Health DWG ad-hoc

May 31\textsuperscript{st}, 2013

OGC-TC
AGENDA

1. Welcome / Roundtable Introductions
2. Background of OGC and proposal of Health DWG
3. Toward an OGC Health DWG
4. Draft Health DWG Charter
5. Potential Health DWG Roles / Function
6. Regional Drivers / Health Threads
7. Identification of existing initiatives in different countries/regions
   a) Presentation on EO2HEAVEN Project Results (Earth Observation and Environmental Modelling for the Mitigation of Health Risks)
8. Identification of potential Health Threads / Focus Areas for OGC Health DWG
9. Identification of key barriers, needs, opportunities
10. General Discussion / Smorgusboard
11. Identification of participants, resources, co-chairs
12. What the OGC can provide
13. Next Steps and Close
Who has heard of the OGC? What most people think about standards work!
Or How Many Others View Standards

Dilbert Cartoon

How did the industry standards meeting go?

Dilbert Cartoon

Did you convince 83 companies to adopt standards that benefit only us while dooming the entire industry in the long run?

Dilbert Cartoon

Or are you a complete failure? Can I hear those choices again?
Global challenges

Across multiple domains

Use cases

- wildfire
- severe weather warning service
- landfalling hurricane
- plume forecasting for emergency response
- winter highways maintenance
- riverine flood forecasting
- current aviation
- future aviation
- climate assessment
- sustained polar science campaign

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The OGC Vision

Achieve the full societal, economic and scientific benefits of integrating location resources into commercial and institutional processes worldwide.

SURA Coastal Ocean Observing and Prediction (SCOOP) Program

PortalU
German Environmental Information Portal

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The OGC Mission

To serve as a global forum for the collaboration of developers and users of spatial data products and services, and to advance the development of international standards for geospatial interoperability.

Urban Model of Berlin based on OGC CityGML

Source: www.3d-stadtmmodell-berlin.de
The OGC Process – Consensus and Collaboration

Interoperability Requirements From members And Market

New or enhanced Interface provided to Community for Implementation

Requirements Documented as Part of OGC Interoperability Activity

Requirements used to Define new interface or Enhance existing Interface

Interface Implemented By Members, Tested And Documented

Members submit Interface for discussion And possible adoption Using OGC RFC/SWG processes

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OGC Activities Driven by Community Needs

- Other Standards Organizations
- Education & Research
- Sustainable Development
- Infrastructure - Transportation
- Emergency Services, Disaster Management
- Consumer Services, Real Time Information
- Energy
- Geosciences
- Government

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OGC Health DWG ad-hoc, May 31st, 2013
# Domain Working Groups (January 2013)

