# Health DWG ad-hoc

May 31st, 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 (**E**arth **O**bservation and **Env**ironmental Modelling for the Mitigation of **Hea**lth 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!
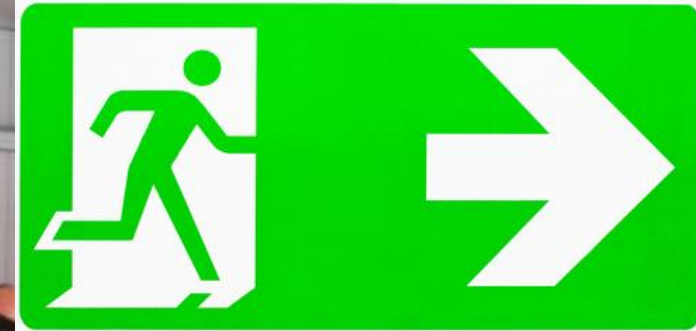
Or How Many Others View Standards
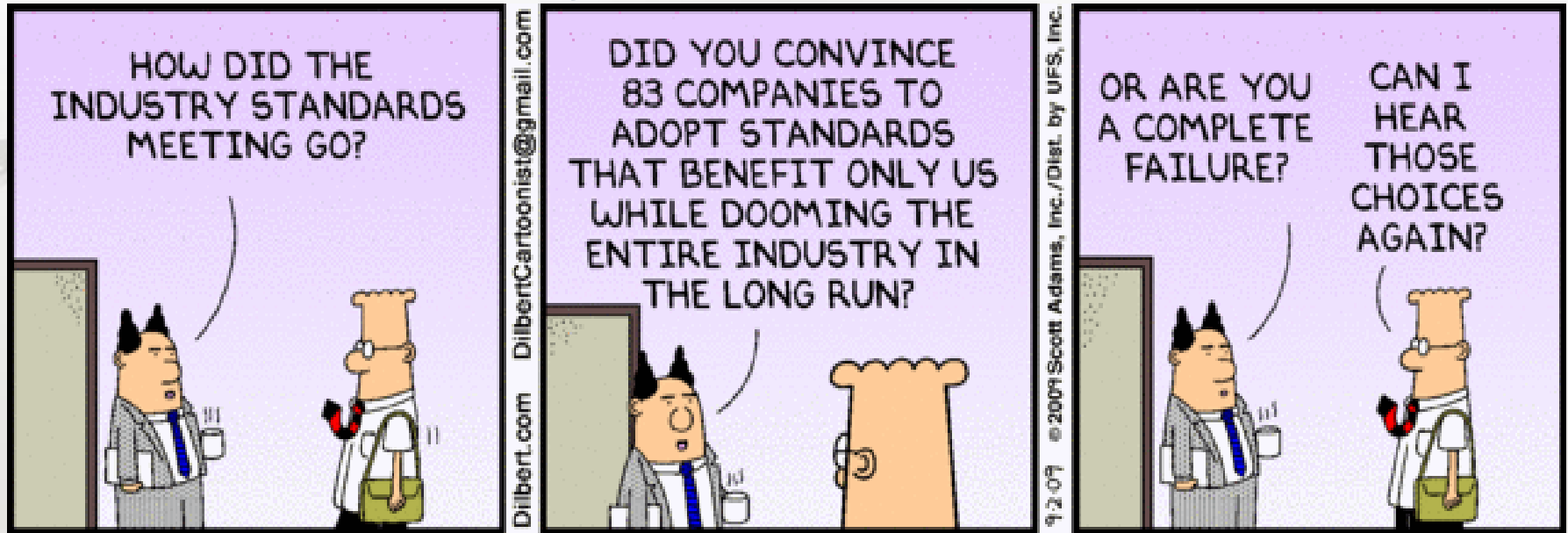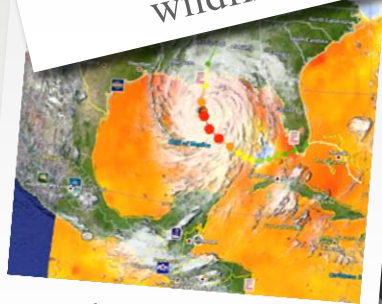
Global challenges

