Supporting other Domains & Industries with location information

Standards in Action – 4 June 2021

Chris Body
Australia
Our Current Liaisons

- Key Partners (OGC, IHO, DGIWG, UNGGIM)

- Existing Liaisons
  - Internal
  - External

- Internal
  - ISO/TC 59/SC 13 Organisation of Information about Construction works
  - ISO/TC 204 Intelligent Transport Systems
  - ISO/TC 268 Sustainable Cities & Communities
  - ISO/TC 268/SC 1 Smart Community Infrastructures

- External
  - International Association of Geodesy (IAG)
  - International Association of Oil and Gas Producers (IOGP)
  - International Federation of Surveyors (FIG)
Our Current Liaisons

• Active or Passive

• Active (Internal)
  – Scope – method of data exchange and sharing based on Geo-Information for Smart Community Infrastructures

• Active (External)
  – ISO 19144-2 Land Cover Meta Language
  – ISO 19144-3 Land Use Meta Language
  – ISO 19152 Land Administration Domain Model

• Passive (Internal)
  – ISO/TC 207 Environmental Management

• Passive (External)
  – World Meteorological Organisation
What’s next

• Transport
• Infrastructure
• Urban Planning
• Utilities
• Energy
• Health
• Buildings/Construction
• Tunnels/Underground
• Light Poles

• Climate Change
• Environmental
• Mining
• Agriculture
• Land Cover/Land Use
• Marine
• Space
• Statistical
• Unmanned Systems
Tech Trend Clusters

Geospatial Tech Trends

- The Power of Location
  - Spatial Thinking; Spatial Brain
  - Location as indicator of intent
  - Precise Positioning
  - Location Authentication

- Spatial-Temporal Models
  - 3D Model Creation
  - Digital Twin: Static, Dynamic
  - HD Maps for CAVs Indoor

- Data Science & Analytics
  - Graph Query Languages
  - Spatial Analytics in Python & R
  - AI/Machine Learning
  - Mod, Sim and Predict
  - Reproducibility

- Big Data Computing
  - Stream Processing
  - Containers & Workflow
  - Extreme Geo Databases
  - Cloud and Edge Computing

- Spatial Data on the Web
  - Web of Data; Linked Data
  - Semantics, Knowledge Graphs
  - APIs for the Web
  - Web Scale Platforms

- Sensing and Observations
  - IoT and Sensor Webs
  - UxS/Drones
  - Crowdsourcing/VGI
  - Commodity Remote Sensing

- Human-System Integration
  - xR: VR, MR, AR
  - AI Conversational Bots
  - Geo Viz and Graphics

- Information Technology
  - 5G Cellular
  - Blockchain
  - Quantum Computing
  - IT Ethics - Geo

OGC

8 June 2021
ISO/TC 211 Geographic information/Geomatics
Tech Trend Clusters

- Responding to COVID-19
- Connected Autonomous Vehicles
- Cloud Native & Edge Computing
- Urban Digital Twin
- Spatial Data on the Web
- New Space Exploitation
- Geospatial Data Science
- Open API Management
- AI & Machine Learning
- Geo IT Ethics
- Immersive Geo: AR XR
- Model Interoperability

OGC September 2020 Meeting - Future Directions
Data share a gateway to more efficient healthcare

Yolanda Redrup

The healthcare sector is being tipped as the next industry to shift away from bricks and mortar, thanks to technological innovations that allow more services to be delivered digitally.

Speaking at the Macquarie Australia Conference yesterday, digital health experts said cloud-based technology enabled healthcare to be delivered at scale for the first time in digital and live channels.

Key to the change was the use of technology to collect everyday data from patients, rather than via a visit to a general practitioner or hospital.

Co-founder of epilepsy diagnostic service Seer Medical, Dean Freestone, said the future of healthcare was "wrapping technologies around the clinical practice," so patients received in-person clinical expertise supported by data collected in real-time at home.

"We can think of new creative business models, as we sort of break free from bricks and mortar," Dr Freestone said. "AI systems will become a collection or curation of the world's knowledge and the medical care we are able to deploy these on a global scale."

Michelle Perugino, co-founder of artificial intelligence healthtech business Presagen, was also pioneering a new way of doing business in healthcare.

Presagen has embraced a "YouTube model", in which the company entices clinics around the world to share with it their de-identified data, which power algorithms that provide the data back to the clinics for free and which it sells to other practices.

The model was created as a solution to the company's struggle to get data from all demographics to ensure its algorithms were useful to as broad a population as possible, Dr Perugini said.

"Global data sets are locked up in clinical environments. We as a company are saying we're building the social network for healthcare," she said. "We're bringing clinics together around the world. We build the product, then provide them for free to clinics in our product.

"Everyone benefits from that and those clinics also get royalties on the sales of the products.

Dr Freestone said what would drive healthtech professionals towards adopting technology were solutions that let them do their jobs faster.

"People don't buy Teslas because [they'll lead to the creation of] autonomous vehicles and greener vehicles; they buy Teslas because they go faster," he said. "I think we need to think the same way in terms of adoption in the healthtech system.

"Systems need to be created that help the medical profession go faster."
Future Directions Topics for the last year - OGC

- CityThings – an integration of dynamic sensor data to the 3D City Model
- Traffic Analysis in the Digital Twin Environment
- Extracting insights from satellite data to drive urban environmental modelling
- Health and Geo-IT Ethics
- Ethics of Geospatial
- GEO with Augmented Reality, Virtual Reality, Mixed Reality
- Geospatial and Simulation
- Linked Data
Themes

• Smart Cities
  – 3D & 4D
• Digital Twins
• Smart Grids
• Climate/Environmental
• Marine

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• Data Integration
• APIs
• Sensors
• Artificial Intelligence/Machine Learning
What’s next

• Liaison, Collaboration, Dialogue
• We can’t do everything
• Strengthen our links with those TCs, other committees, industry and academia
• Exploit the models and systems we have developed
• Leverage the UNGGIM work (eg. Integrated Geospatial Information Framework)
• Review liaison network
Questions