The Value of OGC Standards for the Italian geospatial community

Lucio Colaiacomo

17 november 2006

What is the OGC?

- **The Open Geospatial Consortium (OGC)**
  - Not-for-profit, international standards development consortium
  - 330+ industry, government, and university members
- **Specification Development Program (since 1994)**
  - Significant interaction with other standards consortia
  - Class A liaison with ISO/TC211
- **Interoperability Program (since 1999)**
  - A global, innovative, hands-on engineering and testing program designed to accelerate interface development and bring interoperability to the market
- **Outreach and Community Adoption Program (since 2002)**
  - Awareness raising, education and training, encourage take up of OpenGIS® specifications, business development
- Subsidiaries: OGC Europe, OGC Australia, …

Mission

To advance the development and market adoption of open standards for geospatial interoperability.

OGC

What Drives OGC Standards Development?

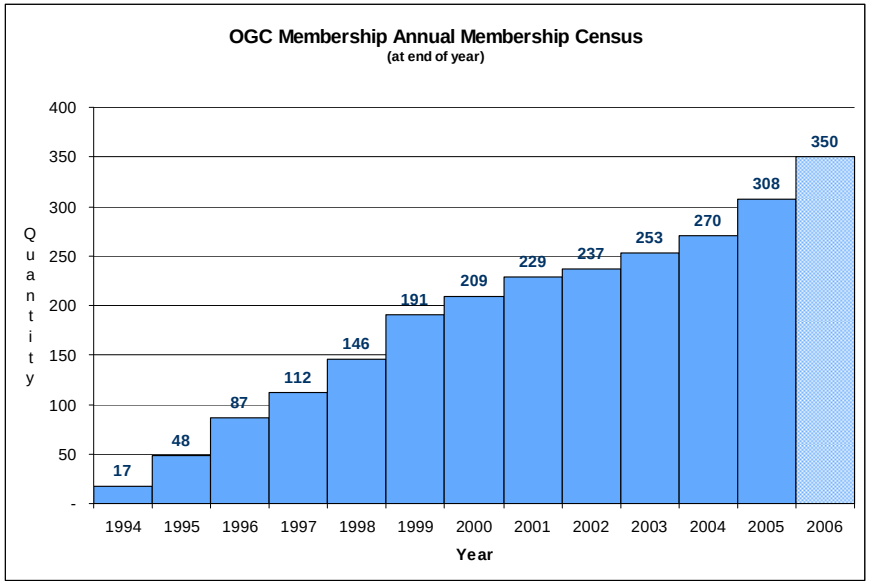
OGC members are tackling major interoperability challenges of next-generation data / service sharing and collaboration….

Developing new specifications for location-based services interoperability and spatially enabling the systems and enterprises

OGC

OGC Today

- Over 330 members from 35 countries & 6 continents
  - 135+ European members
  - 35+ Asia-Pacific members
- Eighteen approved, publicly available Implementation Specifications, with additional standards profiles, and best practice documents…
- Broad participation with other industry and international standards organizations



- 20+ candidate Implementation Specifications in work
- OGC Reference Model defines interoperable geo architecture

OGC

Example Members

- **Geospatial/AEC/CAD**: Analytical Graphics Inc., Autodesk, Bentley Systems, Blue Marble Geographics, Cadcorp, ESRI, e-spatial, Galdos, Intergraph, Ionic, Laser-Scan, MapInfo, NavisWorks, NAVTEQ, PCI Geomatics, others…
- **Infrastructure**: Oracle, Google, Shell Exploration…
- **Integrators / Engineering:** BAE Systems, Boeing, EADS Astrium, Lockheed Martin, GeoDecisions, Raytheon, Northrop Grumman, General Dynamics, Parsons Brinkerhoff, Mitre, Hansa Luftbild, Tetra Tech, Michael Baker, others…
- **Government:** JRC, EUSC, ESA; US DHS, EPA, Census, Geological Survey, Army Corps TEC, DISA, NGA, NASA; Oak Ridge National Labs; United Nations; Natural Resources Canada; Geosciences Australia; and others at the national, provincial, state and local levels.
- **Academia/Research:** 100+ institutions worldwide
- **Sensors:** 3eTI, Smart Sensor Systems, IRIS Corp, Overwatch Systems…
- **Telecom/LBS:** Telecom. Systems, Tele Atlas N.V., SiRF