<table>
<thead>
<tr>
<th>Name</th>
<th>Lead **</th>
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</thead>
<tbody>
<tr>
<td>3DIM DWG (3DIM DWG)</td>
<td>Scott Simmons, CACI International Inc.</td>
</tr>
<tr>
<td>Architecture DWG (Arch DWG)</td>
<td>Doug Nebert, US Geological Survey (USGS)</td>
</tr>
<tr>
<td>Aviation DWG (Aviation DWG)</td>
<td>Navin Venmar, FAA System Operations Airspace and AIM Office</td>
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<tr>
<td>Catalog DWG (Cat DWG)</td>
<td>Doug Nebert, US Geological Survey (USGS)</td>
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<tr>
<td>Coordinate Reference System DWG (CRS DWG)</td>
<td>Victor Minor, Blue Marble Geographics</td>
</tr>
<tr>
<td>Coverages DWG (Cover DWG)</td>
<td>Peter Baumann, FORMISS (Bavarian Research Centre for Knowledge Based Systems)</td>
</tr>
<tr>
<td>Data Preservation DWG (PreservDWG)</td>
<td>Steve Morris, North Carolina State University</td>
</tr>
<tr>
<td>Data Quality DWG (DQ DWG)</td>
<td>Matt Deare, 1Spatial Group Ltd.</td>
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<tr>
<td>Decision Support DWG (DS DWG)</td>
<td>Stan Tilman, Intergraph Corporation</td>
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<tr>
<td>Defense and Intelligence DWG (D and I DWG)</td>
<td>Lucio Colaiacomo, European Union Satellite Centre</td>
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<tr>
<td>Earth Systems Science DWG (ESS WG)</td>
<td>Phillip Dibner, Ecosystem Research</td>
</tr>
<tr>
<td>Emergency &amp; Disaster Management DWG (EDM DWG)</td>
<td>Lewis Leinenweber, Open Geospatial Consortium, Inc.</td>
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<tr>
<td>Energy and Utilities DWG (EnergyUtilities)</td>
<td>Renee Bogie Hughes, Synaptitude Consulting</td>
</tr>
<tr>
<td>Geo Rights Management (GeoRm) DWG (GeoRm DWG)</td>
<td>Roland Wagner, BHT-Berlin (Deuth Hochschule für Technik Berlin)</td>
</tr>
<tr>
<td>GeoBI DWG (GeoBI DWG)</td>
<td>Michael Sanderson, 1Spatial Group Ltd.</td>
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<tr>
<td>Geography Markup Language (GML) DWG (GML DWG)</td>
<td>Ron Lake, Galdos Systems Inc.</td>
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<tr>
<td>Geometry DWG (GeometryDWG)</td>
<td>John Herring, Oracle USA</td>
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<tr>
<td>Geosemantics DWG (Semantics)</td>
<td>Joshua Lieberman, Deloitte Financial Advisory Services, LLP</td>
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<tr>
<td>Hydrology DWG (Hydrology DWG)</td>
<td>David Lemon, CSIRO</td>
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<tr>
<td>Land Development DWG (LandDev DWG)</td>
<td>Scott Simmons, CACI International Inc.</td>
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<tr>
<td>Law Enforcement And Public Safety DWG (LEAPS DWG)</td>
<td>Mohammed Saleh A Mansoori, GIS Center for Security</td>
</tr>
<tr>
<td>Location Services DWG (LS DWG)</td>
<td>Marwa Mahrouk, Esri</td>
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<tr>
<td>Mass Market DWG (MassMarket DWG)</td>
<td>Ed Parsons, Google</td>
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<tr>
<td>Metadata DWG (Metadata DWG)</td>
<td>Devid Danks, Esri</td>
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<tr>
<td>Meteorology &amp; Oceanography DWG (Met Ocean DWG)</td>
<td>Chris Littie, UK Met Office</td>
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<tr>
<td>Oblique Imagery DWG (ObliqueImageryD)</td>
<td>Shayne Urbanowski, Lockheed Martin</td>
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<tr>
<td>Security DWG (SecurityDWG)</td>
<td>Andreas Mathews, University of the Bundeswehr - ITIS</td>
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<tr>
<td>Sensor Web Enablement DWG (SensorWeb DWG)</td>
<td>Mike Botts, Botts Innovative Research</td>
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<td>University DWG (Univ DWG)</td>
<td>Chris Higgins, Open Grid Forum</td>
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<tr>
<td>Web Feature Service DWG (WFS DWG)</td>
<td>Martin Day, cadcorp (Computer Aided Development Corp.) Ltd.</td>
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<td>Workflow DWG (Workflow DWG)</td>
<td>Stan Tilman, Intergraph Corporation</td>
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** - There may be Co-Chairs or Vice-Chairs that are not listed in this table.
## Standards Working Groups

(October 2013)

