Building the Future of Location at the Speed of Innovation

7 September 2021

The world's leading and comprehensive community of experts making location information:

- Findable
- Accessible
- Interoperable
- Reusable

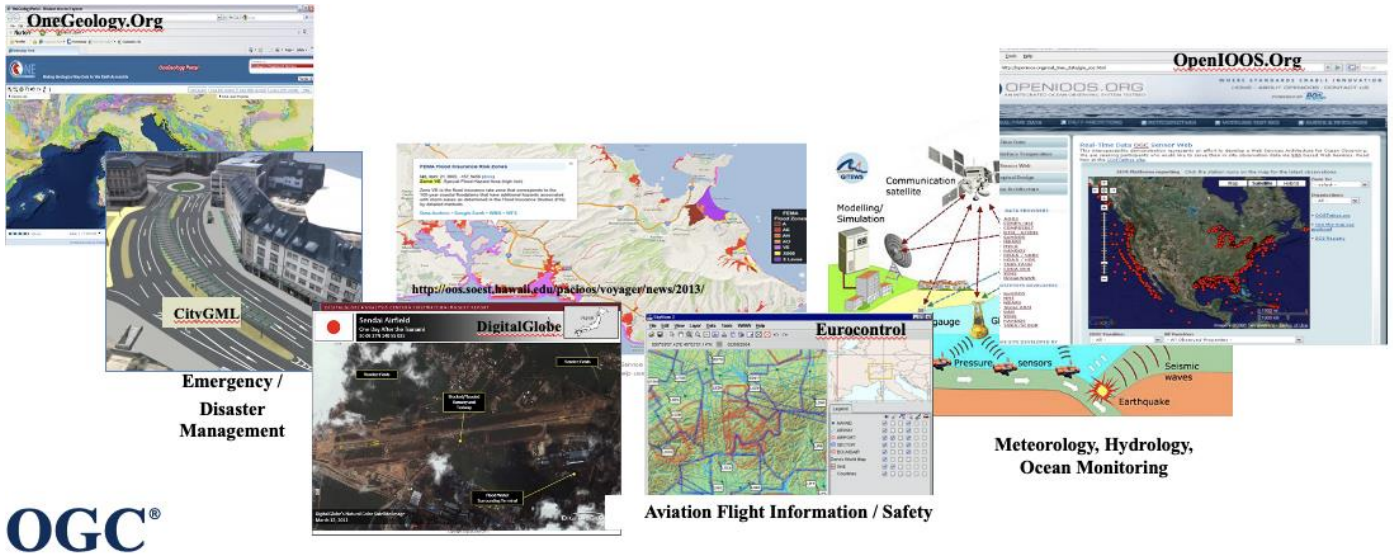
27 years of community, standards and impact

OGC

GeoSeer

The spatial data search engine

Search over **2 million** distinct spatial GIS **WMS** (Web Map Service), **WFS** (Web Feature Service), **WCS** (Web Coverage Service), and **WMTS** (Web Map Tile Service) datasets hosted on over **280,000 live services** from around the world.

