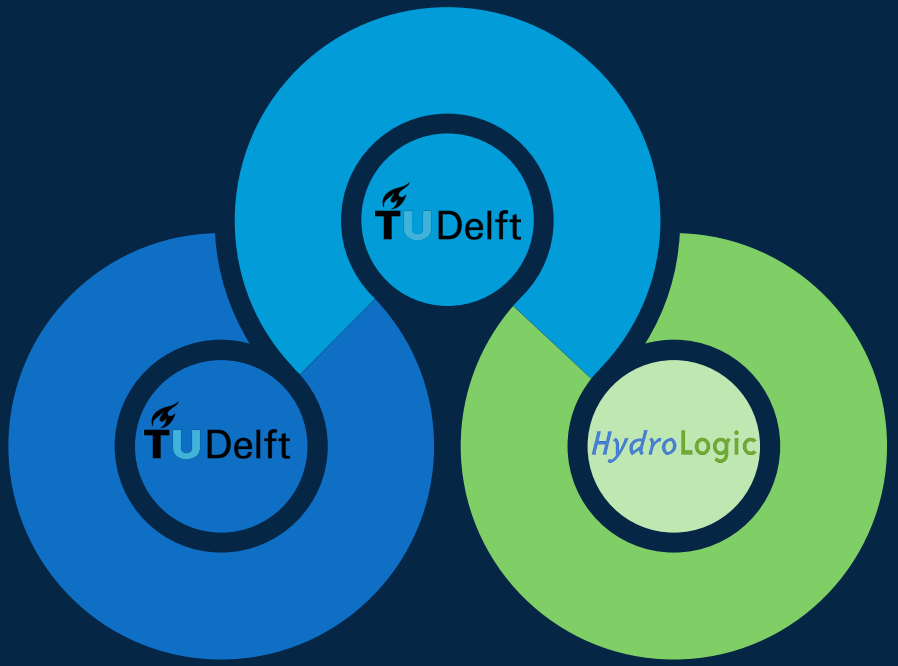
Supervisors
Ing. J. (Jonathan) van der Wielen
Dr. R.H. (Rianne) Giesen

Involved Partners

Prof. Dr. P. J. M. (Peter) van Oosterom
Geomatics
Faculty of Architecture and the Built Environment

Prof. Dr. Nick van de Giesen
Water Resources Management
Faculty of Civil Engineering and Geosciences
TU Delft

HydroLogic Research
Dr. R. H. (Rianne) Giesen
Ing J. (Jonathan) van der Wielen



Presentation Agenda

01 introduction /relevance

02 Research objectives & methodology

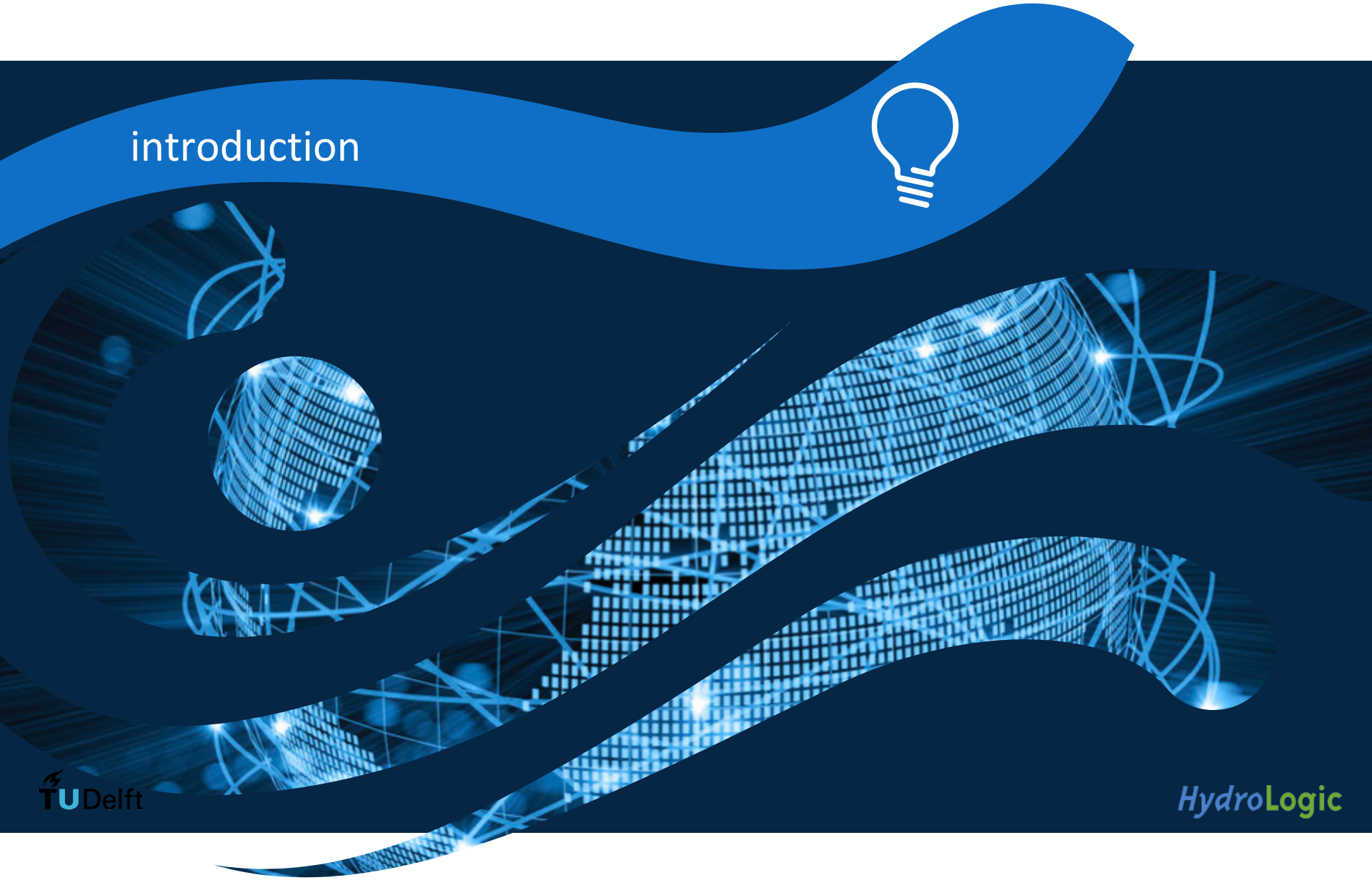
03 Literature research

04 Packets plan

05 Conclusion & recommendations

TU Delft

introduction



TU Delft

HydroLogic

Motivation

GROW OBSERVATORY

TU Delft

European Commission

Horizon 2020
European Union funding
for Research & Innovation

Goal is to be able to answer:

What well defined information model based on standards is optimal for implementation in a information infrastructure within the water sector to make the 1D time series data exchange easier?

TU Delft

research objectives &

METHODOLOGY

TU Delft

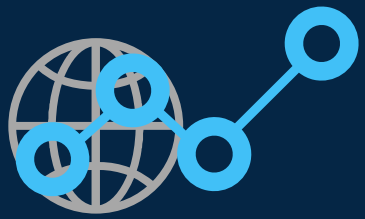
HydroLogic

Literature study

TOP

study

DOWN



PackeTs Plan

UP

study

BOTTOM

TUDelft

HydroLogic

Literature study

- Explore the possibilities of the existing standards structures models
- Development of the Standards Based Information Model (SBIM)

PackeTs Plan

- Create Packets Plan
- Feedback process

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FEEDBACK PROCESS

Evaluation meetings with experts

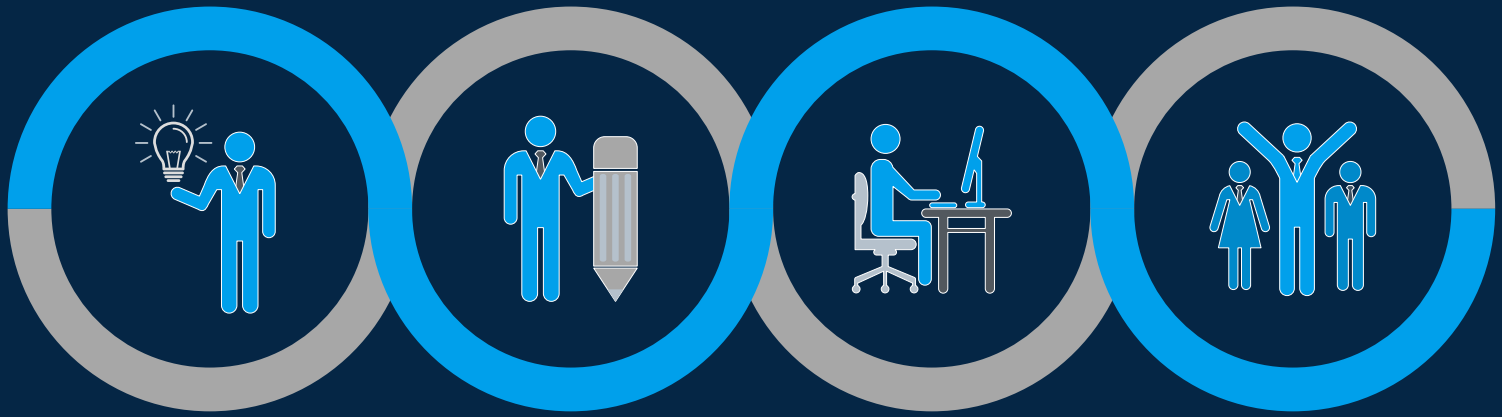
Develop Prototype

EVALUATION EXPERT MEETINGS

QUESTIONNAIRE FOR EXPERTS

Process feedback experts

SHOW FINAL RESULT



DEVELOP PACKETS PLAN

CREATE PACKETS A AND TRANSLATION FROM CASE STUDY VITENS DATASET; "PROEFTUIN"

Communicate the packets plan

Demo explainer video

TUDelft

HydroLogic

EXPERT MEETINGS, QUESTIONNAIRE

HydroLogic

J. van der Wielen / A. Lobbrecht

Deltares

S. HUMMEL

Rijkswaterstaat
Ministerie van Infrastructuur en Milieu

R. Feron

Informatiehuis Water

E. Wisse

OGC® Open Geospatial Consortium, Inc.

TC Event March'17
CP presentation

kadaster

E. Folmer

WaterInnEU

R. van Nooyen

HetWaterschapshuis

H.J. Lekkerkerk

WATER INFODAG

S. HUMMEL
Presentation

OGC® Open Geospatial Consortium, Inc.

TC Event Sept'17
CP presentation

AIRBUS

a. cauchy

Met Office

R. Carne

TU Delft

P. van Oosterom / N. van de Giesen

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HydroLogic

Literature study

TUDelft

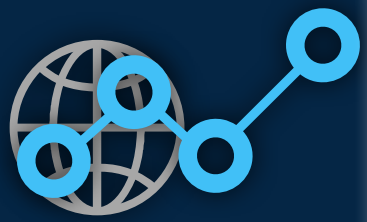
HydroLogic

Literature study

TOP

study

DOWN



Packets Plan

UP

study

BOTTOM

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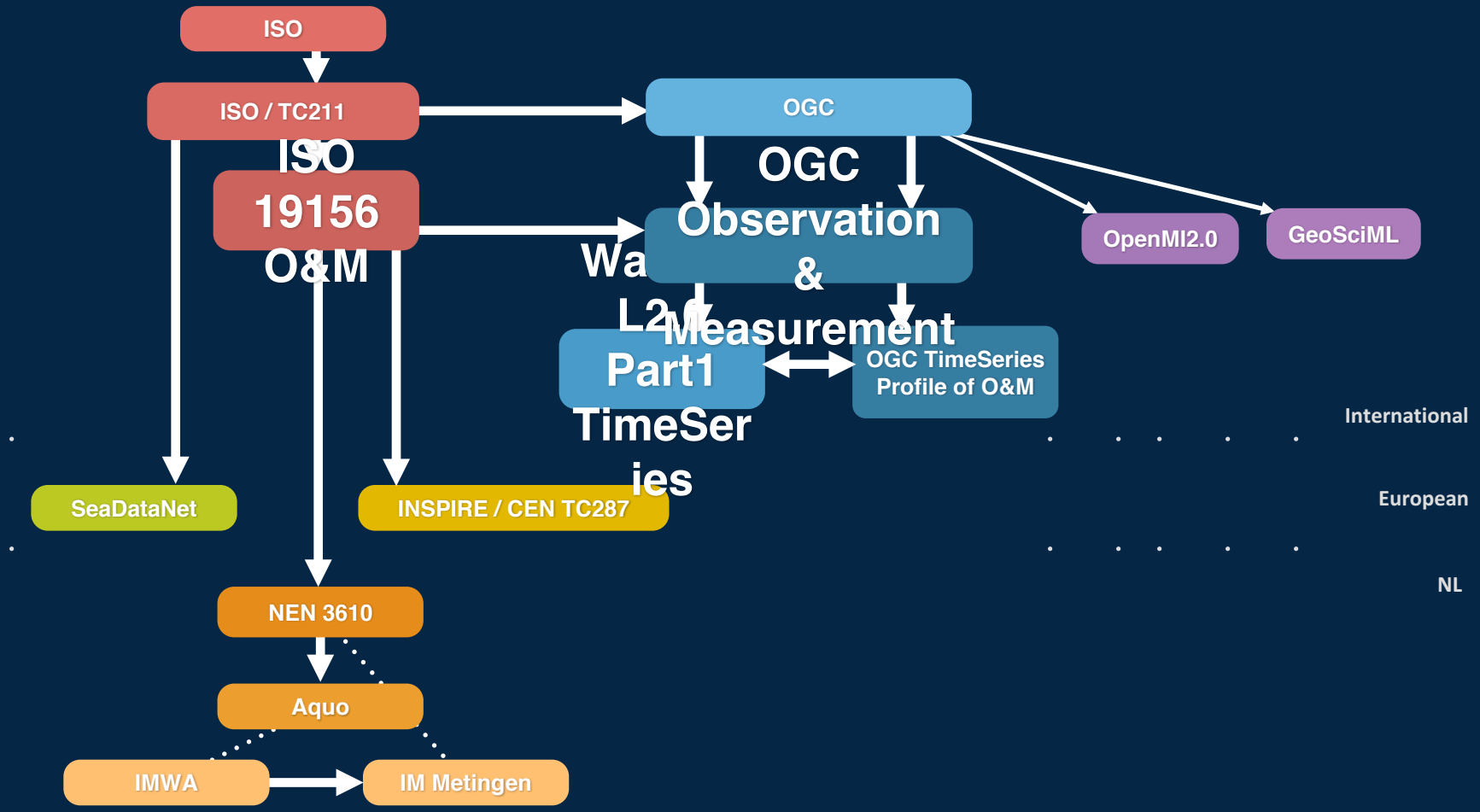
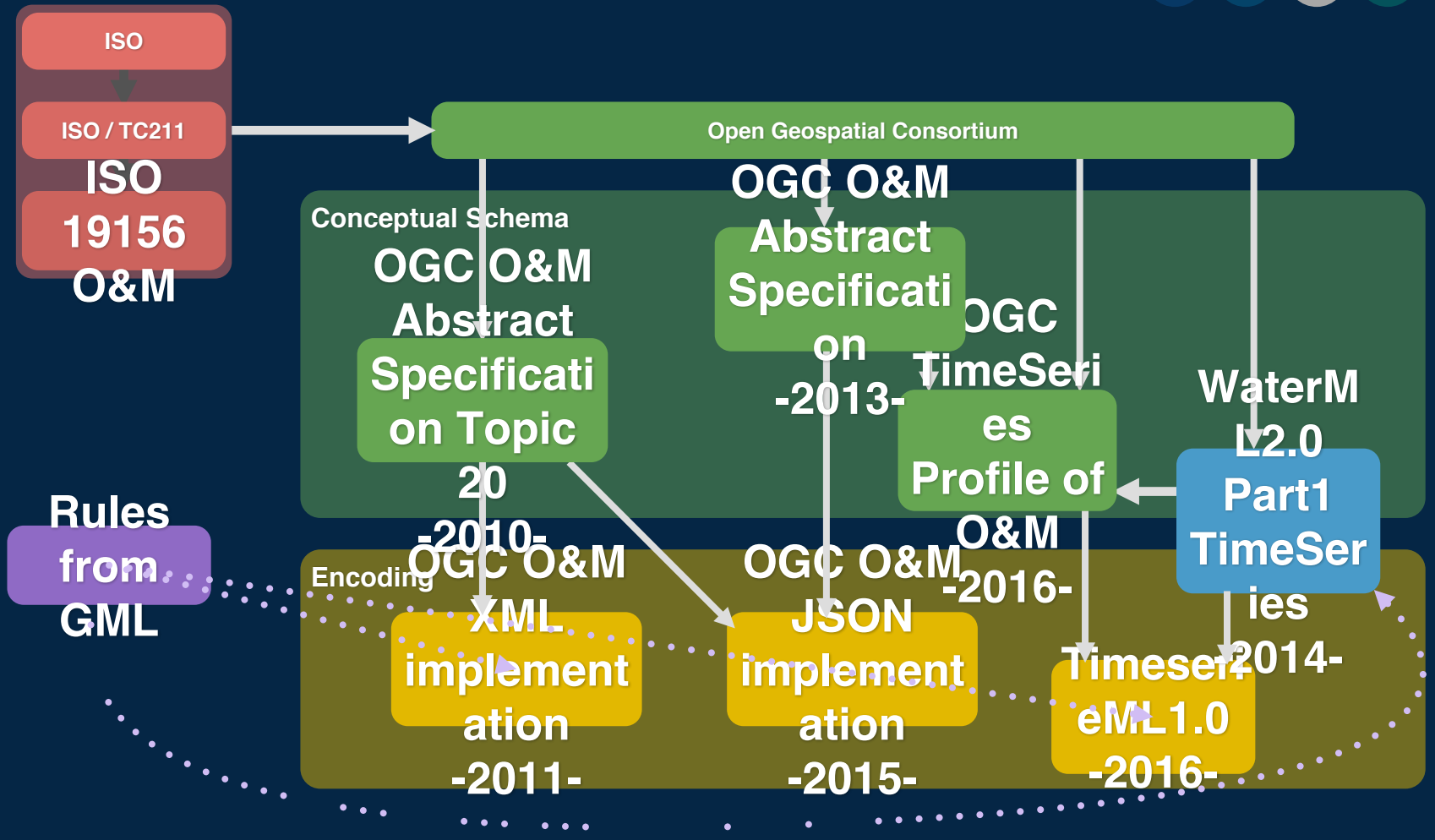
OVERVIEW POTENTIAL RELEVANT STANDARDS



