

Time for a Health Spatial Data Infrastructure?

Dr. Nadine Alameh, OGC

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



Findable



Accessible



Interoperable



Reusable



OGC[®]





Global
Communities

Location
Expertise

Thought
Leadership

Trusted
Forum

Open
Standards

OGC

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

OGC

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



Our perspective – Location & Information Sharing

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12 : 45 : 87
FEB - 05 - 3254
167 78 894

- [National States Geographic Information Council on the value of GIS in the pandemic](#)
 - “More leaders are recognizing **the value of “knowing the where”**”
 - “By **geo-enabling** public health and emergency response data...to understand COVID-19 in the US and mitigate its spread and overall impact.”
- [Guidance from National Alliance for Public Safety GIS on information sharing for crisis management](#)
 - “Mutual Aid and Crisis Management Systems (MACM) in the Public Safety Community suffer from a **lack of use of interoperability and information exchange standards** for system to system interoperability”
- [Recommendations from Research Data Alliance on data sharing](#)
 - “There is a need **for timely and accurate** collection, reporting and sharing of data within and between research communities, public health practitioners, clinicians and policymakers”
 - “The **harmonization** across these sophisticated yet diverse systems combined with the **timeliness** of accessing data across information systems are currently major **roadblocks**”
- [Lessons learned from the National Academies of Science, Engineering and Medicine on geospatial needs for a pandemic-resilient world](#)
 - “Epidemics and pandemics such as the COVID-19 outbreak have **clear geographic dimensions**”
 - “Geospatial information can play **vital roles** in crafting effective government and societal responses at the operational, tactical and strategic levels”



MAX - 34 - 685
KL - IT - 3678 - 986

2995

4583

Too many COVID-19 Portals and Dashboards

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Base Maps and Context

- GEOS Portal (Group on Earth Observations)
- OpenStreetMap WMS (osm-wms.de)
- United States National Topo Base WMTS (USGS)
- United States National Imagery WMTS (USGS)
- United States Transportation WFS (USGS)
- Best practice for Identifiers (UK Geospatial Commission)
- Openrouteservice multi-vehicle optimization for logistics support (Heidelberg)
- FME for COVID-related response (Safe Software)

COVID-19-Specific Information

- Genasys WMS of Johns Hopkins data
- Johns Hopkins Coronavirus Resource Center
- COVID-19 pygeopi - OGC API Features for JHU data
- WHO Coronavirus disease
- County-Level Map of Coronavirus Cases
- ESRI Coronavirus Response
- Tracking Coronavirus COVID-19 (Here)
- Repository of code used to power
- Mapping COVID-19 Research
- COVID JSON Profile
- UK Ordnance Survey COVID-19
- Transmission and mobility
- COVID-19 Clin
- Global Data
- Group

Other

HEALTH DASHBOARD
Department of Health & Human Services

Event Tracking
Download OS OpenData

News and Info
simPOWER
Training
Apply for GIS Account

Support using OS OpenData
APIs and tools

GEO Health Community of Practice
Group on Earth Observations (GEO)

OF PRACTICE
OF PRACTICE

Monitoring the COVID-19 crisis demands fine scale demographic data related to vulnerable groups, including those related to age. Gridded versions of population data, such as the age classes provided by WorldPop, could be considered. In preparation of the next phase, when movement restrictions are relaxed, understanding the general mobility of populations can help model the probability of personal contact and contagion. Concepts like the Functional Urban Area (FUA) community might support such activities. In addition, it has been approached by various groups involved in crisis response for advising on how Earth observations can be used to support a response. Here are a few examples to share and those interested in email: Daniele Ehrlich, DEE.GIS@ec.europa.eu.

Visit the [website here](#).

COVID-19 and Crop Conditions in China
CropWatch, Chinese Academy of Sciences and Institute of Remote Sensing and Digital Earth (IRDI)

CropWatch Bulletin
QUARTERLY REPORT
ON GLOBAL CROP PRODUCTION

Earth Data is an interdisciplinary open access academic publication and the world's first big data journal on Earth sciences, aiming to

Ordnance Survey
Paper maps OS Maps app GPS & tech Outdoor gear

ACAPS Resources Related to COVID-19
ACAPS

ACAPS is focusing on the immediate, short and medium-term secondary effects of the COVID-19 pandemic. They produce global analysis, providing a broad overview of the situation overall, as well as context specific analysis with a narrower focus on regions, countries and crisis hot spots. Looking beyond the mortality and morbidity caused directly by COVID-19 in the short term, the key is to include a focus on the impact on essential health services and availability of regular goods and services and operations and social cohesion and protection.