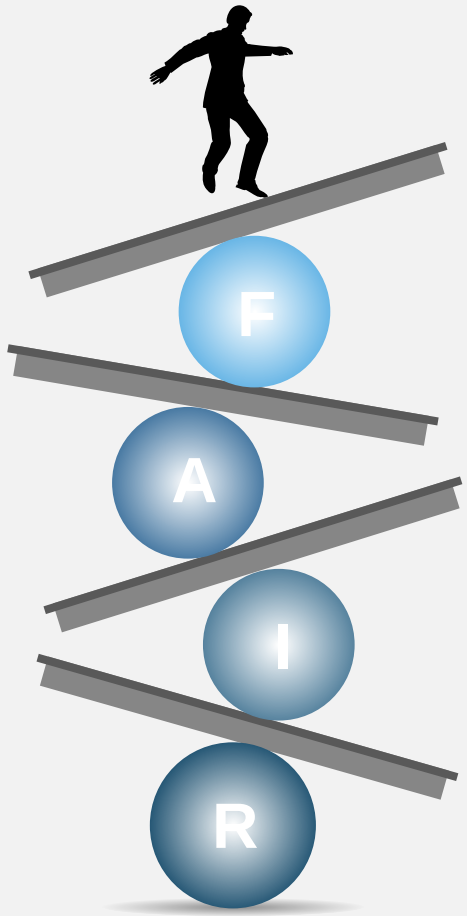


OGC®

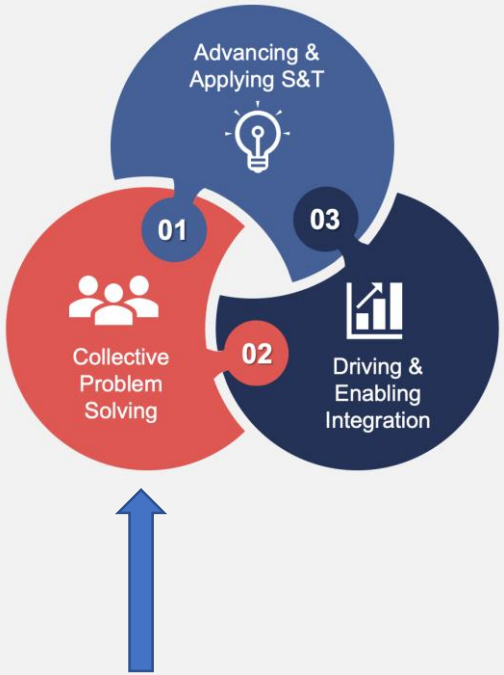
Open Geospatial Consortium (OGC)

OGC

500+ Members



Mission



Approach

Open Standards

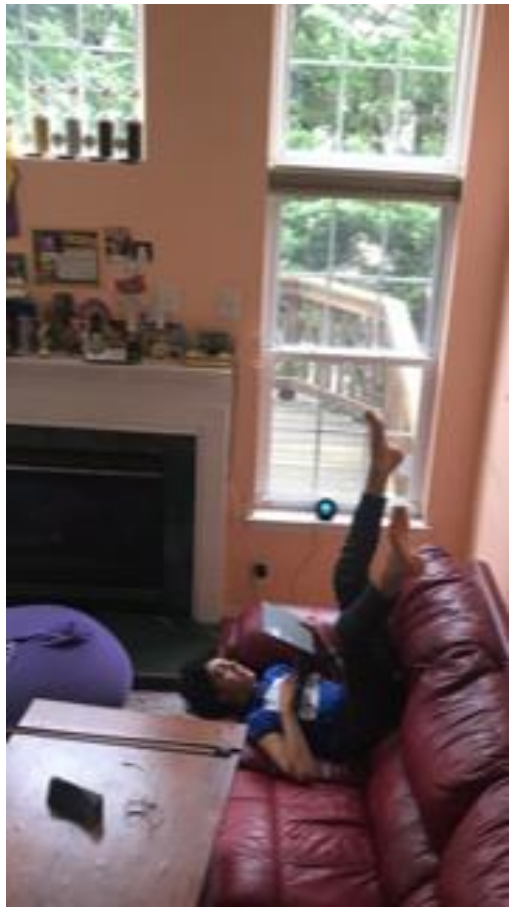
Best Practices

Proof of Concepts

Products

Problems? What Problems?