Overview Relation standards



One complete model

OGC
OGC TimeSeries Profile of Observations & Measurements

ISO 19156 O&M
Observations & Measurements

WaterML2.0
Part 1: Time Series

Aquo
Includes IMWA and IM Metingen

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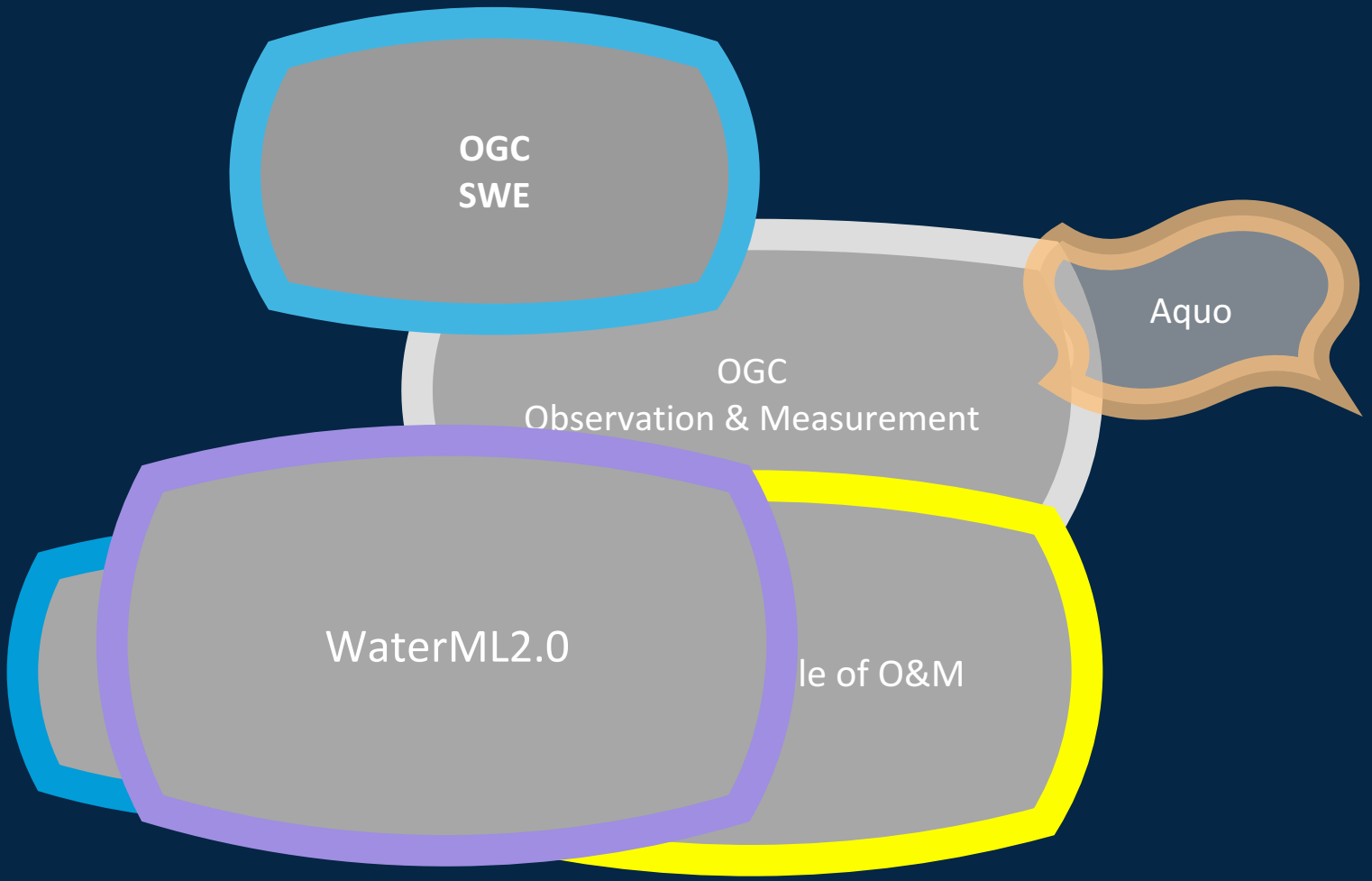
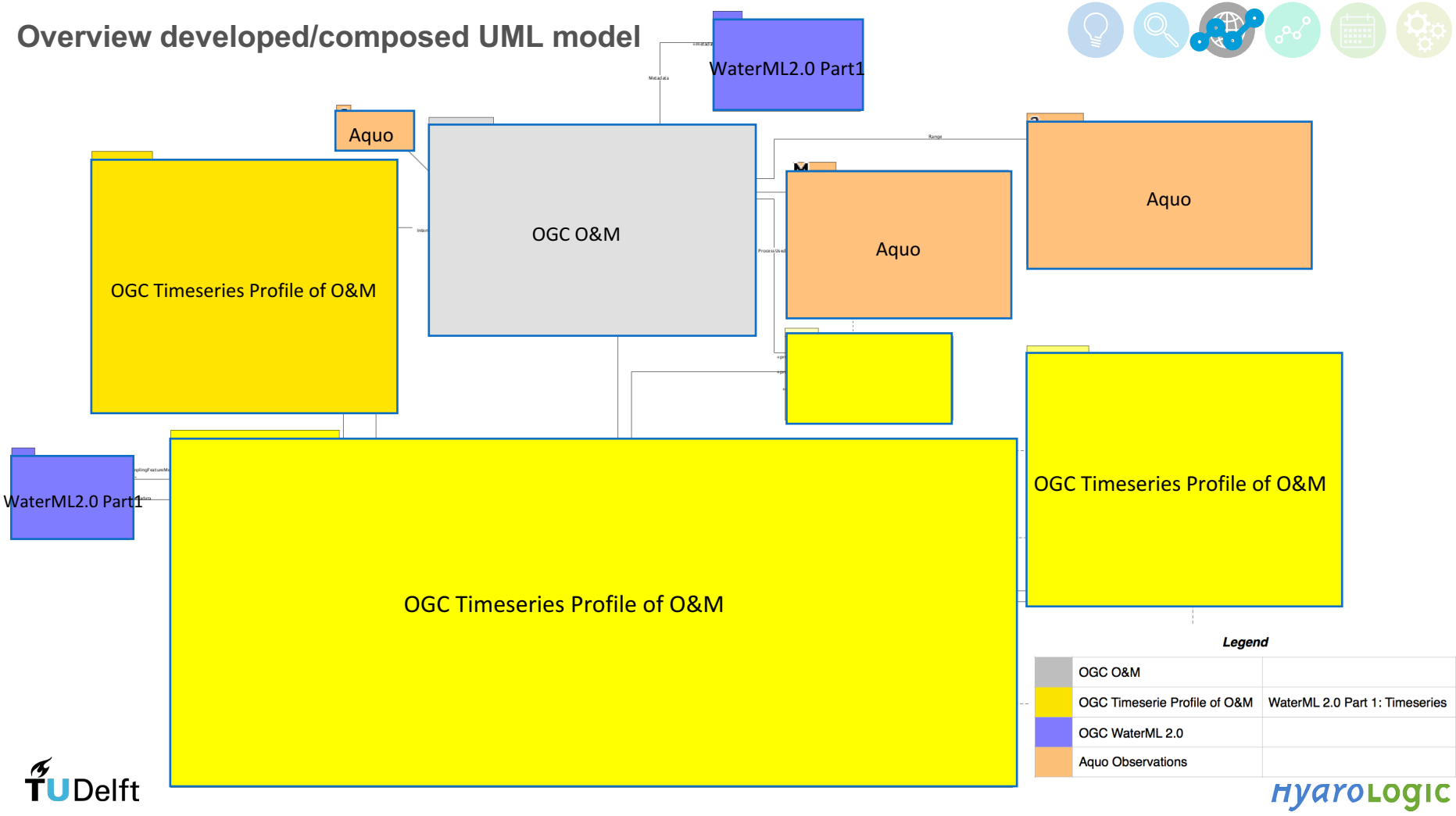
COMPLEXNESS between OGC standards



Overview developed/composed UML model



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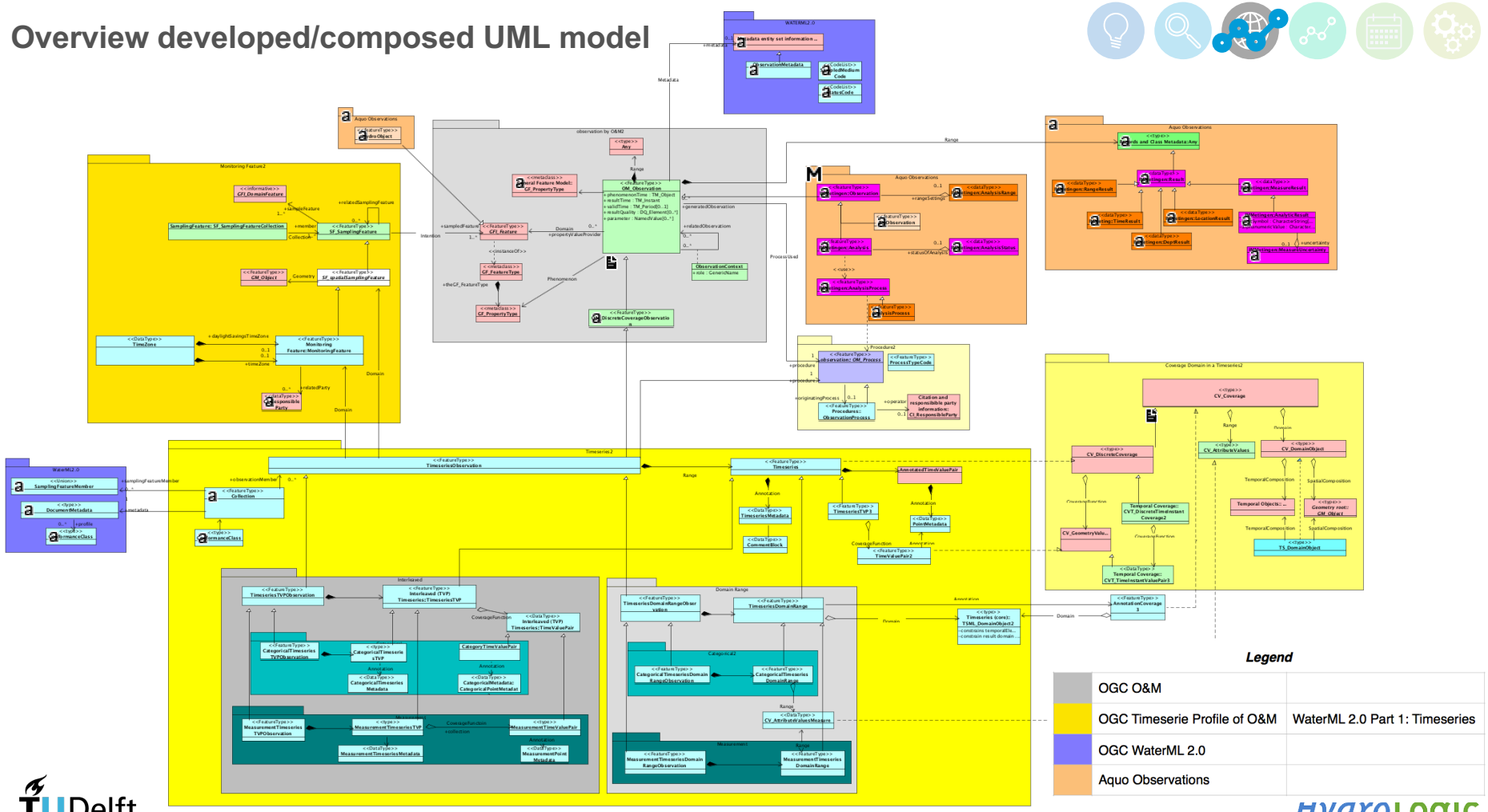
HyaroLogic

Overview developed/composed UML model



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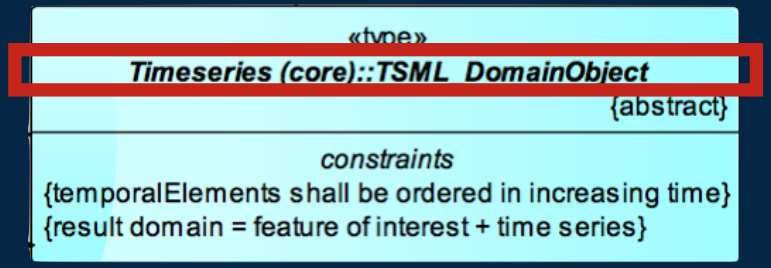
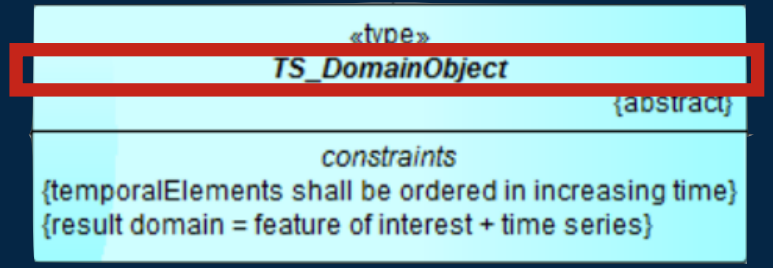
HyaroLogic

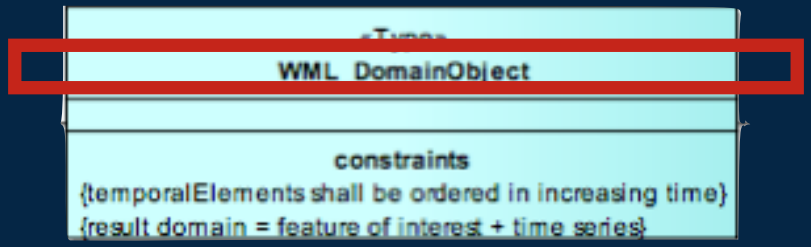
Inconsistencies in the overlapping part

Both classes from Timeserie Profile of O&M





Same class in WaterML2.0 Part 1

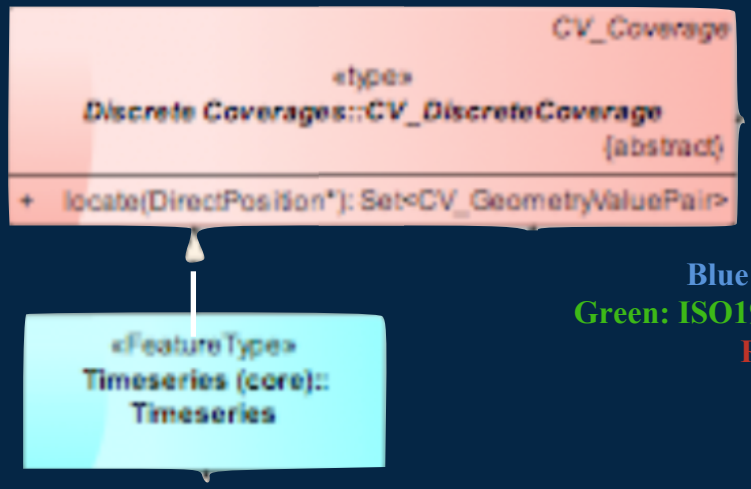


COMPLEXNESS between OGC standards

‘Timeserie Profile of O&M = WaterML 2.0 — Hydrological aspects

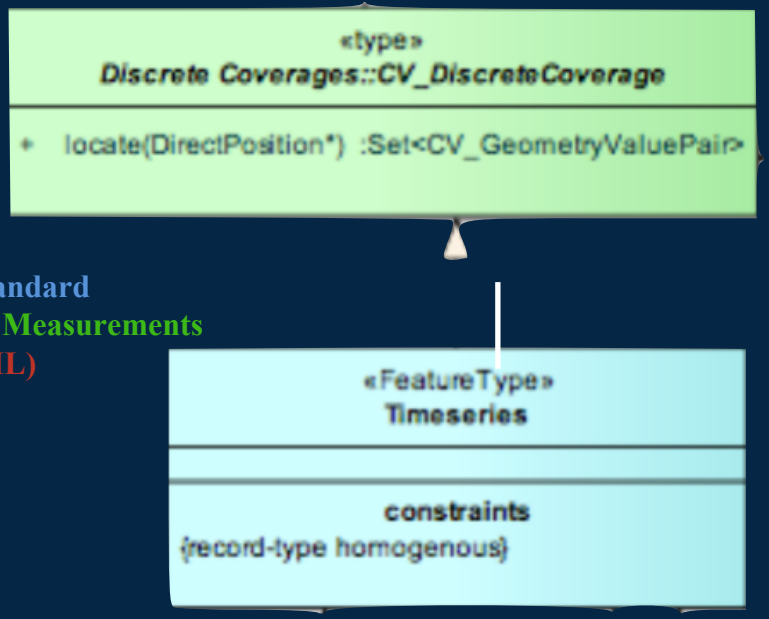
Inconsistencies in references

Timeserie Profile of O&M



REF:

WaterML 2.0 Part 1



Blue: Defined within this standard
Green: ISO19156 – Observations & Measurements
Red: Other (ISO or GML)

COMPLEXNESS between OGC standards

‘Timeserie Profile of O&M = WaterML 2.0 — Hydrological aspects

Inconsistencies in overlapping attributes

Timeserie Profile of O&M

«FeatureType»
ObservationProcess

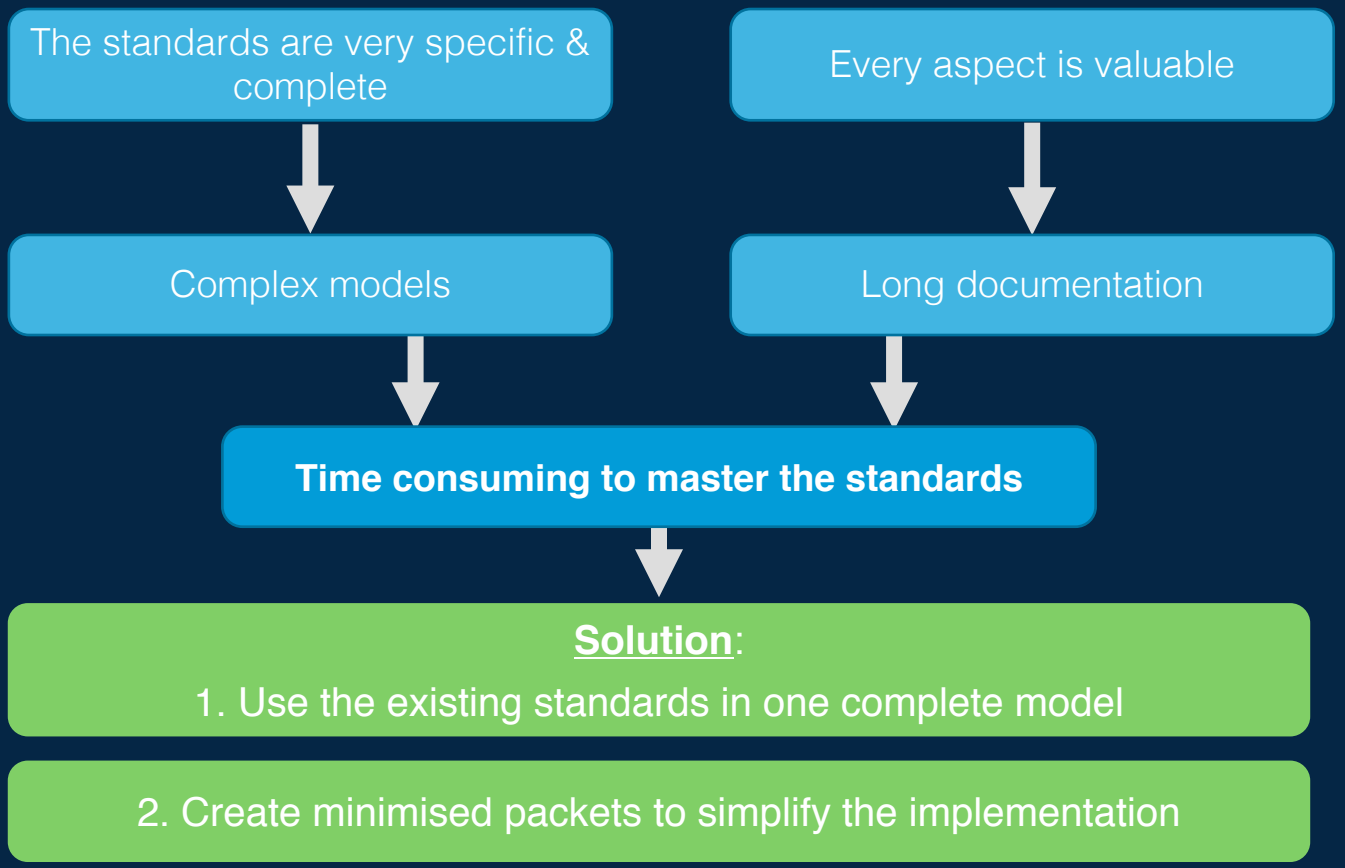
+ aggregationPeriod :TM_PeriodDuration [0..1]
+ gaugeDatum :CD_VerticalDatum [0..1]
+ input :GenericName [0..*]
+ operatorComments :CharacterString [0..*]
+ parameter :NamedValue [0..*]
+ processReference :GenericName [0..1]
+ processType :ProcessTypeCode

WaterML 2.0 Part 1

«FeatureType»
ObservationProcess

+ aggregationDuration: TM_PeriodDuration [0..1]
+ verticalDatum: CD_VerticalDatum [0..1]
+ input: GenericName [0..*]
+ comment: CharacterString [0..*]
+ parameter: NamedValue [0..*]
+ processReference: GenericName [0..1]
+ processType: ProcessTypeCode

Complex standards model does not lead to ONLY the solution



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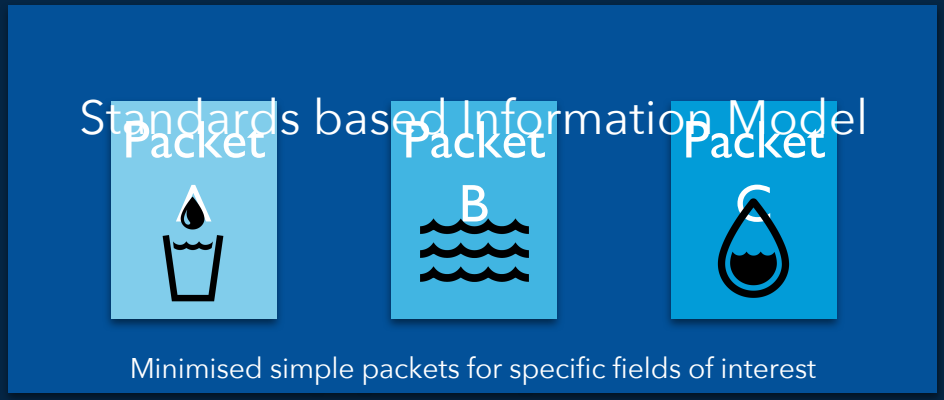
Concept schema Packets Plan

Standards based Information Model



01	Complete standards based Information Model (IM)
A	Packet “A”
B	Packet “B”
C	Packet “C”

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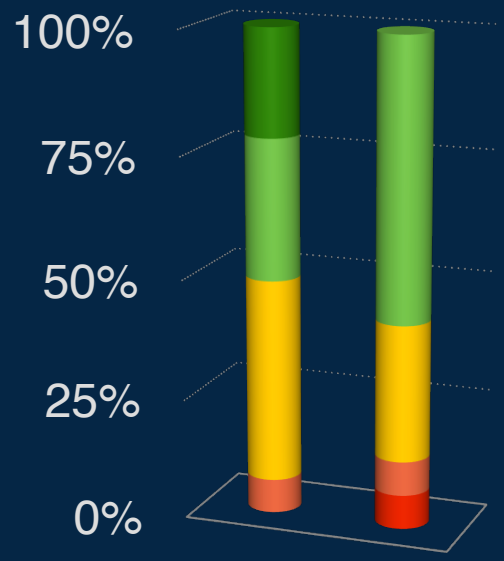
HydroLogic

