A FUTURE FILLED WITH LOCATION

NADINE ALAMEH EXPLAINS HOW THE OGC IS DEVELOPING WAYS TO MAKE LOCATION INFORMATION FAIR – FINDABLE, ACCESSIBLE, INTEROPERABLE AND REUSABLE

We live in exciting times. Technology, social interaction and business models are changing before our eyes – self-driving cars, flying taxis, commercial space missions (to Mars!), smart cities, SmallSats and the Internet of Things (IoT) were all the realm of science fiction just a decade ago, yet here we are. Our children are growing up in a world of blanketed GNSS, virtual assistants poised to react to their every command, and sensor-packed mobile devices with computational power that eclipses the desktops of a decade ago.

And do you know what I find really exciting? Each and every one of these innovations has a location element to it! Never before have we seen such an explosion of domains using location to enhance or differentiate their value.

So, you can probably guess that I'm excited about location. It's what OGC specialises in, and it's how we connect people, communities, technology and decision-making to create a sustainable future for ourselves, our children and future generations. This sounds like quite a task, but we achieve this by making location information Findable, Accessible, Interoperable and Reusable – FAIR.

When location information is FAIR, it can be used to inform decisions concerning some of the biggest issues of our time, including climate change and the food, water,and resource shortages that it's causing, improving the quality of life in and efficiency of 'smart' urban areas, and achieving the UN's sustainable development goals.

This year is a special year for OGC – it's our 25th birthday! Founded on 25 August 1994 by passionate spatial pioneers, OGC has established many firsts since including a one-of-a-kind Innovation Program to rapidly develop, test, and validate cutting-edge prototype solutions, and the Web Map Server (WMS) specification – there are now an astonishing 808,316 WMS services running on the web.

We're now working to modernise our spatial web APIs to conform to current practices on the web and support the use of modern tooling, such as OpenAPI. The first of these modernised standards, OGC API – Features, was just approved by the OGC membership and work is under way on standards for map tiles, processes and coverages, as well as a common foundational standard that will be shared by the more specific standards. Collectively, these

standards will form the basic building blocks upon which all types of geospatial data can be delivered to users.

Early this year, OGC installed a new leadership team to scale the consortium for a future where everything is connected, and location is used as the grand unifier of information and a key driver of innovation. We are focusing on three main areas:

1. Transitioning to the new OGC APIs
2. Positioning OGC as a place for the increasingly diverse communities of interest to come together and dig into how best to deal with, use, and extract value from location.
3. Building partnerships with other organisations across the globe, including other standards organisations.

As necessitates an organisation that represents something as ubiquitous as location, OGC has members all over the globe. This ensures that our standards are as broadly applicable as possible. Recognising that different places have different market dynamics and recognising the barriers of long distances, as well as language and cultural differences, OGC supports several regional forums where local members work together to meet the particular needs and circumstances in their regions. Active forums include the Europe Forum, the UK & Ireland Forum, the Asia Forum, the Canada Forum, and the Australia & New Zealand Forum.

OGC also runs innovation projects across the globe, with projects currently happening in and between the Americas, Asia, and Europe.

Pilots of the future

Our indoor mapping and navigation pilot, sponsored by the Public Safety Communications Research Division of the National Institute of Standards and Technology (NIST), will create and advance solutions to complex geospatial challenges related to indoor mapping and navigation for first responders. LiDAR and 360º camera imagery, coupled with advanced software processing, could enable first responders to very efficiently capture 3D point clouds and a wealth of other information, both observed and derived, while walking through buildings as part of their routine pre-planning operations.

Our 3D IoT platform for smart cities pilot, sponsored by the Korea Land and Housing (LH) Corporation, is intended to advance the use of open standards for integrating environmental, building, and IoT data in smart cities. The pilot will focus on two scenarios: real-time monitoring of indoor occupancy; and real-time monitoring of micro-dust air pollutants. Participants will connect their technology and expertise with real city needs while collaborating with other participants to advance open standards for Smart Cities.

ESPRESSO is trying to find the best way to make a city 'smart' by creating and making

The future will bring more internet-connected devices across varied form factors

available a conceptual smart city information framework based on open standards and 3D city models. These could be used to create an 'urban platform' that enables decision-makers and citizens alike to extract useful information from various combinations of datasets that perhaps weren't initially designed with that combination in mind. Such platforms also provide a data playground in which innovation from diverse players can grow. Further work in smart cities is being undertaken by OGC's smart cities domain working group, including pilot programmes addressing real-world use cases.

Stepping away from Europe's cities and over to its rural landscapes, the EU-funded Horizon2020 projects Cybele and Demeter lie at the convergence of environmental data sources, high performance computing, big data, cloud computing services and IoT. These technologies are driving factors that will revolutionise farming through precision agriculture and precision livestock farming. Location and open standards are crucial building blocks for uniting these technologies. The large number of real-life use cases and demonstrators in both projects is a great opportunity to ensure that discussions, approaches, and new standards are applicable to the real world and have significant business relevance. With its agriculture domain working group, OGC offers the ideal platform for exchange and future developments.

The full potential of data

Location has always been positioned as an ideal organiser for connecting disparate data sources. But now that useful data is being created by more sources than ever, used for more purposes than ever, driving more innovation than ever and solving more problems than ever, location standards and APIs are now more important than ever, if we're to make this information FAIR and realise the full potential of this era of data.

As such, through our Innovation Program activities, as well as our regular global meetings and regional forums, it's never been more important for OGC to bring people, communities, and technology together to not only power decision-making, but to empower decision makers across the globe.

Nadine Alameh is CEO of the Open Geospatial Consortium (OGC)