SDI and Beyond

The Importance of Standards and Interoperability For Good Governance; Selected Examples

Trevor Taylor, Director,
Member Services, Asia and the Americas

Sao Paulo

May 7th, 2014

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Making location count.

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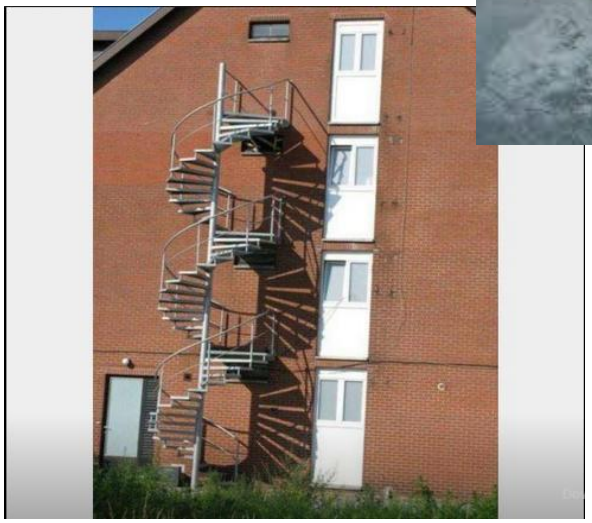
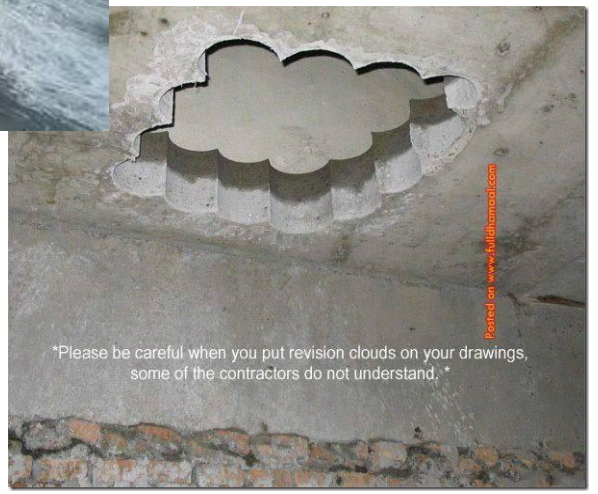
Why is Geospatial interoperability Important ?





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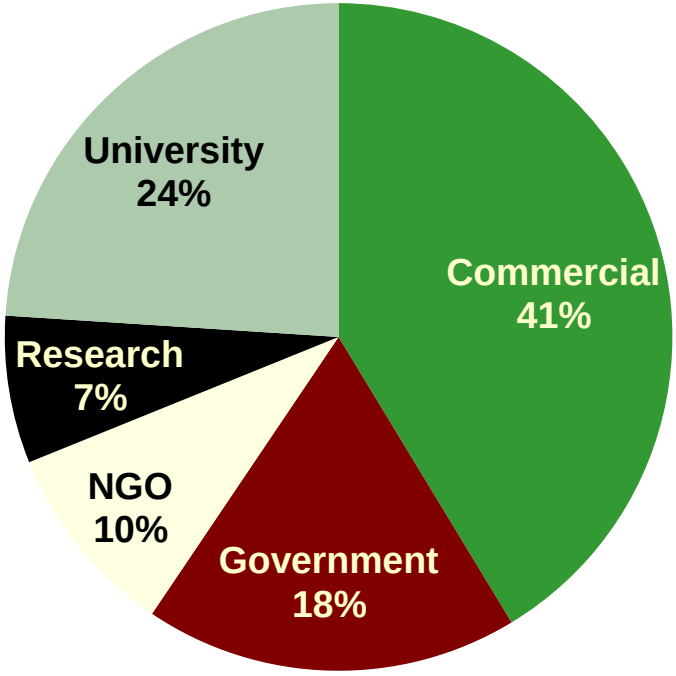
The Open Geospatial Consortium

Not-for-profit, international voluntary consensus standards organization; leading development of geospatial standards

- 20th Anniversary
- 478+ members (100% growth in Members in Latin America – approx. 12)
- 33 “core” standards
  - 15 extensions/profiles
- Hundreds of product implementations
- Broad user community implementation worldwide
- Alliances and collaborative activities with many other organizations (ISO, GEO, UNGGIM, WMO, IHO…)



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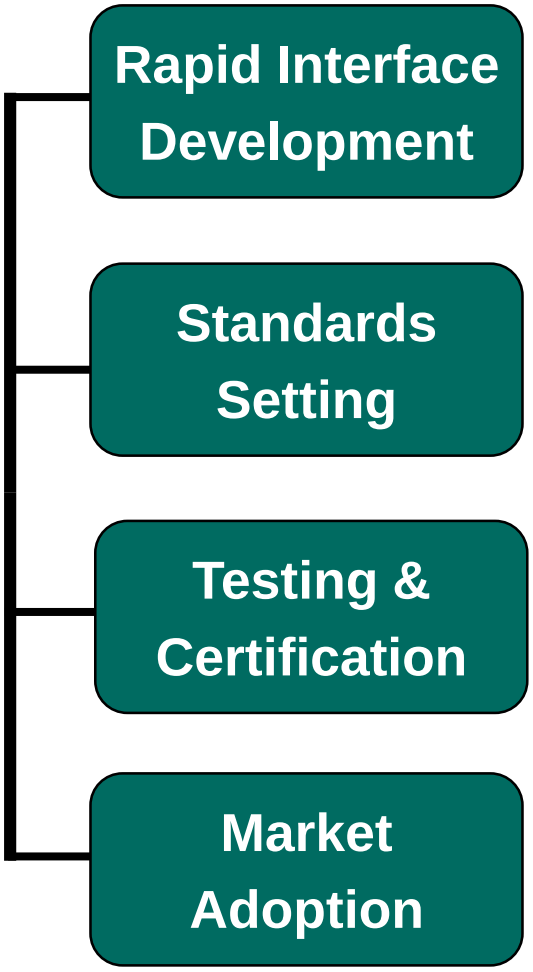
OGC's Approach for Advancing Interoperability