Quality OGC standards Questionnaire

1. Solution : Complete model with Packets



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ld be: One complete standard model that contains all aspects of th

e complexity is solved, the standards will be widely implemented ir

Complex standards model does not lead to ONLY the solution

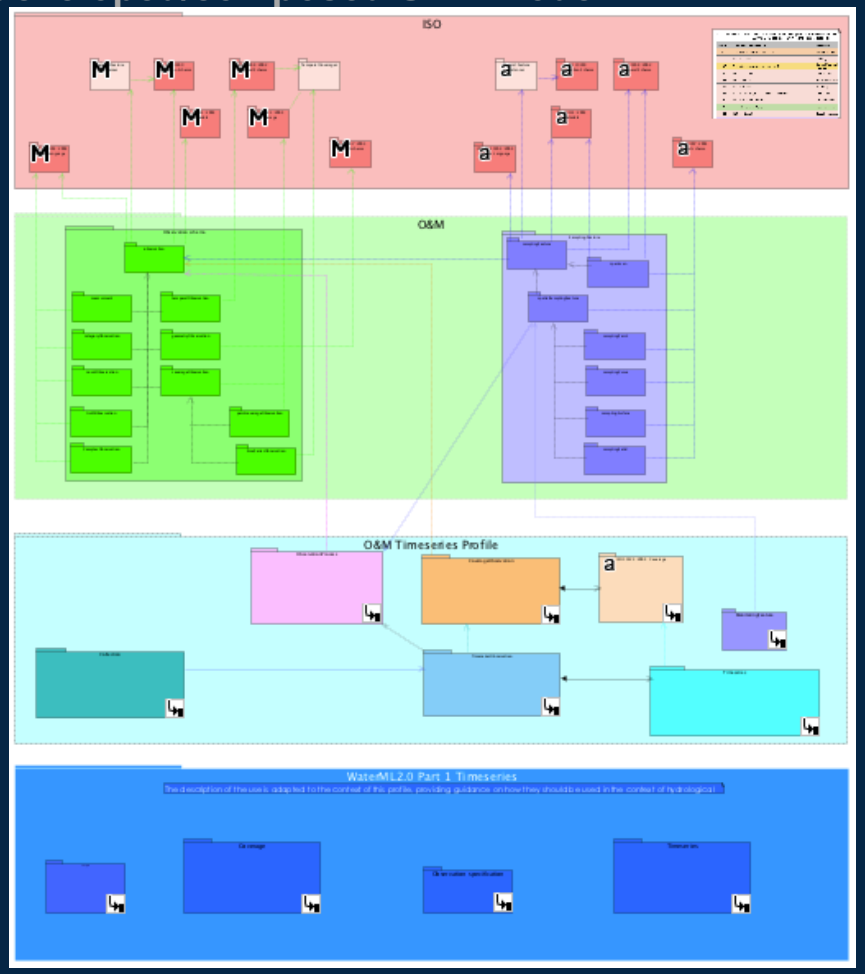
Solution:

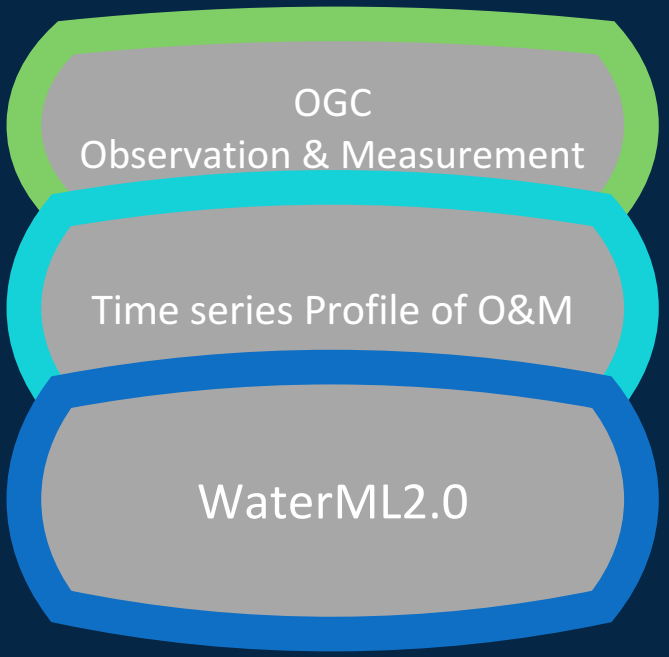
1. Use the existing standards in one complete model

2. Create minimised packets to simplify the implementation

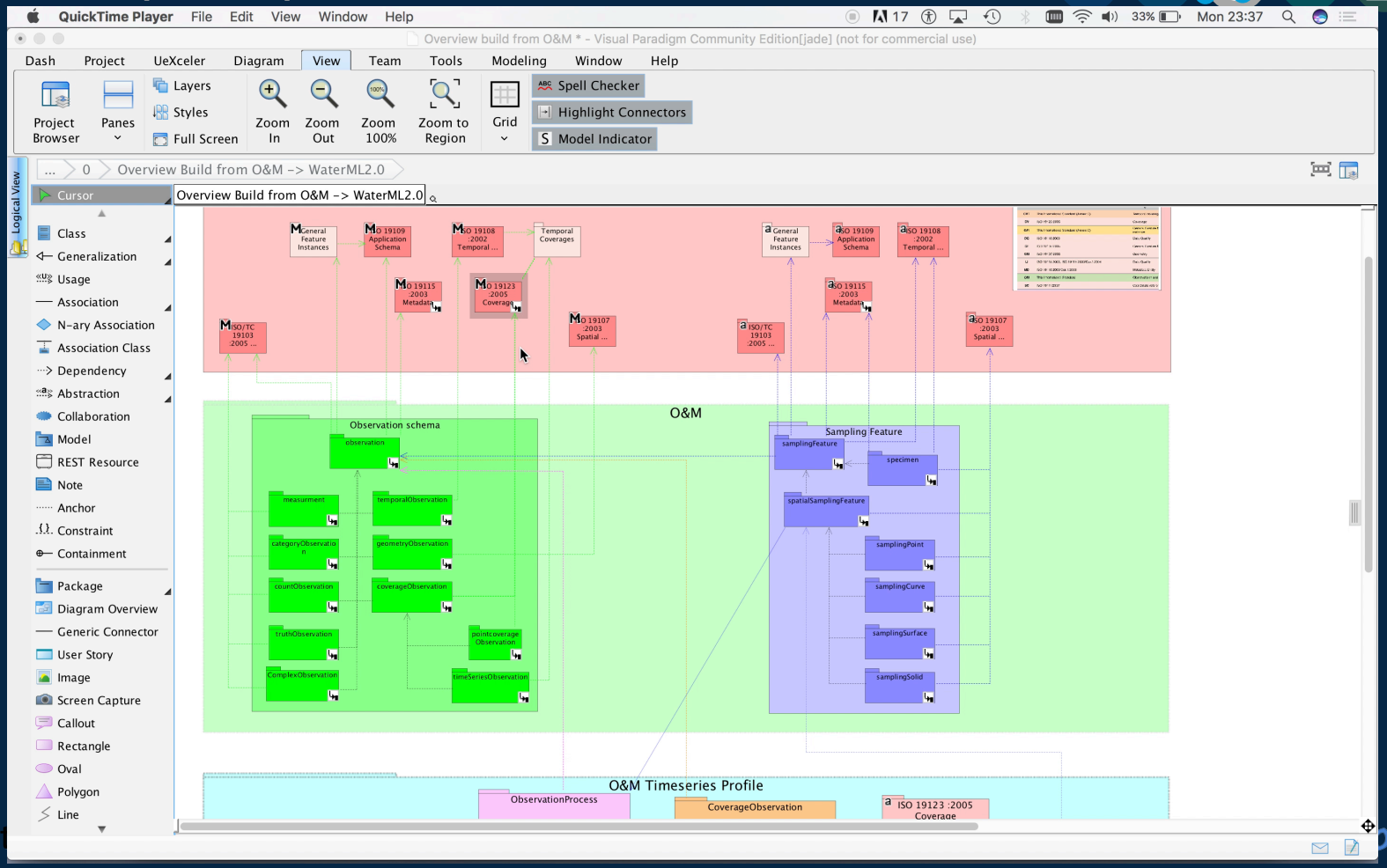
Overview developed/composed UML model

Overview developed/composed UML model

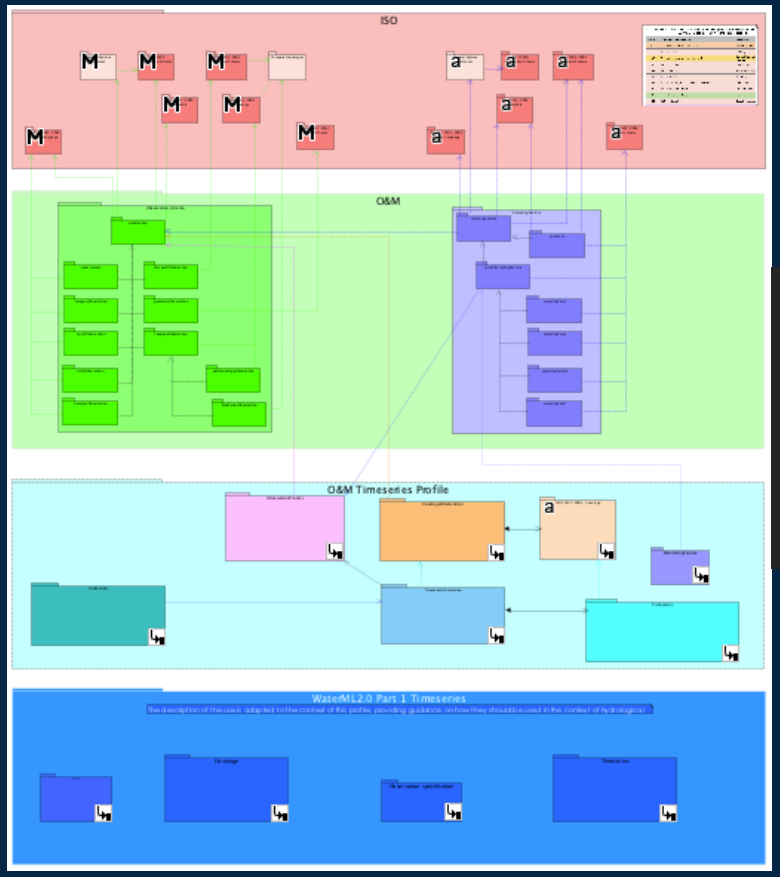


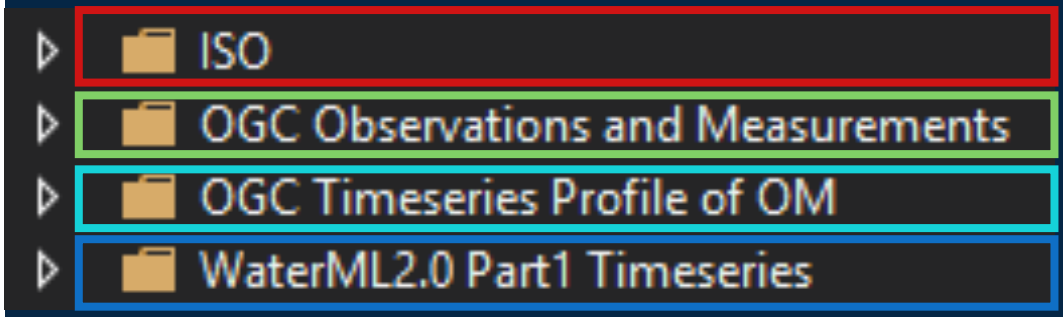


Overview developed/composed UML model



UML model —— Implementation Visual Studio





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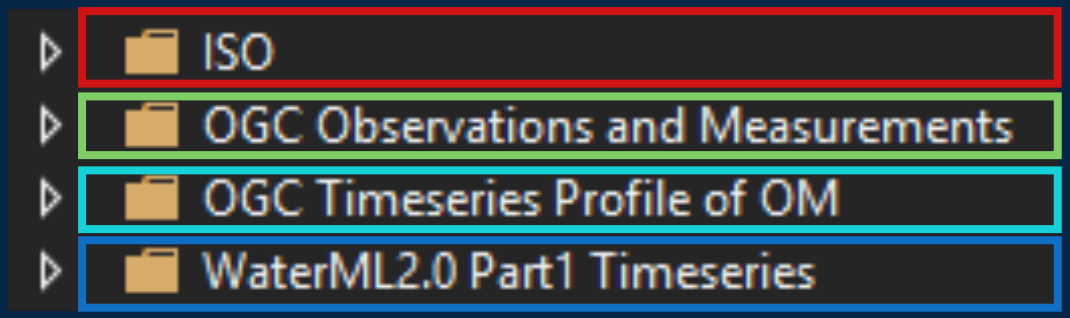
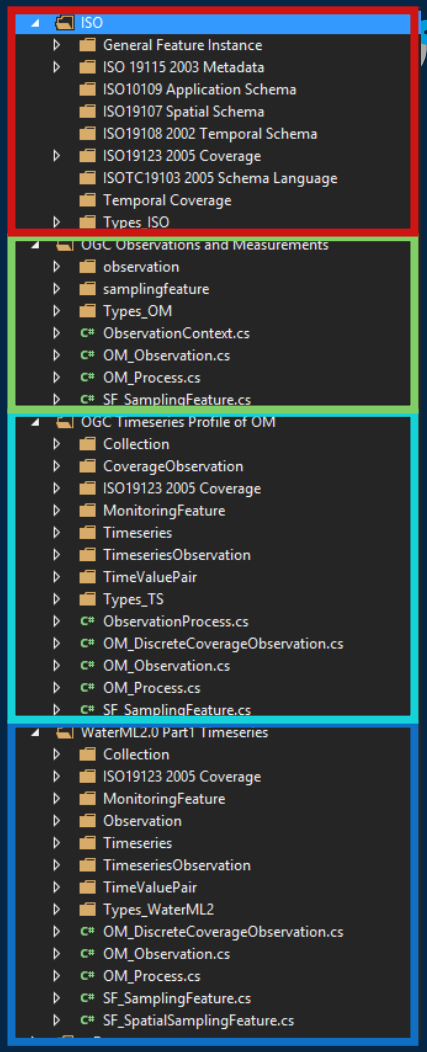
UML model —— Implementation Visual Studio

- ✓ Explanation
- ✓ Inheritance
- ✓ Types defined
- ✓ Linked to correct type of Type_OM folder
- ✓ Copy or New





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Full SBIM implementation not possible

- ✓ Inheritance is implemented
- ✓ Type list for each standard

COMPLICATIONS:

- Reference to types that are not further defined
- Empty classes
- Description not clear enough

Solution:

Solution:

1. Use the existing standards in one complete model

2. Create minimised packets to simplify the implementation

Literature study

TOP

study

DOWN

Packet Plan

UP

study

BOTTOM

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HydroLogic

Packets Plan

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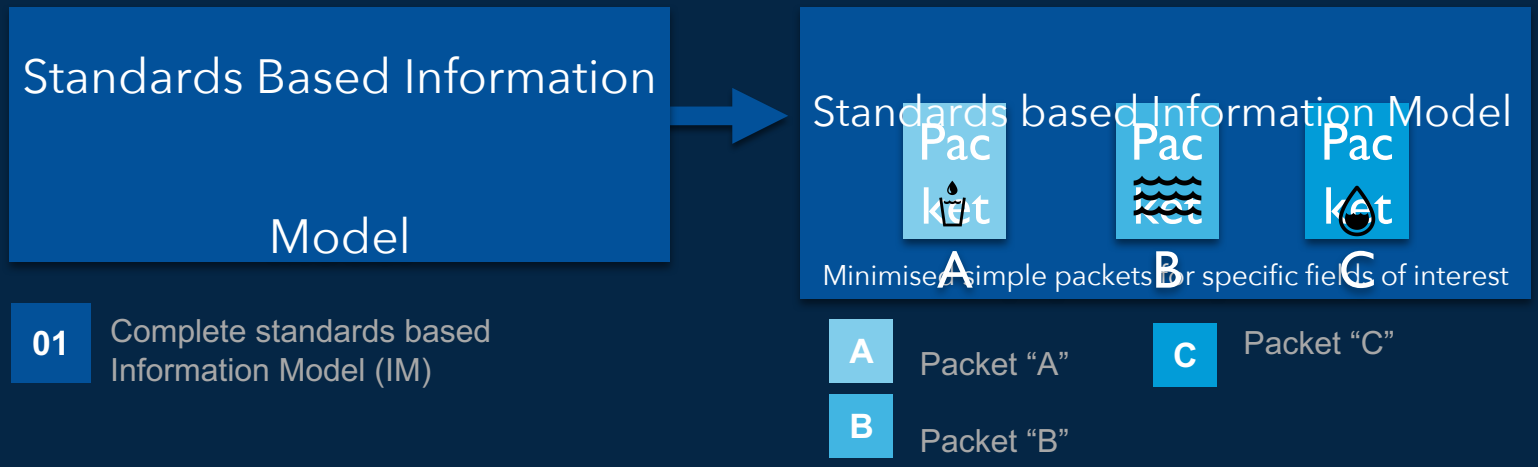
HydroLogic

Concept: **Packets Plan**

Packet =

- Selection from the larger model (SBIM) to be able to use only a specific part
- Translation to technical model as a step towards implementation (O&M JSON



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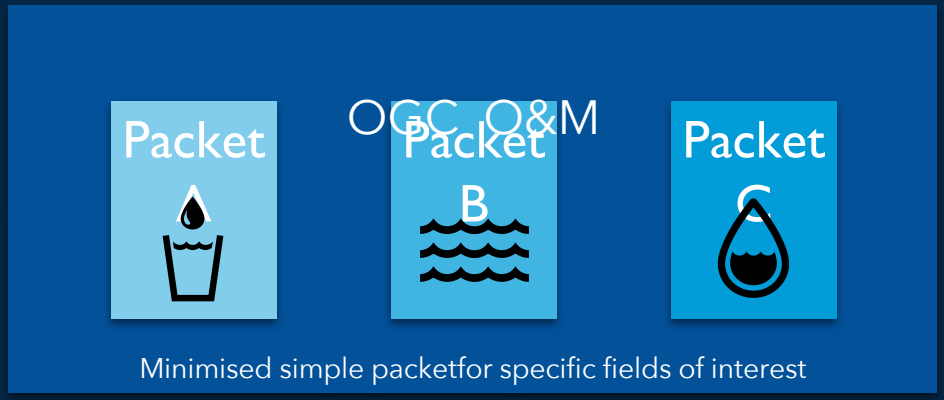
Concept: Packets Plan - **USE CASE**

OGC O&M



01	Complete standards based Information Model (IM)
A	Packet “A”
B	Packet “B”
C	Packet “C”

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Use the implementation documentation of

OGC O&M JSON implementation

&

TimeseriesML (XML implementation of Timeseries Profile of O&M)

OGC O&M JSON Implementation for Packets Plan

```
1   public class Base ...
75
76  public class geometry ...
89
90
91
92  public class Observation ...
174
175
176
177 public class Observation-Collection ...
247
248
249
250 public class Time-series ...
475
476
477
478 public class Sampling ...
505
506
507
508 public class Specimen ...
571
572
573
574 public class Spatial-Sampling ...
614
615
616
617 public class Sampling-Collection ...
657
```

Requirements class: JSON base types-1

	Definition	Example
time-position	Date-time position as character *string*, so as a string, matching *dateTime*, date, Year-Month, Year	"2015-05-12T15:05:00.00+10:00" "2015-05-12T05:05:00.00Z" "2015-05-12" "2015-05" "2015"
time-instant	Single property "instant" whose value is a temporal position.	{ "instant": "2015-05-12T15:05:00.00+10:00"} { "instant": "2015-05-12T05:05:00.00Z" } { "instant": "2015-05-12" } { "instant": "2015-05" } { "instant": "2015" }
time-interval	Properties "begin" and "end", whose value is a temporal position. An open-ended interval shall use the same JSON object, omitting the open end	{ "begin": "2015-05-10" , "end": "2015-05-15" { "begin": "1788-01-26" } { "end": "1918-11-11" }

duration	Temporal duration used in a data instance shall be encoded either as a text string, or as a measure object	"P1Y3M16DT2H35M14.53S"
		
		{
		"value": 60,
		"uom": "s"
		}

measure	Object containing an amount, denoted "value", and an optional unit of measure, denoted "uom"	{
		"value": 76.50 ,
		"uom": "kg"
		}

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OGC O&M JSON Implementation for Packets Plan
Complication

Class	Attibute	Types options
Specimen properties	samplingTime	(a) time-instant (b) time-interval
	samplingLocation	(a) Text description (b) Geometry (c) Link
	result	(a) Object (b) Literal

- Solution -

Packets Plan

Explainer Video Package ‘A’

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Case study- Vitens Data - “Proeftuin”