Across multiple domains

Use cases

current aviation

future aviation

wildfire

severe weather warning service

sustained polar science campaign

climate assessment

landfalling hurricane

plume forecasting for emergency response

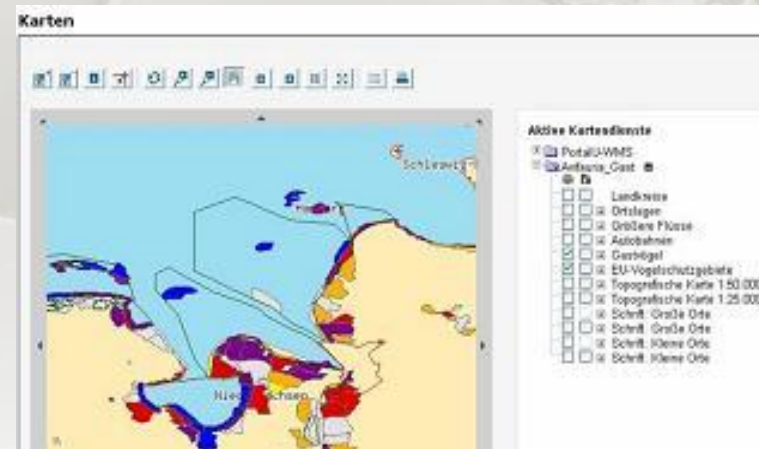winter highways maintenance

riverine flood forecasting

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
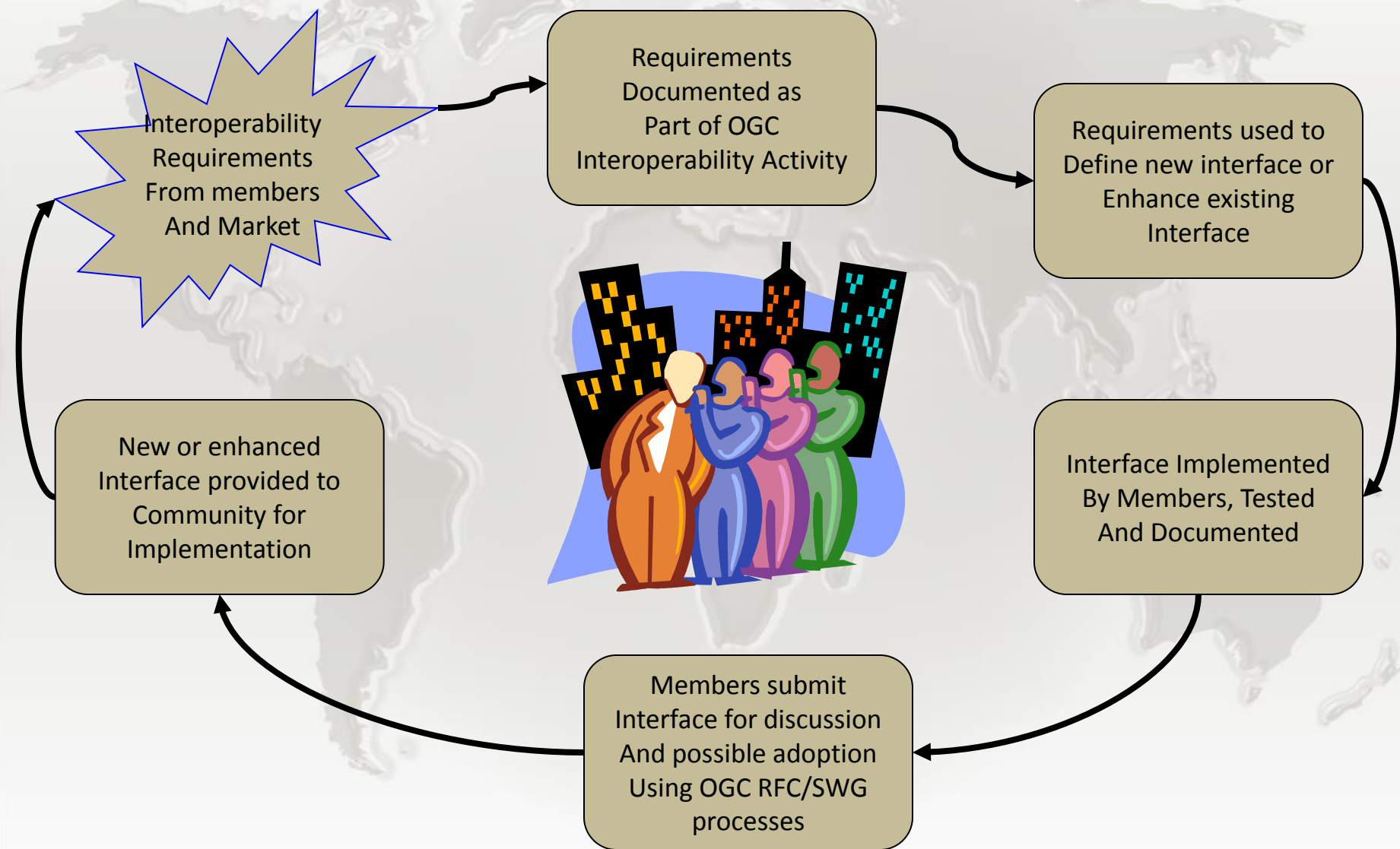German Environmental Information Portal