OGC Alliance Partnerships

- World Wide Web Consortium (W3C)
- Digital Geospatial Information Working Group (DGIWG)
- International Organization for Standards (ISO)
- OASIS
- Object Management Group (OMG)
- Open Mobile Alliance (OMA)
- Geospatial Information & Technology Association (GITA)
- Web3D
- Simulation Interoperability Standards Organization (SISO)
- International Alliance for Interoperability (IAI)
- IEEE Technical Committee 9 (Sensor Web)
- Spatial Data Infrastructure organizations (National, Regional, Global)
- Others

OGC

Geospatial Interoperability and NCES Applicable Open Standards / Organizations

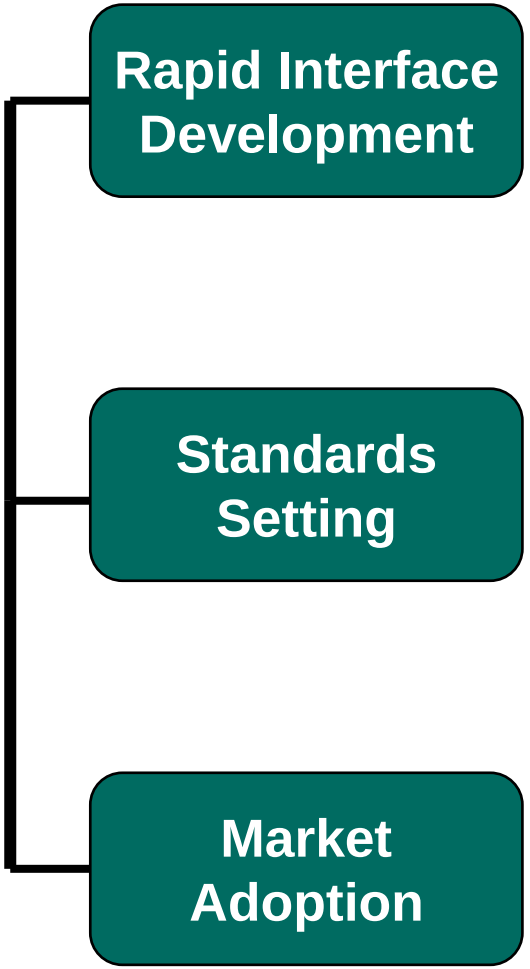
- World Wide Web Consortium (W3C)
- Digital Geospatial Information Working Group (DGIWG)
- International Organization for Standards (ISO)
- OASIS
- Object Management Group (OMG)
- Open Mobile Alliance (OMA)
- Web3D
- Simulation Interoperability Standards Organization (SISO)
- International Alliance for Interoperability (IAI)
- IEEE Technical Committee 9 (Sensor Web)
- Open Geospatial Consortium, Inc (OGC)
- Others

OGC

OGC Organization and Programs

OGC's Approach for Advancing Interoperability

- ***Interoperability Program* (IP)** - a global, innovative, hands-on prototyping and testing program designed to accelerate interface development and validation, and bring interoperability to the market
- ***Specification Development Program*** –Consensus processes similar to other Industry consortia (World Wide Web Consortium, OMA, OMG, etc.).
- ***Outreach and Community Adoption Program*** – education and training, encourage take up of OGC specifications, business development, communications programs



OGC

The OGC Interoperability Program

- A global, collaborative, hands-on engineering, prototyping and testing program started in 1999, designed to rapidly deliver :
  - ***candidate specifications*** into the Specification Development Process
  - ***product implementations*** that use these candidate standards
  - ***demonstrated capability*** achieved through comprehensive testing, validation and public demonstrations