Problem Number 1

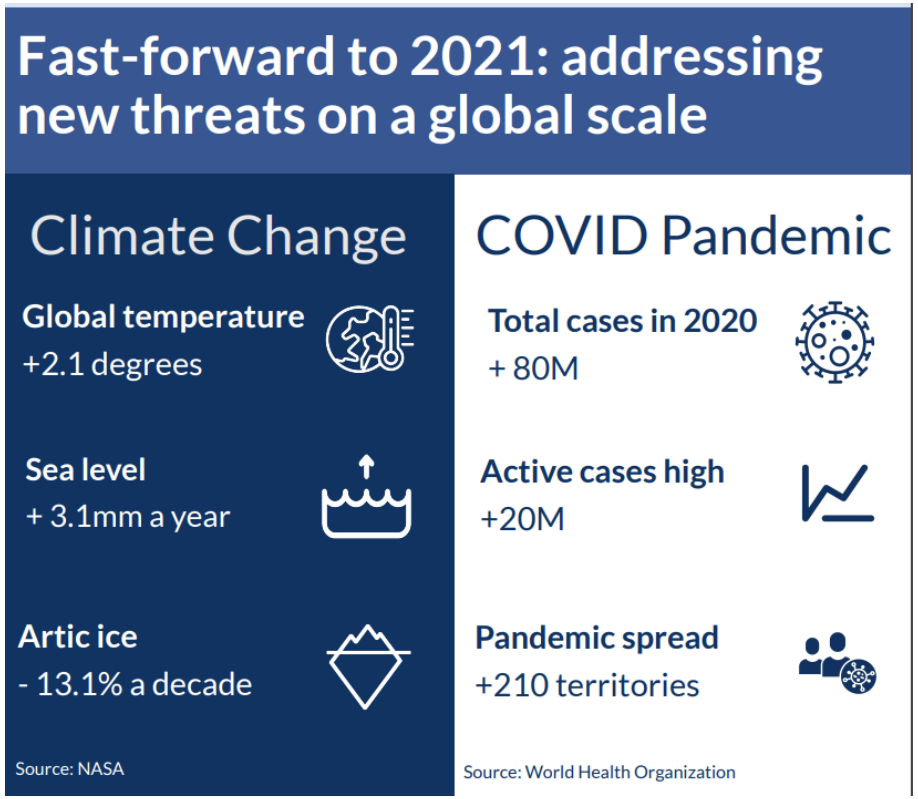


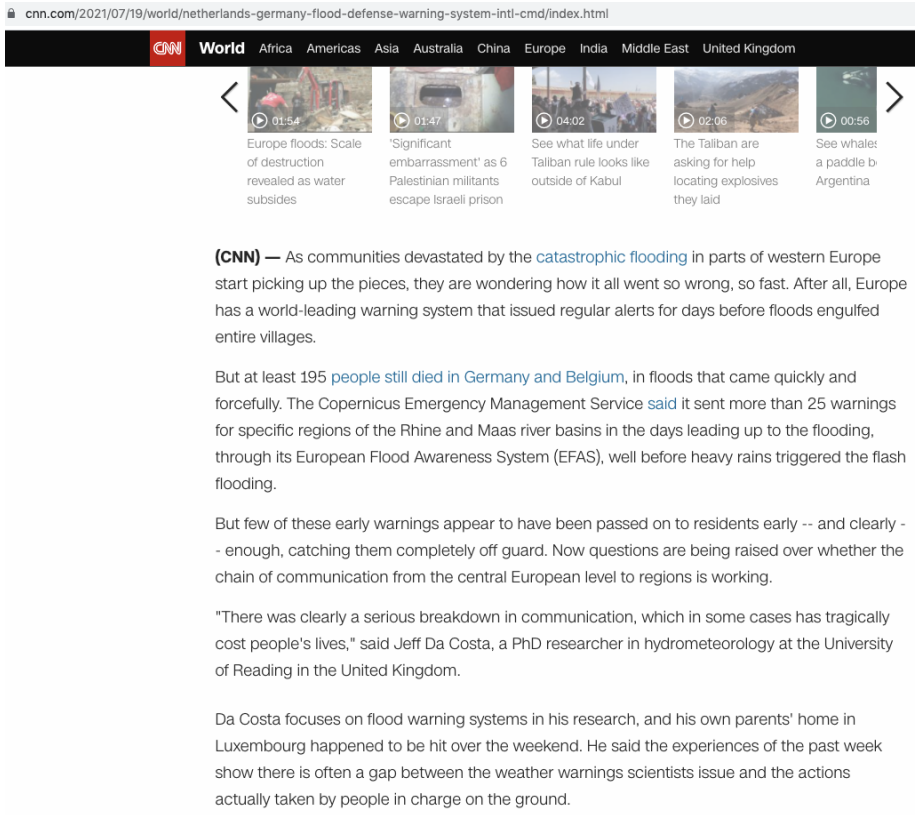
https://cesium.com/blog/2021/08/13/a-birds-of-a-feather-session-building-the-open-metaverse/

