

EDIAQI

Evidence
Driven Indoor
Air Quality
Improvement

Agenda – part 1

9:00 – 9:30
INTRODUCTION

- Presentations
- OGC Intro
- Data interoperability



9:30 – 10:00
SENSORTHINGSAPI

- Intro
- Data Model
- API



10:00 – 10:30
STARREQUESTS

- Locations, Things
- Datastream,
Multidatastream
- Observations

10:30 – 11:00
COFFEE BREAK

Agenda – part 2

11:00 – 11:30

FROST

- Characteristics
- Deploy options
- PostgreSQL and plugin



11:30 – 12:00

STA+

- STA limitations
- STA+ additional properties
- Applications for EDIAQI



12:00 – 12:15

INSPIRE

- Directive
- Regulations
- Technical Guidelines

Q&A

The speakers



Piergiorgio
Cipriano

GIS



Luca
Giovannini

Data



Martina
Forconi

IT



Beatrice
Olivari

Analytics

Who are you ... who, who, who, who?

①

EDIAQI partners
with focus on
Indoor Air Quality

②

AIR BREAK
stakeholders
with focus on
**Outdoor Air Quality
and traffic**

③

USAGE partners
and stakeholdes,
with focus on
Climate

Introduction



This project has received funding from the European Union's HE research and innovation programme under the grant agreement No. 101057497

EDIAQI Task 4.3 - Interoperability management

T4.3 Interoperability management [M1-24, Lead: **DEDA**, Participants: LC, KNOW, ASC, WINGS, THIN, TalTech, LAS]

The goal of the task is to **define and implement a common interoperability approach and related technical solution** to identify, which data will be managed (storage, analysis, visualization, FAIR, etc.) with which metadata standard, the semantic, the documentation, the technological solutions, the methodology, etc. As described in part A, we will start from and adopt OGC standards (i.e., SensorThings API for IoT), CityGML (for 3D data models of monitored buildings in pilot areas) and WMS (also ISO19128, for interoperable web map services) or INSPIRE Buildings data specification. The activity will contribute to the “**data management plan and data standard interoperability**” (Activity 2.1). **Data will be transferred and handled through common standard formats and protocols.** IAQ monitoring data will be collected according to a common interoperable technical approach, with common semantics described in machine-readable vocabularies. In this task a common methodology to be used for identifying and assessing IAQ elements and ensuring a continuous improvement of Air Hygiene and Well-being between Pilots will also be identified. This methodology will be deployed by taking into account and integrating the beyond state-of-the-art technical standards on IAQ Management System (ISO 16000). The IAQ behavioural change monitoring campaigns will be driven by a process management which shall rests on the following pillars: (i) data on building and people for a risk level and assessment of IAQ aspects building categories; (ii) real-time analytical measurements on IAQ via wireless remote multi-sensor devices; (iii) **collection of subjective perceptions and complaints about IAQ from residents.**

Task 4.3 Interoperability management

Activity	By	April				May				June				July				August				September				October				November				December			
		w1	w2	w3	w4	w1	w2	w3	w4	w1	w2	w3	w4	w1	w2	w3	w4	w1	w2	w3	w4	w1	w2	w3	w4	w1	w2	w3	w4	w1	w2	w3	w4	w1	w2	w3	w4
Initial call with all partners KNOW and LAS	15-apr			1																																	
Regular calls with all partners [LC, KNOW, ASC, WINGS, THIN, TalTech, LAS]	31 dec							1			1					1				1				1				1				1				1	
Preparation of materials for training modules to partner/pilots (SensorThings, FROST, PostgreSQL + TimeScaleDB + PostGIS)	31 may			<	---	---	---	---	>																												
Training modules - SensorThing API standard, FROST server	30 jun											4																									
Training modules - PostgreSQL, TimeScaleDB, PostGIS	31 jul															4																					
Training modules - web/desktop clients for SensorThings API	30 sep																																				
Training modules - CityGML standard	31 oct																																				
D4.3 Framework and standards for data interoperability - version 1	30-nov															<	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---				

- **Training T1** Today, June 21st (9-13)
- Training T2 Friday, July 21st morning (9-13)
- Training T3-T4 to be scheduled

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Member login

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Open
Geospatial
Consortium

Key topics ↓

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OGC is a consortium of experts committed to improving access to geospatial, or location information. We connect people, communities, and technology to solve global challenges and address everyday needs.