Data

Vitens_Data.txt | Vitens-OGC-"Data".cs

```
"Data": [
  {
    "LocationIdentifier": "HydroNet#MLAG",
    "LocationCode": "MLAG",
    "UseQuality": false,
    "Data":
      [
        {
          "Value": 10.5348,
          "Availability": 1,
          "DateTime": "20140101005000"
        },
        {
          "Value": 10.65201,
          "Availability": 1,
          "DateTime ": "20140101010000"
        },
        {
          "Value": 10.68132,
          "Availability": 1,
          "DateTime": "20140101092000"
        }
      ],
    "NoDataValue": -9999.0,
    "StartDate": "20140101005000",
    "EndDate": "20140131233500",
    "DataType": "Single",
    "Interval": {
      "Type": "None",
      "Value": 0.0
    },
    "VariableCode": "T",
    "DataSourceVariableId": 541,
    "TimeZoneOffset": "+0000",
    "IsCumulative": false,
    "CalculationType": "Average"
  },
```

MetaData

Vitens_Metadata.txt | Vitens-OGC-"MetaData"

```
"Meta": {
  "Locations": {
    "MLAG": {
      "Identifier": "HydroNet#MLAG",
      "LocationId": 1615,
      "Name": "DMA LWCB1; Aggemastate 192, 8926 PH Cammingaburen Leeuwarden ",
      "Code": "MLAG",
      "X": 5.834358,
      "Y": 53.216243,
      "Z": 0.0,
      "ProjectionId": 3,
      "OwnerOrganisationId": null,
      "OwnerAccountId": null,
      "DataSourceGroupCode": "HydroNet"
    },

  },

"Variables": {
    "T": {
      "VariableId": 2684,
      "Name": "Temperatuur",
      "Code": "T",
      "UnitCode": "°C",
      "State": 1
    }
  },

"DataSourceVariables": {
    "541": {
      "DataSourceVariableId": 541,
      "VariableCode": "T",
      "DataSourceCode": "Vitens.Proeftuin",
      "UnitCode": "°C",
      "Name": "tm01",
      "Code": "tm01",
      "DataType": "Single",
      "MathematicalType": "NotSummable",
      "MeasurementType": "Instantaneous",
      "State": 1,
      "IsCumulative": false
    }
  },

  "Projections": {
    "3": {
      "ProjectionId": 3,
      "Name": "WGS84",
      "Epsg": 4326,
      "ProjectionString": "+proj=longlat +ellps=WGS84 +datum=WGS84 +no_defs "
    }
  },

  "Units": {
    "°C": {
      "Name": "°C",
      "Code": "°C",
      "ParentUnit": null
    }
  }
},
"StructureType": "TimeSeries"
}
```

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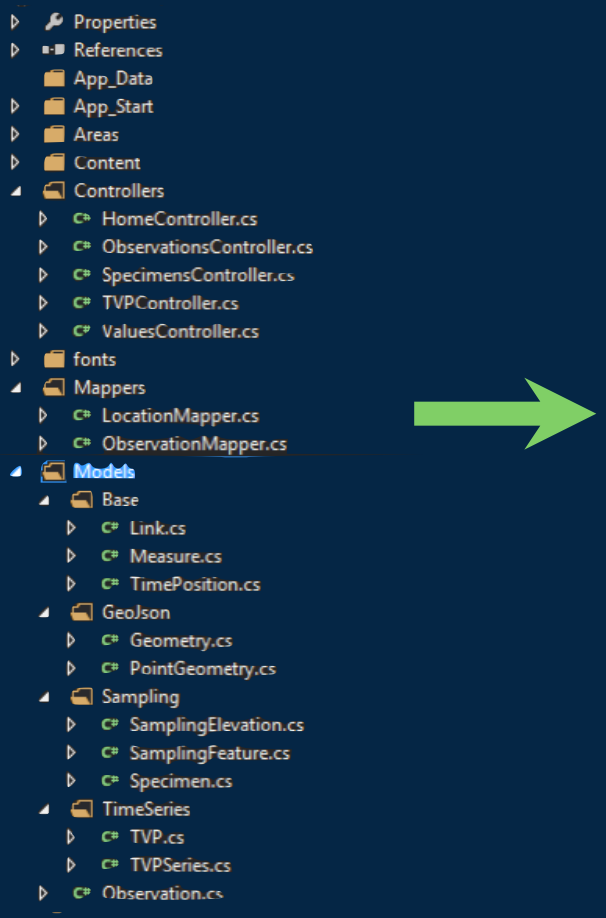
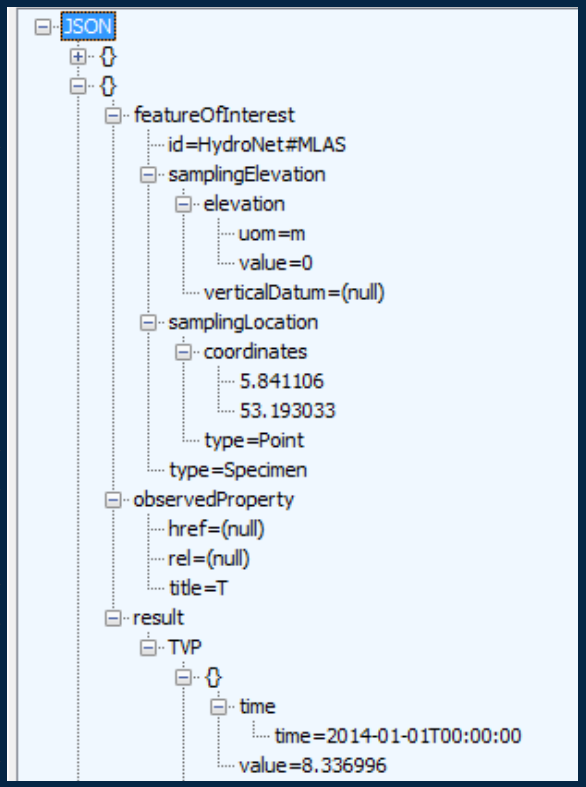
Packets Plan - Visual Studio implementation for API Packet “A”



WHERE?

WHAT?

WHEN?



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Solution Packets Plan:

- ✓ Easy to understand
- ✓ Time efficient

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CONCLUSIONS & RECOMMENDATIONS

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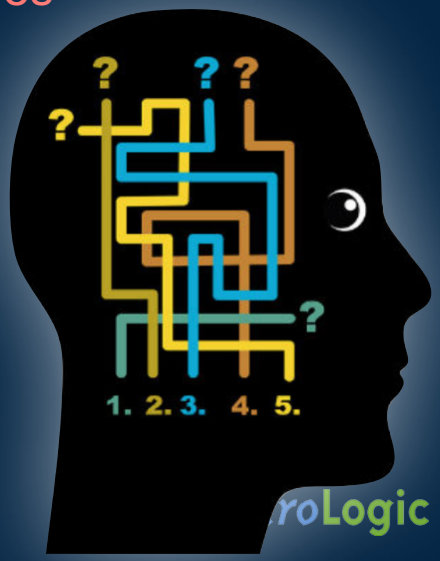
Conclusions

One Standards Based Information Model not possible right now

Complications:

- Inconsistencies in overlapping classes, attributes and or types
- Reference to types that are not further defined
- Empty classes
- Description not clear enough



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Recommendations

1. Improve / remove the pointed out complications
2. Finish the Standards Based Information Model
3. Use Packets Plan concept for SBIM

Recommendations

Packets Plan to

Remove the gap between users and developers of the standards

1. Use examples in the explanation of the standard
2. Implement the standards before publishing
3. Show implementation code as an example

Only implementation make data exchange possible!

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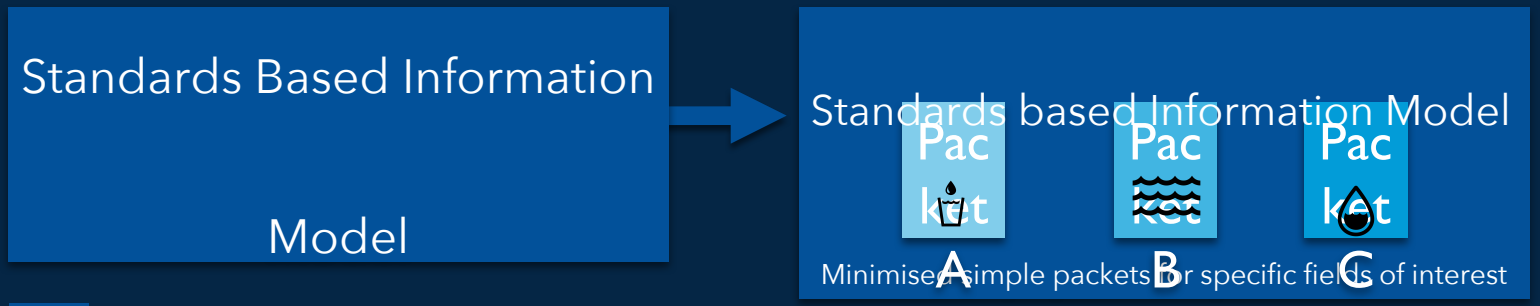
What well defined information model based on standards is optimal to implement in a information infrastructure within the water sector to make the 1D time series data exchange easier?



01 Complete standards based Information Model (IM)

A Packet “A”

B Packet “B”

C Packet “C”

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THANK YOU

Towards interoperable standards for 1D time series data within the water sector

M.J. Haayen

jadehaayen@gmail.com

TU Delft

Main Mentor:
Prof. Dr. Ir. P.J.M. (Peter) van Oosterom
Second Mentor:
Prof. Dr. Ir. N. (Nick) van de Giesen

HydroLogic

Supervisors
Ing. J. (Jonathan) van der Wielen
Dr. R.H. (Rianne) Giesen

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Future Geo

Emerging technologies, industry and social trends affecting Geo across Defence and Intelligence

Defence & Intelligence Workshop - Initial Highlights to TC

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Workshop Aspirations

- How can standards be used to better enable the integration of old and new technologies?
- Each workshop examined
  - Challenges
  - Opportunities
  - Priorities
  - Next Steps …

wikiwand.com

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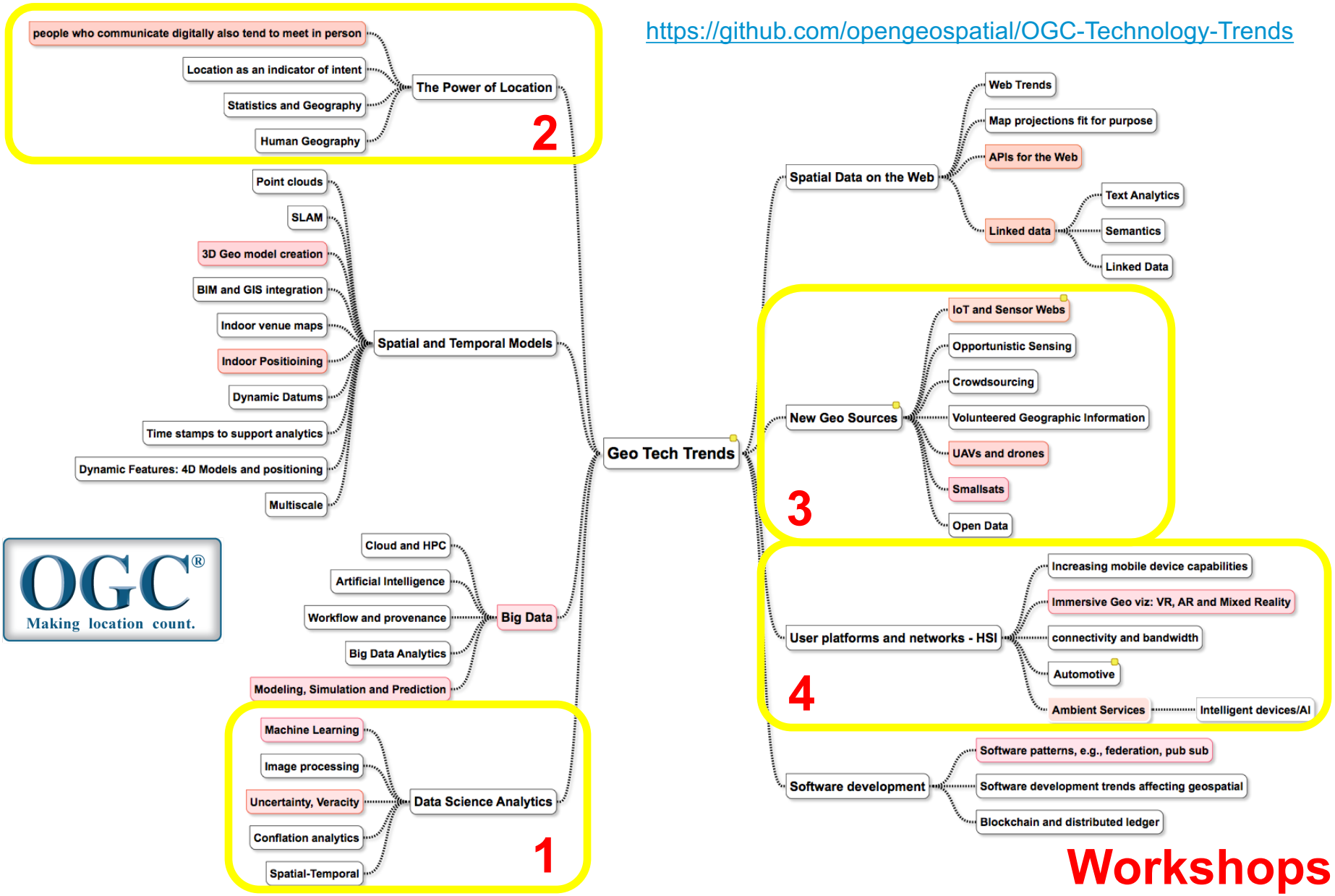
https://github.com/opengeospatial/OGC-Technology-Trends



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Workshops

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Workshop 1 – Data Science Analytics

- Essential to consider the human and business aspects of moving towards an information centric approach to support automation, machine learning, data analytics and linked data.
  - Put simply:
    - Need more than just technical standards
    - Need business process context
    - Need to enable effective decision making

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Workshop 2 – The Power of Location

- Vernacular Geographies
  - Challenge is often we need local names, local knowledge.
  - Problem is how to collect these names, knowledge?
- Validation of Data
  - Which is better:
    - Authoritative OR Open Source / Crowd Sourced / VGI?
    - Authoritative AND Open Source / Crowd Sourced / VGI?
  - Conflation and validation of Data - Adding value to baseline authoritative data.

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Workshop 3 – New Geo Sources

- Dark Data, this is the data being collected that we are not yet exploiting.
  - Linking data could be the next big thing? Challenge is this changed the way we look at datasets? How would you want to incentivise linked data?
- Metadata - How can it be used for all purposes?
  - What do you use metadata for? Is it to provide another source data? Stacking and time series for data?

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Workshop 4 – User Platforms and Networks

- User Interfaces
  - Adaptability and flexibility of User Interfaces was a significant topic, as well as change of how you get the data for an adaptable interface
- Platforms will be:
  - Users, generators of information
  - But this no different to now
  - Platform exchanges need to happen faster, in future

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Geo is evolving…

- **“Complex systems will evolve much more rapidly if there are stable intermediate forms than if there are not”**
  - Herbert Simon, ‘*The Architecture of Complexity*’
- **Continue Innovation to support Standardisation**

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OGC Working Groups

Interoperability Test Bed

OGC Tech Trends

DEFENCE GEOSPATIAL INFORMATION WORKING GROUP
DGIWG

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Roll Call

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TC Motions

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WPS 2.0 SWG Report and Corrigendum

104th OGC Technical Committee

Southampton, United Kingdom

Benjamin Pross

14 September 2017

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Agenda

- WPS REST API - update and discussion; Benjamin Pross; 52°North GmbH
- Transactional WPS - update and discussion; Benjamin Pross; 52°North GmbH
- Discussion of CR 388: W*S must support content-type application/www-form-urlencoded for POST requests; Andreas Matheus; UniBW/Secure Dimensions
- WPS 2.0 Corrigendum; Benjamin Pross; 52°North GmbH

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Activity Summary

- Discussion topics
  - WPS REST API
  - Transactional WPS
  - Use content-type application/www-form-urlencoded for POST requests

- Upcoming deliverables
  - WPS 2.0 Corigendum

- Coordination (ongoing and planned)

- Future meetings
  - TBA

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WPS 2.0 corrigendum

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WPS 2.0 corrigendum

Reason:

- Gérald Fenoy discovered an issue in the WPS 2.0 schemas
- Multiple nested outputs were not possible

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WPS 2.0 corrigendum

Fix:

- Matthias presented a fix
- **maxOccurs** attribute set to **unbounded**
- Changes reflected in standards document
- Additionally, a small issue in the wpsDismiss.xsd was fixed

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WPS 2.0 corrigendum

Documents are on pending:

https://portal.opengeospatial.org/files/?artifact_id=75180&version=1

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Template for Document Approval Motion

- The WPS 2.0 SWG recommends that the OGC Technical Committee approve an electronic vote to approve release of document [OGC 14-065r1] “Web Processing Service 2.0.2” as a bug fix to an approved OGC standard
  - Pending any final edits and review by OGC staff
  - There was no objection to unanimous consent
- NOTE: Correction made to schemas and respective figures and tables in the standards document.

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Geocoding API ad hoc

104th OGC Technical Committee

Southampton, United Kingdom

Joseph Abhayaratna, Michael Gordon

14 September 2017

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Agenda

- Discuss history
- Introduce the SWG Charter
  - Discuss “the need”
  - Discuss the thoughts in the room

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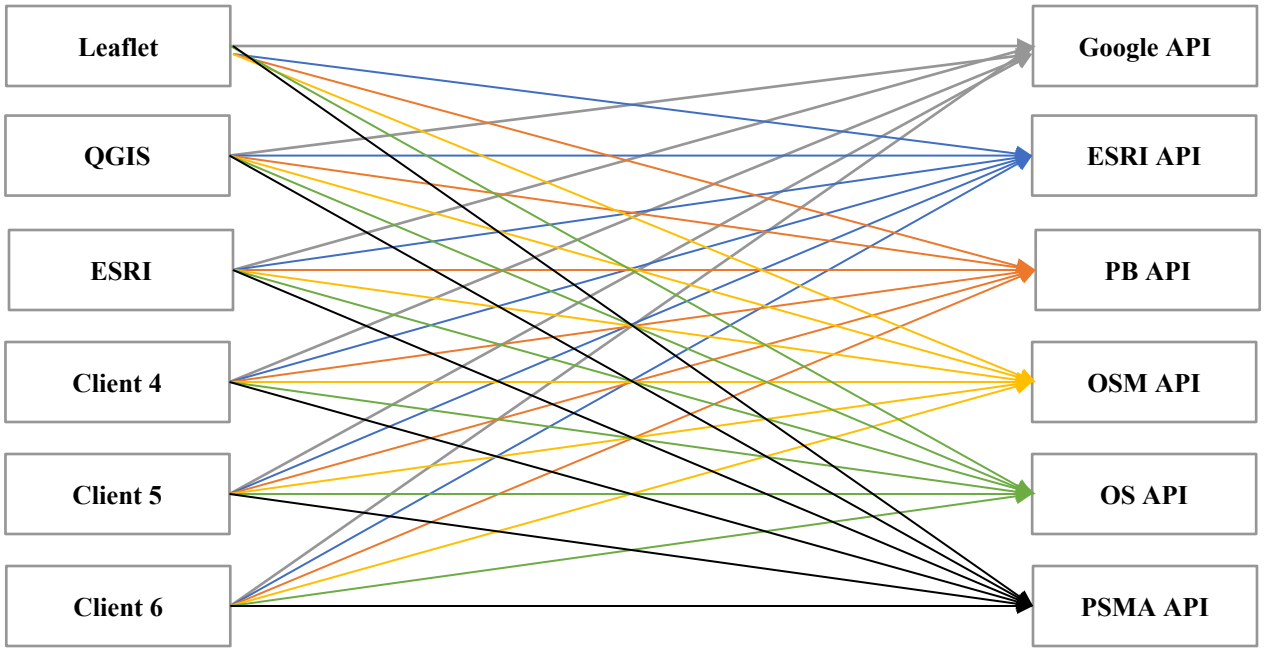
The need

- Geocoding is a core function
- There are lots of tools for geocoding
- There are lots of tools that use geocoding. E.g., Leaflet



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Use cases

- Can be distilled into three
  - Locating a single place with varying certainty
  - Resolving a place from a location
  - Geocoding one hundred places in a spreadsheet – NOT IN SCOPE

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Activity Summary

- Discussion topics
  - Public comment period started 5 Sept
  - Lots of things to consider to balance interoperability with feature richness
  - Need to have a razor sharp focus

- Upcoming deliverables
  - Public comment period closes 26 Sept
  - Charter team will respond within 30 days, and discuss with interested parties shortly thereafter

- Coordination (planned)
  - WFS SWG

- Future meetings
  - GoToMeeting to discuss responses with interested parties within two weeks

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Key activities

- Collect public comments (Sep 26)
- Address them appropriately and circulate r1 (Oct 31)
- Organize GoToMeeting to discuss responses to comments (Nov 7)
- Make any final adjustments and submit to TC (Nov 9)
- Bring SWG together to discuss work plan (Nov 30)

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Approval Motion

- The Geocoding API ad hoc recommends that the OGC Technical Committee approve an electronic vote on document [OGC 17-015] “Geocoding API SWG Charter” to form an OGC Standards Working Group.
  - Pending appropriate responses to public comment and review by OGC staff
  - There was no objection to unanimous consent

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GeoSciml SWG

104th OGC Technical Committee

Southampton, United Kingdom

Eric Boisvert

12 September 2017

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Agenda

- Review of decisions and actions from Vienna meeting(all)
  - Create a profile for GML 3.2 version of GeoSciml
  - New instance documents for GSML-lite
  - JSON / RDF encoding
  - Relations with GeoScience DWG
- GeoSciML issues and change request
  - Modification of schemas to add nillables
    - 17-075 Corrigendum
  - Broken metadata dependencies (ISO-19115-3:2016)
- Borehole / EPOS
- QGIS complex feature demo
- GeoSciML, GWML2, Inspire:GE, BoreholeML mapping
- GeoSciML paper

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GeoSciML Corrigendum

104th OGC Technical Committee

Southampton, United Kingdom

Eric Boisvert

12 September 2017

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GeoSciML Schema Corrigendum

- During the generation of the GeoSciML (16-008) XSD schema, the nillable="true“ for voidable property were omitted
- GeoSciML document has a clause (9.2.4) describing the use of voidable property.
- New schemas were generated to fix this problem
- All instance documents that validated with previous schema will validate with the new one, therefore the modification is completely backward compatible.
- This short corrigendum (07-075) describes the modification.