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-stadtmodell-berlin.de

The OGC Process – Consensus and Collaboration

Interoperability Requirements From members And Market

Requirements Documented as Part of OGC Interoperability Activity

Requirements used to Define new interface or Enhance existing Interface

New or enhanced Interface provided to Community for Implementation

Interface Implemented By Members, Tested And Documented

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

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

OGC Activities Driven by Community Needs

Other Standards Organizations

Education & Research

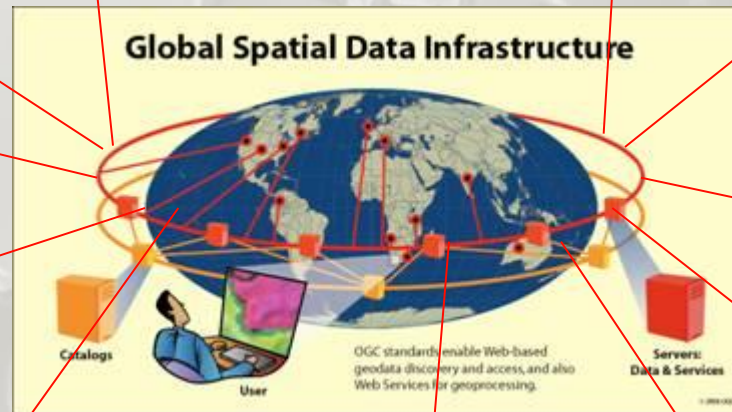**Sustainable Development**

Infrastructure - Transportation

Health

Global Spatial Data Infrastructure

E -Government

Emergency Services, Disaster Management

Aviation

Energy

Geosciences

Consumer Services, Real Time Information

Domain Working Groups (January 2013)

Name	Lead **
3DIM DWG (3DIM DWG)	Scott Simmons, CACI International Inc.
Architecture DWG (Arch DWG)	Doug Nebert, US Geological Survey (USGS)
Aviation DWG (Aviation DWG)	Navin Vembar, FAA System Operations Airspace and AIM Office
Catalog DWG (Cat DWG)	Doug Nebert, US Geological Survey (USGS)
Coordinate Reference System DWG (CRS DWG)	Victor Minor, Blue Marble Geographics
Coverages DWG (Cover DWG)	Peter Baumann, FORWISS (Bavarian Research Centre for Knowledge-Based Systems)
Data Preservation DWG (PreservDWG)	Steve Morris, North Carolina State University
Data Quality DWG (DQ DWG)	Matt Beare, 1Spatial Group Ltd.
Decision Support DWG (DS DWG)	Stan Tillman, Intergraph Corporation
Defense and Intelligence DWG (D and I DWG)	Lucio Colaiacomo, European Union Satellite Centre
Earth Systems Science DWG (ESS WG)	Phillip Dibner, Ecosystem Research
Emergency & Disaster Management DWG (EDM DWG)	Lewis Leinenweber, Open Geospatial Consortium, Inc.
Energy and Utilities DWG (EnergyUtilities)	Renee Bogle Hughes, Synaptitude Consulting
Geo Rights Management (GeoRM) DWG (GeoRM DWG)	Roland Wagner, BHT-Berlin (Beuth Hochschule für Technik Berlin)
GeoBI DWG (GeoBI DWG)	Michael Sanderson, 1Spatial Group Ltd.
Geography Markup Language (GML) DWG (GML DWG)	Ron Lake, Galdos Systems Inc.
Geometry DWG (GeometryDWG)	John Herring, Oracle USA
Geosemantics DWG (Semantics)	Joshua Lieberman, Deloitte Financial Advisory Services, LLP
Hydrology DWG (Hydrology DWG)	David Lemon, CSIRO
Land Development DWG (LandDev DWG)	Scott Simmons, CACI International Inc.
Law Enforcement And Public Safety DWG (LEAPS DWG)	Mohammed Saleh Al Mansoori, GIS Center for Security
Location Services DWG (LS DWG)	Marwa Mabrouk, Esri
Mass Market DWG (MassMarket DWG)	Ed Parsons, Google
Metadata DWG (Metadata DWG)	David Danko, Esri
Meteorology & Oceanography DWG (Met Ocean DWG)	Chris Little, UK Met Office
Oblique Imagery DWG (ObliqueImageryD)	Shayne Urbanowski, Lockheed Martin
Security DWG (SecurityDWG)	Andreas Matheus, University of the Bundeswehr - ITIS
Sensor Web Enablement DWG (SensorWeb DWG)	Mike Botts, Botts Innovative Research
University DWG (Univ DWG)	Chris Higgins, Open Grid Forum
Web Feature Service DWG (WFS DWG)	Martin Daly, cadcorp (Computer Aided Development Corp.) Ltd.
Workflow DWG (Workflow DWG)	Stan Tillman, Intergraph Corporation

** - There may be Co-Chairs or Vice-Chairs that are not listed in this table.

Standards Working Groups (January 2013)

