



Driving geospatial interoperability - communities of interest

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Cross-Boundary / Limited or No Connectivity Information Sharing



Continues to be one of our biggest challenges!

Source: www.fao.org/docrep/008/ae929e/ae929e03.htm



Source: David Rydevik, Thailand Tsunami, 2004



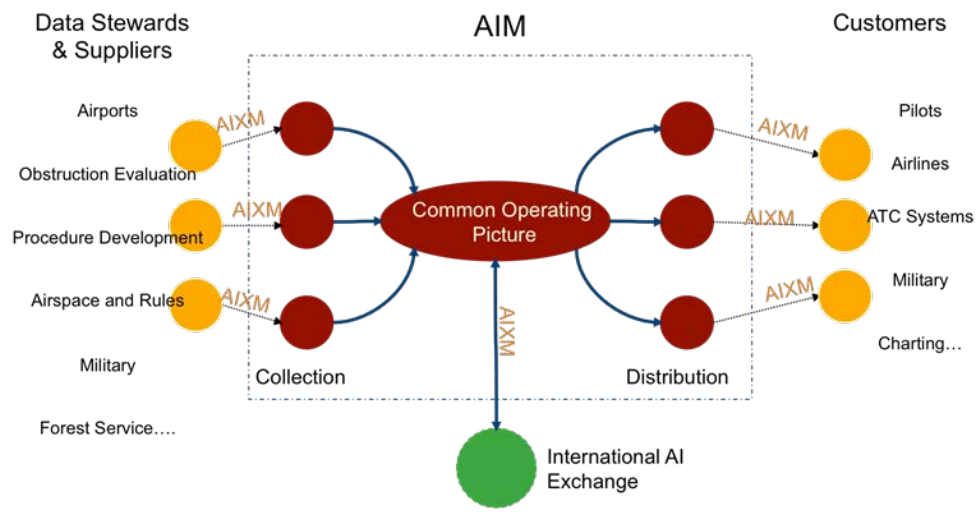
Aeronautical Information Management (AIM)

(OGC Web Services Phase 6 & 7 Testbeds)



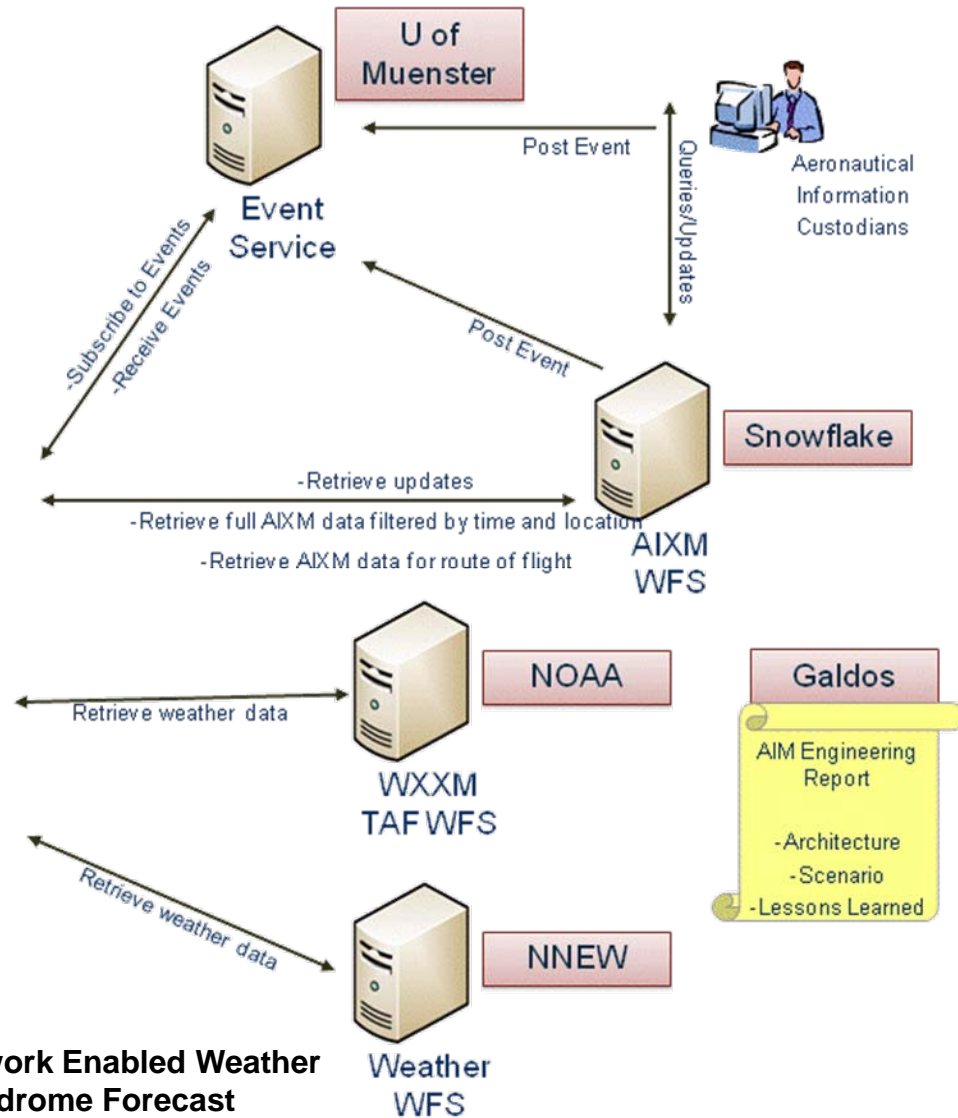
- Develop and test standards-based service-oriented architecture to support the provision of aeronautical information directly to flight decks and Electronic Flight Bags (EFB)
- Support vision for Aeronautical Information Management

