OGC API STANDARDS FOR WEB USE

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W3C/OGC Joint Workshop Series on Maps for the Web
w3.org/2020/maps/
Overview

• About OGC

• Background to OGC API development

• Motivation for developing OGC APIs

• Overview of OGC API standards

• Innovation initiatives

• How to get involved
What is OGC?

A Global consortium representing over 500 industry, government, research and academic member organizations:

A hub for thought leadership and innovation for all things related to location

A neutral and trusted forum for tackling interoperability issues within and across communities

A consensus-based open standards organization for location information
Who are our members?

The world’s leading and comprehensive community of experts making location data more findable, accessible, interoperable and reusable.

Commercial
- Business Development
- Competitive Technical Advantage
- Global; Brand Exposure
- Funding for Innovation

Government
- Innovation and Market Support
- Trusted Advice
- International Partnerships
- Operational Policy, Support, and Certification

Research & Academia
- Applied Research Partners
- Funding for Innovation
- International Collaboration
- Citations
Background

OGC Web Services (OWS)
Web Map Service (WMS)
Web Map Tile Service (WMTS)
Web Feature Service (WFS)
Web Coverage Service (WCS)

“There are more than 200K OGC Web Services deployed across the Web”
- Source: GeoSeer spatial data search engine: https://geoseer.net

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# Background: OGC Web Services

<table>
<thead>
<tr>
<th>Feature</th>
<th>WMS</th>
<th>WFS</th>
<th>WCS</th>
<th>WPS</th>
<th>SOS</th>
<th>SPS</th>
<th>CSW</th>
<th>WMTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use HTTP methods explicitly.</td>
<td>Y</td>
<td>N</td>
<td>Y*</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Be stateless.</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Expose directory structure-like URIs.</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Use HTTP Error codes</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Transfer XML, JavaScript Object Notation (JSON), or image.</td>
<td>Image</td>
<td>XML</td>
<td>Any</td>
<td>Any</td>
<td>XML</td>
<td>XML</td>
<td>XML</td>
<td>Image</td>
</tr>
</tbody>
</table>

Source: OGC 15-052r1r1
Timeline

2015
• Testbed-11 Comparison of REST to classic OGC Web Services

2016
• Testbed-12 work on a RESTful binding of the WPS
• Focus of discussions shifts from REST to Web APIs

2017
• OGC® Open Geospatial APIs - White Paper published

2018
• Work on version 3 of the Web Feature Service (WFS3) starts

2019
• WFS3 draft specification renamed OGC API - Features
• OGC API – Features – Part 1: Core standard is published
‘Why’ OGC APIs

- APIs are a popular, effective method for rapid software development
- API variations degrade interoperability
- Open Standards enable interoperability of independent implementations
- OGC APIs will improve interoperability between Web APIs
OGC API Standards Development

- Modular API building blocks; spatially enable Web APIs in a consistent way
- Spatial Data on the Web Best Practices
- Leverages OpenAPI
- Focus on developer experience and usability
- Modular building blocks for access to spatial data that can be used in data APIs
- Open development; Public GitHub, Early implementations, In-depth validation
API First Approach – using OpenAPI definitions

Building Blocks specified in OGC API - Features - Part 1: Core

Common components used in the OGC standard "OGC API - Features - Part 1: Core".

OGC API - Features - Part 1: Core 1.0 is an OGC Standard. Copyright (c) 2019 Open Geospatial Consortium. To obtain additional rights of use, visit http://www.opengeospatial.org/legal/.

This document is also available on OGC.

Contact Clemens Portele
OGC License

No operations defined in spec!

Schemas

- collection
- collections
OGC API standards

Approved
• OGC API – Features

Draft
• OGC API – Common
• OGC API – Coverages
• OGC API – Records
• OGC API – Processes
• OGC API – Tiles
• OGC API – Maps
• OGC API - Environmental Data Retrieval
• OGC API – Styles

• Future concepts: DGGS, Routing
What to expect from each approved OGC API standard

OGC API - Features: Part 1 - Core

Standards document & OpenAPI definition

Executable Test Suite

Tutorials & Guides
Sprints, Hackathons, Pilots, Testbeds and Innovation

Previous

- OGC API Hackathon: June 2019
- STAC and OGC API - Features and Catalogues Sprint: December 2019
- ESIP and OGC Coverage Processing and Analysis Sprint: January 2020
- Environmental Data Retrieval API Sprint: March 2020
- OGC API – Tiles Sprint: April 2020
- Routing Pilot, Vector Tiles Pilot
- Testbeds 15 & 16 – APIs for Styles, Maps and Tiles, SWIM, DGGS
- 3D Data Container and Tiles Pilot
- … and many more

Next up

OGC API – Common & OGC API – Features Virtual Code Sprint
On Sept 29 – 30, 2020
Register at https://portal.ogc.org/public_ogc/register/q3_api.php
THANK YOU!

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