Name	Lead **
ARML 2.0 SWG (ARML 2.0 SWG)	Martin Lechner, Wikitude GmbH.
Catalogue Services 3.0 SWG (Cat 3.0 SWG)	Doug Nebert, US Geological Survey (USGS)
CF-NetCDF 1.0 SWG (CF-NetCDF1.0SWG)	Ben Domenico, University Corporation for Atmospheric Research (UCAR)
CityGML SWG (CityGML SWG)	Carsten Roensdorf, Ordnance Survey
ebRIM AP of CSW SWG (ebRIM AP of CSW)	Frédéric Houbie, GEOMATYS
ebXML RegRep SWG (ebXMLRegRepSWG)	Frédéric Houbie, GEOMATYS
GeoAPI 3.0 SWG (GeoAPI 3.0 SWG)	Martin Desruisseaux, GEOMATYS
GeoPackage SWG (GeoPackage SWG)	Paul Daisey, Image Matters LLC
GeoServices Rest SWG (GServRestSWG)	Satish Sankaran, Esri
GeoSPARQL SWG (GeoSPARQL SWG)	Matthew Perry, Oracle USA
GeoSynchronization 1.0 SWG (Geosync SWG)	Panagiotis (Peter) A. Vretanos, CubeWerx
GeoXACML SWG (GeoXACML SWG)	Jan Herrmann, Technische Universität München, Dept. of Informatics
GML 3.3 SWG (GML 3.3 SWG)	Clemens Portele, interactive instruments GmbH
GMLJP2 1.1 SWG (GMLJP2-1.1SWG)	Lucio Colaiacomo, European Union Satellite Centre
IndoorGML SWG (IndoorGML SWG)	Ki-Joune Li, Pusan National University
KML 2.3 SWG (KML SWG)	David Burggraf, Galdos Systems Inc.
O&M 2.0 SWG (OM 2.0 SWG)	Simon Cox, CSIRO
OLS 1.3 SWG (OLS 1.3 SWG)	Carl Stephen Smyth, Open Site Plan
Open GeoSMS SWG (Open GeoSMS SWG)	Kuo-Yu Chuang, Industrial Technology Research Institute
OWS Common 1.2 SWG (OWSCommon1.2SWG)	James Greenwood, SeiCorp, Inc.
OWS Context SWG (OWScontextSWG)	David Wesloh, US National Geospatial-Intelligence Agency (NGA)
PubSub SWG (PubSub SWG)	Johannes Echterhoff, International Geospatial Services Institute (iGSI) GmbH
RESTful Services Policy SWG (RESTful SWG)	John Herring, Oracle USA
Sensor Model Language (SensorML) 2.0 SWG (SensorML2.0SWG)	Mike Botts, Botts Innovative Research
Sensor Web for IoT SWG (SWE IoT SWG)	Steve Liang, University of Calgary
Simple Features SWG (SF SWG)	John Herring, Oracle USA
Styled Layer Descriptor and Symbology Encoding 1.2 SWG (SLDSE 1.2 SWG)	Olivier Ertz, School of Business & Engineering Vaud (HEIG-VD)
WaterML 2.0 SWG (WaterML2.0SWG)	Peter Taylor, CSIRO
Web Coverage Service (WCS) SWG (WCS SWG)	Peter Baumann, Jacobs University Bremen GmbH
Web Mapping Service 1.4 SWG (WMS 1.4 SWG)	Satish Sankaran, Esri
Web Processing Service 2.0 SWG (WPS 2.0 SWG)	Benjamin Pross, 52° North Initiative for Geospatial Open Source Software GmbH
WFS Gazetteer Profile 1.0 SWG (WFSgaz1.0 SWG)	Doug Nebert, US Geological Survey (USGS)
WFS/FES SWG (WFS/FES SWG)	Panagiotis (Peter) A. Vretanos, CubeWerx

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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

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.
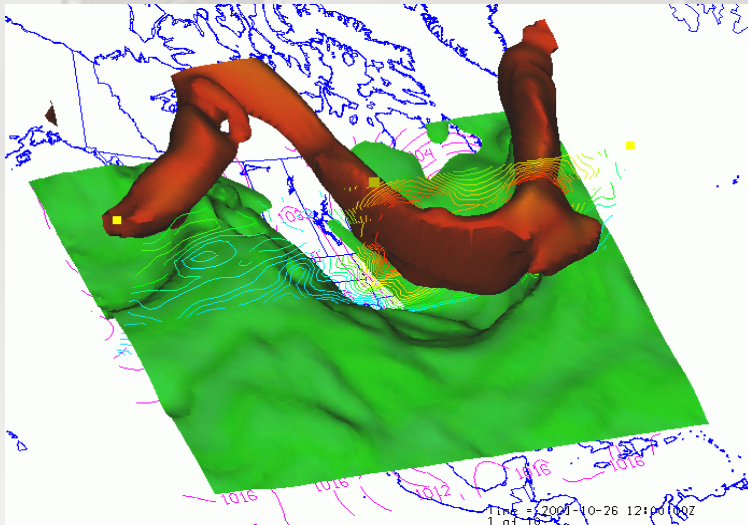
Earth System Science (ESS) DWG