<table>
<thead>
<tr>
<th>Name</th>
<th>Load **</th>
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<tbody>
<tr>
<td>ARML 2.0 SWG (ARML 2.0 SWG)</td>
<td>Martin Lechner, Wikitude GmbH</td>
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<tr>
<td>Catalogue Services 3.0 SWG (Cat 3.0 SWG)</td>
<td>Doug Neberl, US Geological Survey (USGS)</td>
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<td>CF-NetCDF 1.0 SWG (CF-NetCDF1.0SWG)</td>
<td>Ben Domenico, University Corporation for Atmospheric Research (UCAR)</td>
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<td>CityGML SWG (CityGML SWG)</td>
<td>Carsten Poonsond, Ordnance Survey</td>
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<td>ebRIM AP of CSW SWG (ebRIM AP of CSW)</td>
<td>Frédéric Houbie, GEOMATYS</td>
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<td>ebXML RegRep SWG (ebXMLRegRepSWG)</td>
<td>Frédéric Houbie, GEOMATYS</td>
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<td>GeoAPI 3.0 SWG (GeoAPI 3.0 SWG)</td>
<td>Martin Desruisseaux, GEOMATYS</td>
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<td>GeoPackage SWG (GeoPackage SWG)</td>
<td>Paul Belsey, Image Matters LLC</td>
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<td>GeoServices Rest SWG (GSServRestSWG)</td>
<td>Satish Sankaran, Esri</td>
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<td>GeoSPARQL SWG (GeoSPARQL SWG)</td>
<td>Matthew Perry, Oracle USA</td>
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<td>GeoSynchronization 1.0 SWG (GeoSynchron SWG)</td>
<td>Panagiota (Peter) A. Vretanos, CubeWerk</td>
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<td>GeoXACML SWG (GeoXACML SWG)</td>
<td>Jan Herrmann, Technische Universität München, Dept. of Informatics</td>
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<td>GML 3.3 SWG (GML 3.3 SWG)</td>
<td>Clemens Fortele, Interactive Instruments GmbH</td>
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<td>GMLJP2 1.1 SWG (GMLJP2-1.1SWG)</td>
<td>Lucio Colafaco, European Union Satellite Centre</td>
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<td>IndoorGML SWG (IndoorGML SWG)</td>
<td>K.J. Joune Li, Pusan National University</td>
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<td>KML 2.3 SWG (KML SWG)</td>
<td>David Burggraf, Goldos Systems Inc.</td>
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<td>O&amp;AM 2.0 SWG (OM 2.0 SWG)</td>
<td>Simon Cox, CSIRO</td>
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<td>OLS 1.3 SWG (OLS 1.3 SWG)</td>
<td>Carl Stephen Smyth, Open Site Plan</td>
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<tr>
<td>Open GeoSMS SWG (Open GeoSMS SWG)</td>
<td>Kuo-Yu Chuang, Industrial Technology Research Institute</td>
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<tr>
<td>OWS Common 1.2 SWG (OWSCommon1.2SWG)</td>
<td>James Greenwood, SeiCorp, Inc.</td>
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<td>OWS Context SWG (OWSContextSWG)</td>
<td>David Weldon, US National Geospatial-Intelligence Agency (NGA)</td>
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<tr>
<td>PubSub SWG (PubSub SWG)</td>
<td>Johannes Eckert, International Geospatial Services Institute (IGSI) GmbH</td>
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<tr>
<td>RESTful Services Policy SWG (RESTful SWG)</td>
<td>John Herring, Oracle USA</td>
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<tr>
<td>Sensor Model Language (SensorML) 2.0 SWG</td>
<td>Mike Bot, Botts Innovative Research</td>
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<td>Sensor Web for IoT SWG (SWE IoT SWG)</td>
<td>Steve Liang, University of Calgary</td>
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<tr>
<td>Simple Features SWG (SF SWG)</td>
<td>John Herring, Oracle USA</td>
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<tr>
<td>Styled Layer Descriptor and Symbology Encoding 1.2 SWG (SLDE 1.2 SWG)</td>
<td>Olivier Erz, School of Business &amp; Engineering Yaud (HEIG-VD)</td>
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<td>WFS 2.0 SWG (WFS 2.0 SWG)</td>
<td>Peter Taylor, CSIRO</td>
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<td>WFS Coverage Service (WCS) SWG (WCS SWG)</td>
<td>Peter Baumann, Jacobs University Bremen GmbH</td>
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<td>Web Mapping Service 1.4 SWG (WMS 1.4 SWG)</td>
<td>Satish Sankaran, Esri</td>
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<tr>
<td>Web Processing Service 2.0 SWG (WPS 2.0 SWG)</td>
<td>Benjamin Pross, 52° North Initiative for Geospatial Open Source Software GmbH</td>
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<td>WFS Gazetteer Profile 1.0 SWG (WFSgaz 1.0 SWG)</td>
<td>Doug Neberl, US Geological Survey (USGS)</td>
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<td>WFS/FEATURE SWG (WFS/FEATURE SWG)</td>
<td>Panagiota (Peter) A. Vretanos, CubeWerk</td>
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Every DWG and SWG has a portal page

- Go to https://portal.opengeospatial.org/?m=projects&tab=3 and select the WG of interest

OGC Health DWG ad-hoc, May 31st, 2013
Emergency and Disaster Management Domain Working Group

Forum for uniting communities of users including government agencies, industry, research organizations, non-governmental organizations and others. Promotes dialogue, collaboration and innovation concerning interoperability and standards harmonization within the EDM community.
Hydrology Domain Working Group

Provide a venue and mechanism for seeking technical and institutional solutions to the challenge of describing and exchanging data describing the state and location of water resources, both above and below the ground surface. Coordination with WMO.
Meteorology/Oceans DWG

The OGC Meteorology and Oceanography DWG provides an open forum for work on meteorological and oceanographic data interoperability and a process to publish and revise OGC Best Practices and Standards thence giving a route for submission to WMO CBS for adoption.
Earth System Science (ESS) DWG

- Coordination point for multiple DWGs working geosciences, environmental, and other activities related to the use of OGC standards