Join our community





Open Geospatial Consortium

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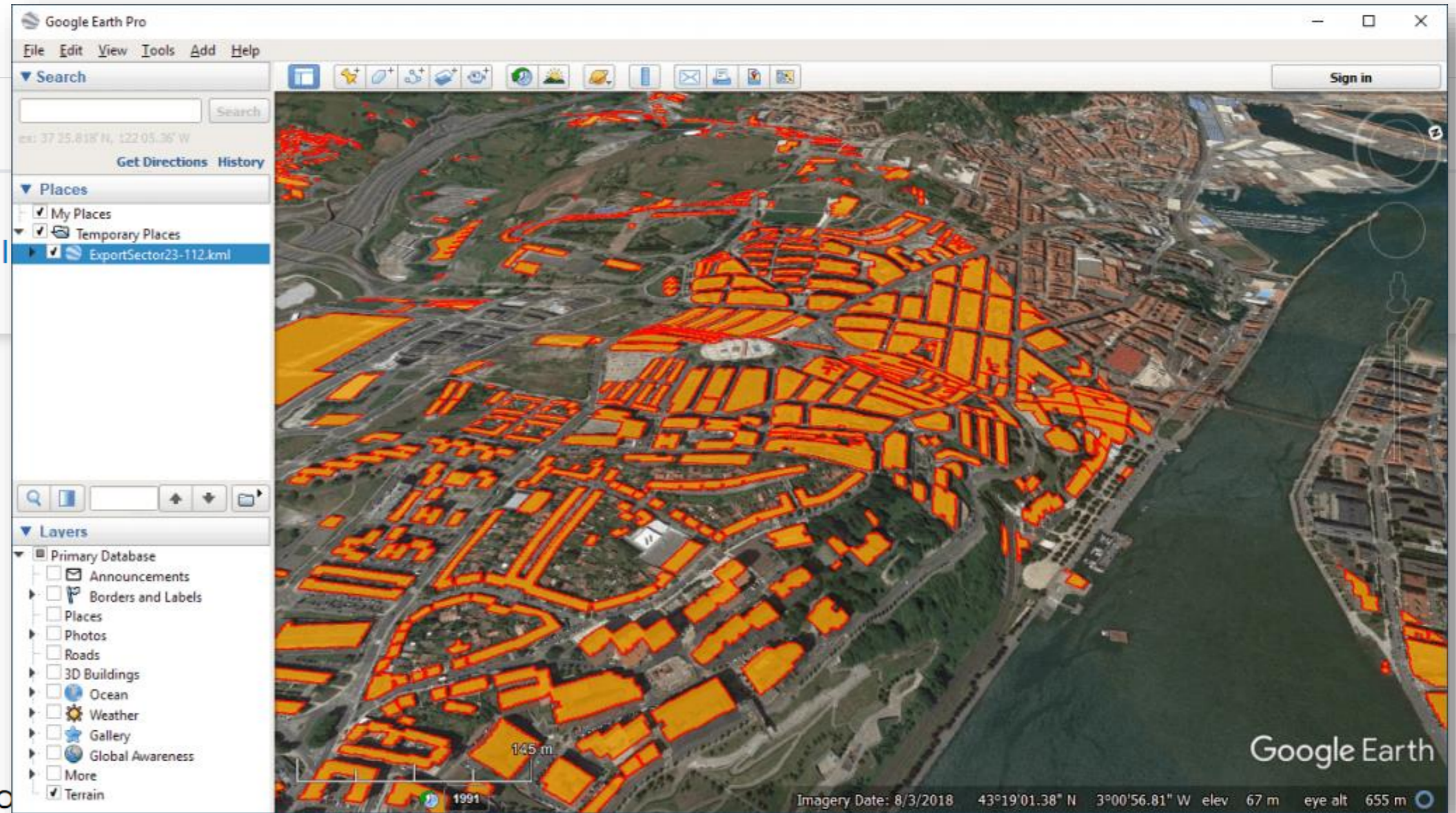
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KML

Overview

Google submitted KML (formerly Keyhole Markup Language) to the Open Geospatial Consortium (OGC) to be evolved within the OGC consensus process with the following goal: KML Version 2.2 has been adopted as an OGC implementation standard. Future versions may be harmonized with relevant OGC standards that comprise the OGC standards baseline. There are four objectives for this standards work:

- That there be one international standard language for expressing geographic information and visualization on existing or future web-based



- [3dP](#)
- [ARML2.0](#)
- [Cat: ebRIM App Profile: Earth Observation Products](#)
- [Catalogue Service](#)
- [CDB](#)
- [CityGML](#)



Eventi PA

Il sistema di partecipazione alle attività per la Pubblica Amministrazione

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Organizzato da FormezPA

Progetto: Informazione e formazione per la transizione digitale della PA nell'ambito del progetto "Italia Login - La casa del cittadino" - Linea 3 Dati e documenti delle PA

Intervengono



Partecipano



Dati aperti dinamici da sensori e IoT: standard e buone pratiche

Webinar - 20 Aprile 2023 - ore 12:00

FormezPA WEBINAR

Dati aperti dinamici da sensori e IoT: standard e ...