- Interconnected systems with many actors and many users
- Need for real-time information used in flight planning, navigation, rerouting, etc.
- Right information at the right time at the right place to the right user
- End-to-end management of information



Aeronautical Information Management Architecture

(OGC Web Services Phase 6 Testbed)



Community and Use Case Driven Meteorology and Oceanography Domain Working Group



Aviation:

- ICAO WXCM / WXXM



Hydrology:

- OGC Hydro DWG
- *Surface Water IE*



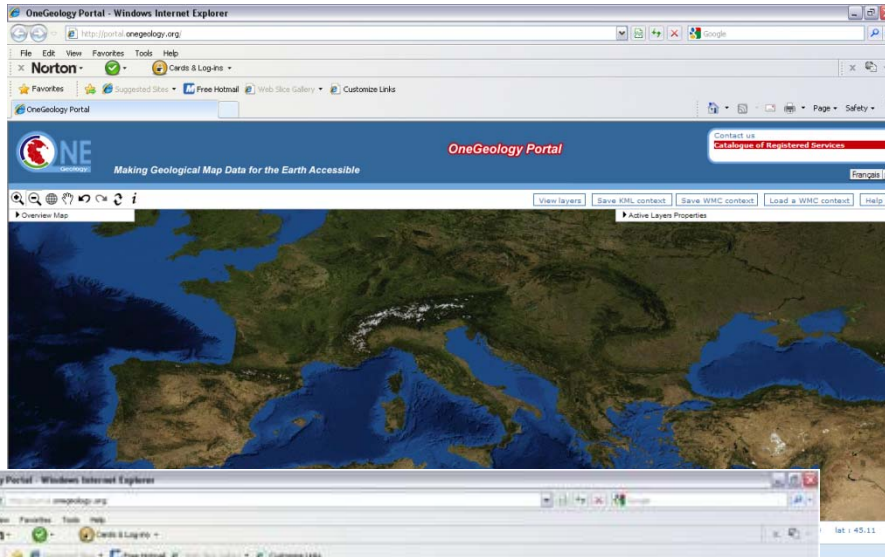
Climate:

- Surface Temperatures
- CMIP5 etc.



Source: http://external.opengeospatial.org/twiki_public/MetOceanDWG/MetOceanUseCases