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Motion: GeoSciML Corrigendum

- The GeoSciML SWG recommends that the OGC Technical Committee approve an electronic vote to approve release of document [OGC 16-008r1] “GeoScience Markup Language 4.1.1” as a bug fix to an approved OGC standard.
  - Pending any final edits and review by OGC staff
  - Result: There was no objection to unanimous consent

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Coverages & WCS

104th OGC Technical Committee
Southampton, United Kingdom
Peter Baumann, Stephan Meissl
11 September 2017

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Agenda

- CRS-Coverages joint session
- Coverages.DWG
  - Status report (P. Baumann)
  - Datacube.DWG (P. Baumann)
  - Some recent results on spatio-temporal array analysis acceleration (P. Baumann)
  - n-D grid/polygon clipping in presence of partitioned grid storage (P. Baumann)
- WCS.SWG
  - Status report (P. Baumann)
  - MetOcean GetCorridor Extension for WCS2.1 (P. Trevelyan)

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CIS GRIB2 1.0 Encoding Standard

104th OGC Technical Committee

Southampton, United Kingdom

Peter Baumann, Stephan Meissl

11 September 2017

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GRIB2

= General Regularly-distributed Information in Binary Form
  - Defined & maintained by WMO
- Ensures data interoperability between weather centers
  - WMO mandates use for international exchange of NWP data
- Use cases
  - Surface weather, Street conditions,Flight corridors, Power grid control, Climate change studies, (Sparse) hypercube storage & analytics
- OGC GRIB2 coverage encoding standard allows WCS to load & deliver GRIB2
  - Implementation evidence: open-source *rasdaman community*
  - public RFC passed, next: TC vote

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Motion: GRIB2 Coverage Encoding 1.0

- The WCS.SWG recommends that the OGC Technical Committee approve an electronic vote to approve release of document [OGC 16-060r1] “GRIB2 Coverage Encoding” as an OGC Adopted Standard.
  - Pending any final edits and review by OGC staff
  - Result: There was no objection to unanimous consent

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EO-WCS 1.1

104th OGC Technical Committee
Southampton, United Kingdom
Peter Baumann, Stephan Meissl
11 September 2017

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EO-WCS

- Constrains WCS to EO domain
- Adds mandatory EO metadata to define a *Dataset*
- Add coverage hierarchies
  - Heterogeneous coverage groupings as *DatasetSeries*
  - Homogeneous coverage groupings as *StitchedMosaic*
- New operation *DescribeEOCoverageSet*

EO-WCS 1.1 (OGC 10-140r2)

- Available online including schemas & extensive examples
  - https://schpidi.github.io/eo-wcs/
  - https://github.com/Schpidi/eo-wcs/tree/evo-odas
  - https://github.com/EOX-A/eo-wcs/pull/1/
- Proposed changes/additions
  - `rangeType` description enhancements
  - Add metadata as `EOWCS::EOMetadata` to DatasetSeries
  - Paging in *DescribeEOCoverageSet* requests following example of WFS and OpenSearch
  - New request *GetEOCoverageSet* to download multiple coverages in one request
  - Remove limitation to 2D

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Motion: EO-WCS 1.1

- The WCS.SWG recommends that the OGC Technical Committee approve an electronic vote to approve release of document [OGC 10-140r2] “OGC WCS 2.0 Interface Standard – Earth Observation Application Profile” as an OGC Adopted Standard.
  - Pending any final edits and review by OGC staff
  - Result: There was no objection to unanimous consent
- *Explanation: This document is a backwards compatible revision 1.1 to the adopted version 1.0.*

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Meeting Sponsor

Ordnance Survey

IndoorGML SWG Meeting Report to TC

104th OGC Technical Committee

Southampton, United Kingdom

Jeremy Morley, Ki-Joune Li

13 September 2017

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Agenda

- Agenda
  - Corrigendum: Fixing errors for the consistency between UML model and XML Schema (indoorgmlcore.xsd) by Hye-Young Kang (10min.)
  - Presentations (60 min.)
    - iNous Project - Building an Eco-System for IndoorGML by Ki-Joune Li
    - CityJSON: JSON encoding use-case of CityGML by Hugo Ledoux
    - CityGML 3.0 Core: changes to incorporate abstract spaces by Thomas Kolbe
  - Discussion (5 min.)
    - JSON encoding for IndoorGML

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Corrigendum to IndoorGML 1.0.2

- Issues
  - Inconsistency between IndoorGML UML Model and XML schema (indoorgmlcore.xsd) and XML schema bugs.
- Changes
  - Adding “CellSpaceBoundaryPropertyType” in indoorgmlcore.xsd and setting the minOccurs for “CellSpaceBoundary” as 0
  - Adding an element “ConnectedLayers” in “InterLayerConnectionType” of indoorgmlcore.xsd
  - Adding “SpaceLayerPropertyType” in indoorgmlcore.xsd

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Corrigendum to IndoorGML 1.0.2

- Uploaded before three-week deadline to OGC Portal pending documents document number:17-074 https://portal.opengeospatial.org/files/?artifact_id=75204&version=1
  - Change Summary
  - Standard Document (IndoorGML 1.0.3 - OGC 14-005r5) to reflect the corrected schema parts
  - Corrected IndoorGML Core XML Schema: indoorgmlcore.xsd

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IndoorGML 1.0.3 vote

- The IndoorGML SWG recommends that the OGC Technical Committee approve an electronic vote to approve release of document [OGC 14-005r5] “OGC IndoorGML” as bug fix release of an adopted standard.
  - Pending any final edits and review by OGC staff
  - There was no objection to unanimous consent

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Activity Summary

- Discussion topics
  - JSON encoding for IndoorGML

- Upcoming deliverables
  - none

- Coordination (ongoing and planned)
  - Plan a teleconference meeting for JSON encoding
  - An team for JSON encoding experiment for IndoorGML

- Future meetings
  - Teleconference SWG meeting within a month
  - Meeting in Palmerston North, NZL

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Meeting Sponsor

Ordnance Survey

TimeSeriesML Working Group

104th OGC Technical Committee

Southampton, United Kingdom

Paul Hershberg, Steve Olson

14 September 2017

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Agenda

- Reconvened TimeSeriesML SWG Aug 17, 2016
- Created Pending Document for OAB review (titled: 15-042r4_TimeseriesML1.2_-_XML_Encoding-Southampton.zip) located here: https://portal.opengeospatial.org/files/?artifact_id=75198
- The National Weather Service (NWS) has a National Digital Forecast Database (NDFD) use case where forecast elements have changing time period spacings in between forecast data projections, with no way to describe this. We propose to add metadata to accurately describe the individual segments of a whole irregularly spaced time series that have different time spacings. A link to the OGC Presentation describing this proposed TimeSeriesML change is here:
  https://portal.opengeospatial.org/files/?artifact_id=75700

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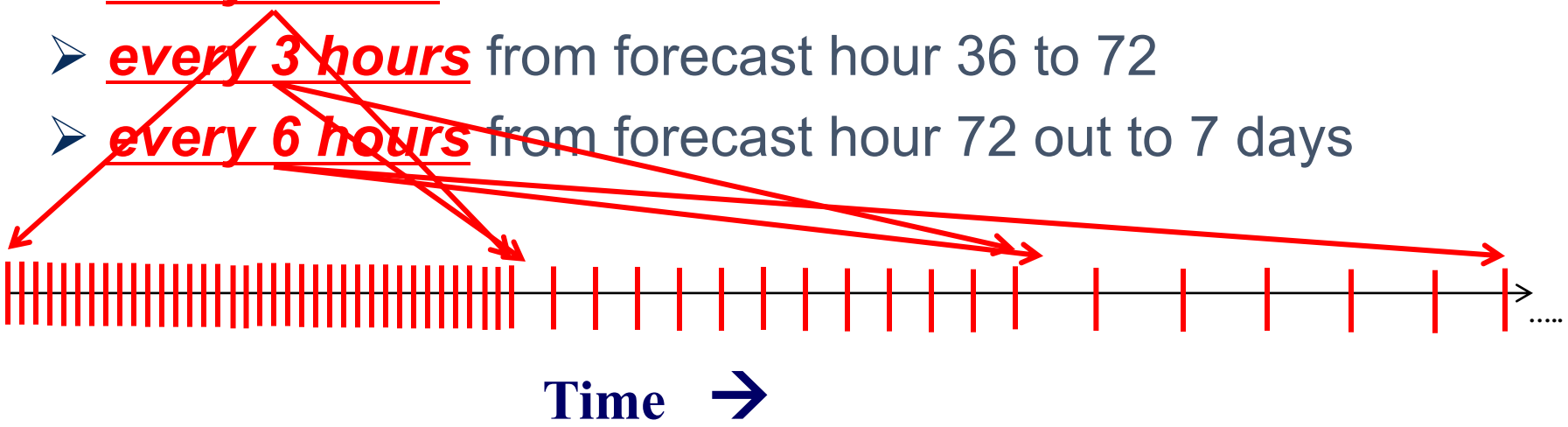
The NWS Use Case

- The NWS would like to encode a time series of certain forecast observations (i.e. temperature):
  - ***every 1 hour*** for the 1st 36 hours of the time series
  - ***every 3 hours*** from forecast hour 36 to 72
  - ***every 6 hours*** from forecast hour 72 out to 7 days



- Thus, there are 3 distinct time spacings comprising the entire, ***irregularly*** spaced time series.

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The NWS Use Case (cont)

- Currently, we have no way of describing different time spacings associated with an “irregularly” spaced whole time series in the DR encoding.

- For metadata purposes, we propose to break up the entire irregularly spaced time series with different time spacings into segments that ***do*** contain regularly spaced forecast projection time steps.

- Thus, in our example, we would break up the irregularly whole time series into 3 distinct segments, and attribute metadata to each specific segment.

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Proposed Change: An Example XML Instance Snippet

```
<tsml:timeseriesMetadata>
  <tsml:TimeseriesMetadata>
    <tsml:temporalExtent>
      <gml:TimePeriod gml:id="Time-Step-1">
      <gml:beginPosition>2017-07-05T00:00:00Z</gml:beginPosition>
      <gml:endPosition>2017-07-06T12:00:00Z</gml:endPosition>
      </gml:TimePeriod>
    </tsml:temporalExtent>
    <tsml:spacing>PT1H</tsml:spacing>
  </tsml:TimeseriesMetadata>
<tsml:timeseriesMetadata>

<tsml:timeseriesMetadata>
  <tsml:TimeseriesMetadata>
    <tsml:temporalExtent>
      <gml:TimePeriod gml:id="Time-Step-2">
      <gml:beginPosition>2017-07-06T12:00:00Z</gml:beginPosition>
      <gml:endPosition>2017-07-08T00:00:00Z</gml:endPosition>
      </gml:TimePeriod>
    </tsml:temporalExtent>
    <tsml:spacing>PT3H</tsml:spacing>
  </tsml:TimeseriesMetadata>
</tsml:timeseriesMetadata>

<tsml:timeseriesMetadata>
  <tsml:TimeseriesMetadata>
    <tsml:temporalExtent>
      <gml:TimePeriod gml:id="Time-Step-3">
      <gml:beginPosition>2017-07-08T00:00:00Z</gml:beginPosition>
      <gml:endPosition>2017-07-12T00:00:00Z</gml:endPosition>
      </gml:TimePeriod>
    </tsml:temporalExtent>
    <tsml:spacing>PT6H</tsml:spacing>
  </tsml:TimeseriesMetadata>
</tsml:timeseriesMetadata>
```

Describes 1 hourly spacing, for the 1st 36 hours

Describes 3 hourly spacing, for hours 36 to 72

Describes 6 hourly spacing, for hours 72 to 7 days

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Proposed Amendment to ***timeseriesDR.xsd*** Schema

Current Schema

```
<xs:element name="timeseriesMetadata" minOccurs="0" maxOccurs="1">
  <xs:annotation>
    <xs:documentation>Metadata applicable to the whole timeseries.</xs:documentation>
  <xs:annotation>
  <xs:complexType>
   <xs:complexContent>
     <xs:extension base="gml:AbstractMemberType">
       <xs:sequence>
         <xs:element ref="tsml:TimeseriesMetadata"/>
       </xs:sequence>
     </xs:extension>
   </xs:complexContent>
  </xs:complexType>
</xs:element>
```

Cardinality of 1

Proposed Schema

```
<xs:element name="timeseriesMetadata" minOccurs="0" maxOccurs="unbounded" >
  <xs:annotation>
    <xs:documentation>Metadata applicable to the whole timeseries or individual regularly
                      spaced segments of an irregularly spaced whole timeseries.
    </xs:documentation>
  <xs:annotation>
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="gml:AbstractMemberType">
        <xs:sequence>
          <xs:element ref="tsml:TimeseriesMetadata/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
```

Open up Cardinality to Unbounded and Update Documentation

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Activity Summary

- Discussion topics
  - <something from agenda>
  - <topic raised during meeting>
  - <topic raised on email list>

- Upcoming deliverables
  - <document to review by WG, OAB, TC, etc.>
  - <document to Pending>
  - <vote in progress>

- Coordination (ongoing and planned)
  - <other WG>
  - <other SDO>
  - <other organization>

- Future meetings
  - <web meeting>
  - <next TC Meeting>
  - <special forum or conference>

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Key activities

- SWG reviewed content, passed motion

- <ALL: provide estimated milestone dates of any upcoming deliverables such as standards, discussion papers, etc.>
- <ALL: you can copy slides from a presentation in the WG meeting into this presentation to illustrate a point>

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Template to Request an electronic vote

- The Timeseries SWG recommends that the OGC Technical Committee approve an electronic vote to approve release of OGC Document 15-042r4 “TimeseriesML 1.2 - XML Encoding of the Timeseries Profile of Observations and Measurements” as an OGC Adopted Standard.
  - Pending completion of public review period
  - Pending any final edits and review by OGC staff
  - There was no objection to unanimous consent

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Upcoming TC Meetings

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Meeting Sponsor

Ordnance Survey

Announcing December 2017 TC Palmerston North, New Zealand

104th OGC Technical Committee

Southampton, United Kingdom

Alistair Ritchie

14 September 2017

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LANDCARE RESEARCH
MANAAKI WHENUA

Tēnā koutou katoa

GREETINGS TO YOU ALL

- Location: Palmerston North, New Zealand
- 4th - 8th December
- Hosted by: Landcare Research Ltd
- Further details:

  https://www.landcareresearch.co.nz/ogctc2017

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LANDCARE RESEARCH
MANAAKI WHENUA

- One of eight New Zealand Crown Research Institutes (CRIs)
- Core purpose – to drive innovation in the management of terrestrial biodiversity and land resources – sustainable development
- Approximately 300 staff at 9 locations across New Zealand
- Cross-disciplinary Informatics team from the fields of geoinformatics, biodiversity informatics, systematics, genomics, remote sensing & computer science
- Active in OGC, use standards in production systems, & promote the use of standards in New Zealand

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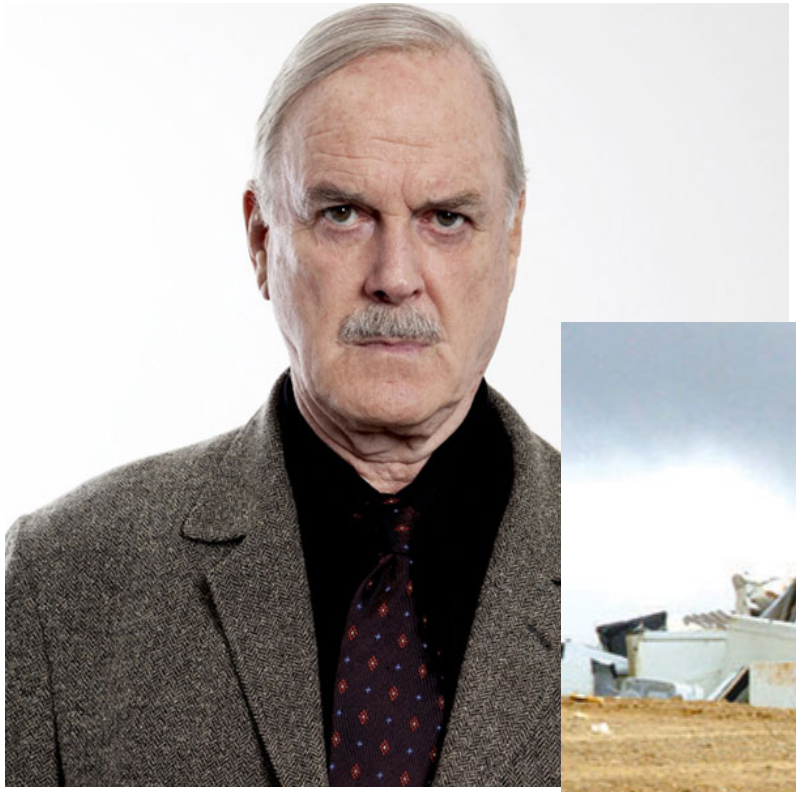
About ‘Palmy’



- It’s a city (honest)
- Population 86000
- Tertiary education and research (agriculture), and defence

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MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

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OGC TC

- Will run week after ISO TC 211 meeting in Wellington
- Environmental Observation Data Summit
- Ocean Data Networks Ad Hoc
- Engagement with NZ and Australian geospatial community
- Registration open soon

Location Powers Summit

- Friday 8th December
- Focus on data and data interoperability in agriculture
- Topics: *Precision Agriculture; Farm Information Systems/GIS; Big Ag Data; Supply chains, distribution and traceability; interoperability with science and government, ag data standards*
- Range of NZ and international presenters

ISO/TC211 45th Plenary

Wellington, NZ

- immediately prior to OGC 27Nov – 1Dec
- project meetings, workshops, seminars, & plenary
- on the modern downtown campus @ Victoria University of Wellington
- cosmopolitan capital city; energetic personality.
- right in the heart of Middle Earth

STANDARDS NEW ZEALAND
PAEREWA AOTEAROA

Land Information New Zealand
Toitū te whenua

LANDCARE RESEARCH
MANAAKI WHENUA

Australian Government
Department of the Prime Minister and Cabinet

VICTORIA UNIVERSITY OF WELLINGTON

Stats NZ
Tatauranga Aotearoa

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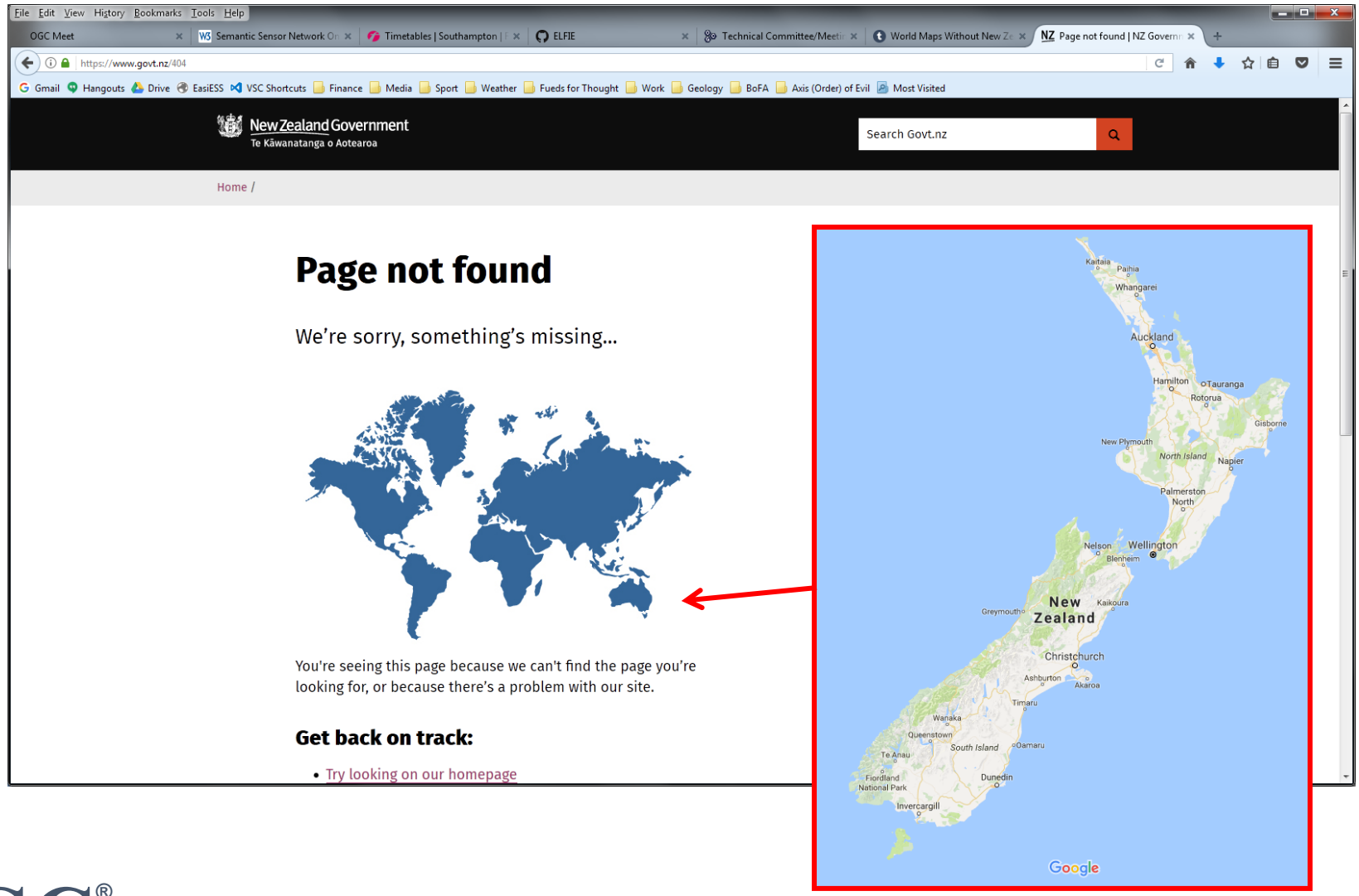
Getting There