Dati aperti dinamici da sensori e IoT: standard e buone pratiche

20 aprile 2023
ore 12.00 - 13.30

Watch later Share



Open
Geospatial
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Introduzione a SensorThings API

Dati aperti dinamici da sensori e IoT:
standard e buone pratiche

Webinar - 20 April 2023

Francesca Noardo – Open Geospatial Consortium
fnoardo@ogc.org - <https://www.ogc.org/>





Open Geospatial Consortium (OGC)



<https://www.ogc.org>

OGC is a no-profit international membership organisation committed to improving access to geospatial, or location information through the development of Standards.



Findable



Accessible



Interoperable



Reusable

Community

- 500+ International Members
- 110+ Member Meetings
- 60+ Alliance and Liaison partners
- 50+ Standards Working Groups
- 45+ Domain Working Groups
- 25+ Years of Not for Profit Work
- 10+ Regional and Country Forums

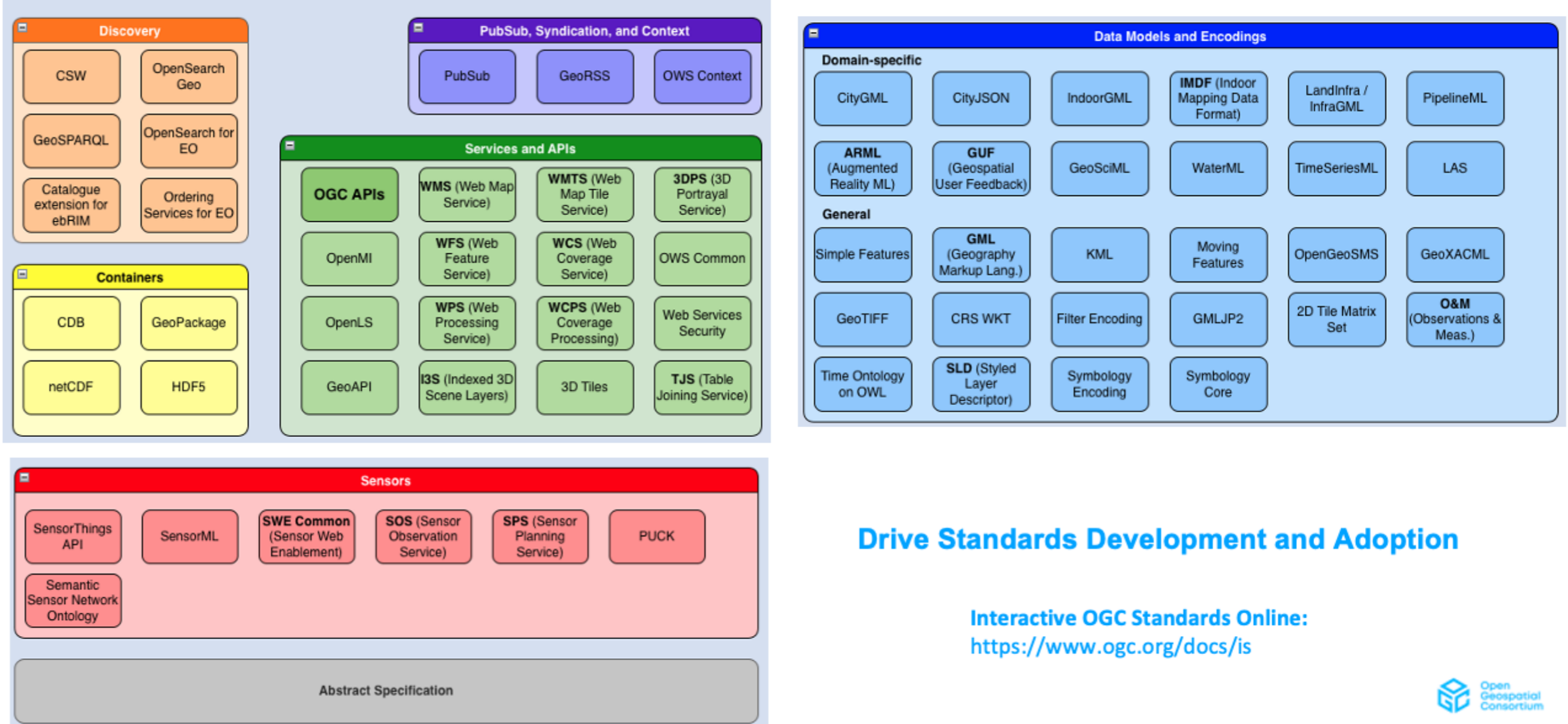
Standards

- 65+ Adopted Standards
- 300+ products with 1000+ certified implementations
- 1,700,000+ Operational Data Sets
- Using OGC Standards

Innovation

- 120+ Innovation Initiatives
- 380+ Technical reports
- Quarterly Tech Trends monitoring