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

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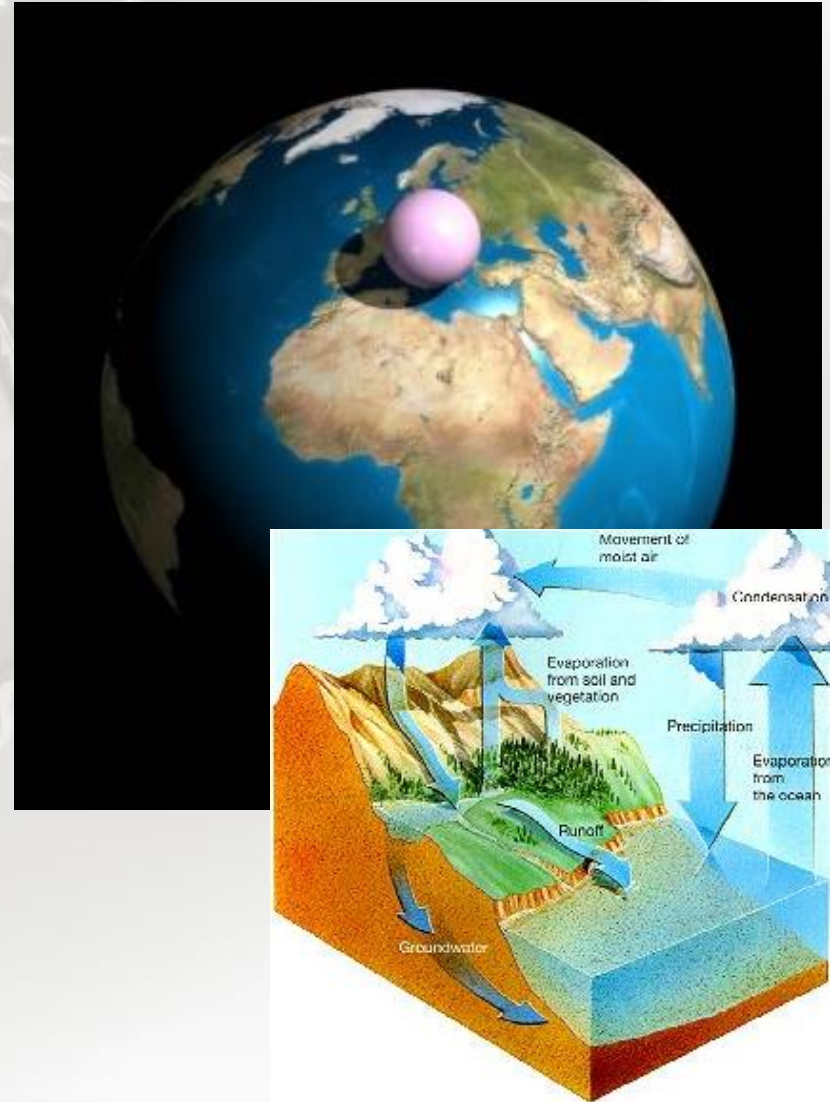
Domain of Interest: OGC Sensor Web Enablement Standards (SWE)

Enable discovery and tasking of sensor assets, and the access and application of sensor observations for enhanced situational awareness
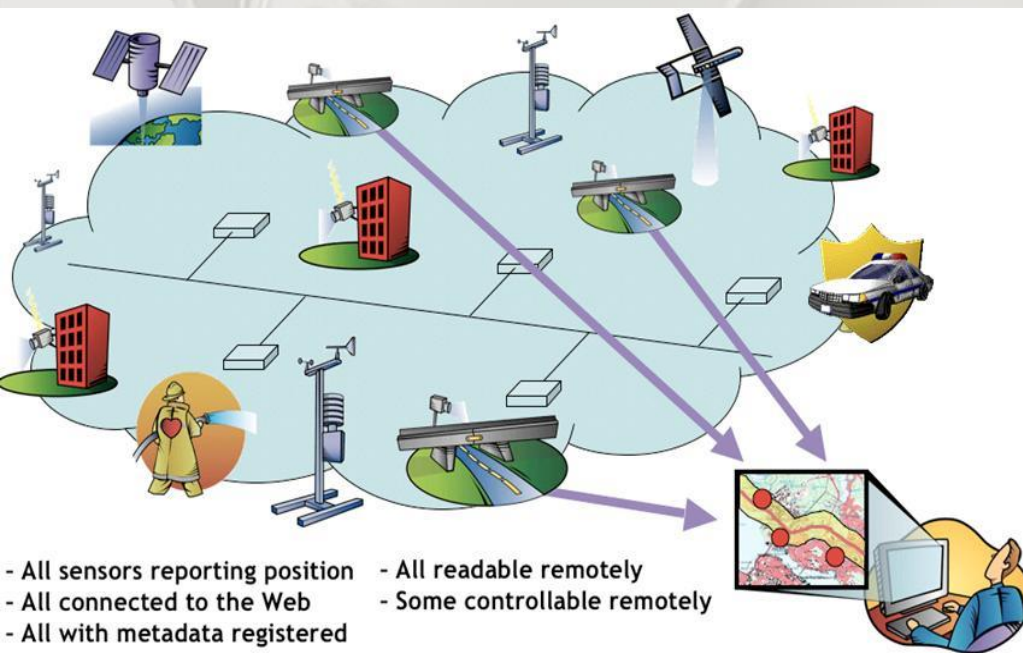
✓Sensor Model Language (SensorML)