- Sponsors and Participants work together.
  - Sponsors provide requirements, ***use / business cases*** and funding
  - Participants work with sponsors to define and/or refine OGC interface specifications to solve a given interoperability problem

OGC

OGC
Open Geospatial Consortium

Benefits

Benefits of OGC Standards - User Perspective

- *Introduce requirements into standards process* – The OGC consensus process gives user organizations a way to align the technology industry to cooperate on advancing important new standards

- *Improve choice in the marketplace* – Because no single application meets the needs of all users, OGC standards are designed to enable a choice of products that can plug-and-play seamlessly in system or enterprise environments.

- *Reduced technology life cycle costs* – Through the use of standards based COTS products, users have a better chance to reduce the cost of custom solutions and associated maintenance.

- *Rapid Insertion of New Technology* – By working with industry and academia to implement OpenGIS® specifications in their offerings, organizations can maximize their ability to rapidly transfer new solutions into use.

Market Implementation

- **OGC consensus specifications freely available**
- **Several hundred commercial and open source products are implementing OpenGIS Specifications**
- **Formal Compliance Testing and Certification Program**

Return on Investment

Multiple studies confirm the value and advantage of open standards based solutions:

- NASA Geospatial Interoperability: Return on Investment Study: http://gio.gsfc.nasa.gov/docs/ROI%20Study.pdf
- Value of Standards, Delphi Report: http://www.delphigroup.com/research/whitepapers/20030728-standards.pdf
- Economic Benefits of Standardization, DIN German Institute for Standardization: http://www.sis.se/upload/6322488981596875 00.pdf

OGC

OGC Public References

- Adopted Standards:
  - http://www.opengeospatial.org/specs/?page=specs
- Sensor Web Enablement:
  - http://www.opengeospatial.org/functional/?page=swe
- OGC Reference Model:
  - http://www.opengeospatial.org/specs/?page=orm
- OGC Web Services 3 Testbed Video Summary
  - http://www.opengeospatial.org/demo/ows3/
- Compliance Testing and Certification
  - http://www.opengeospatial.org/resources/?page=testing
- List of Registered Products using OGC Standards:
  - http://www.opengeospatial.org/resources/?page=products
- OGC User – case studies of OGC implementations in the global community
  - http://www.opengeospatial.org, click on “Press Room”

Community References

- Geospatial Standards Return on Investment Study:
  - http://gio.gsfc.nasa.gov/docs/ROI%20Study.pdf
- Geospatial Profile of the Federal Enterprise Architecture
  - http://colab.cim3.net/cgi-bin/wiki.pl?GeoSpatialCommunityofPractice
- NATO C3 Technical Architecture
  - http://nc3ta.nc3a.nato.int/website/book.asp?menuid=15&vs=3&page=rationale%2Fapb.html
- INSPIRE Technical Architecture
  - http://inspire.jrc.it/reports/position_papers/inspire_ast_pp_v4_3_en.pdf
- Australian Spatial Interoperability Demonstration Project Reference Model
  - http://www.sidp.com.au/

Main focus for Italy

- **Situational Awareness**

"an accurate perception of what has happened, what is happening, and what might happen."

Source: Crew Training International

- **Common Operational Picture (COP)**

"A single identical display of relevant information shared by more than one command. A common operational picture facilitates collaborative planning and assists all echelons to achieve situational awareness."

Source: The Free Dictionary (www.freedictionary.com)

OGC available to collaborate with other organizations in preparing a COP for Italy (joining would help!)

OGC

Summary

- Medium term objectives
  - Industries, agencies, universities in the standardization loop
  - Education
  - Italian reference portal building
  - Users' requirements in the standardization process
  - Italian SDI setup and implementation
- Short term objectives
  - Data interoperability
  - Services interoperability
  - Education (at all levels)

OGC

Thank you

OGC