Standards Architecture Diagram



Drive Standards Development and Adoption

Interactive OGC Standards Online:
<https://www.ogc.org/docs/is>





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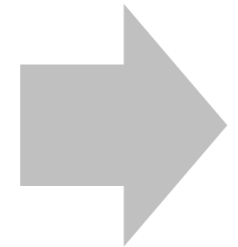
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- Findable
- Accessible
- Interoperable
- Reusable



OGC SensorThings API

<https://www.ogc.org/standard/sensorthings/>



<https://www.usage-project.eu> Funded by the European Union's Horizon Europe Framework Programme for Research and Innovation. Grant Agreement no 101059950

<https://ad4gd.eu> Funded by the European Union's Horizon Europe Framework Programme for Research and Innovation. Grant Agreement no 101061001

<https://www.ogc.org>



Understanding OGC Standards

What is a standard?

In the OGC context, a standard is an **agreed specification** of rules and guidelines about how to implement software interfaces and data encodings. Geospatial software vendors, developers and users collaborate in the OGC's consensus process to develop and agree on standards that enable information systems to **exchange geospatial information** and instructions for geoprocessing.

OGC standards are **open standards**.

Open Standards

Organizations like the OGC, the IETF, the World Wide Web Consortium (W3C) and others are open organizations in the sense that **any individual or organization can participate**, the topics of debate are largely public, decisions are democratic (usually **by consensus**), and specifications are **free and readily available**. An “open” process is necessary to arrive at an “open” standard. The openness that OGC promotes is part of this general progress.

Open Standards - the definition

The OGC defines Open Standards as standards that are:

1. **Freely and publicly available** – They are available free of charge and unencumbered by patents and other intellectual property.
2. **Non discriminatory** – They are available to anyone, any organization, any time, anywhere with no restrictions.
3. **No license fees** - There are no charges at any time for their use.
4. **Vendor neutral** - They are vendor neutral in terms of their content and implementation concept and do not favor any vendor over another.
5. **Data neutral** – The standards are independent of any data storage model or format.
6. **Based on Consensus** - They are defined, documented, and approved by a formal, member driven consensus process. The consensus group remains in charge of changes and no single entity controls the standard.

Web Map Service

Overview

The OpenGIS® Web Map Service Interface Standard (WMS) provides a simple HTTP interface for requesting geo-registered map images from one or more distributed geospatial databases. A WMS request defines the geographic layer(s) and area of interest to be processed. The response to the request is one or more geo-registered map images (returned as JPEG, PNG, etc) that can be displayed in a browser application. The interface also supports the ability to specify whether the returned images should be transparent so that layers from multiple servers can be combined or not.

NOTE: WMS 1.3 and ISO 19128 are the same documents.

Downloads



<https://www.ogc.org/standard/wms/>

OGC Standards

- [3D Tiles](#)
- [3dP](#)
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- [Cat: ebRIM App Profile: Earth Observation Products](#)
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- [CityGML](#)
- [CityJSON](#)
- [Coordinate Transformation](#)
- [EO-GeoJSON](#)
- [Filter Encoding](#)
- [GML in JPEG 2000](#)
- [GeoAPI](#)
- [GeoPackage](#)
- [GeoPose](#)
- [GeoSciML](#)





Standards

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ISO 19128:2005

Geographic information — Web map server interface

This standard was last reviewed and confirmed in 2021.
Therefore this version remains current.

Abstract

 **Preview**

ISO 19128:2005 specifies the behaviour of a service that produces spatially referenced maps dynamically from geographic information. It specifies operations to retrieve a description of the maps offered by a server, to

Buy this standard

Format

Language



PDF

English



Web Feature Service

Overview

The Web Feature Service (WFS) represents a change in the way geographic information is created, modified and exchanged on the Internet. Rather than sharing geographic information at the file level using File Transfer Protocol (FTP), for example, the WFS offers direct fine-grained access to geographic information at the feature and feature property level.

This International Standard specifies discovery operations, query operations, locking operations, transaction operations and operations to manage stored, parameterized query expressions.

Discovery operations allow the service to be interrogated to determine its capabilities and to retrieve the application schema that defines the feature types that the service offers.

Query operations allow features or values of feature properties to be retrieved from the underlying data store based upon constraints, defined by the client, on feature properties.



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- GeoPose
- GeoSciML



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ISO 19142:2010

Geographic information — Web Feature Service

This standard was last reviewed and confirmed in 2018.
Therefore this version remains current.

Abstract

[Preview](#)

ISO 19142:2010 specifies the behaviour of a web feature service that provides transactions on and access to geographic features in a manner independent of the underlying data store. It specifies discovery operations, query operations, locking operations, transaction operations and operations

Buy this standard

Format**Language** PDF

English