OneGeology



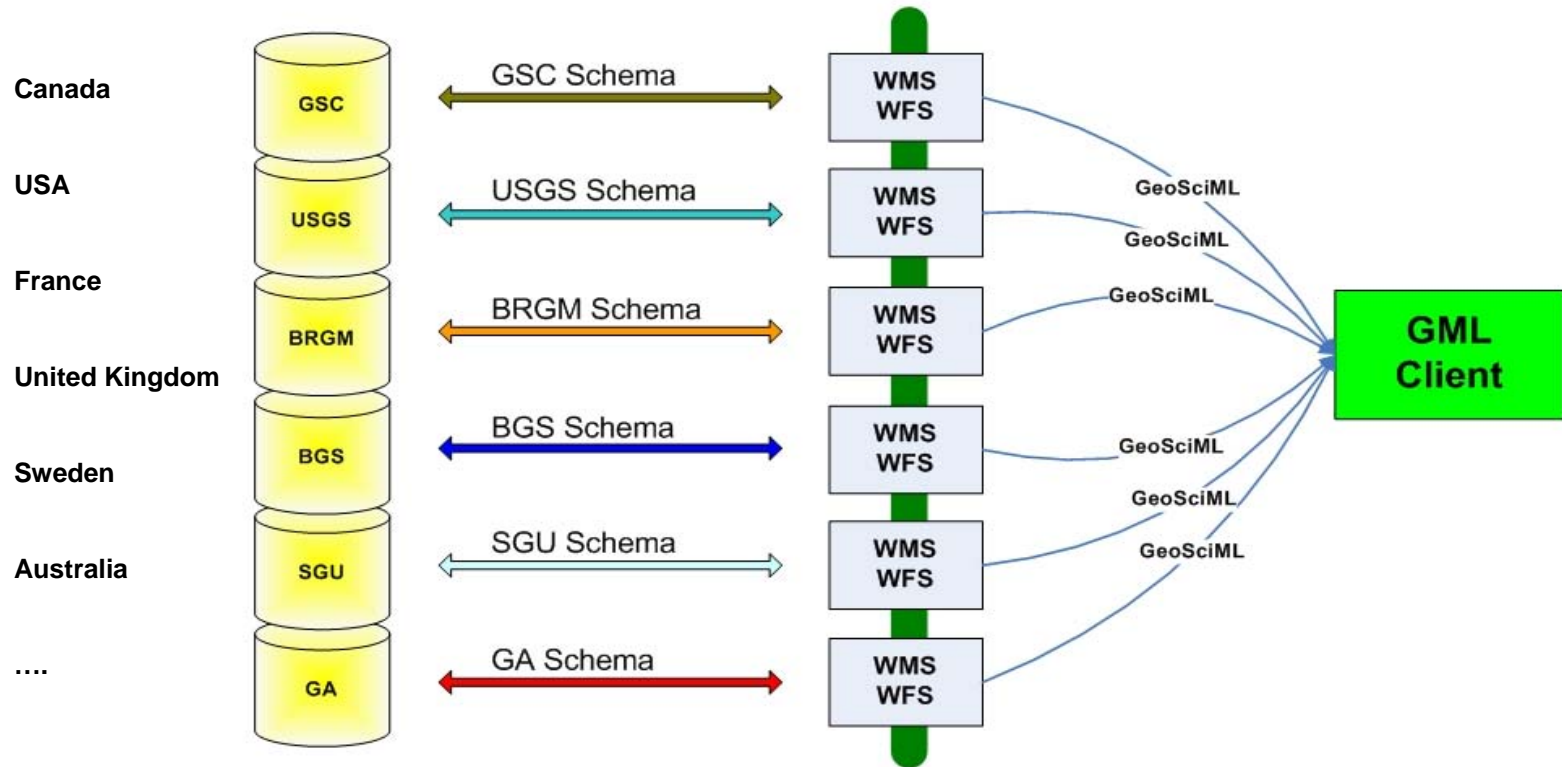
- **Distributed, interoperable geologic information**
- **Leverages open standards:**
 - OGC Web Map Service
 - OGC Web Feature Service
 - Geography Markup Language
 - OGC Observations & Measurements
 - GeoSCIML (GML Schema)
 - Broad agreement between geologic surveys, organizational bodies
 - <http://onegeology.org>

OneGeology

Addressing Semantic Differences



GeoSciML – an OGC Geography Markup Language application schema for the sharing of Geologic information



Source: Commission for the Management and Application of Geoscience Information(CGI)