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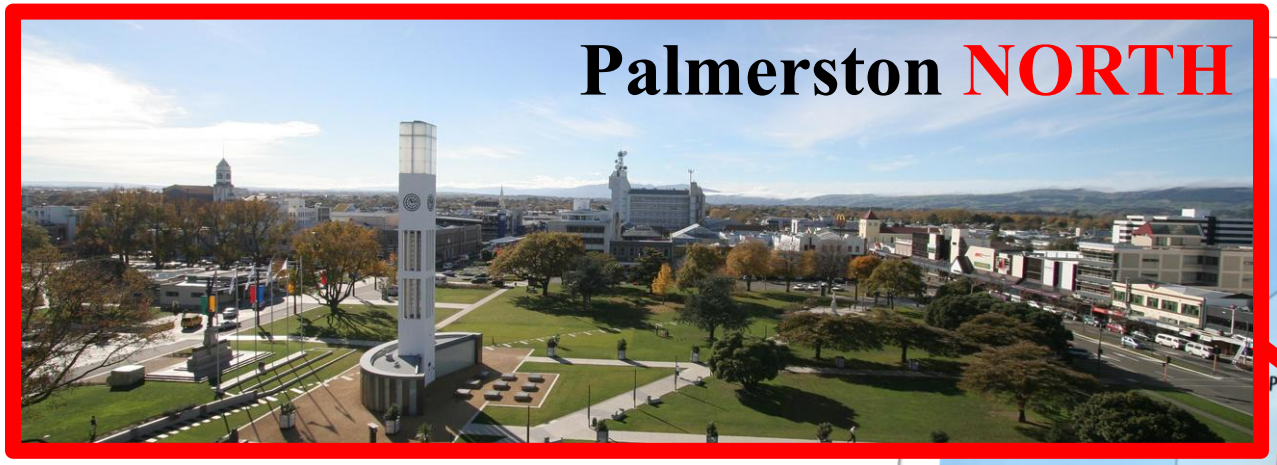
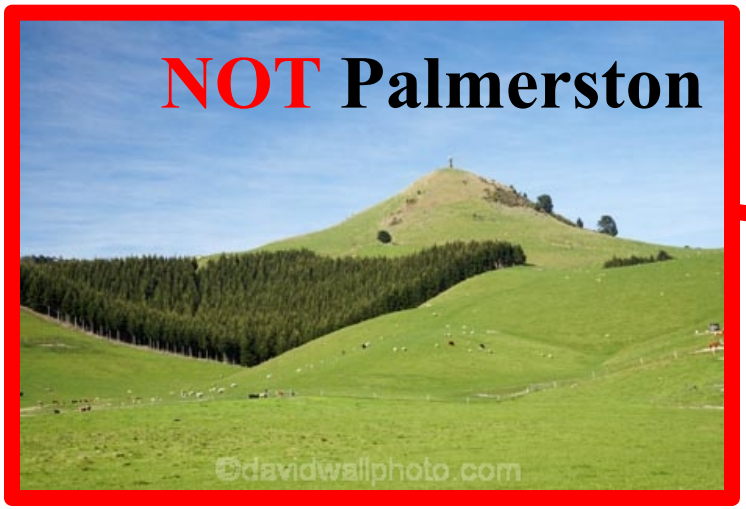
Map Data © 2017 Google

Getting There





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Via Auckland

- Main hub for most international airlines
- Can then …
- Fly
  - 1h10m
  - 10 flights on December 3
- Drive
  - 6-7 hours (non-stop)

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Via Wellington

- Capital City
- Hosting TC/211 the previous week
- Can drive
  - 2 hours

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While you're there …

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Hosted by

LANDCARE RESEARCH
MANAAKI WHENUA

Sponsored by

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horizons
regional council

Gold sponsors

koordinates

Silver sponsor

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Link

Technical / Planning Committee Meetings

Date	Location	Host/Sponsor
11-15 Sept 2017	Southampton, UK	Ordnance Survey
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
17-21 September 2018	Stuttgart, Germany	HTF Stuttgart
December 2018	North America	
March 2019	Asia-Australasia	

Who wants to host or sponsor?

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TC Chair Announcements and Motions

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Congratulations to the SDWWG

- Congratulations to the SDWWG! **Spatial Data on the Web Best Practices** [OGC15-107r1] is now an official OGC Best Practice. The document is published here: https://www.w3.org/TR/sdw-bp/.

- Special thanks to the editors: Jeremy Tandy, Linda van den Brink, and Payam Barnaghi

- And to the dedicated contribution from both OGC and W3C membership

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Congratulations to the GeoRSS submitters

- Congratulations to the GeoRSS submitters! **GeoRSS** [OGC17-002r1] is now an official OGC Community standard. The document is published here: http://docs.opengeospatial.org/cs/17-002r1/17-002r1.html.

- Special thanks to the editor: Carl Reed

- And to the submitting organizations: Carl Reed and Associates, Mikel Maron (as an individual), Tumblingwalls, Galdos, IBM

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Congratulations to the I3S submitters

- Congratulations to the I3S submitters! **Indexed 3D Scene Layers (I3S) and Scene Layer Package Format Specification** [OGC17-014r5] is now an official OGC Community standard. The document is published here: http://docs.opengeospatial.org/cs/17-014r5/17-014r5.html.

- Special thanks to the editors: Carl Reed and Tamrat Belayneh

- And to the submitting organization: Esri

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Congratulations to the GeoPackage SWG

- Congratulations to the GeoPackage SWG! **OGC GeoPackage 1.2** [OGC12-128r14] is now an official OGC standard. The document is published here: https://portal.opengeospatial.org/files/12-128r14.

- Special thanks to the editor: Jeff Yutzler

- And to the submitting organizations: Envitia, Luciad, Sigma Bravo, The Carbon Project, U.S. Army Geospatial Center, U.S. National Geospatial Intelligence Agency

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Congratulations to the LandInfra SWG

- Congratulations to the LandInfra SWG! **OGC InfraGML Part 7** [OGC 16-107] is now an official OGC standard. Final publication is in progress.

- Special thanks to the editor: Paul Scarponcini

- And to the submitting organizations Bentley Systems, Inc., Aalborg University, Dept. of Development & Planning. Trimble Inc., Leica Geosystems, Autodesk

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Inactive Working Groups

- The following Working Groups seem to be inactive. Shall they be archived?
  - Catalogue Services - ISO Metadata Application Profile 2.0 SWG
  - Context RWG
  - Earth Observation Extension Package of ebRIM profile 1.0 SWG
  - ebRIM AP of CSW SWG
  - ebXML RegRep SWG
  - Education Sub-Committee
  - GeoServices REST SWG
  - GovFuture
  - I15 (Cataloging of ISO19115 Metadata) Extension Package of ebRIM Profile of CS-W 1.0 SWG
  - Oblique Imagery DWG
  - OLS 1.3 SWG and OLS RWG 2.0
  - REST SC
  - RESTful Services Policy SWG
  - UML DWG
  - WFS Gazetteer Profile 1.0 SWG
  - XLink Transition
- Please let me know if there is any reason to keep these active.

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Status

- Databasing/linking of Policy Directives – in work
- Standards Incubator – working on OpenAPI integration
- TC Policies and Procedures – get ready for a revision to be briefed in Palmerston North

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WG Reports not to be briefed

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Not being briefed today

- OWS Context SWG
- PipelineML SWG
- Point Cloud DWG
- Security DWG
- SensorThings API SWG
- Simple Features SWG
- SWE DWG
- WFS/FES SWG

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ON DECK:

Symbology and Encoding ad hoc

Geosemantics DWG

3 – Z

WG Reports with TC Motions

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Ordnance Survey

JAG Report

104th OGC Technical Committee
Southampton, United Kingdom
Scott Simmons
14 September 2017

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ON DECK:
3DIM DWG
3D Portrayal SWG

3 – Z

WG Reports

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3DIM DWG

104th OGC Technical Committee

Southampton, United Kingdom

Jantien Stoter, David Graham, Carsten Rönsdorf

14 September 2017

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Agenda

- 3D NYC - Thomas Kolbe, TUM (20 min)
- Discussions OGC et acteurs éventuels sur montage FCP2 - Bart, OGC (45 min)
- Community Energy Management System ADE, Keiji Yamada, KOKUSAI KOGYO Co., Ltd. (20 min)
- Testbed 14 ideas (discussion)

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Activity Summary

- Discussion topics
  - Results of FCP1 and discussion on use cases for FCP2 (see next slide)
  - Ideas for testbed 14: Some FCP2 ideas are likely more suited for testbed 14 + Workflow for urban planning where different application-specific CityGML data is served from one base
  - Need for repository for (informal) CityGML ADEs -> added to citygml.org https://www.citygml.org/ade/
- Coordination (ongoing and planned)
  - On IFC/CityGML with IDBE and EuroSDR
- Upcoming deliverables
  - Not planned any
- Future meetings
  - Next TC meeting

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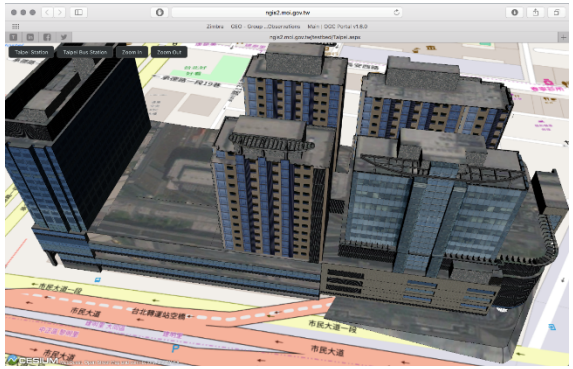
Call for Interest, FCP2

- Recap of FCP1
  - Major outcomes

- Discussion on FCP2 topics
  - From members, IDBE, EuroSDR, projects, …
- Timeframe: 2018, 1Y



- Next step: Bart to compile the topics, and create a comprehensive text for the portal and public website – and starting the call for Sponsors process.
  - Including promoting at events and presentations

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Ideas for use cases in FCP2

- Data security and privacy
  - SSO – protected sensors, protected parts of the city model
- Data – data sponsors
  - Link with CityVerve project – usage of data
  - Make data from FCP2 available to other smart city projects
- Learn from IDBE use cases
- Use case: link to mobility/tranportation/mobility concepts
  - Lots a data, how to combine those
- Urban energy, more complex simulations
  - Eg wind models (intrincicably 3D)
- Use of 3D portrayal service
- Finding the right cities to partner with
  - Combine problem solving and data availability
- Most building in 2D, not yet in 3D
  - Generating IFC from CityGML (IFC is missing)
- Convert IFC to CityGML, retaining link between the objects/surfaces
- Spaces are very important – better support for spaces
- Link CityGML to IndoorGML – link with spaces
- Paralyzing simulations
- 3 use case in NL
  - Use of IFC in urban planning (similar to FCP1) – building permit
  - Object life cycle (large infra – bridges, tunnels, … cfr RWS)
  - Integration BIM in geological sub-surface
- Code-checking using IFC/CityGML
- Architects to get context information (env) to see impact of their design
- Urban designers, not using citygml
  - Use of Paper maps
  - Create eco system of tools that can consume cityGML (incl editors)
- Use of the 3D City Model (eg Rott) in urban planner environment
- Test with editors that speak CityGML 2 and CityGML 3

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Ordnance Survey

Aligning LandInfra/InfraGML & CityGML

104th OGC Technical Committee

Southampton, United Kingdom

Carsten Rönsdorf, Jantien Stoter

14 September 2017

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Agenda

1. Why to align, Steve Smith
2. Scope and design principles of LandInfra, Paul Scarponcini
3. Scope and design principles of CityGML, Thomas Kolbe
   Aligning approach from LandInfra perspective, Hans-Christoph Gruler
4. Aligning approach from CityGML perspective, Jantien Stoter
5. Implementation of CityGML and LandInfra / InfraGML for a BIM acoustic use case: lessons learned, Emmanuel Devys, IGN France

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Activity Summary

- Discussion topics
  - Two OGC standards developed for different purposes with overlapping concepts
  - Some concepts have same name and different definition; some have different name and same meaning
  - Consensus that aligning is needed

- Upcoming deliverables
  - Not planned any

- Coordination (ongoing and planned)
  - Collaboration between involved SWG's and DWG's
  - Discussion driven by use cases from OGC members

- Future meetings
  - 2nd meeting agreeing on next steps

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Two standards; two purposes

CityGML

- Semantic information model for ***representation of 3D urban objects to be shared over different applications***
- Focus on model of city

LandInfra/InfraGML

- ***Land development*** & ***design of facilities***
- Provides environment on which facilities exists
- Subsurface, Terrain, Landdivision, Surveying
- Focus on Sites

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Some overlap?

CityGML		LandInfra
• Waterbody/VegetationObject	⟷	• LandFeature: LandElement
• Relief	⟷	• LandFeature: LandSurface (TIN)
• LandUse	⟷	• LandDivision
• Railway (Transportation)	⟷	• Railway
• Road (Transportation)	⟷	• Road
• Bridges, Buildings, Tunnels, Railways, Roads	⟷	• FacilityPart

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Road Overlap?

CityGML

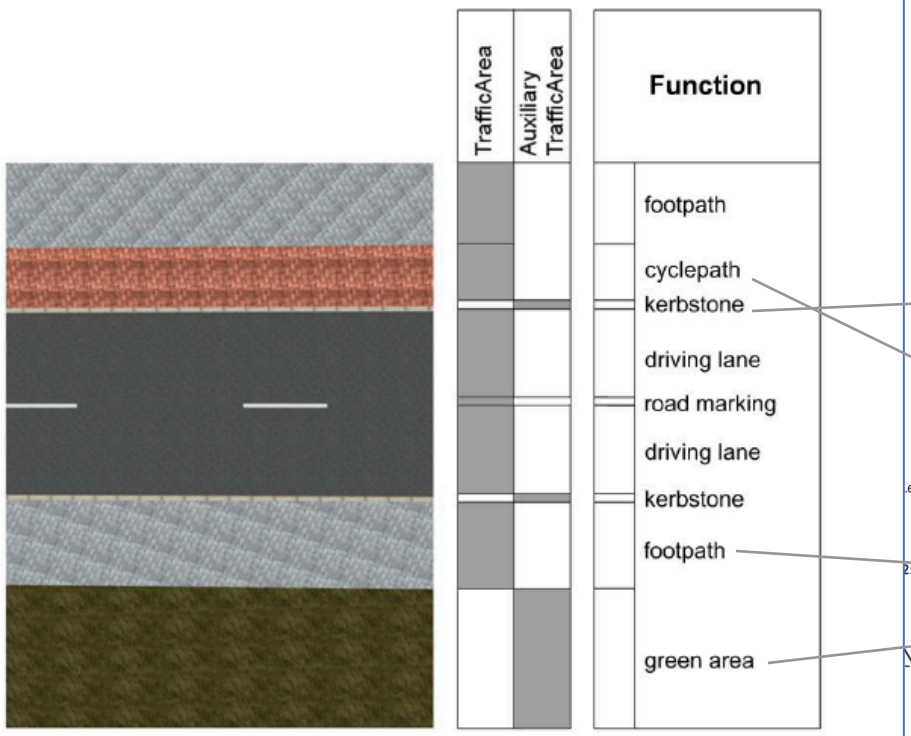

Fig. 61: *TransportationComplex* in LOD 2-4: representation of a road with a complex cross-section profile (example shows urban road) (source: Rheinmetall Defence Electronics).

LandInfra

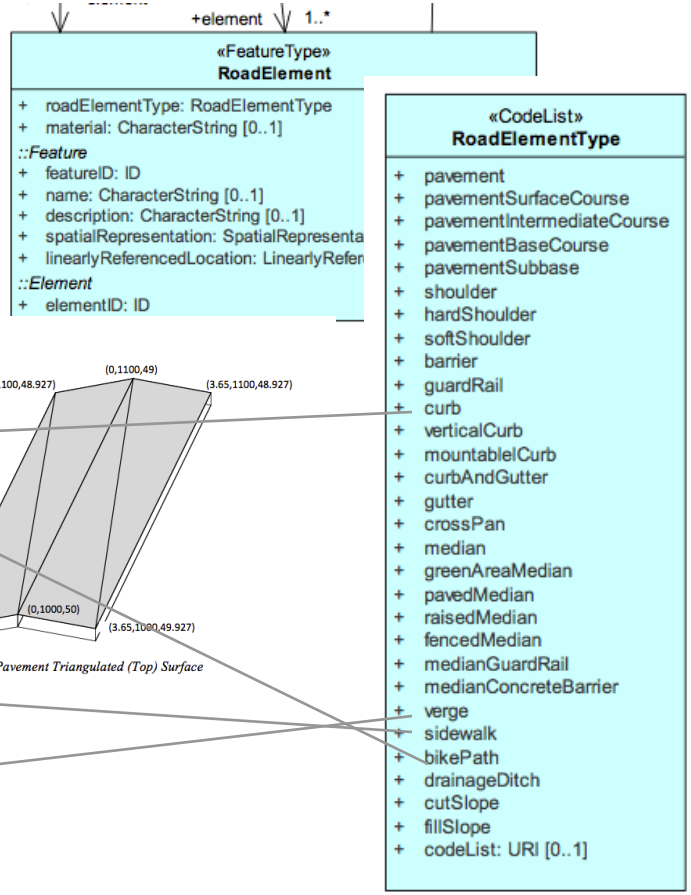

Figure 9. Pavement Triangulated (Top) Surface

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Related concepts

CityGML Building Unit

- *A semantic object for representing subdivisions of a building with their own lockable access from the outside or from a common area (i.e. not from another BuildingUnit), which are atomic, functionally independent, and may be separately sold, rented out, inherited, etc*

LandInfra Building part

- *Floor-related part of a multi-storage building, subdivided according to management and use by a lawful process*

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IDBE SC Agenda

104th OGC Technical Committee

Southampton, United Kingdom

Carsten Rönsdorf in absence of any selected chairs

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Objective

The goal of the IDBE SC is

to increase interoperability between the geospatial and built environment domains,

specifically through coordination of standards development activities

of the OGC and buildingSMART International (bSI).