- Very recent: GeoSciML Discussions
Domain of Interest: OGC Sensor Web Enablement Standards (SWE)

Enable discovery and tasking of sensor assets, and the access and application of sensor observations for enhanced situational awareness

- Sensor Model Language (SensorML)
- Observations & Measurements (O&M)
- Sensor Planning Service (SPS)
- Sensor Observation Service (SOS)
- Catalogue Service
- Sensor Alert Service (SAS)

--Complementary Standards--
- IEEE 1451 smart sensor standard
- OASIS (alert) standards

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3D Information Management: Integration of 3D Built / Geospatial Worlds

• Interoperation across the AEC / CAD / Geospatial domains
  – 3D City Models
  – 3D Visualization and Portrayal Services
  – Location Services
  – Indoor Location / Navigation
  – CityGML Discussions
  – CityGML Utility ADE Extension

Adapted from BuildingSmart Alliance presentation

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Decision Support DWG
Application fusion: 3d, location services, mass market

- CityGML, OpenStreetMap, Digital Terrain models, and OGC OpenLS, SOS, and candidate W3DS standards
Toward a Health DWG

• Health related outcomes from previous OWS phases
• OGC Standards and Domain WGs (cross-pollination)
• OGC implementations in different regions (e.g. INSPIRE)
• Multiple Drivers exist at global, national, sub-national scales & varying time scales
• Policies for Health SDI and Data Standards vary by country/region
• Common barriers, needs, drivers continue to be identified
• Scientific research can inform, or depends upon, open map standards
• A wide range of health-related applications continue to be identified
• No existing platform for development of geospatial data standards in the public health domain; No existing international health-oriented SDI
• Draft Health DWG Charter introduced: OGC Doc. Number: 13-009
• GovFuture Webinar well received: Serving Public Health through Open Health Mapping Services, is available here: https://www2.gotomeeting.com/register/803074466

OGC Health DWG ad-hoc, May 31st, 2013
Draft Health DWG Charter

An OGC Health Domain Working Group would enable the identification and prioritization of use cases, business and technical requirements that will provide the most significant value, or mitigate the most significant risks in the public health arena.

The suggested format for an OGC Health Domain Working Group is Public – i.e. open to OGC members and non-members. This will enhance the opportunity for health sector, government agencies, and geospatial community to collaborate in:

1. User and Technical requirements gathering
2. Informing the development of standards
3. Facilitating exchange of knowledge, best practices
4. Demonstration through interoperability projects
5. Implementation of interoperable technical solutions

Draft Charter for a Health DWG (Doc Ref #: 13-009
https://portal.opengeospatial.org/files/?artifact_id=52042&version=1)

OGC Health DWG ad-hoc, May 31st, 2013
Potential Health DWG Role / Functions:

- **Convene** OGC members and non-members in public health domain
- **Build Capacity** for technical solutions, knowledge exchange, requirements gathering and prioritization
- **Assimilate Inputs** toward geospatial standards development, including data definitions, formats, and services for publishing, discovery, exchange, protection and queryability of geospatial information
- **Spawn Demonstration Projects**, Interoperability Experiments, and Interoperability Pilots
- **Educate and Inform** Public Health communities-of-practice
- **Other?:**

OGC Health DWG ad-hoc, May 31\textsuperscript{st}, 2013
Regional Drivers / Health Threads

Regional Drivers:
- a)
- b)
- c)

Regional Drivers:
- a)
- b)
- c)

Regional Drivers:
- a)
- b)
- c)

Regional Drivers:
- a)
- b)
- c)

Regional Drivers:
- a)
- b)
- c)

Common Drivers / Focus for Health DWG

OGC Health DWG ad-hoc, May 31st, 2013
Monitor trends in chronic illness and infectious disease – with WPS, WFS, WMS

Model Climate Change and Health Impacts for Risk Assessment

Prevention, Alerting, Response, Recovery

Assess Vulnerable Populations / Zones

Time series pandemic surveillance with time-tag in WMS

Public education, resource planning (including vaccination campaigns) with WMS
Statement of Needs / Strategic Objectives

Address interoperability requirements – e.g. support more effective health surveillance using open mapping standards to access distributed geospatial data pertaining to disease, disease vectors and vulnerable communities / populations.

Support collaborative research into cumulative, synergistic, non-linear impacts to public health, for risk assessment and reduction

Develop and support communication strategies and market research, including for take-to-market of OGC standards / OGC-compliant technologies which serve the health marketplace

Support Policy, Research, Education – including development of policy, research, best practices, and education in the use of open mapping standards to monitor trends and changes in public health, for risk identification, communication, and disease prevention.