OneGeology Participants

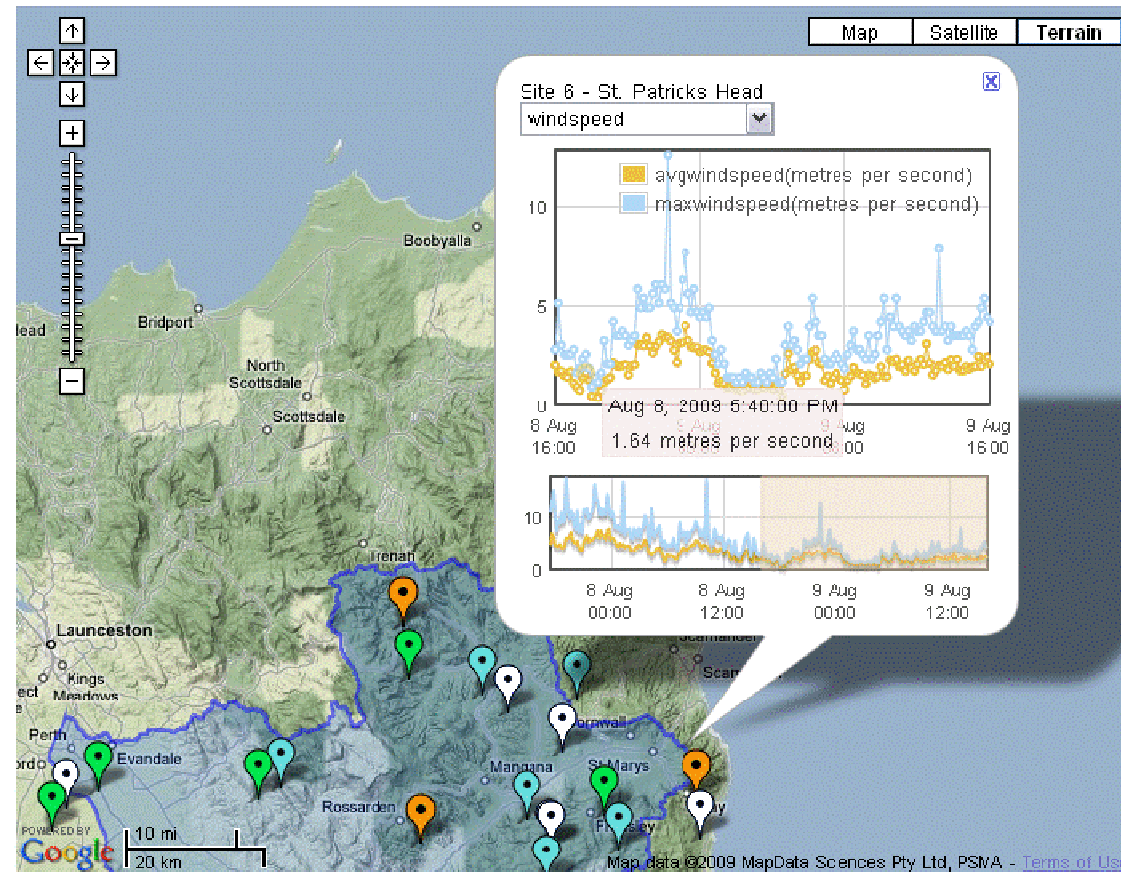


165 organisations from 117 countries



Flood, Drought, Pollution Monitoring / Forecasting

South Esk River Catchment – Tasmania



- OGC Standards used to monitor, model and forecast flood, drought and environmental events
- Government agencies can rapidly integrate data from different sensor networks
- External (e.g. agricultural) sensor feeds can be incorporated easily to improve prediction and decision making

OGC Web Services, OGC Sensor Web Enablement, W3C OWL Standards



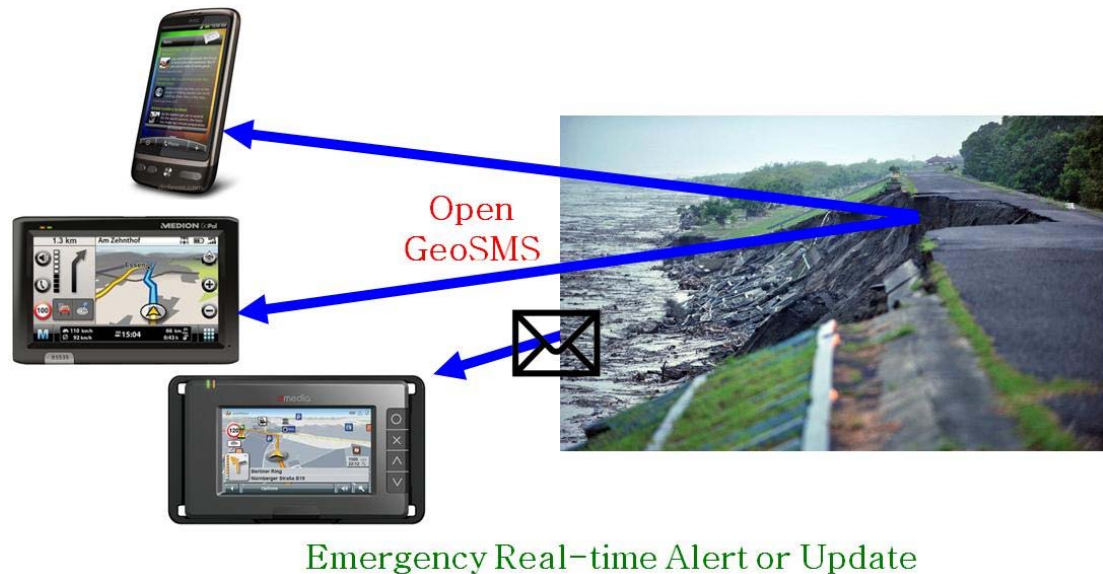
From Emergency Management to Mass Market

