OGC Innovation Program Update

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First Initiative and challenge in 1999

What interface should we use to publish a map on the web?

- http://mymapapi?map=3
- http://maps/map/uk/tile1
- http://myserver?request=getmap

How to separate data from styling?

How to integrate multiples source of data to produce dynamic maps?
Web Mapping Testbed in 1999

Created the Web Map Service (WMS)

Today we have thousands of articles related to WMS

Today hundreds of thousands of layers are available
OGC Innovation Program Initiatives

• **Reduce technology risk** through accelerating development, testing and acceptance of interoperability standards with the refinement of standards and best practices

• **Expand the market and improve choice** by encouraging industry adoption of new standards and best practices, ensuring market availability of interoperable solutions

• **Mobilize new technologies** through providing participants with real world experience and a platform to innovate while driving early adoption of standards

• **Provide cost effective method** for sponsors and participants to share expertise and development while gaining early marketplace insight and advantage
Benefits to Sponsors

Confidence and advancement of solutions

Influence technology

New tools
Lead new standards

Get early insights from experts

Leverage investment (cost sharing/pool of sponsors)
Benefits to participants

Position themselves in the global marketplace

Interact with sponsors and technical experts

Improve their solution

Increase Business

Get funded

Opportunity to market company and solutions

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Initiative phases

1. Identify pool of sponsors
2. Concept development
3. Call for Participation
4. Team formation
5. Execution
6. Demonstration and outreach

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Example Recent / Planned Pilots

- **Aviation Pilot** produced proven standards that are now operational in civilian aeronautical information management systems.

- **Empire Challenge Pilot** enabled sharing of sensor data in the defense and intelligence domain based on the OGC Sensor Web Enablement standards.

- **Arctic Data Pilot** demonstrating the diversity, richness, and value of a Spatial Data Infrastructure (SDI) to Arctic stakeholders.

- **Future Cities Pilot** demonstrated how use of CityGML and IFC (BIM standard) together to enhance financial, environmental, and social outcomes for citizens living in cities.

- **Underground Infrastructure Pilot** – based on results of recent NYC Concept Development Study, this pilot will demonstrate a common architecture and data model across multiple cities. Scenarios will include street excavations, large scale construction, disaster planning and response.
Relevant Activities in Current / Upcoming OGC Initiatives

- **OGC Testbed 13** (Completion December 2017)
  - Explores
    - expansion of CDB 1.0 feature codes and application schema via NAS profile
    - use of OGC Web Services framework to access the CDB data store.
  - Engineering Report expected to be released in late December 2017

- **OGC Testbed 14** (Request out 8 December 2017, Kick Off April 2018)
  - Indoor Navigation
    - Includes focus on first responder indoor navigation
    - Create and convert 3D indoor LiDAR point cloud models to functional building and navigation models for high risk structures
    - Store and serve point cloud, building, and navigation models for visualization and navigation
    - Derive dynamic turn-by-turn indoor navigation instructions based on the navigation model
    - View and annotate point cloud and building models, along with navigation routes and instructions into, through, and out of buildings.
Current / Upcoming Initiatives

• OGC Testbed 14 (cont’d)
  – 3D Portrayal / Visualization / Streaming
    • Urban centric built infrastructure scenario
    • Test and validate the use of I3S and 3DTiles streaming protocols with the OGC 3D Portrayal Service
    • Focus on web based visualizations of CityGML and CDB data sets via structured workflows
  – Integration of Augmented Reality into CityGML
    • Visualization of AR content within CityGML models and 3D visualization
  – Machine Learning
    • Addressing uncertainties
    • Integration with OGC Web Services environment
    • From “supervised” to “reinforced” learning
    • Knowledge generation and semi-automated clustering techniques

References:
  Testbed 14 Summary:  http://www.opengeospatial.org/projects/initiatives/testbed14
  Testbed 14 Ideas:  https://github.com/opengeospatial/testbed14-ideas/issues
  OGC Technology Trends:  https://github.com/opengeospatial/OGC-Technology-Trends
Testbed 14
Topics Pending Sponsor Funding

• Sponsor areas of interest that are currently unfunded
  – CDB and 3D Globe Service
    • defined ‘container’, terrain service, model service, 3D feature service, disconnected capability
  – Semantic Web
    • Evaluation of semantic web approaches to optimize discovery and application of services and geoinformation via OGC services
  – Point Cloud and Cataloging
    • Common standards-based architecture to improve interoperability and application

• A second RFQ/CFP may be issued early February 2018 to address additional requirements
What Next?

• Explore adding priority M&S requirements to existing initiatives

• Explore joint initiatives led by members of OGC, SISO, and USGIF and the M&S community:
  – **Interoperability Experiments** - narrow focus, entirely member driven with light staff facilitation.
  – **Joint testbed threads / pilot initiatives** – more complex issues/requirements. Funding from sponsoring organizations, staff facilitated / managed.
  – Direct linkage with existing testing, prototyping activities:
    • Labs / testbed infrastructure led by Services
    • Research centers
    • Private sector
    • Exercises, LVC events - Operation Blended Warrior