- ***Interoperability Program*** **(IP)** - a global, innovative, hands-on rapid prototyping and testing program designed to unite users and industry in accelerating interface development and validation, and the delivery of interoperability to the market
- ***Standards Program*** **–** Consensus standards process similar to other Industry consortia (World Wide Web Consortium, OMA etc.).
- ***Compliance Program*** - allows organizations that implement an OGC standard to test their implementations with the mandatory elements of that standard

- ***Communications and Outreach Program*** **–** education and training, encourage take up of OGC specifications, business development, communications programs



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OGC Standards Alliance and Partnerships

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

Geo-data Generation, Management, Distribution

From the few to the many…

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OGC Web Services Standards

- **Rapid discovery, access, fusion and application of location information for:**
- **Catalogue**
- **Geography Markup Language**
- **KML**
- **Observations and Measurements**
- **SensorML**
- **Sensor Observation Service**
- **Sensor Planning Service**
- **Web Coverage Service**
- **Web Feature Service**
- **Web Map Service**
- **Web Processing Service**

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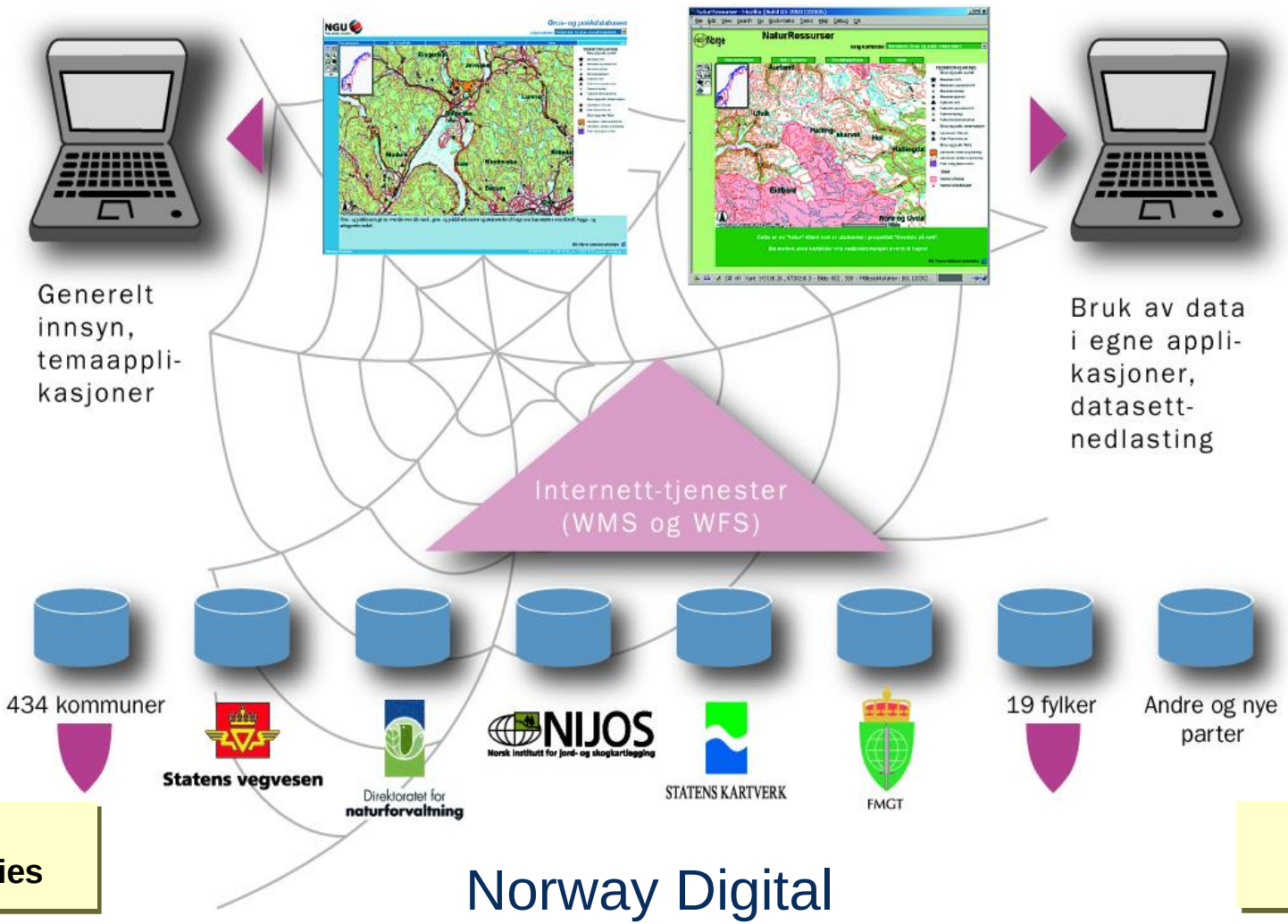
Local to Federal – Land Use