Open GeoSMS

Location Enabling SMS Messaging: GeoSMS



- Significant potential for many applications
- Characteristics
 - Multilingual
 - Multi-device
 - Harmonized with many existing applications
 - Incorporates relevant ISO standards
- Adopted in 2011



Domain Working Groups Active in OGC



- Hydrology
- Meteorology
- Oceanography
- Aviation
- Emergency & Disaster Management
- Defense & Intelligence
- Public Safety & Law Enforcement*
- Built Environment / 3D
- Mass Market

Focus on Water Resources



Hydrology DWG Activities

- WaterML 2.0 SWG
- Groundwater IE
- Surface Water IE
- Forecasting IE

OGC Liaisons for Water

- World Meteorological Organization (WMO)
- Group on Earth Observation (GEO)
- US and international research centers

Water Info System: Concept Development Study
CUAHSI-sponsored, Completed in 2011

Water Information Services Concept Study



Searching Federal and State Data

Search Criteria

Who

- Texas
- HIS Central

What

- Barometric pressure
- Discharge, stream
- Oxygen, dissolved
- Evaporation, actual
- Gage Height, stream
- pH
- Precipitation

● USGS Daily Values
● USACE River Gages
● Texas TWDB
● Texas TCEO & TPWD

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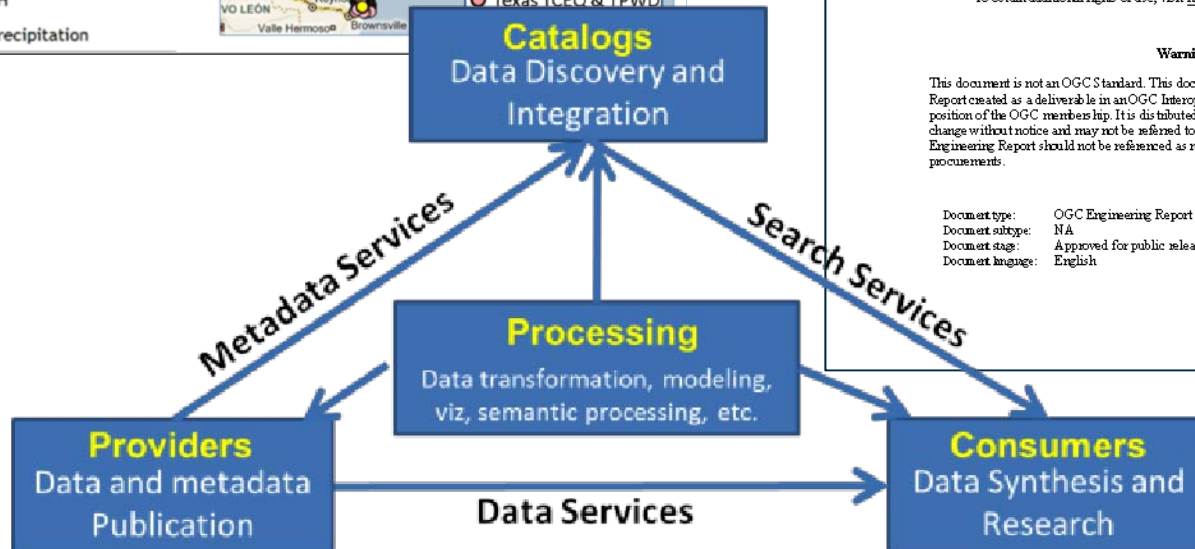
OGC Engineering Report: Water Information Services Concept Development Study

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More OGC Areas of Focus



Uncertainty
Data-Quality Sensor-Fusion
Decision-Fusion Cloud-Computing
Data-Preservation Mass-Market-Standards
Semantic-Mediation Embedded-Mobile-Sensors
Cross-Community-Interoperability Internet-of-Things
Compliance-Testing Water-Resources-Best-Practices
Earth-Observation-Best-Practices Aviation-Information-Management
Geosynchronization Modeling-and-Simulation
Augmented-Reality Geo-Rights-Management
Oblique-Imagery 3D-Portrayal Compliance-Certification
3D-Urban-Models Mobile-Internet
Indoor-Location
Linked-Data



**Standards are like
parachutes....**

**...they work
best when
they're open.**