Problem Number 2

https://www.ogc.org/node/4476

Problem Number 3





Problems

- A whole new generation of application developers
- A whole new generation of users/consumers with very different expectations re access to data
- A whole new ecosystem with many many players that are outside of geospatial
- And increasing threats at a global scale

It’s 2021

http://mars.nasa.gov

Here on Earth

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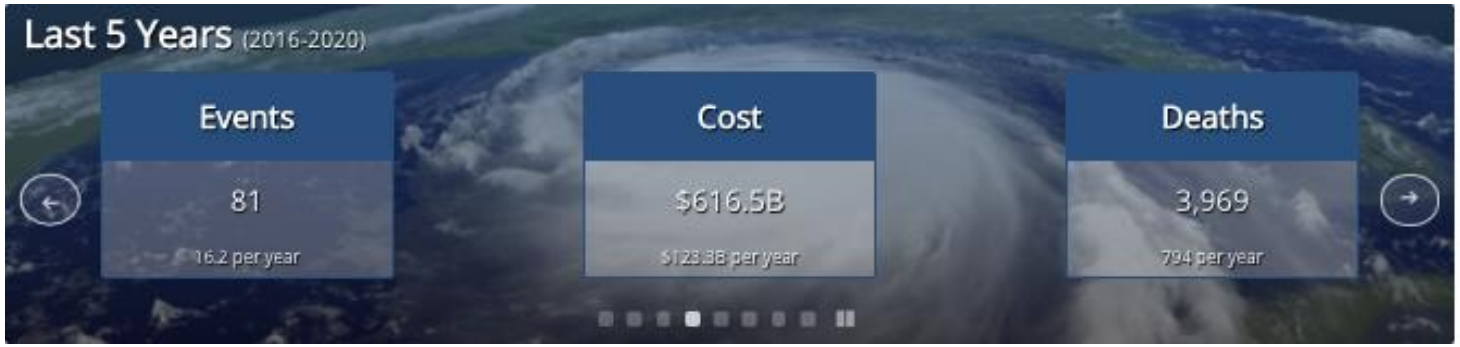
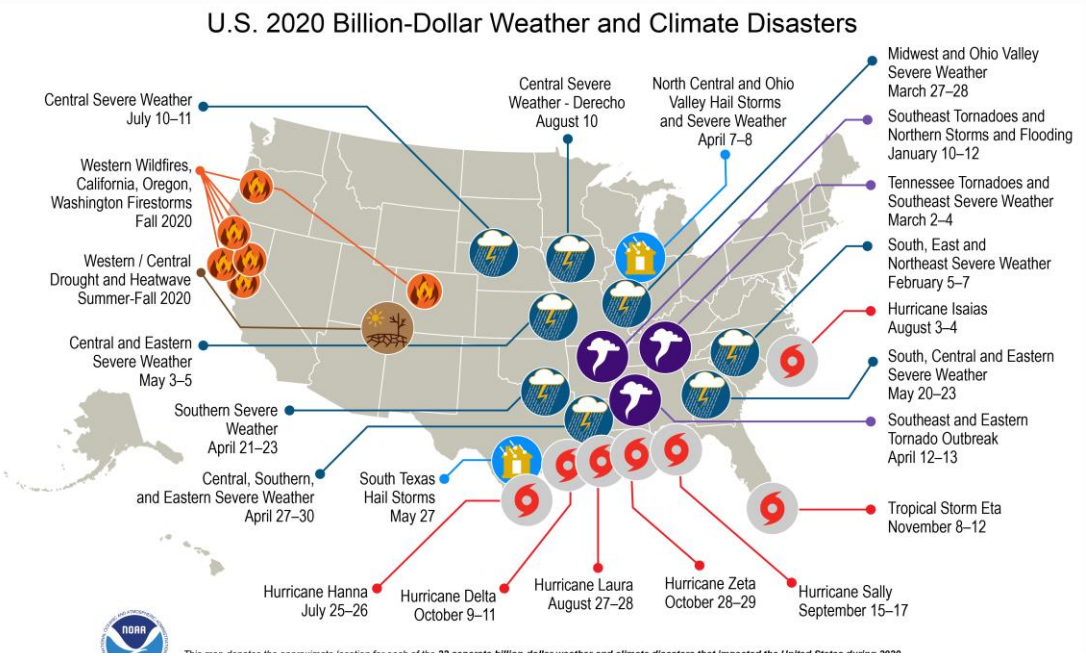