400 municipalities

19 counties

Norway Digital

Source http://www.statkart.no/Norge_digitalt/Engelsk/About_Norway_Digital

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Land Use and Applications

Municipal Areas

Flood Risk Areas

- **Fisheries**
- **Waste Water Outflow**
- **Water Supply**

- **Demography**
- **Biodiversity**
- **Agriculture and Forestry**

Land Use

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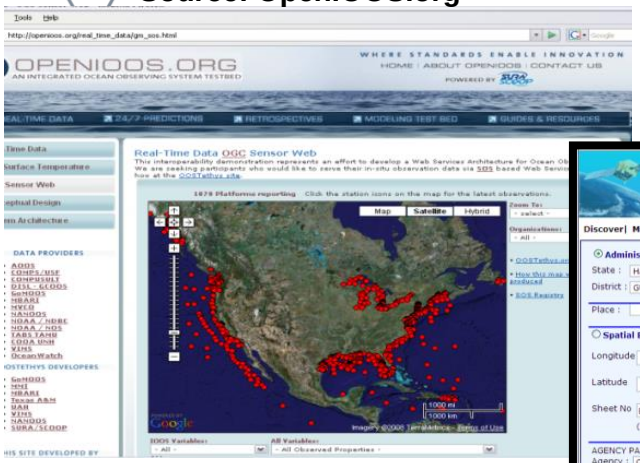
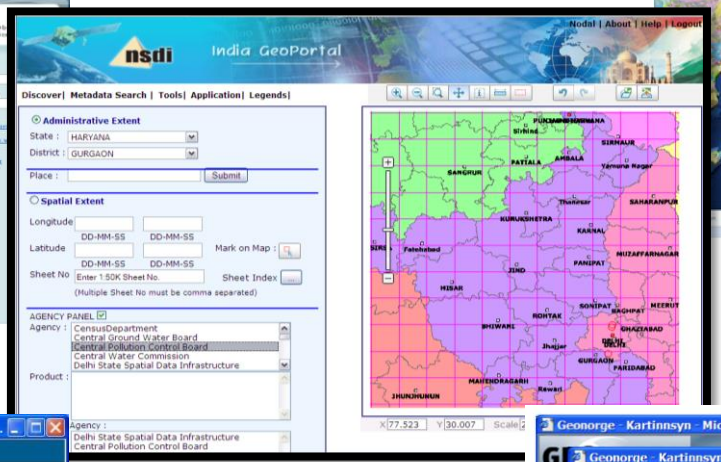
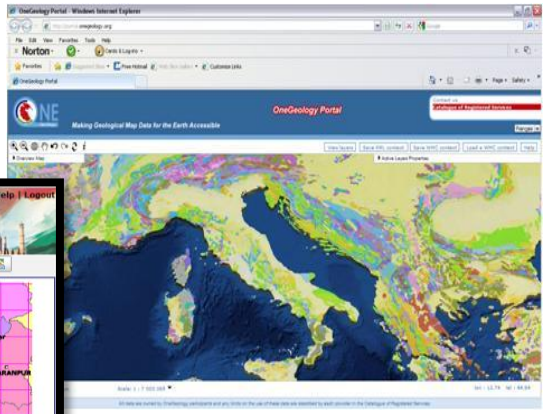
Local to Federal to International

Source: OpenIOOS.org



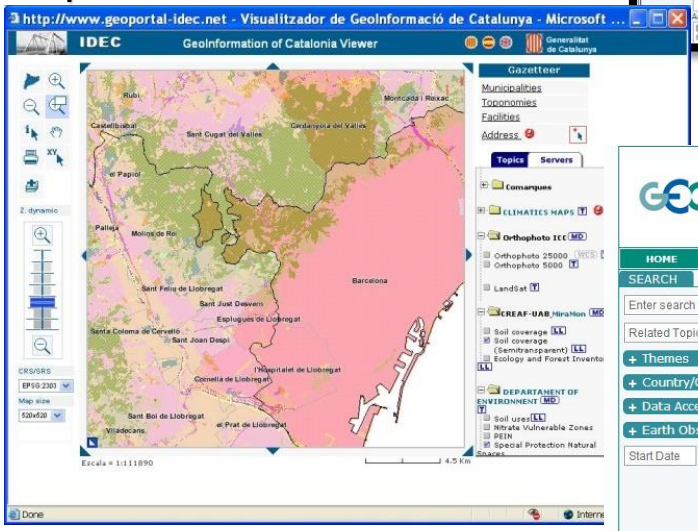
NSDI - India GeoPortal Map Viewer

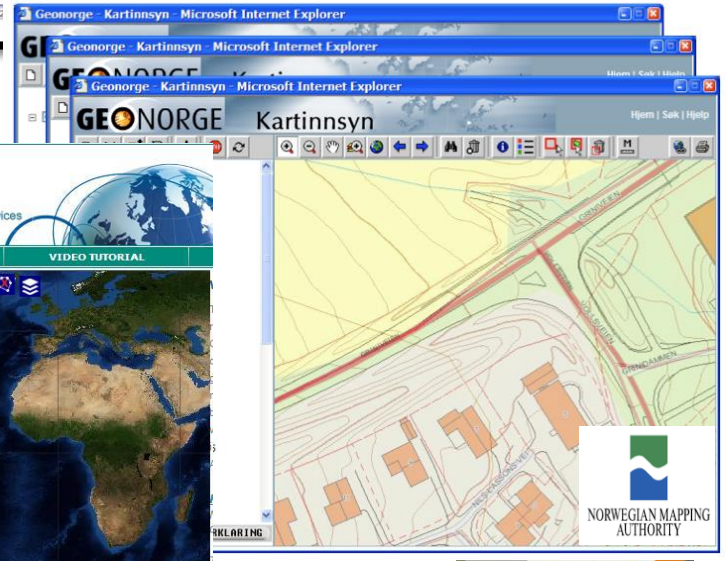




Source: onegeology.org

Geoportal of the Catalonia SDI





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Harnessing Sensors: OGC standards