✓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

- All sensors reporting position
- All connected to the Web
- All with metadata registered

- All readable remotely
- Some controllable remotely

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

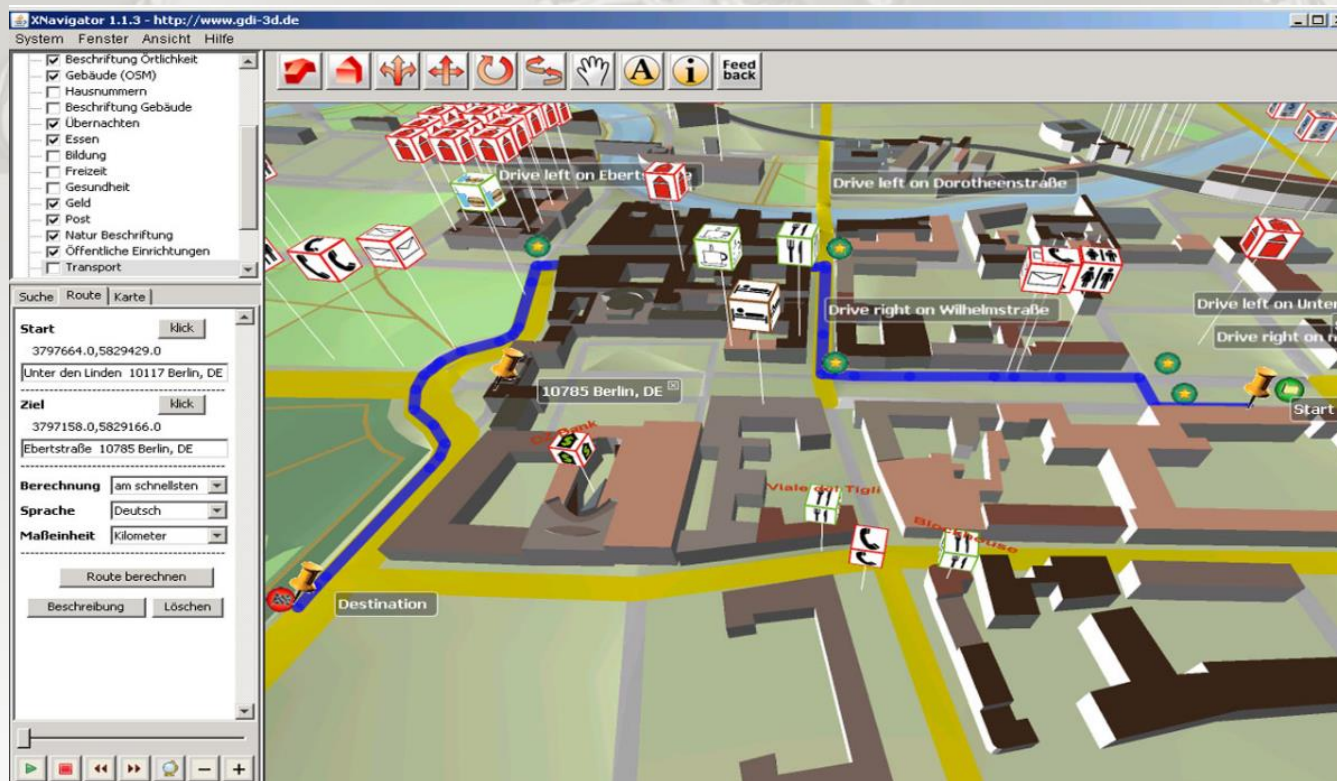*Adapted from BuildingSmart Alliance presentation*

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

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)