2020 sets the new annual record of 22 events - shattering the previous annual record of 16 events that occurred in 2011 and 2017. 2020 is the sixth consecutive year (2015-2020) in which 10 or more billion-dollar weather and climate disaster events have impacted the United States. Over the last 41 years (1980-2020), the **years with 10 or more** separate billion-dollar disaster events include **1998, 2008, 2011-2013,** and **2015-2020**.

Here on Earth

OGC

Share Like (2) Comment (1) Apr 16, 2020 9:04 pm GMT 3200 views

Summary of a white paper prepared for the Geospatial Information & Technology Association by Geoff Zeiss and Dr. Sakura Shinoaki

Over the past two decades in the U.S. there have been over 400 fatalities and nearly 2000 injuries attributed to hitting underground infrastructure during excavations. For comparison over the past 20 years in the U.S., there have been about the same number of fatalities (403) resulting from major commercial airline crashes (excluding 9/11). In addition inaccurate and missing information about underground infrastructure increases the risk of construction project schedule and budget overruns. It has been estimated that unreliable location information about underground infrastructure represents a $50 billion to $100 billion drag on the U.S. economy, multiple £ billions in the U.K. and € 1 billion in the Netherlands. Comparing the United States and Japan reveals a startling difference in the number of incidents of underground utility damage during construction. In the U.S. the number of incidents is between 400,000 and 800,000 per year (roughly one or two every minute). For Japan the number of incidents in 2016 was 134. Clearly something can be done to reduce the risk for construction workers and the public.

https://energycentral.com/c/pip/reducing-d amage-underground-utility-infrastructure-during-excavation-costs

https://ogcapi.ogc.org/

https://www.youtube.com/watch?v=hNmZJ1itqfM

OGC APIs – Building Blocks of the Future

Features

Approved Standard

OGC API - Features - Part 1: Core and Part 2: Coordinate Reference Systems by Reference are both publicly available.

Common

OGC API - Common provides those elements shared by most or all of the OGC API standards to ensure consistency across the family. The candidate standard will soon be released for public review.

Maps

OGC API - Maps offers a modern approach to the OGC Web Map Service (WMS) standard for provision map and raster content.

Tiles

OGC API - Tiles provides extended functionality to other OGC API standards to deliver tiled data, such as Map Tiles.

Styles

The OGC API - Styles defines a Web API that enables map servers, clients as well as visual style editors, to manage and fetch styles...

EDR

Environmental Data Retrieval (EDR) API provides a family of lightweight interfaces to access Environmental Data resources. Each resource addressed by an EDR API maps to a defined query pattern.

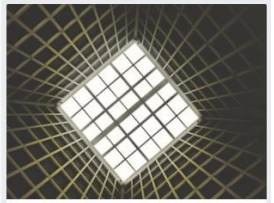
https://ogcapi.ogc.org/

Records

OGC API - Records updates OGC's Catalog Services for the Web by building on the simple access to content in OGC API - Features.

Processes

OGC API - Processes allows for processing tools to be called and combined from many sources and applied to data in other OGC API resources though a simple API.



Coverages

OGC API - Coverages allows discovery, visualization and query of complex raster stacks and data cubes.

