Map Server Interface & Geo-services

Standards in action Workshop

12th Meeting of ISO TC211
Portugal - Lisbon
7th of March 2001

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www.ionicsoft.com
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Member of standard organizations

⇒ OGC, ISO/TC211, OMG, W3C
⇒ Head of Belgium Delegation at ISO TC211
⇒ Seat at Open GIS Consortium Management Committee (TC rep to PC)

Very active in the standardization process

⇒ Author, co-author, editor and submitters of standard specifications:
  WMS, WFS, GML, Gazetteer, Geocoding, LOF, Service Model, Catalog Service
⇒ Leading participant in all OpenGIS testbeds and pilots:
  WMT-1, WMT-2, GFS-1, USL PP, GFS PP, MPP
⇒ Reviewer / contributor of EC projects for geo-spatial infrastructure:
  CEEC, Pre-Anvil, Agile, Administrative Boundaries, …
⇒ Testing platform for compliance to specification:
  WFS Tester, WMS Enabler, …
COTS: Implemented standards as commercial products

- Contract with ESA (European Space Agency) for e-business of EO
- Contract with SIEMENS for geo-enabled WAP Services
- Contract with US Gov Agencies and US Army for projects
- E-shop of IONIC products = COTS in Java / Component Suite:
  - EJB, Servlets, Beans, JSP, applets, Application Framework

Worldwide leadership in implementation of these standards

Host of next OGC TC Meeting in Belgium (2-5 April 2001)

- Possible presence of EC Commissioner for Research (?)
- Also hosting ISO TC211 Advisory Group for LBS (Location Based Services)
Vision & Mission

We see the whole market self-organizing around the concept of Location (including the wireless and mobile business) and demanding for a geo-spatial technology, interoperable, standard-based and ready for e-business

We want to lead standardization of this technology so that we can deliver now the standard-based COTS that the market is requesting
Standards in actions … WMS example

Interface defined by

Web Map Server Interface

ISO TC211 Document N939 NWI/CD
Distributed Mapping or geo-enabled services to present and analyze information from “Geo-Servers” using different vendors technology and rendering methods.
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- Clients
- Imagery = Map Server
- BaseMap = Map Server
- Raster = Map Server
- Topo = Map Server
- Network = Map Server

RDBMS / GIS / ‘non-GIS’

- Features Servers
  ➔ Objects ➔ GML/XML ➔ Rendering
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Online Geo-Services
Distributed Mapping or geo-enabled services to present and analyze information from “Geo-Servers” using different vendors technology and rendering methods.

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Network = Map Server

Raster = Map Server
Interoperability ...

Market = End Users (B2B or B2C)

Standards

- Access all data
- Offer services
- Reduce the costs

Use “geo-legacy”, finally!

GIS System

Maps

Data(Objects)

Maps and/or Objects

GIS System

Geo-enabled DBs
Architecture (Concepts / Interfaces)

- Clients
  - Java Clients
  - HTML Clients
  - WAP Clients
- Web Server
- Application Server
- Data Store
  - Data Servers
- Feature Servers
- Map Servers
- WFS interface (Web Feature Service)
- WMS interface (Web Map Service)
- Services
- Portrayal service

IONIC Software s.a.

IONIC Components
Standard Interfaces
Legacy
US Army
Corps of Engineers

The Problem...
Need better ways to access and exploit geospatial information from diverse information communities and disseminate information to users.

... the Solution: Interoperable Web Mapping Technology
A key information resource for future mission areas will be geospatial information that is on-line and accessible using standards-based web mapping technology.
ESA Web Mapping

Application & e-Business for Fire detection
Standards in Action

↓

Standard on the market

↓

Implemented standards

↓

Standard-based COTS
E-Shop of COTS
Technology for interoperable
Web Mapping, Distributed GIS & Location Based Services

Showcase
WFS/GML: Geo-spatial objects on the web

ESA Web Mapping
Application for e-business
Fire Detection

Presented in EOS Workshop
Bangkok
(Sept ’00)
WFS + WMS + GML : OS data on London
LBS: Location-based Services for Mobile
LBS/LBMS : examples

- Location-based Advertising
- Public Safety, Vehicle Management
- Location-Based Billing
- Leisure & Touristical Information
- Mobile Service Information
- Route Service Information & Roadside Emergency
- Traffic Information & Directions
- Emergency Services
- Fleet Tracking
- Vehicle Theft Detection and Recovery
- Child Tracking
- Classified Advertising (Jobs, properties, …)
Gazetteer Service

GFS Testbed

Presented in Arlington, DC

16th/17th Nov.

(CIA)
Web Geo Portal for e-business
(ex: Survey Markers)
Enhancing / Cascading / Connecting Services

« Wrappers »
to enable proprietary Servers as standard Servers

« From proprietary technology to standard »
(ex : ArcIMS)
Benefits of Interoperability (1)

✓ No off-line data conversion required
✓ No redundancy of geo data, reduced duplication and dissemination
✓ Multi GI servers / Multi GIS-vendors / Reduce conflicting data
✓ Cross-systems / cross-departments applications among public sector

⇒ Reduce significantly costs of non-interoperability of geo-data

✓ Architecture: natively distributed & multi-servers
✓ Standard-based (W3C, ISO, OpenGIS, OMG, …)
✓ Benefit from geo-ressources (data + services) produced by others
✓ Native for the Web
✓ Ready for e-business

⇒ Promote access to digital geospatial information (National and International)

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Benefits of Interoperability (2)

✓ Save development effort
✓ Use of leading-edge standard technology
✓ Discovery and access through Catalogs
✓ Multi-vendors, yet nothing proprietary
✓ Keep legacy by wrapping existing systems

⇒ Reduce development and integration time

✓ Focus is on information delivery, not data/map delivery!
✓ Decision Support (optimization and better repartition)
✓ Distributed online services
✓ Same information available for all

⇒ Better decision-making
Thank you for your attention

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Conclusion
What is available NOW?

⇒ IONIC: A unique combination of expertise and technology

⇒ A comprehensive product line implementing standards
100% Java framework of client, middleware and server components for fast & cheap development of interoperable Web Mapping applications. Available NOW!

⇒ A vision to share, for long-term evolution opportunities
e-business (B2B/B2C), mobile clients, online geo-services & portals, influence standard as OGC author, ...

⇒ Not another complicated, heavy, non-maintainable, proprietary technology for both provider and end-users

⇒ The capacity to use concretely the emerging standards and technologies to identify and setup solutions meeting business requirements

⇒ Innovation, enthusiasm and return from experience of world-class projects