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?:**

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)
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Regional Drivers:
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a)
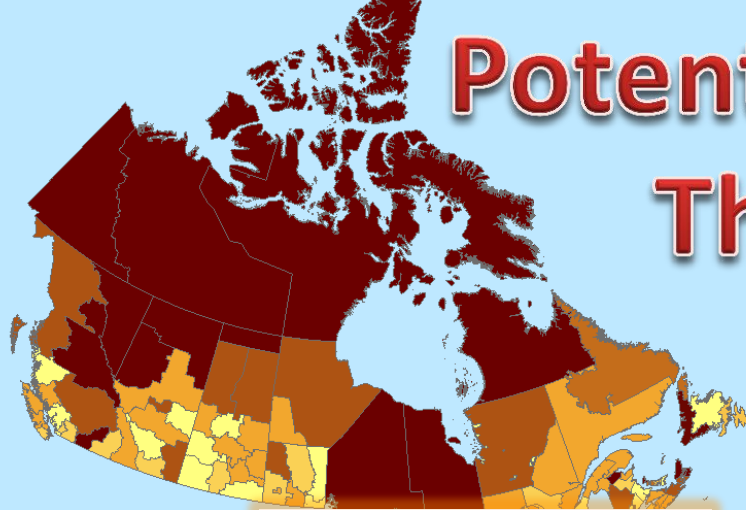b)

Regional Drivers:
a)
b)
c)

Regional Drivers:
a)
b)
c)

Regional Drivers:
a)
b)
c)

*Common Drivers /
Focus for Health DWG*

Potential Health Threads

Monitor trends in chronic illness and infectious disease – with WPS, WFS, WMS
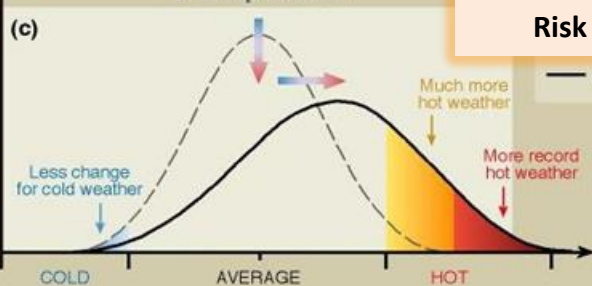
Asthma-COPD Morbidity Trends, 2005
Age-Adjusted Cases per 1,000 Standard Million (Census 2001)

Provincially Adjusted
Morbidity Trends per 1,0
Very Low
Low
Average
High
Very High

Time series pandemic surveillance with time-tag in WMS

Model Climate Change and Health Impacts for Risk Assessment

Increase in mean and variance of temperature

(c)

New climate

Less change for cold weather

Much more hot weather

More record hot weather

Probability of occurrence

COLD   AVERAGE   HOT
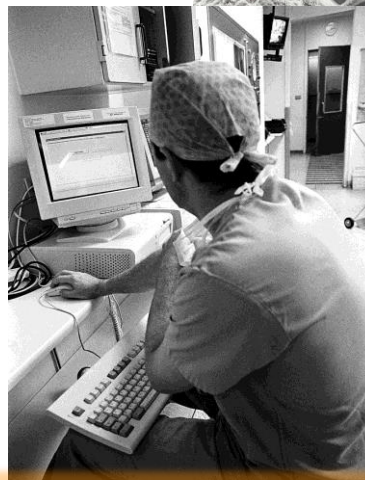
Prevention, Alerting, Response, Recovery

Risk: Low (1 - 3)   Moderate (4 - 6)   High (7 - 10)

Current
Observed at
11:00 AM EDT Thursday 24
April 2008

4 Moderate Risk

At-Risk Population:
• If you have heart or breathing problems, and experience reducing physical exertion outdoors or reschedule activit index is lower.

Public education, resource planning (including vaccination campaigns) with WMS

Assess Vulnerable Populations / Zones
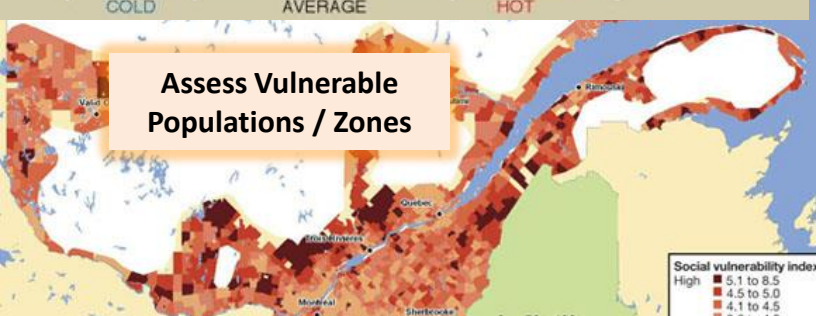
Social vulnerability index
High   5.1 to 8.5
4.5 to 5.0
4.1 to 4.5

FOREST FIRES

H General Medical and Surgical Hosp
Nursing and Personal Care Facilitie
Skilled Nursing Care Facilities, 200
Offices and Clinics of Doctors of M

Air quality Monitoring Station 03,
Good
Fair

Population per square kilometre, 2
0
0 - 10
10 - 25
25 - 50
50 - 100
100 - 1000
1000 - 10000
> 10000
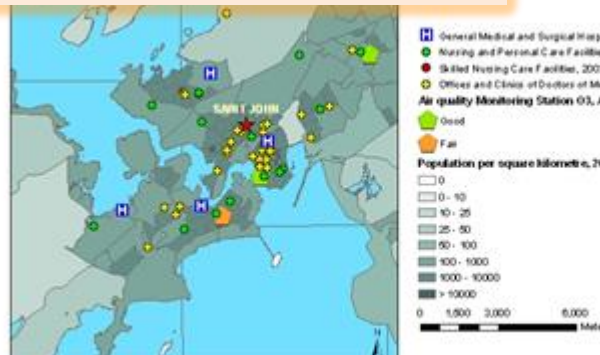
Statement of Needs / Strategic Objectives

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?