DGGS

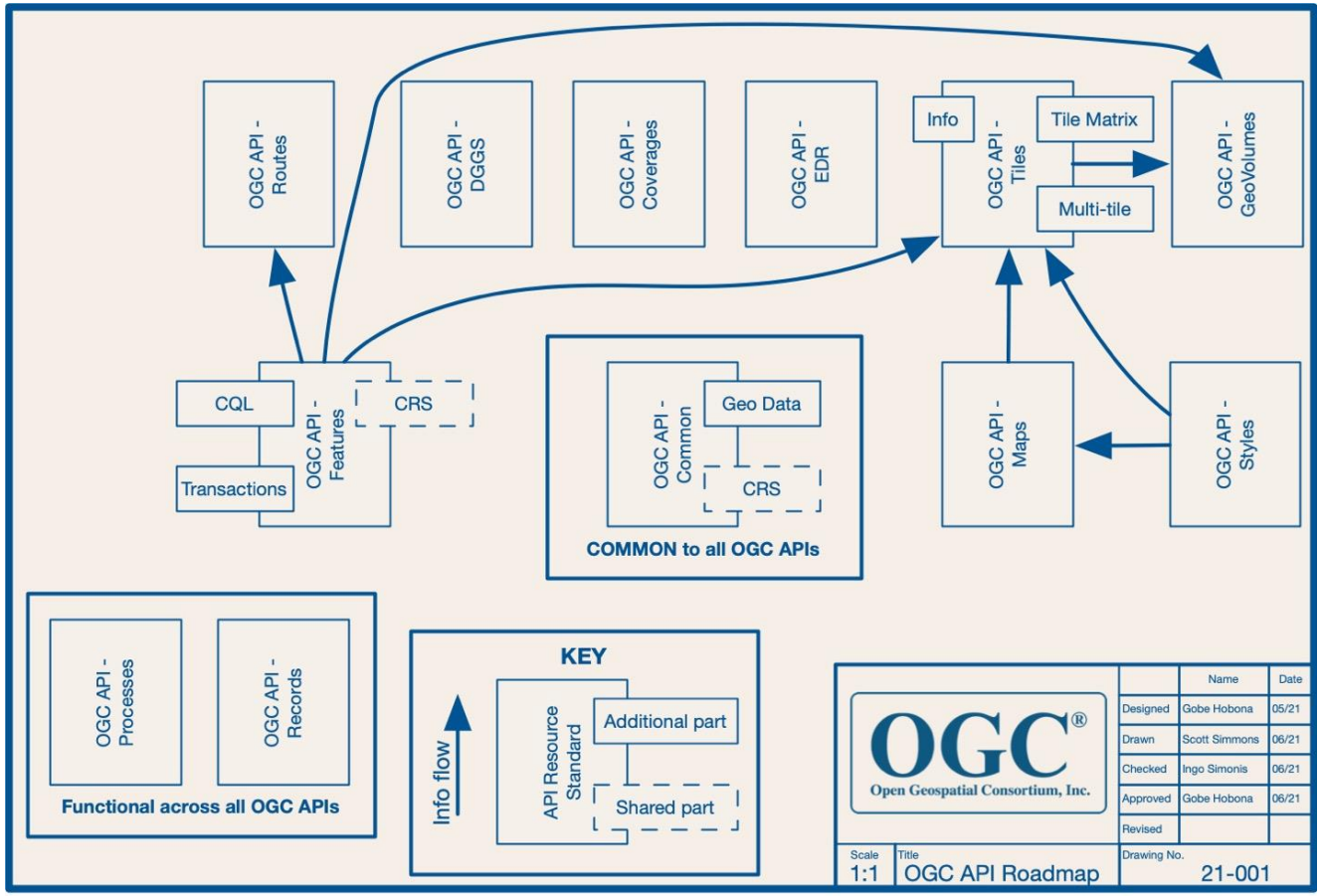
Enables applications to organise and access data arranged according to a Discrete Global Grid System (DGGS).

Routes

Enables applications to request routes in a manner independent of the underlying routing data set, routing engine or algorithm.

Building Blocks

- “Building blocks” that can be used to assemble novel APIs for web access to geospatial content
- Defined with OpenAPI and published in discrete, easily implementable parts
- Ensure that geospatial data are “web native”