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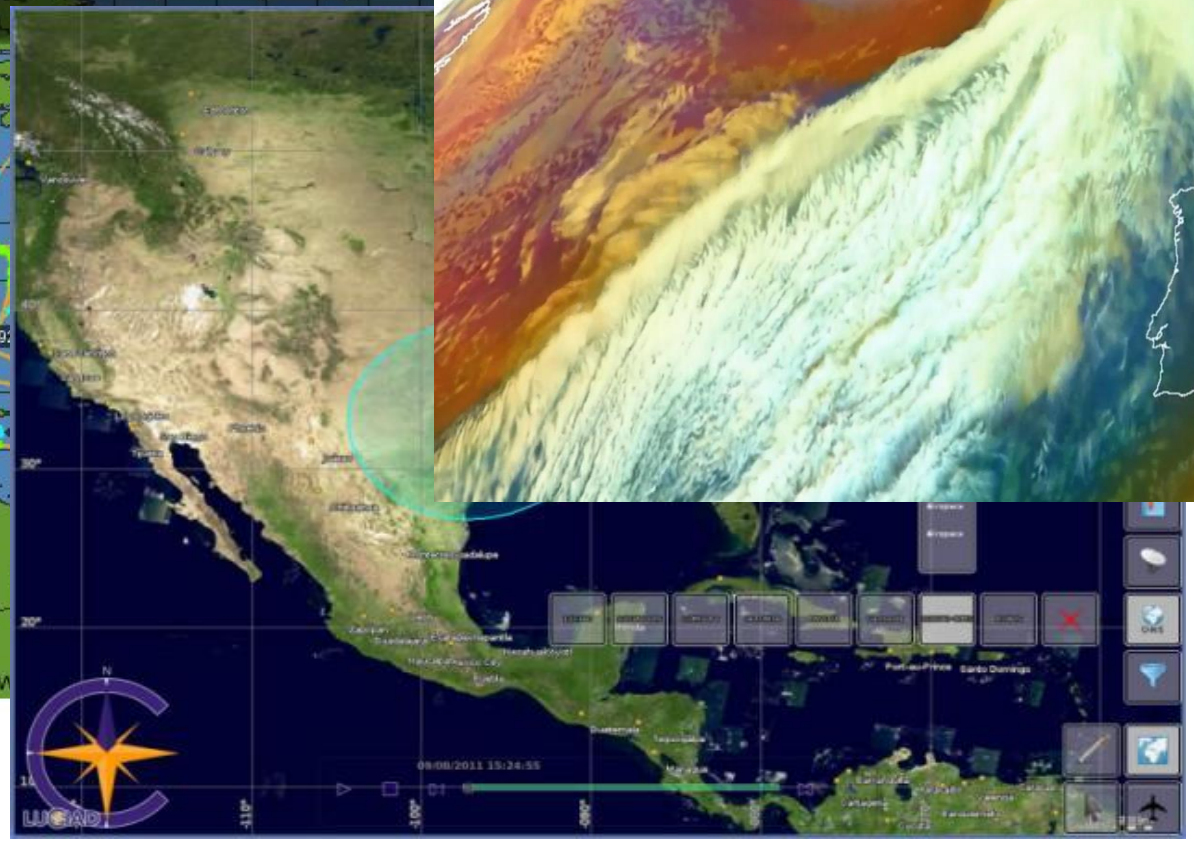
Weather And Climate:
Cuts Across Multiple Domains and Scales



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Weather and Climate; Thousands of Sensors

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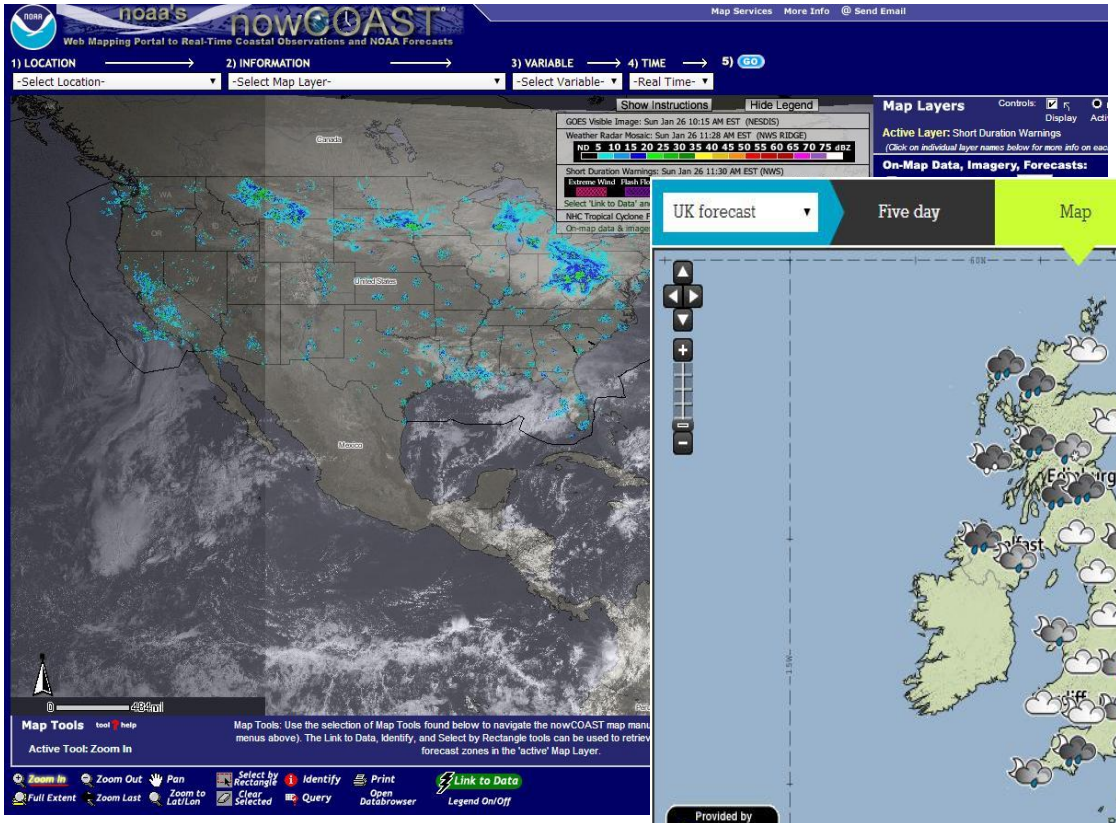
WMO / Met Ocean DWG Interests