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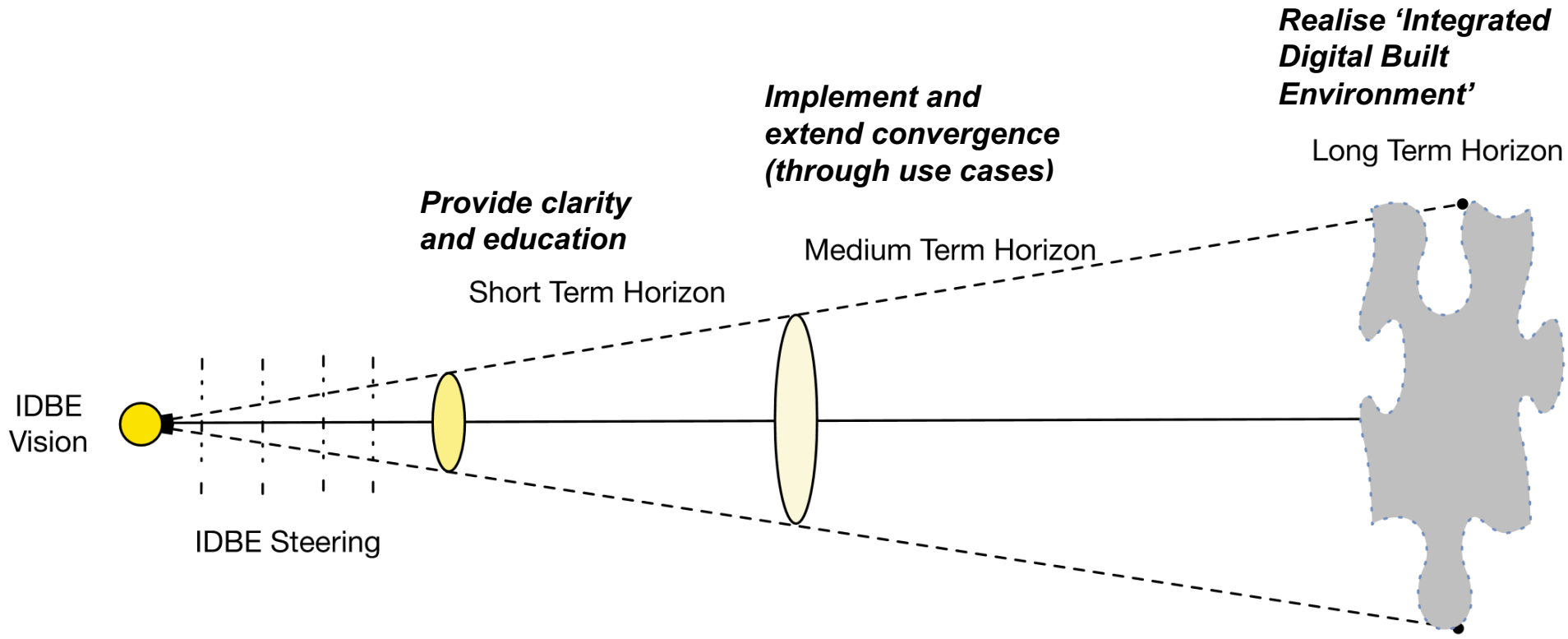
IDBE vision


Realise 'Integrated Digital Built Environment'
Long Term Horizon
Implement and extend convergence (through use cases)
Medium Term Horizon
Provide clarity and education
Short Term Horizon
IDBE Vision
IDBE Steering

Long term:
Realise Integrated Digital Built Environment

- Maybe 5-10 years
- Data completely decoupled from tools
- Lots of tool support
- Holistic, integrated modular built environment approach and standard that is universally used
- Data market place with trusted data stores in place

Integration/interoperability

Approaches/framework (4 levels):

1. Formalising and relating modelling techniques
2. Joint conceptual model
3. Linking of conceptual models
4. Instance linking

Agenda

- Overview of bSI (Richard Petrie, bSI)
- Over view of SC, whitepaper, objectives, time horizon (Carsten)
- Developing a use-case driven conversion between IFC and CityGML: results, recommendations and plans for a EuroSDR follow-up" (Ken Ohori Arroyo, Abdou Diakitie, Hugo Ledoux and Jantien Stoter)
- FCP2 plans and relationship with IDBE (Bart)
- Differences and commonalities - future activities to agree these (Carsten)
- Feedback on ISO stage 0 NWIP (Scott, Carsten)

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Activity Summary

- Discussion topics
- Election of chairs: postponed to next meeting

- Upcoming deliverables
  - TC chair to clarify how the IDBE SC can/should initially operate under the policy framework of both organisations + IDBE planning committee to confirm membership
  - Explanation of differences in conceptual modelling approaches OGC and bSI

- Coordination (ongoing and planned)
  - 3DIM, LandInfra
  - bSI (buildingSmart International)

- Future meetings
  - 2 Nov 2017 London: bSI summit
  - 6 Nov 2017 London: Planning Committee
  - 7 Nov 2017 London: Modeling panel

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3D Portrayal Service

104th OGC Technical Committee
Southampton, United Kingdom
V. Coors
14 September 2017

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Agenda

- TOP 0: 3DPS SWG and Testbed 13
- TOP 1: Status Publication 3DPS Standard Document
- TOP 2: Election of Vice-Chair
- TOP 3: Cesium, 3D Tiles and CityGML
  - Shehzan Mohammed, AGI via goto Meeting
- TOP 4: Interoperability of i3s and Cesium using 3DPS
  - V. Coors, HFT Stuttgart
- TOP 5: CityGML to i3s and 3D Tiles conversion for 3D Modeling
  - C. Dahmen, conterra

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Architecture DWG

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Southampton, United Kingdom

Carl Reed

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Agenda

- Chair Handoff Plan
  - Gobe Hobona will assume the Chair Position. Carl Reed has stepped down.
- Testbed 13: Update on Vector Tiling. Stefano Cavazzi
- OGC JSON Best Practices. Joan Maso
- OGC and Metadata – Going Forward. Carl Reed

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Activity Summary

- Discussion topics
  - Update on status of TB 13 Vector Tiling activity. ER is in progress
  - Presentation on OGC JSON Best Practices. Resulted in Action
  - Presentation and Discussion on Metadata for CDB version 1.1. Good discussion and suggestions

- Upcoming deliverables
  - Final review and discussion of OGC TB 13 Engineering Reports
  - Draft OGC JSON Best Practices

- Coordination (ongoing and planned)
  - CDB Metadata Activity
  - Related OGC JSON standards activities

- Future meetings
  - Agreed to one or two teleconferences on JSON draft document prior to New Zealand meetings.
  - Next TC Meeting
  - <special forum or conference>

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Key activities and actions

- Gobe Hobona approved as new chair for Architecture DWG
- Action: The Architecture DWG endorses the creation of an OGC Best Practice on the use of JSON and JSON-LD for encoding OGC content. They have accepted the action to develop a strategy for creating this Best Practice.
- Some recommendations for CDB metadata work
  - Related to how to accommodate the use of different metadata standards or profiles of those standards
  - Element names in CDB should be based on some common metadata standard (19115?)
  - Short in development document on CDB 1.1 metadata clauses. DWG agreed to review.

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Big Data DWG

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Southampton, United Kingdom
Charles Heazel
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Agenda

- GEOINT Metadata Catalog - Steven Thomas (Ball Aerospace)
- Federation Management - Dr. Craig A. Lee (Aerospace Corp.)
- Simple Features for Cloud - Raj Singh (IBM)
- JTC 1/WG 9 - Big Data – Ingo Simonis (OGC)

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Activity Summary

- Discussion topics
  - NIST/IEEE Cloud Federation standards effort
  - ISO work on Big Data Terminology and Reference Architecture
  - Metadata extraction and cataloging for Big Data environments
  - Simple Features for Big Data

- Upcoming deliverables
  - Charter for Simple Features activities (October 2017)

- Coordination (ongoing and planned)
  - NIST/IEEE
  - ISO JTC 1/WG 9

- Future meetings
  - December 2017 TC (Charter)
  - March 2018 TC (First face to face)

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Key activities

- Cloud Federation:
  - NIST/IEEE standardization effort has begun
  - Potential OGC role?
  - Proposed for Testbed 14
- ISO JTC 1/WG 9:
  - ISO/IEC 20547 – Big Data Reference Architecture (May 2019)
  - ISO/IEC 20546 – Big Data Vocabulary (October 2018)
- Cloud Metadata:
  - General interest in leveraging this work
  - Presenter invited to participate in MetOcean Profile Workshop on Friday
- Simple Features:
  - Chuck will send out emails to Big Data DWG to define the work and find interested partners
  - Proposed schedule is on next slide

Potential Conflict?

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Plan for Simple Features

- Convene idea at meeting at Big Data WG (Sep 12)
- Establish a group to develop a Charter (Sep 12)
- Charter document is created (Sep)
- Announced Charter to the TC (Oct)
- Press release and public review (Oct)
- TC approves Charter (Dec at New Zealand)
- Work starts (Jan 2018)
- First face to face meeting at Orleans, France (March 2018)

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CDB SWG

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Southampton, United Kingdom
David Graham and Carl Reed
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Agenda

- Introductions, welcome, etc. David Graham
- Thoughts on CDB 2.0, Roger Brackin, Envitia
- SWIR Extension. Ryan Franz
- Testbed 13 activity update, Sara Saeedi, U of C
- Review of CDB Change Requests. David Graham, Carl Reed
- Version 1.1 update. Carl Reed
- Metadata. Carl Reed

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CITE SC

104th OGC Technical Committee
Southampton, United Kingdom
Gobe Hobona (OGC)
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Agenda

- Update Compliance program (Luis Bermudez, OGC)
- Update Validation Tools (TEAM Engine, tests, roadmap etc.) - Dirk Stenger, Iatlon
- OGC Validation of instances and monitoring SLA performance (Forest Gafford Image Matters)
- Compliance Testing and Microservices (Chuck Heazel, WISC)
- Update INSPIRE Compliance activities (Giacomo Martirano, Epsilon-IT)
- Testbed 13 Update and possible ideas for Testbed 14 (Luis Bermudez, OGC)

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CITE SC – Key Activities (1/2)

- There was an update on the Compliance program, including an introduction of LatLon as the new TEAM engine product manager.
- LatLon provided an update, explaining that they have added new features that include support for Docker, provision of a REST interface and the ability to export HTML reports.
- The vision for monitoring SLA parameters such as uptime, the passing of test suites, performance and capacity was presented.
- The need to engage with the Quality of Service working group was identified.
- There was a presentation on compliance testing and micro services which relates to future WFS 2.x and ultimately to WFS 3.0.

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CITE SC – Key Activities (2/2)

- Some of the changes expected would include support for HTML encoded capabilities responses.
- A number of validation strategies for JSON and JSON-LD are currently being looked into. The work being done in Testbed-13 on SHACL is potentially relevant.
- There was a presentation on INSPIRE compliance.
- The deadline for member states to be compliant to Annex I of INSPIRE is November 23rd 2017.

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Citizen Science DWG

104th OGC Technical Committee

Southampton, United Kingdom

Joan Maso

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Agenda

- Announcement about the CS workshop in the GEO Plenary in Washington DC
- On Data Interoperability for Public Participation in Scientific Research (Sven Schade EC)
- Standards for data access: Applying SWE4CS to Groundtruth 2.0 demo cases (Joan Maso)
- Standards for project description (in connection with the COST Action CA15212 (Joan Maso)
- How to move an interoperability experiment to integrate mosquito CS projects into a UN Global Mosquito Alert (Anne Bowser)

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Activity Summary

- Discussion topics
  - How to describe CS projects
  - How to share information
  - How to scale projects up by interoperate among similar ones misquito
  - Single sign-on (in the corridors)

- Upcoming deliverables

- Coordination (ongoing and planned)
  - COST Action on CS
  - CSA-ECSA-Australian
  - UN global mosquito alert
  - Cit. Obs. EC projects coordination

- Future meetings
  - The meeting in GEO plenary in Washington DC
  - Next TC Meeting could focus on the Australian prospective
  - COST action meetings

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COMC SWG Report

104th OGC Technical Committee

Southampton, United Kingdom

Lucio Colaiacomo

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Agenda

- Charter proposal discussion
- Next steps

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Coordinate Reference Systems Domain Working Group

104th OGC Technical Committee

Southampton, United Kingdom

Keith Ryden

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Agenda

- Status update – joint ISO 19111/OGC Topic 2 updates for support of dynamic datums. **Roger Lott**
- Coordinate Reference systems for DGGS – what does it mean? **Dr. Matthew Purss**
- Interest has been expressed in organizing an OGC Testbed project for coordinate reference systems?
  - Who is willing to participate?
  - What do we want to accomplish?
    - Test validity of CRS WKT?
    - Validate coordinate projections/transformations?
    - Test dynamic datum implementations?
    - Other?

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Activity Summary

- Discussion topics
  - Status of ISO 19111 Editing
  - DGGS Overview
    - Geodetic implications

- Upcoming deliverables
  - Submission of CRS testbed activities for Testbed 14 due end September

- Coordination (ongoing and planned)
  - Call for Palmerston North CRS DWG topics – possible focus on Asia-Pacific topics
  - Call for interest in CRS testbed activities

- Future meetings
  - Wellington:
    - Joint ISO/OGC 19111 editing
  - Palmerston North:
    - CRS DWG

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CRS SWG

104th OGC Technical Committee
Southampton, United Kingdom
Roger Lott
14 September 2017

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Agenda

1. ISO 19111 CD editing committee meeting
   - Tuesday 2017-09-12
   - 455 comments received on draft

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CRS DWG – Coverages DWG Joint Meeting

104th OGC Technical Committee

Southampton, United Kingdom

Roger Lott

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Agenda

1. Topic 2 issues – Roger Lott
2. CRSs in grid coverages – Peter Baumann
3. CRS and Grids (17-072) – Eric Hirschorn
4. Discussion – boundary between topic 2 and topic 6

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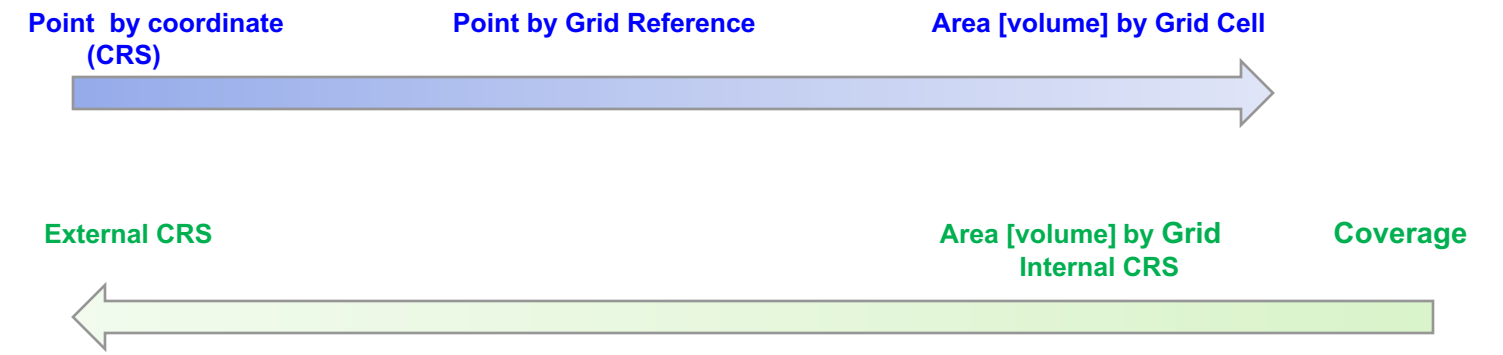
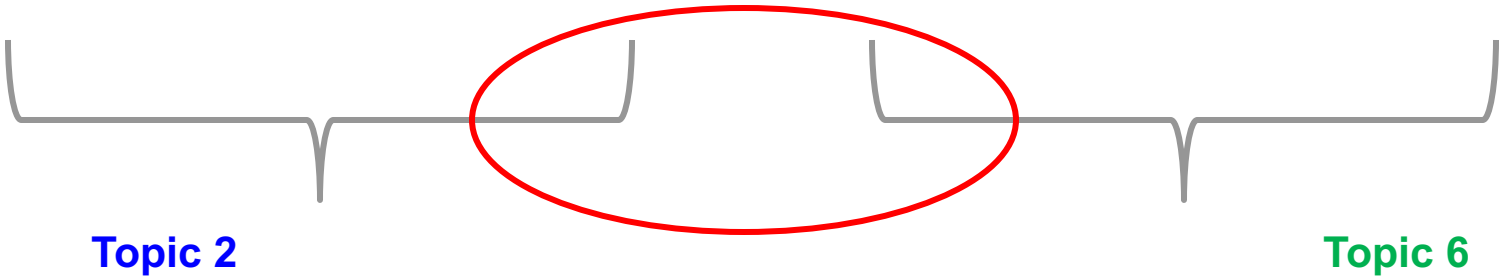
Topic 2 and Topic 6





We need to mind the gap

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Activity Summary

- Discussion topics
  - Topic 2 (ISO 19111) undergoing revision [for modern geodesy]
  - Gap perceived in CRS <> grid relationship
  - 19123-1 (Topic 6) under revision in ISO

- Upcoming deliverables
  - Image CRS not fit for purpose
    - Topic 2 will exclude
  - Topic 2 will include all CS definitions to support coverages ('ordinal CS')
  - Abstract description of CRS <> grid and cube slicing to be added to Topic 6

- Coordination (ongoing and planned)
  - Motion for TC211-OGC JAG meeting passed (no objection to unanimous consent)

- Future meetings
  - CRS SWG will provide support to 19123-1 revision

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D&I DWG Report

104th OGC Technical Committee
Southampton, United Kingdom
Cheryl Nayyar, Lucio Colaiacomo
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Agenda

- Future Geo
  - DSTL Proposition
  - OGC future direction
  - DGIWG
  - Interoperability and other communities
- Quick Fire Talks
- D&I DWG
- Workshops
  - Data science analytics
  - The power of location
  - New geo sources
  - User platforms and networks

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Activity Summary

- Discussion topics
- It has been established as starting point the OGC Geo Tech Trends 2017 schema for new activities
- Workshops has been established about 4 main areas
- Defence and Intelligence related topics are 60-70 % of the entire OGC topics
- Context is a very important topic

- Upcoming deliverables
  - Closing plenary resume from UK MOD DSTL

- Coordination (ongoing and planned)
  - none

- Future meetings
  - next TC Meeting

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Discrete Global Grid Systems Domain Working Group

104th OGC Technical Committee

Southampton, United Kingdom

Matthew Purss

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Agenda

- Vote on new co-chairs;
- Review of scope of work for the DWG
- Review and discussion of current outreach activities;
- Presentation
  - "DGGS for Open Point Cloud Data Handling: Location, Time, and Scale". (Neeraj Sirdeshmukh - Delft University of Technology)
- Presentation
  - "The Road Ahead" (Zoheir Sabeur – Southampton University)
- Update and discussion on the establishment of the OGC DGGS Reference Implementation Registry
- Other Business

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Activity Summary

- Discussion topics

  Election of Founding co-chairs
  - Zoheir Sabeur – Southampton University (UK)
  - Peter Strobl – JRC (Italy)
  - Matthew Purss – GA (Australia)
  - Perry Peterson – PYXIS (Canada)
- Discussion from floor on cross-cutting Issues with Topic 2 and Topic 6

- Upcoming deliverables
  - OGC DGGS Registry of Reference Implementations
  - Insertion of references to DGGS in the revised version of ISO 19123-1 and Topic 6

- Coordination (ongoing and planned)
  - CRS
  - WCS
  - SWE
  - CITE
  - ISO (TC-211 WG-6)

- Future meetings
  - Teleconference in 6 weeks
  - New Zealand TC & ISO meetings
  - Strong interest in holding a joint CRS-DGGS-Coverages workshop/session during the NZ TC Meeting to further explore touch points and cross-cutting issues between Topics 2, 6 and 21

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Key activities

- A rolling roster for co-chairs has been established to:
  - Ensure the leadership team remain energized with opportunities for new members to step up to the co-chair role
    - 4 co-chairs with 1 co-chair role to be re-filled every 2 years
  - Establish a geographic coverage of DWG chairs to enable local co-chairs to host face-to-face meetings
- Discussion from the floor on cross-cutting issues with Topic 2 and Topic 6:
  - Are there implications for Topic 2, 6 and 21 regarding the application of DGGS technologies to dynamic datums and large scale statistical analyses.
  - This appears to be more of a consideration for specific use case scenarios for DGGS rather than requiring significant change to Topic 21
  - Further discussion of these issues is warranted during the next TC

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Key activities

- Work is progressing towards of the OGC Registry of DGGS Reference Implementations
  - No detailed discussion during this TC
  - Active engagement with OGC Staff and CITE SC is underway with the potential for a pilot demonstration registry to be presented and discussed for further elaboration during the New Zealand TC.

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Discrete Global Grid Systems Standards Working Group

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Southampton, United Kingdom

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Agenda

- Vote on new co-chairs.
- Review, and update as necessary, the regular schedule and roster for hosting SWG teleconferences
- Planning/Scoping the DGGS Best Practice Guide to the Abstract Spec
- Planning/Scoping the suite of extension Protocols/Implementation Standards that are needed
- Other Business

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Distributed Simulation and Gaming ad-hoc

104th OGC Technical Committee

Southampton, United Kingdom

David Graham

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Agenda

- Open Discussion
- OGC Member support for the formation of a new Domain Working Group, tentatively named “Distributed Simulation and Gaming”

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Activity Summary

- Discussion topics
  - Gaming, Serious Gaming
  - Distributed Simulation

- Upcoming deliverables
  - Draft DWG Charter
  - Solicitation of potential co-chairs

- Coordination (ongoing and planned)
  - OGC Staff
  - TC to review/approve DWG Charter

- Future meetings
  - Possible DWG meeting in New Zealand

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DocTeam

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Scott Simmons
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Agenda

- Community standard topics: Carl Reed
- Security considerations in standards: Scott Simmons
- Common nomenclature for categories of standards (IS, AS, extension, profile, etc.); Scott Simmons
- Canonical links to important clauses; Ingo Simonis
- AsciiDoc Q&A; Ingo Simonis and Scott Simmons

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Activity Summary

- Discussion topics
  - Minor tweaks needed for Community standard process
  - Document templates and management
  - AsciiDoc is great… for some

- Upcoming deliverables
  - New templates for standards with many more tags and Security Considerations section
  - Taxonomy for document types in OGC

- Coordination (ongoing and planned)
  - Knowledge management system

- Future meetings
  - Next TC Meeting

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EDM-LEAPS DWG

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EDM/LEAPS Plenary

- Co-Chair Nominations/Vote – approved two new co-chairs
  - European: Richard Smith, Airbus Defence and Space
  - North America: Don Sullivan, US National Aeronautics and Space Agency (NASA)
- Presentations:
  - Disaster Response Support based on Dynamic Population Estimation using Mobile Phone Big Data; Nobuhiro Ishimaru; Hitachi
  - Body Worn Cameras, Mark Reichardt/Bart De Lathouwer, OGC Staff
- Discussion: 3D Portrayal Requirements
  - Held a discussion on 3D portrayal requirements, consensus on the need for best practices
  - Start with vendor agnostic terrain services
  - Strong second is for 3D features such as plumes related to MetOcean (hazard plumes, oils spills, etc.)