Deployment model example – building blocks

User: need a list of lights in WGS 84, but want to query

Features: CQL

Features: CRS

Features: Core

Data

OGC API - Common

Tiles

Maps

Coverages

EDR

Features: Transactions

User: I want to look at charts on my phone

User: get new soundings in the Torres Strait in GDA2020

User: hurricane approaching, give me everything

Developing Standards at the Speed of Innovation

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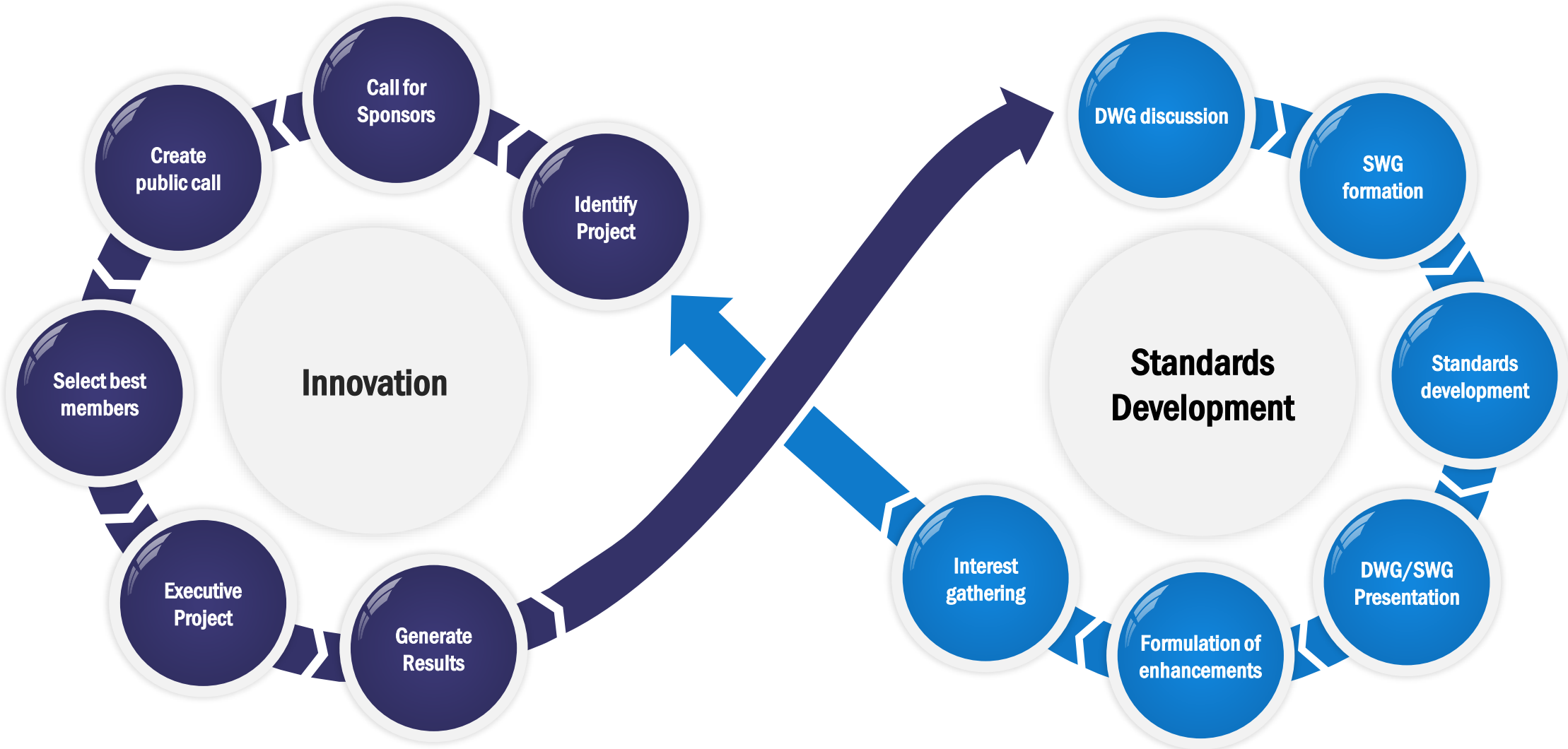
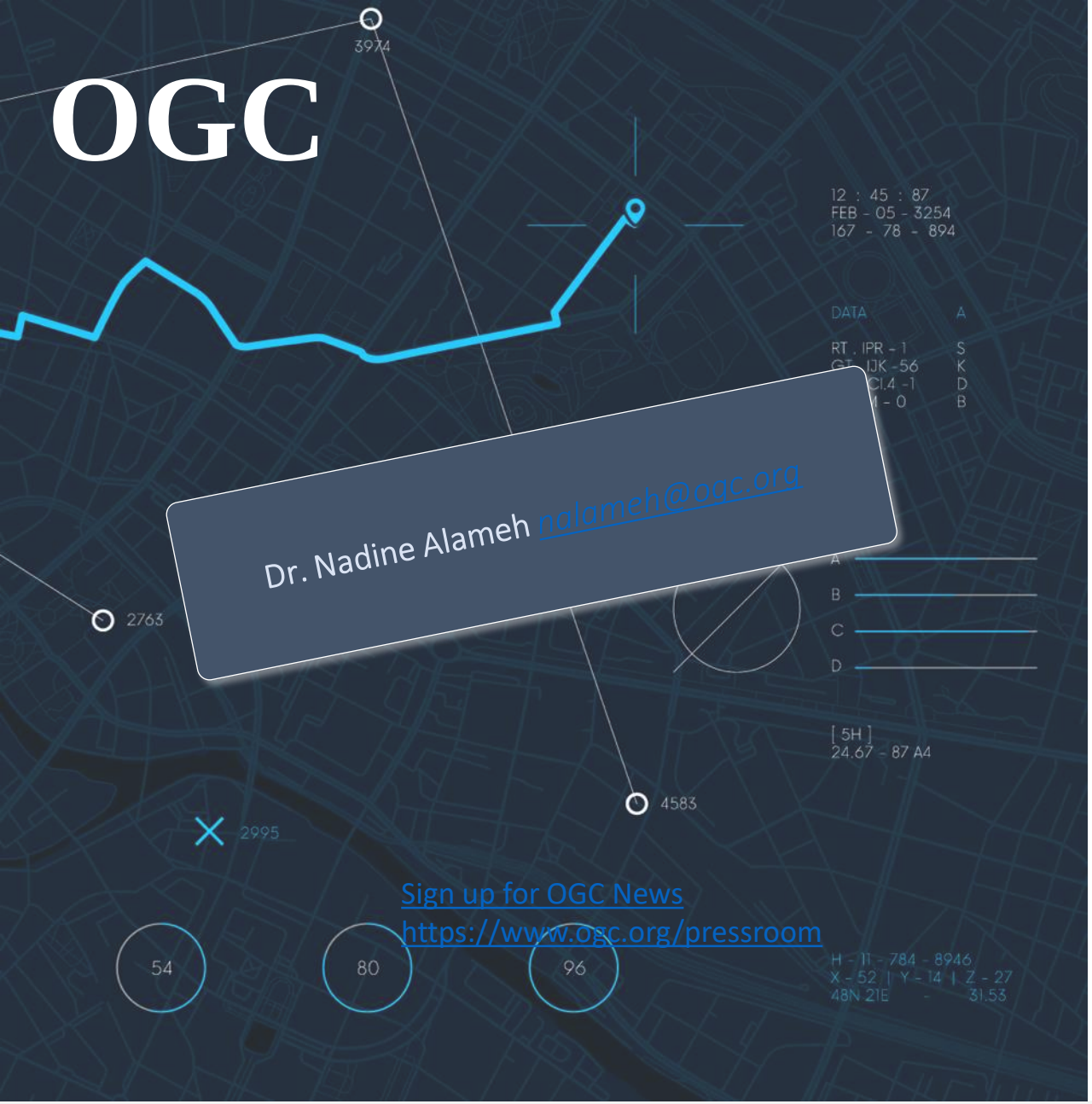


Key take-aways

- The whole ecosystem is changing (your kids and mine are part of it!)
- Together we need to evolve and modernize how we discover, access, use, integrate and share our data - any data that is associated with location
- The OGC APIs are part of that puzzle – our effort as a global community
- We are developing these standards literally at the pace of innovation

- We can’t do that without strong committed partners like Geonovum in our community!



Thank You!

Community

540+ International Members
115+ 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

Innovation

120+ Innovation Initiatives
380+ Technical reports

Standards

65+ Adopted Standards
300+ products with 1000+ certified implementations
1,700,000+ Operational data sets using OGC Standards