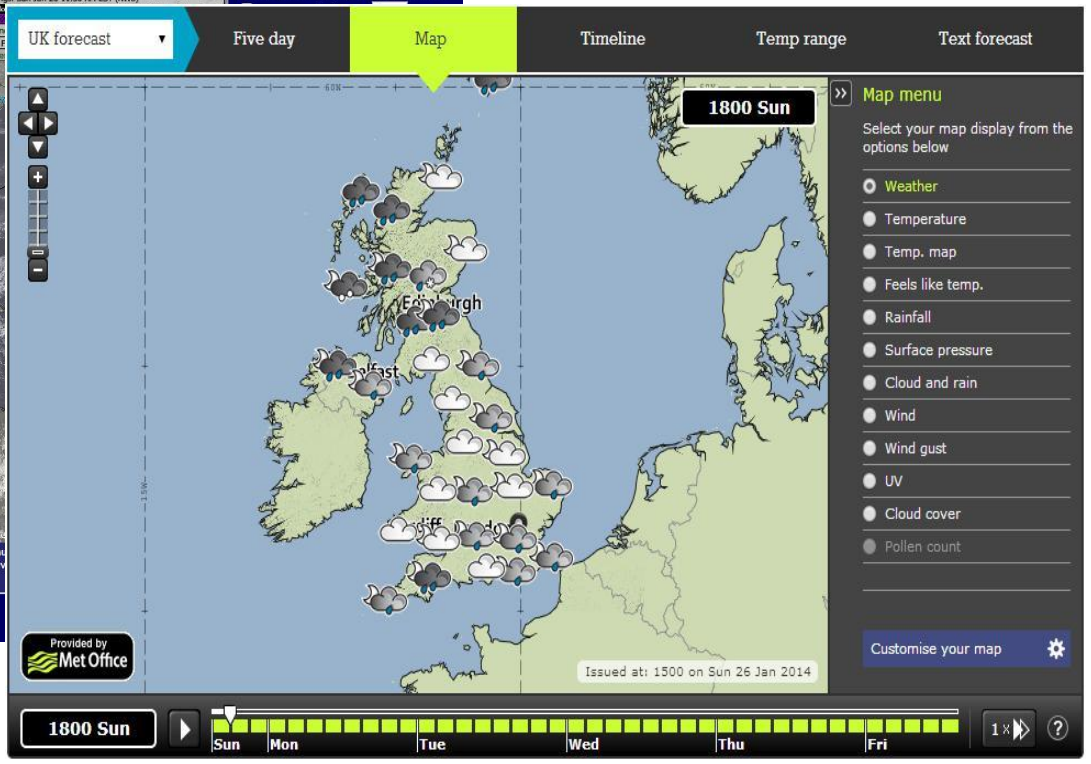
- WMS (Web Map Service)
  - Time – Several Proposals, consensus nearly achieved.
  - Elevation
  - Map Projections – changes to existing repositories in progress
  - SLD/SE – Aviation SigWx and standard WMO Plots Use Cases
  - Tiling – WMTS now a separate standard – jigsaw edges
  - Conceptual Modelling
    - WXXM for Aviation (Weather information Exchange Model)
    - GML3.2.1, KML2.2
    - geoSMS for use with CAP
- WCS/WFS (Webcoverage Service/Web Feature Service)
  - 4D, CRS (Coordinate Reference Systems)
  - payload formats,
  - vector vs raster
- CSW (Castalog Service) – compatibility with ISO23950, OpenSearch
- O&M, SWE (Observations and Measurement , Sensor Web Enablement) increasing in importance

Weather and Coastal Information

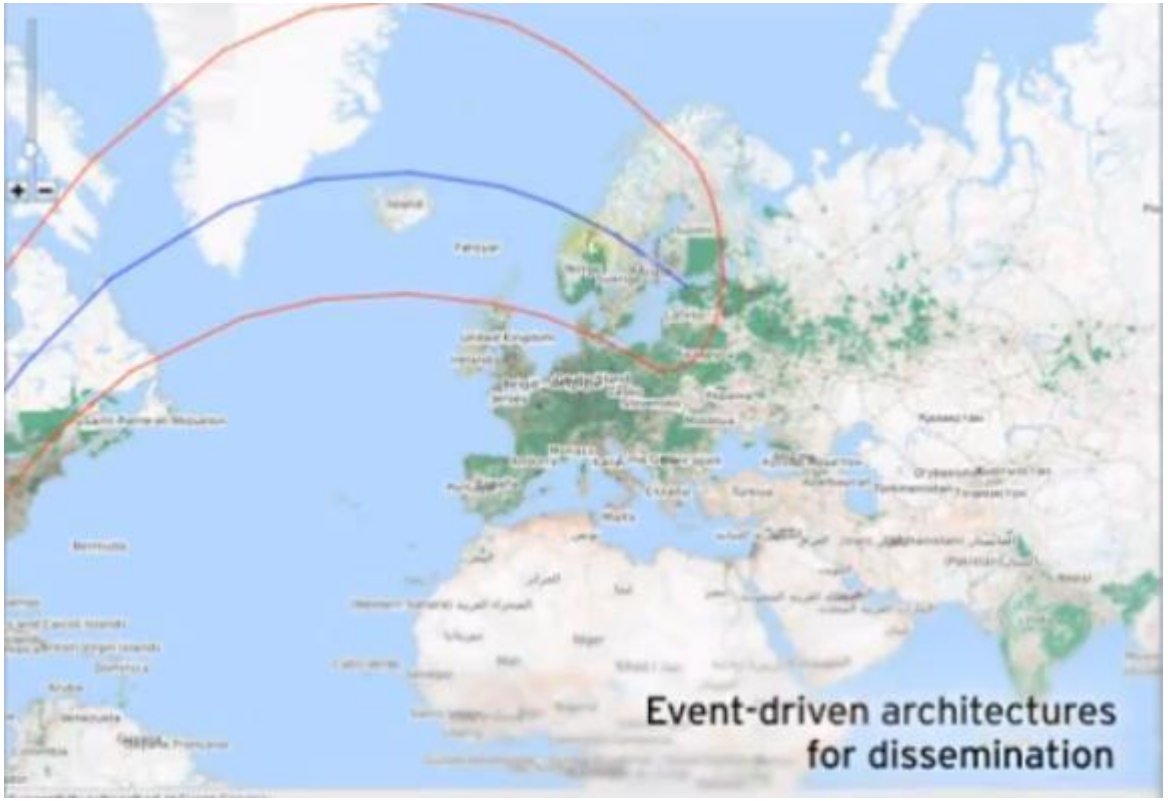
- NOOA NowCoast WMS Service for Coastal and Weather data