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Earth System Science
ESS DWG

104th OGC Technical Committee

Southampton, United Kingdom

Stefano Nativi

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Agenda

- Data Cube special session (organized by G. Percivall, M. Voidrot and S. Nativi)
  - Earth Server II project (Julia Wagemann)
  - Australia DataCube (Stuart Minchin)
  - ECMWF DataCube (Julia Wagemann)
  - Six Faces of DataCube (Stefano Nativi)

  - Final discussion about how to move on (all)

- Possible OGC standardization of GEOSS APIs: announcement (POSTPONED)

Final discussion and Resolution

- 25-35 attendees
- Discussion on:
  - DataCube innovations and challenges
  - Present OGC contributions to DataCube interoperability
  - The many viewpoints/needs/technologies to be considered for an effective DataCube system
- Considering a motion from Coverage WG
  - ESS **Motion**: Convene ad-hoc meeting(s) to prepare the charter for a DataCube Domain WG

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GeoAPI report

104th OGC Technical Committee
Southampton, United Kingdom
Martin Desruisseaux
14 September 2017

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Agenda

- History, purpose, approach
- Demo using 2 independent implementations
- Which OGC/ISO standards are in GeoAPI
- Discussion

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GeoScienceDWG

104th OGC Technical Committee – GeoScience DWG session

Southampton, United Kingdom

Mickaël BEAUFILS (BRGM) & Carina KEMP (GeoScience Australia)

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Agenda

- Administrative stuff
  - Set up of a mail list
  - Wiki page
  - Election of co-chairs

- Presentations and discussion about Borehole description
  - 8h45: Updates on boreholes in EPOS: architecture, BoreholeView (Sylvain GRELLET - BRGM) x2
  - 8h55: Updates on boreholes in EPOS: BoreholeUML model (Henning LORENZ - Uppsala University)
  - 9h00: GeoSciML & GWML for boreholes (Eric BOISVERT - Natural Resources Canada) x2
  - 9h10: WitsML (Jean-François RAINAUD - Energistics)
  - 9h15: Discussion

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Agenda

- Presentations and discussion about 3D geomodelling / urban geology / geotechnics / BIM
  - 10h20: Updates on models exchanges in EPOS (Sylvain GRELLET - BRGM)
  - 10h25: ResqML (Jean-François RAINAUD - Energistics)
  - 10h30: 3D geomodel metadata description (Gerold DIEPOLDER - Bavarian Environment Agency)
  - 10h35: i3DGS (Laurent AILLERES - Monash University)
  - 10h40: Geo3DML and CGS experience on urban geology (Honggang QU & Zhang MINGHUA - China Geological Survey) x2
  - 10h50: Standardizing access to geological models and geotechnical information: the SCUDDD and MINND projects (Mickael BEAUFILS - BRGM) x2
  - 11h00: Discussion and wrap-up of session

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Action

- A Borehole Interoperability Experiment is to be initiated by the GeoScienceDWG targeting a common Borehole conceptual model
- Discussion: Interested parties identified
- Action : Sylvain Grellet (BRGM) to initiate a draft charter

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Action

- A Underground Model Discovey Interoperability Experiment is to be initiated by the GeoScienceDWG
- Discussion: Interested parties identified
- Action : Carina Kemp (GA) to initiate a draft charter

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Geosemantics DWG Report

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Josh Lieberman
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Agenda

- Stephen McCann – Testbed 13 DCAT / SRIM ER Overview
- Ed Parsons – Status of Spatial Data on the Web WG / IG
- Charles Chen – Aviation Taxonomies ER (presentation posted, but no power in Florida to connect remotel)
- Stephane Fellah -- Semantic Portrayal ER
- Discussion – next steps in OGC – W3C collaboration and SDW work items

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Notes

- Discussion topics
  - Appropriate work items for follow-on OGC – W3C IG coordination
    - Coverage ontologies
    - Basic spatial ontologies
    - Map element for HTML
    - Data access for spatial
  - Appropriate organization for follow-on

- Upcoming deliverables
  - Charter for a W3C JWOC
    - Rechartered DWG (Geosemantic tools function coordination with W3C / domain modeling function coordination with communities
    - **SubDWG**
    - Separate JWOC DWG

- Coordination
  - Coordination with renovated OGC NA and knowledge management
  - Coordination with vocabulary and domain model formalisms of other OGC groups
  - Outreach to publicize and act on SDWWG BP, etc.

- Future meetings
  - Charter consideration in advance of December TC

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Key activities

- Communicate and act on SDWWG products
- Plan for follow-on activities, products
- Decide and charter the next OGC – W3C coordinated activity
- Work with Gobe on naming and vocabulary advancements
- Support Testbed 13 geosemantics ER's with review and feedback
- Contribute Testbed 14 proposals, possibly linked with W3C follow-ons

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GMLJP2 SWG

104th OGC Technical Committee
Southampton, United Kingdom
Lucio Colaiacomo
14 September 2017

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Agenda

- Results of the electronic vote for gmljp2 2.1 L. Colaiacomo Satcen
- Presentation of the annotation extension (rev version) Ulf tennors L Colaiacomo
- Examples and updates on examples for georefereanceable imagery E. Hirschorn
- Presentation about sensor model E. Devys

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HDF SWG

104th OGC Technical Committee

Southampton, United Kingdom

Aleksandar Jelenak

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Agenda

- Review of the current version of the HDF5 Data Model Implementation Specification standard
- A SWG vote to make public the GitHub repository hosting the standard

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Land and Infrastructure SWG (LandInfra)

104th OGC Technical Committee

Southampton, United Kingdom

Paul Scarponcini

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Agenda

1. Verify membership / proxies / quorum
2. Approve agenda
3. Approve previous meeting Draft Minutes
4. Action Items
5. Updates
    - LandInfra 1.0
    - InfraGML
    - Code List Manifesto
    - DWG
    - bSI
6. Current Activity
    - IFC alignment verification
    - LandInfra II: Site, WUPI, Roadmap
7. Other Business
    - Other Southampton Meetings
8. Next Meeting(s)
9. Adjourn

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Marine DWG

104th OGC Technical Committee
Southampton, United Kingdom
Jonathan Pritchard
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Agenda

- Introductions, technology [5 mins]
- Presentations
  - “Semantically enhancing SensorML with controlled vocabularies in the marine domain”– Alexandra Kokkinaki, Senior data Scientist BODC [20 mins]
  - “Maritime Limits and Boundaries and IHO S-121” – Sébastien Durand, Canadian Hydrographic Service. [20 mins]
- External groups - [20 mins]
  - Formation of UN-GGIM Marine Working Group – [10 mins]
  - IOC Plan for Oceanographic Data and Information Management – [10 mins]
- AOB [5 mins]
- Point Cloud DWG crossover [20 mins]
  - Intro – The scope and work of the Point Cloud DWG - Stan Tillman [5-10 mins]
  - Bathymetry and Point Clouds – Jonathan Pritchard [10-15 mins]
- **Break (as per programme)**
- Open Discussion and Actions - Point Cloud collaboration

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Activity Summary

- Discussion topics
  - UN-GGIM MGIWG creation
  - IOC reachout from OGC, and IHO?
  - Bathymetry / point cloud use cases
  - Point Cloud potential for collaboration and ad hoc joint session

- Upcoming deliverables
  - White paper to IOC, benefits of standards, advantages of closer working and mutual representation.

- Coordination (ongoing and planned)
  - Point Cloud DWG, list of potential areas following meeting
  - Joint teleconferences and if enough interest a joint ad hoc session at a future (tbd) TC

- Future meetings
  - yes
  - NZ TC

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Key activities

- Main topics
  - Semantically enhancing SensorML in the marine domain. Links with BODC/IOC and highlights unique challenges in the marine domain and how semantics might bridge the different vocabularies
  - UN-GGIM MGIWG is a great opportunity to contribute to adoption of standards/best practice. MDWG welcome the opportunity to assist in any way.
  - Bathymetry provides a use case for point clouds. The quantity of data is increasing rapidly and will require new tools, techniques and technology.
- Milestones / Deliverables
  - White paper to IOC, input sought from group on content
  - Point Clouds
    - Identify some common areas and circulate to both groups (following Southampton TC meeting)
    - Poll both groups on interest in a joint meeting
    - Joint meeting at (next?) TC.

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Met Ocean Domain Working Group Report

104th OGC Technical Committee

Southampton, United Kingdom

Chris Little, Frédéric Guillaud, Steven Olson

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Met Ocean DWG Agenda

- Introductions, technology struggles [5 min – we're getting better!]
- Election of Co-Chair(s) for the DWG, Chris Little, [20min]
  - Presentation by candidates, [3min each]
- Open Weather WMO Web API for the global community, Rich Carne [15min+5min questions]
- Extending WCS2.1 to extract Trajectories, Pete Trevelyan [10min+5min questions]
- Reports on progress of other SWG work, Chris Little, Met Office [10min+5min questions]
  - WCS2.1 Extensions
  - WCS2.1 GRIB2 encoding
  - TimeseriesML1.1 & 1.2
  - CRS WKT & ISO19111
  - W3C SDW BP, Time, SSN, QB4ST Ontologies
- Prioritise future OGC/W3C/perhaps RDA work, Members [20min]
- Scene setting for Friday's workshop, Steve Olson [5min]
- AOB [5 min]

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Activity Summary

- Discussion topics

  Elected two new co-chairs to replace Marie-Françoise:
  - Frédéric Guillaud, Meteo-France
  - Steve Olson, NWS, USA

  WMO OpenWeather initiative

- Upcoming deliverables
  - WCS2.1 Trajectories Extension
  - WCS2.1 Polygon Extension
  - TimeseriesML 1.2, 1.3…

- Coordination (ongoing and planned)
  - WCS
  - TimeseriesML
  - CRS & WKT
  - W3C SDW Interest Group
  - WMO & OpenWIS Association

- Future meetings
  - Fortnightly telcos
  - New Zealand TC
  - Open planning Workshop tomorrow

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Key activities

- Rollout of WCS 2.1 Extensions to demos and operational status
  - Trajectories for Aviation
  - GRIB2
- Moving to API/Web services for data, and infrastructure such as registries, conceptual models, controlled vocabularies, ontologies

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Big Picture - 4

- Semantic Web / Web 2.0
- Lots of relevant metadata outside of containers
- Highly scalable
- Highly flexible
- Resolvable registries of controlled vocabularies happening
- Conceptual models can be stored as ontologies
- Ontologies allow valid machine reasoning

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Mobile Location Services

104th OGC Technical Committee

Southampton, United Kingdom

Giuseppe Conti, Ki-Joune Li, (George Percivall)

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MLS DWG Agenda

- Welcome and introduction;
- Indoor mapping and the best practice of the Municipality of Abu Dhabi City; Mustafa Almusawa Alhashemi - Smart Navigation Systems; 15 min
- Results from www.geoiotworld.com; Giuseppe Conti - Trilogis; 15 min;
- Testbed 14 planning; Ingo Simonis - OGC; 15 min
- NIST PSCR program for indoor location for first responders; Jeb Benson - NIST PSCR program for indoor location for first responders; 20 min
- AOB

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MLS DWG Activity Summary

- Discussion topics
  - Indoor mapping in Abu Dhabi City
  - Indoor location for first responders by US NIST PSCR
  - “Global Statement for Indoor Maps as Accessible, Open Data” to Geo IOT World

- Upcoming deliverables
  - Indoor topics for Testbed 14

- Coordination (ongoing and planned)
  - Ki Joune Li to send information to Jeb Benson and DWG about laser scanning for city model construction

- Future meetings

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MLS DWG Key activities

Good discussion about possible Testbed 14 topics by DWG

- NIST PSCR topics on indoor to seamlessly locate, track, and inform first responders while operating indoors.
  - Point-cloud to usable mapping and navigation formats
  - Map/data repository and distribution
- Discussion in DWG
  - Examples of experience of creating building models from point-clouds – e.g., Ki-Joune Li
  - Building models coming from BIM – Musatafa in Abu Dhabi
  - First responder could use visualized point cloud directly for nav
  - Machine learning techniques to identify first responder features of interest
  - Terminology - Localization vs. Positioning

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Moving Features SWG Report

104th OGC Technical Committee

Southampton, United Kingdom

Nobuhiro Ishimaru, Kyoung-Sook Kim, Ryosuke Shibasaki

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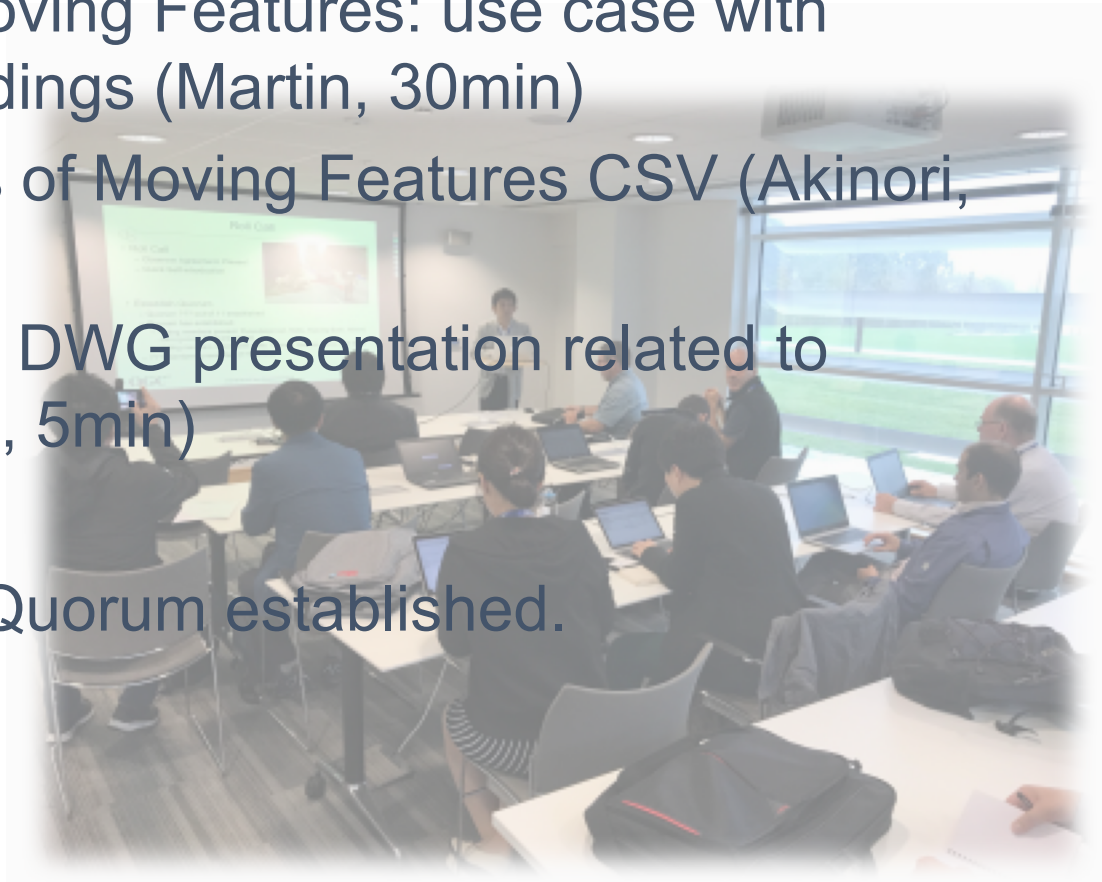
Agenda

13:00-13:50, Monday Sep 11 @ Stour Room

- 1. Roll call, General Introduction (Nobu, 10min)
- 2. GeoAPI model for Moving Features: use case with netCDF and CSV encodings (Martin, 30min)
- 3. Discussion on Issues of Moving Features CSV (Akinori, 10min)
- 4. Quick report on EDM DWG presentation related to Moving Features (Nobu, 5min)

21 members presented, Quorum established.



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netCDF SWG Report

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Southampton, United Kingdom
Ethan Davis and Stefano Nativi
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Agenda

Introductions

Update from Advancing netCDF-CF Workshop

OGC MetOcean Profile: Corridor data type, etc.

Update on EO-netCDF Discussion Paper (OGC 17-067)

Advancing netCDF-CF Workshop: topics for discussion

- Geometries (based on OGC Simple Features)
- Use of Group hierarchy, inheritance

Next Steps for OGC

Any Other Business

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OWS Common.SWG

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Joan Maso

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Agenda

- Analize the CRs pending about OWS Common and classify them in:
  - CRs that can be easily applied to the OWS Common 2.0
  - CRs that forces us to radical changes

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OWS Common Security SWG

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Southampton, United Kingdom

Andreas Matheus

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Agenda

- Draft standard V0.8 review
  - section 7.5
  - Annex B: Conformance Tests
- Discussion: Security Considerations

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Product Metadata and OpenSearch SWG Report

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Uwe Voges, Yves Coene

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Agenda

- Status Reports
  - SWG EOPMOS (Voges, conterra)
  - OGC 13-026r9 (Voges)
  - OGC 17-003 (Coene, Spacebel)
  - OGC 17-047 (Coene, Voges)
  - OpenSearch and OWS Context Related Change Requests (Goncalves, terraDue)
  - Discussion (All)
    - GeoJSON EO Collection / DataSeries Metadata (GeoDCAT, UMM-C)
    - CRs

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Quality of Service and Experience DWG

104th OGC Technical Committee

Southampton, United Kingdom

Michael Gordon

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Agenda

- Work topic progress & status
  - Survey for the most useful QoS metrics (Michael Gordon)
  - OGC Best Practice for providing QoS metadata for OGC Web Services
  - OGC Discussion paper for ensuring QoE of OGC Web Services
- Practical DWG issues
- Any other business
  - OGC Testbed 14

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Activity Summary

- Discussion topics
  - Surveying members on quality of their services, error rates etc – how big is the problem
  - How could OWS be implemented better – best practices for implementation?

- Upcoming deliverables
  - Discussion paper on Quality of Experience - will be seeking comments from relevant SWGs and DWGs before public comment

- Coordination (ongoing and planned)
  - Reach out to Institute for Catalonia
  - Metrics survey to W3C membership and OSGeo membership
  - Testbed 14 sponsorship

- Future meetings
  - Next telecon 10th October

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SensorThings API SWG Report

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Steve Liang
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Agenda

- OGC SensorThings API, Smart Cities and, LEaRN – Brian Miles, CGI
- OGC SensorThings API in HERACLES & beAWARE - Hylke van der Schaaf, Fraunhofer
- SensorThings API Part 2 – Tasking Core
- Change Requests Discussions

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SLD/SE 1.2 Working Group Report

104th OGC Technical Committee
Southampton, United Kingdom
O. Ertz / E. Bocher
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Agenda

- Portrayal interoperability
- Analysis of the situation
- Three major requirements
- Proposal for a common styling language
- Next steps

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Unmanned Systems (UxS) DWG Southampton TC #OGC17OS

104th OGC Technical Committee

Southampton, United Kingdom

Marcus Alzona, Rob Laudati, Don Sullivan

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Unmanned Systems (UxS) DWG Southampton TC #OGC®17

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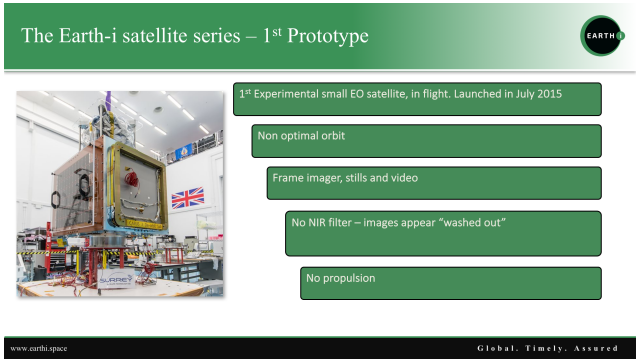
- (Hurricane UxS Ops & COOP)
- UxS Problem Statements
- Organization Relationships
- Global Unmanned Traffic Management
- Mission Plan Standard Conceptual Model
- Small Earth Observation Satellites for Images and Video



Geometry
- WKT Simple Features
- GML
- KML
- GeoJSON
- CSV

Coordinate Reference Systems
- Support EPSG
- Mandatory "WGS 84" and "Web Mercator" to accommodate hobbyist hardware?

Modality/Mobility
- Environment (fly, swim, drive)
- Remote-control vs. autonomous
- Full movement control vs. environmental control (e.g., balloons and free-floating buoys)

Sensors
- Active vs. Passive vs. none
- SWE
- SensorThings
- PUCK
- Other standards?

UNMANNED TRAFFIC MANAGEMENT

UNIFLY

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WMS.SWG

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Joan Maso
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Agenda

- Maps For HTML. Extending the Web with Maps; Peter Rushforth
- Thoughts on Progressing the WMS Standard; Peter Trevelyan
- WMTS time and elevation extensions; Cechini, Matthew F. Science Systems & Applications, Inc
- WMTS Tilematrixset abstract specification; Joan Masó; UAB-CREAF
- WMTS 1.1 spcification; Joan Masó; UAB-CREAF

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