Support Cross-Border Surveillance initiatives – including modeling, exercising, responding to cross-border health risks

Advance best practices for visualization of Chronic and Infectious Diseases using open mapping standards including to support epidemiology, surveillance, control, treatment, prevention, and education activities

Advance best practices for Public Health Management and Cost Reduction using open mapping standards including resource allocation for health emergencies, to protect vulnerable populations, and in response to changing geo-demographics

Advance best practices for Adapting to Climate Change Impacts to Public Health using open mapping standards – including modeling of climate impacts on public health, risk assessment and reduction (e.g. to heat events, reduced air quality, vector borne disease, floods, drought, fire, extreme weather, changes in food production and water quality, social impacts of displacement and exposure of vulnerable populations). This includes supporting efforts to standardize interoperable interfaces for health and climate models at a scale appropriate to decision making (regional and temporal) while protecting privacy of personal health information.
Health DWG Goals and Objectives:
• Your turn

Potential Focus Areas / Priorities:
• Your turn
Identify existing initiatives using OGC Standards

For example:
- in different countries/regions
- to support various health related applications

Capture Participant Inputs:
- EU INSPIRE
- GEOSS AIP, EO2Heaven
- Other? / your turn
Presentation on EO2HEAVEN Project Results
Identification of key barriers, needs, and opportunities

Barriers and Needs:
- ?

Opportunities:
- ?

Data standardization, integration, interoperability
Cross-Border collaboration / communication
Emergency / pandemic preparedness
Health issues (e.g. chronic illness)
Health Care Costs, Other?

OGC Health DWG ad-hoc, May 31st, 2013
General Discussion / Smorgusboard

- Key local and global Drivers
- Use Cases / Business Needs
- Market Scope, Requirements Analysis
- Health DWG Goals and Objectives
- Potential Champions / Key Users
- Costs / benefits analysis
- value proposition
- Parallel and Collaborative Initiatives
- OGC & Health Information Standards of Interest
- Technical solutions

Capture Participant Inputs:
- a)
- b)
- c)
- ...

OGC Health DWG ad-hoc, May 31st, 2013
Potential participants / resources / co-chairs

For example:

- Health Authorities
- Disease Surveillance Agencies, Health Information Institutes
- Professional Health / Medical Associations
- National and Sub-National Governments
- Health Informatics solution providers
- Geospatial Vendor Community
- Research Community

Other Resources:

For example:
- Publications,
- Web Sites,
- Services (OGC),
- Data Sources

Capture Participant inputs:

a)
b)
c)
...
What does the OGC provide?

• An *agreed upon consensus process* for defining, testing, documenting, and approving standards

• *Staff knowledge, expertise and support* to work with the members to facilitate the consensus process the culminates in approved and adopted standards.

• A *process framework* to encourage effectiveness and efficiency in advancing OGC member goals.

• A comprehensive *Communications infrastructure*.

• A *consensus-based forum* for conflict resolution
OGC Standards Alliance Partnerships

- Internet Engineering Task Force (IETF)
- Organization for the Advancement of Structured Information Standards (OASIS)
- National Emergency Number Association (NENA)
- International Organization for Standards (ISO)
- World Wide Web Consortium (W3C)
- World Meteorological Organization (WMO)
- IEEE Technical Committee 9 (Sensor Web)
- Open Grid Forum (OGF)
- buildingSMART Alliance
- Web3D Consortium

OGC Health DWG ad-hoc, May 31st, 2013
Relationship with ISO TC-211

• The OGC has a class A technical liaison agreement with TC 211. Governed by Terms of Reference (ToR)

• The coordination and communication is performed by the Joint Advisory Group (JAG)

• A number of OGC standards have been submitted into ISO and approved as ISO standards
  – Web Map Service
  – Simple Features
  – Web Feature Service
  – Filter Encoding
  – GML
  – Observations and Measurements
  – Coordinate Reference Systems (aka Spatial Referencing by Coordinates)
Next Steps and Close

• Next Steps:
  – Summary of ad-hoc
  – Amend Draft Health DWG Charter as needed
  – Introduce a formal Charter within OGC
  – Establish Listserve and Repository for Health DWG

• Points of Contact
  – Facilitator: Eddie Oldfield, Spatial Quest Solutions
    Tel. 1 506-453-0887, Email: eoldfield@bellaliant.net
    • Member of OGC

OGC Health DWG ad-hoc, May 31st, 2013