UK Met Office



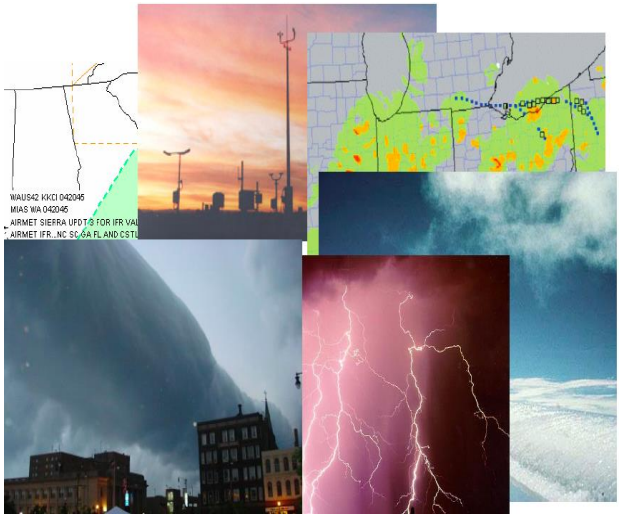
Aviation

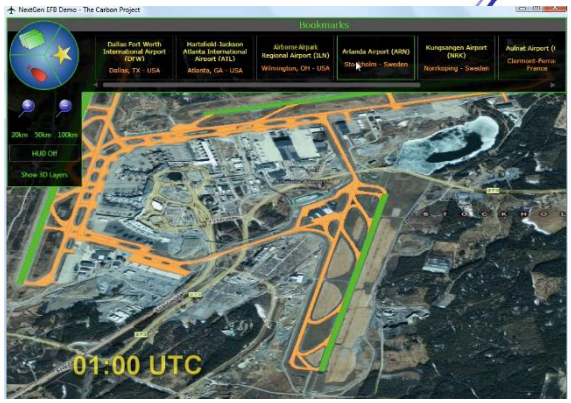


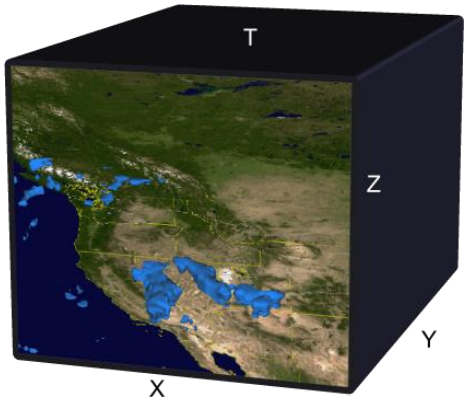
Aviation - Goals

- End-to-end management of information
- Provision of timely, relevant, quality-assured up-to-date information directly to the cockpit
- Support for collaborative decision making – Common Operating Picture
- Ultimate goal: Real-time relevant information to any user anywhere at any time

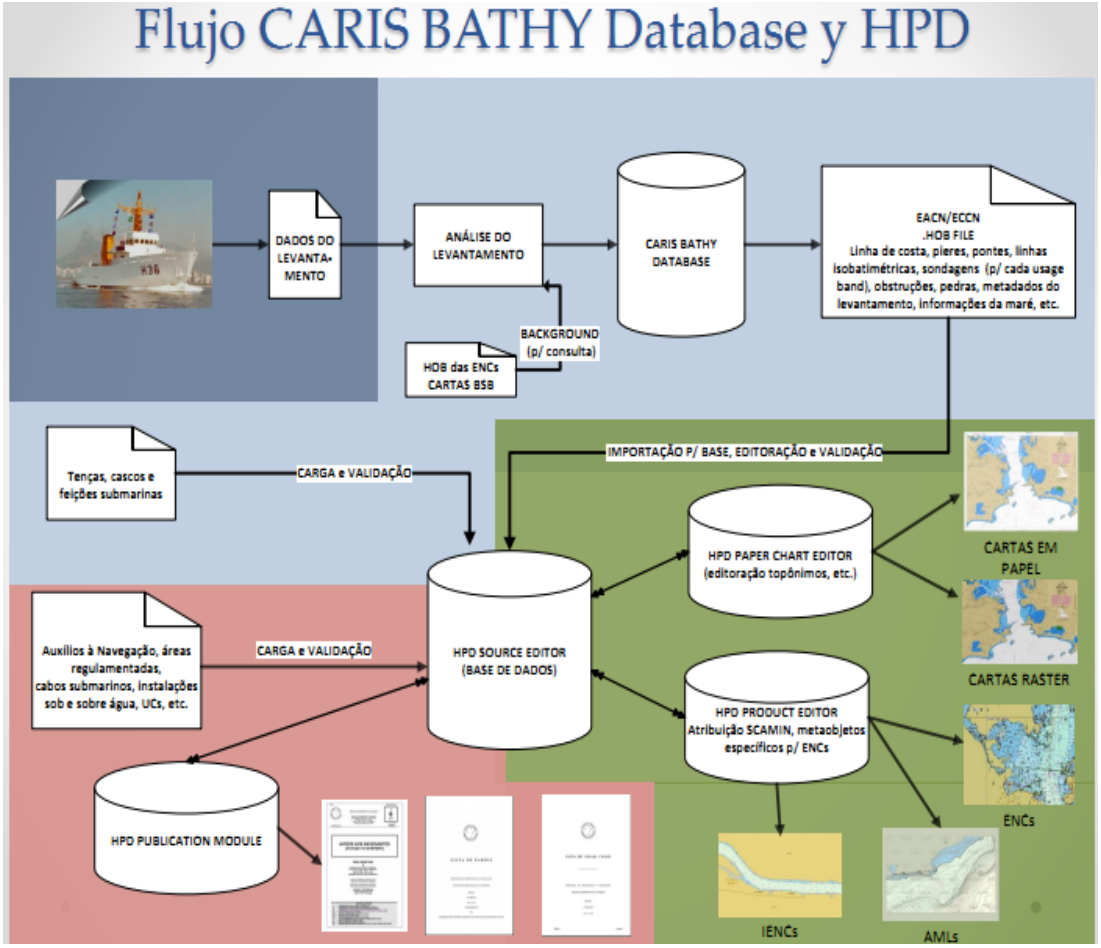
AIXM & WXXM
in OGC Web Services Environment







Marine SDI



Source: CARIS HPD and BDB workflows at the Brazilian Navy – HPD workshop – Lima, Peru – September 2nd, 2013.