General Discussion / Smorgusboard

Key local and global Drivers

Health DWG Goals and Objectives

Parallel and Collaborative Initiatives

Use Cases / Business Needs

Potential Champions / Key Users

OGC & Health Information Standards of Interest

Market Scope, Requirements Analysis

Costs / benefits analysis

Technical solutions

value proposition

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)
…

Capture participant inputs:

- ?

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 Structure
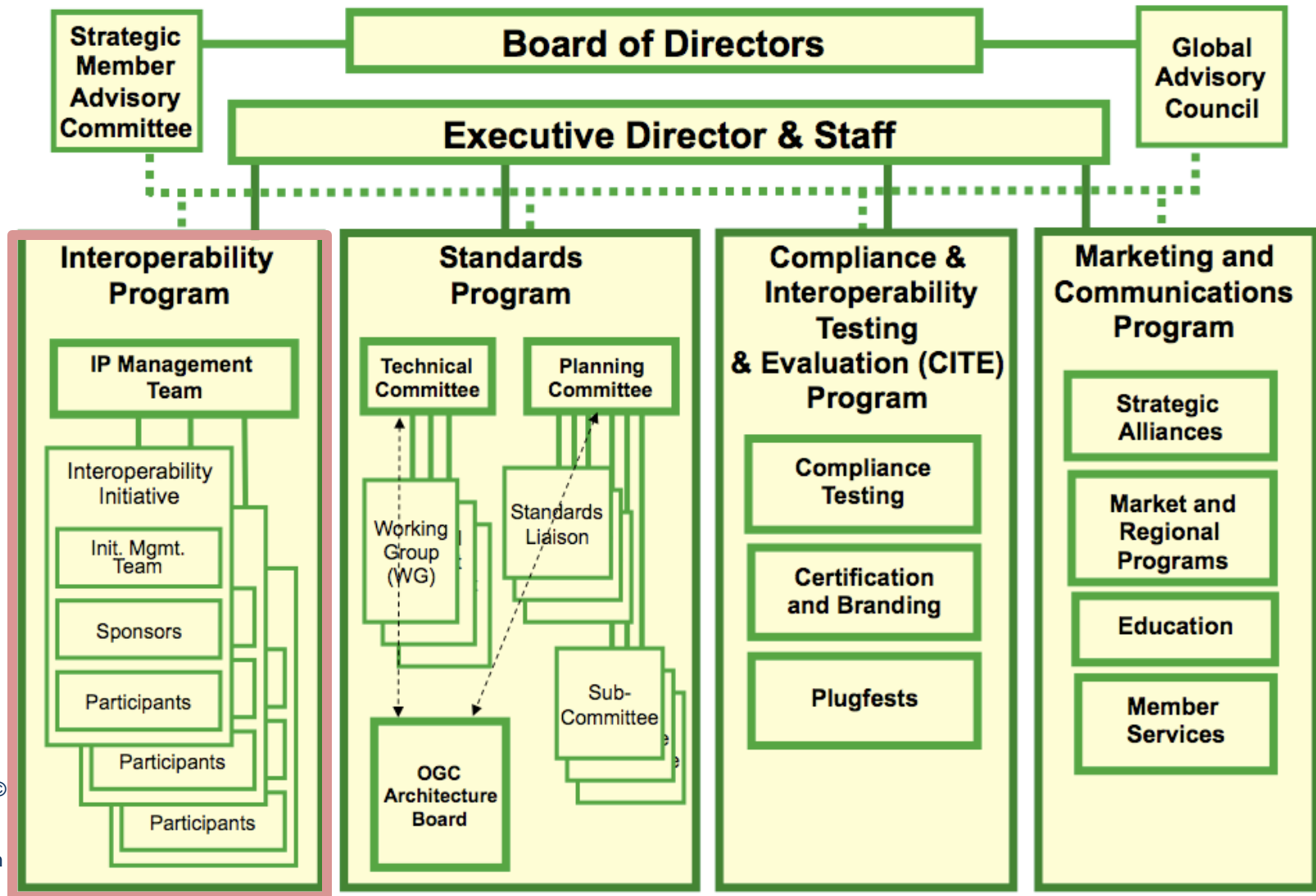
OGC Standards Alliance Partnerships

- 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

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