Visit the [website here](#).

FEMA COVID-19 Apps Gallery

2,844,729
201.3
207

City of Dallas
NEPA COVID-19
Canadian Outbreak
Total Cases
60,777

How does one integrate?
How does one contribute?
How does one trust?

Coronavirus COVID-19 România

Total confirmate
(după localitățile)

13512

Cazuri confirmate pe...

2964 SUCEAVA
1369 BUCUREȘTI
614 ARAD
534 HUNEDOARA
521 NEAMȚ
517 BOTOȘANI
510 MUREȘ
492 BRAȘOV
471 BIHOR
458 TIMIȘ
428 CLUJ
422 GALAȚI
368 SIBIU
347 VRANCEA

Vindecări înregistrate pe județ

1975 JUDEȚ NEAMȚ
155 SUCEAVA
795 SUCEAVA
273 TIMIȘ
260 ARAD
195 MUREȘ

Decese înregistrate pe județ

155 SUCEAVA
81 ARAD
58 GALAȚI
58 HUNEDOARA
54 BUCUREȘTI

Evoluția cazurilor pe zile

2995

- We are scraping websites to get information. There are no APIs, let alone standard APIs....
- We are spending most of our time figuring out how to connect to data (different hospitals, different counties, different states, different health departments), how to keep it up to date, how to interpret it And then the next day, it all changes again!
- As health care professionals, we don't have the data at the appropriate granularity level to customize a plan for our patient
- As government officials, we don't have the data at the appropriate granularity level to make custom local decisions
- How do we integrate mobility data?
-

Is it time for a Health Spatial Data Infrastructure?

- We need to **collaboratively** develop and evolve a Health SDI based on standards and FAIR location information – a community-based effort that
 - **Brings together** location experts in government, industry and academia from across the world and across domains
 - Delivers FAIR location-referenced information via the use of **open standards** and APIs
 - Treats **location**/geospatial information as a **unifying** concept and a differentiator in analysis and decision making - rather than an afterthought
 - Supports **data-driven** decision making for rapid response (at any level)
 - Enables **granular sharing** and correlation of data for impact on local policy and economic recovery
 - Empowers data scientists, **innovators** and entrepreneurs to think outside the box
 - Facilitates a **practical dialog** on issues of data sharing from the technical, policy and privacy perspectives
 - Demonstrates the feasibility and sustainability of an **operational ecosystem** that is beneficial to government and public safety officials, the medical/health community as well as secondary impacted industries
 - Tackles confidentiality and intellectual property issues and employs **ethical practices** in the process
 - Can serve as a global Pandemic Early Warning, Response, and Recovery Platform



- Build on the **latest technological developments** from access and integration of location information to applications of Artificial Intelligence and Machine Learning to advances in data science, analytics and visualization.
- Incorporate NOT just the traditional layers of a typical SDI, but also a whole new set of dynamic crowd-sourced privately collected such as **mobility data**
 - The incorporation of such data presents a fundamental shift in the SDI concept that is already being actively explored in other industries such as transportation and infrastructure with the rise of HD maps
 - The incorporation of such data raises not only technical issues but equally privacy concerns that will need to be addressed
- Support **secondary industries impact** of a health crisis, as understanding supply-chain repercussions and emerging use cases such as implications on broadband service provision and expansion to rural areas to support teleworking and distance learning
 - The availability of data from across disciplines via standard models and APIs is key to the support of emerging use cases
- Enable local decision making by non-geospatial-savvy users such as clinicians using local virus spread information to **derive individualized risk indices** for their patients in combination with their health history and symptoms.
 - The concept of incorporating analysis and insights gleaned from such location data from a trusted Health Spatial Data Infrastructure into the routine of clinicians is ground-breaking and key to better and more accurate response

This initiative will map a path to a global, Pandemic Early Warning, Response, and Recovery Platform that will ensure the world will not again face endless lockdowns, complete disruption of entire societies, unprecedented job losses and trillions of dollars in economic costs due to an unexpected contagious disease.

<https://www.ogc.org/projects/initiatives/healthsdi>

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Thank You!

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

Innovation

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

Standards

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