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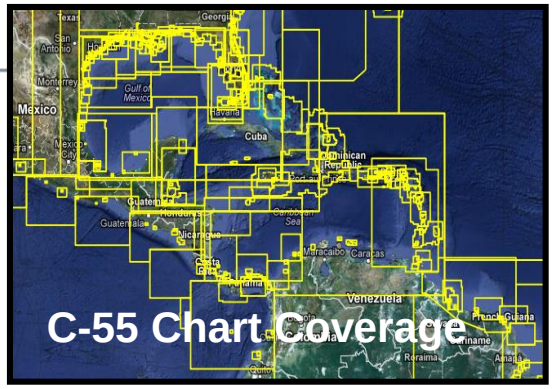
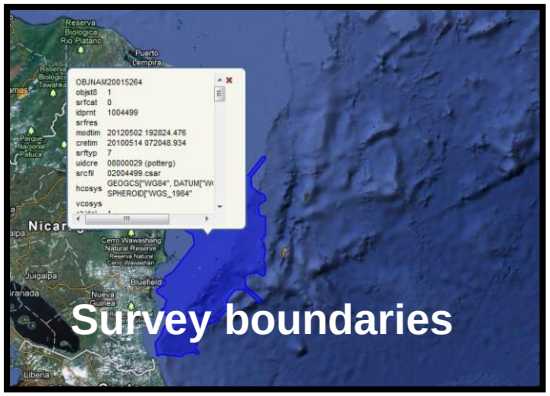
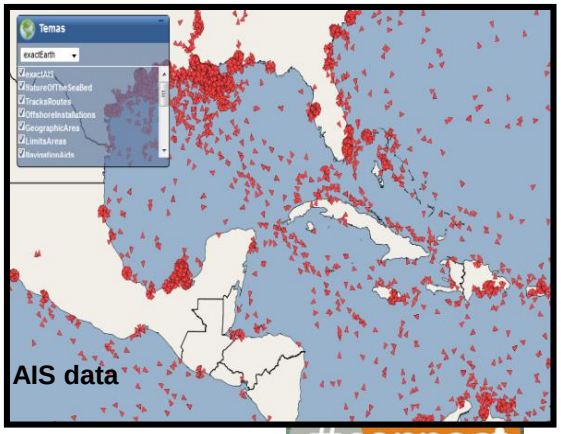
IHO MACHC MEIP

- Mesoamerican and Caribbean Sea Hydrographic Commission
- MEIP – Marine Economic Infrastructure Program
- Regional SDI to promote economic development
- Idea is to drive hydrographic survey projects in the region
- Challenge is to get countries to contribute their data

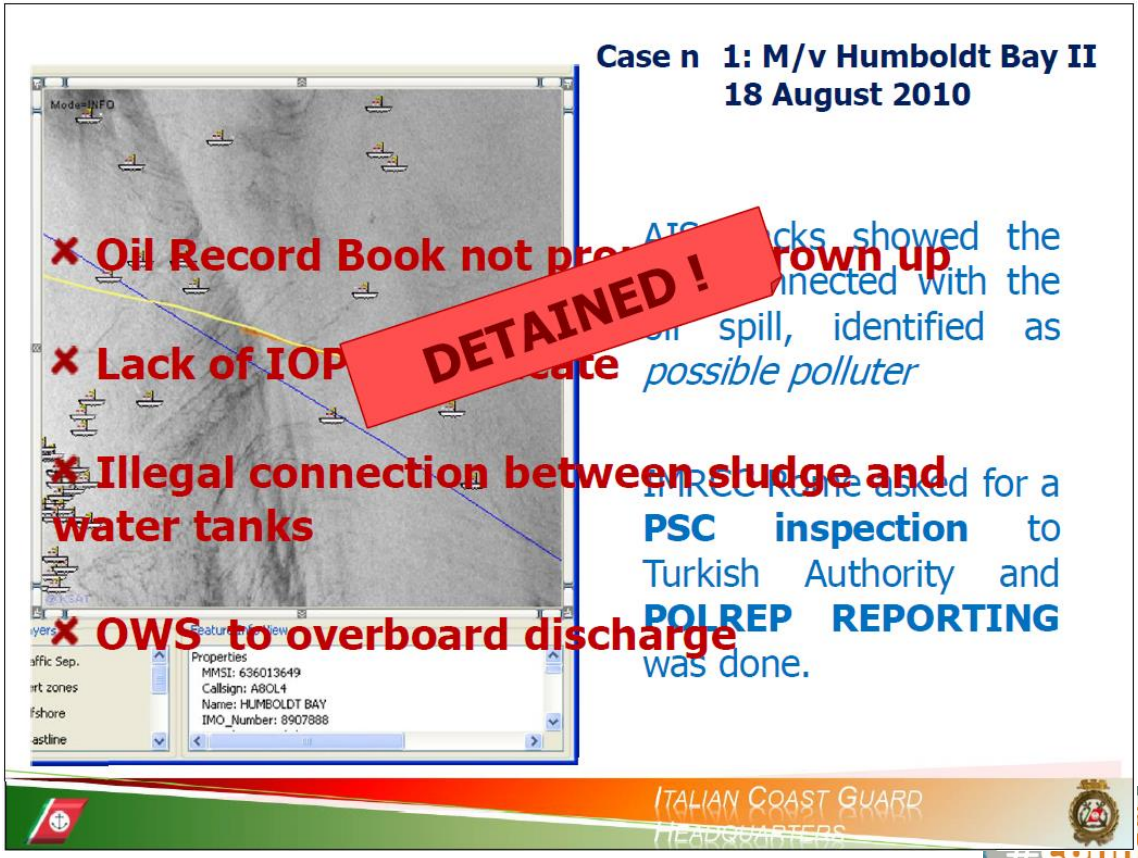






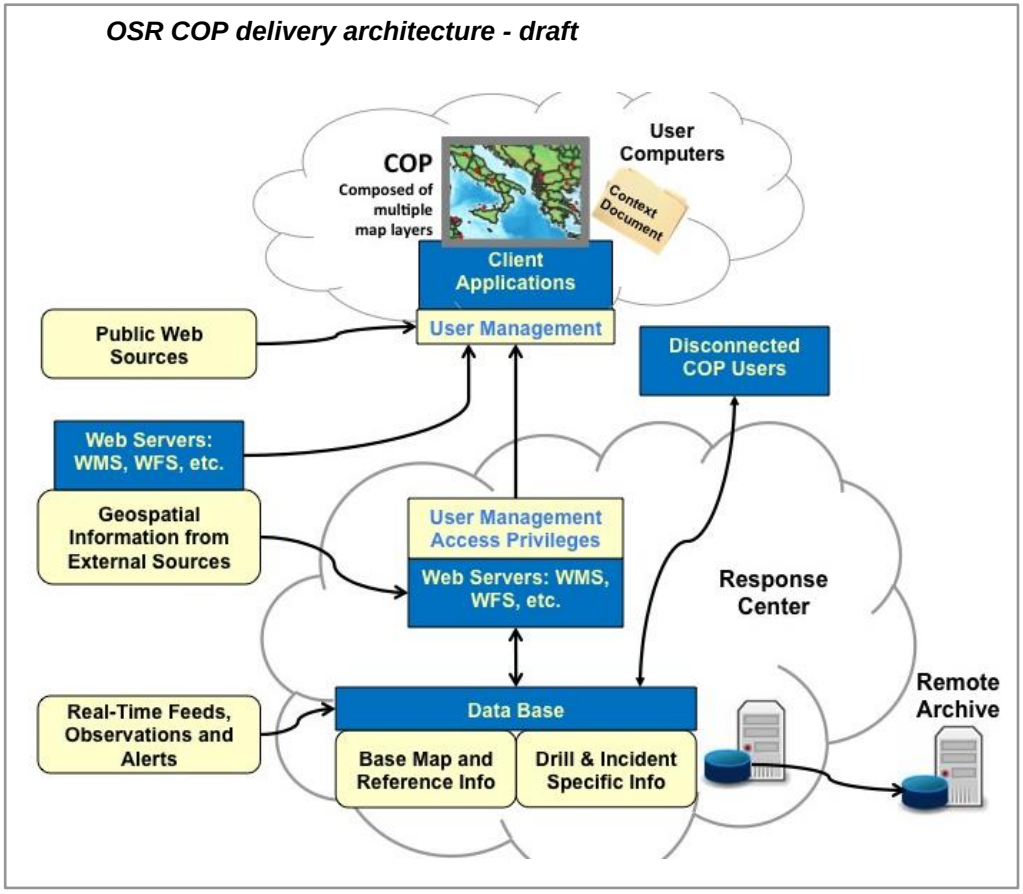
Oil Spills: CleanSeaNet

- A European system developed for the detection of oil slicks at sea using satellite surveillance on request of the Commission and all EU and EFTA Coastal States. The service, to be integrated into the national and regional response chain, aims to strengthen operational pollution response for accidental and deliberate discharges from ships and assist Coastal States to locate and identify polluters in areas under their jurisdiction.
  - Monitoring
  - Tracking
  - Enforcement



OGP/OGC RFI for Oil Spill Response (OSR) Common Operating Picture (COP)

- OSR enterprise view
  - Deepwater Horizon
  - COP Definition, Users and Scenarios
- Geospatial information
  - Base map and reference information
  - Drill and incident specific information
- Delivering GeoInfo
  - Web services
  - Schemas and encodings
  - Disconnected users
  - Records retention



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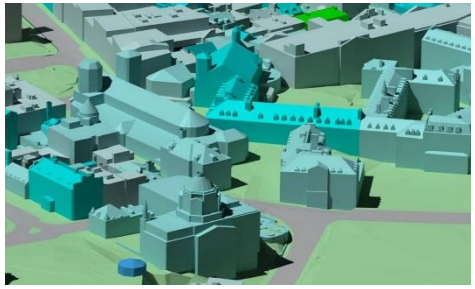
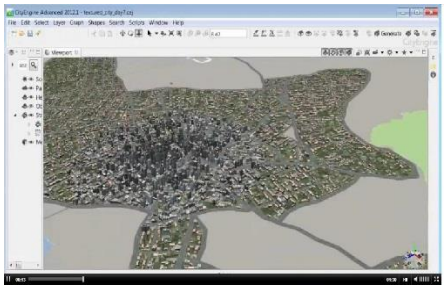
Plus Many More!

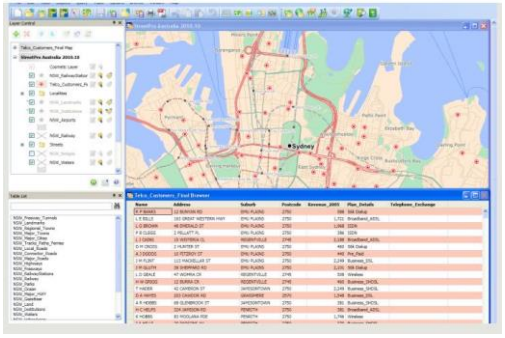


Source: Bentley

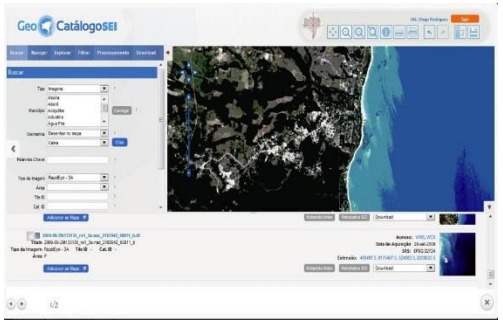


Source: ESRI

Source: Intergraph



Source: Pitney Bowes



Source: SSCON

Thanks!

Trevor Taylor, Director,
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Sao Paulo

May 7th, 2014

Apply to join OGC and contribute to the Local, National and Global collaboration process!

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