



OGC Standards in the GEO/GEOSS registry

Final Symposium – OBSERVE Project
Thessaloniki, 15.-16. October 2012

FINAL SYMPOSIUM



Athina Trakas
Open Geospatial Consortium
Director European Services
atrakas@opengeospatial.org
<http://www.opengeospatial.org>
With input from George Percivall

The presentation is about...



- ... OGC as organisation
- ... Architecture Implementation Pilot
- ... the GEOSS registry system

→ interested in more details about the OGC?

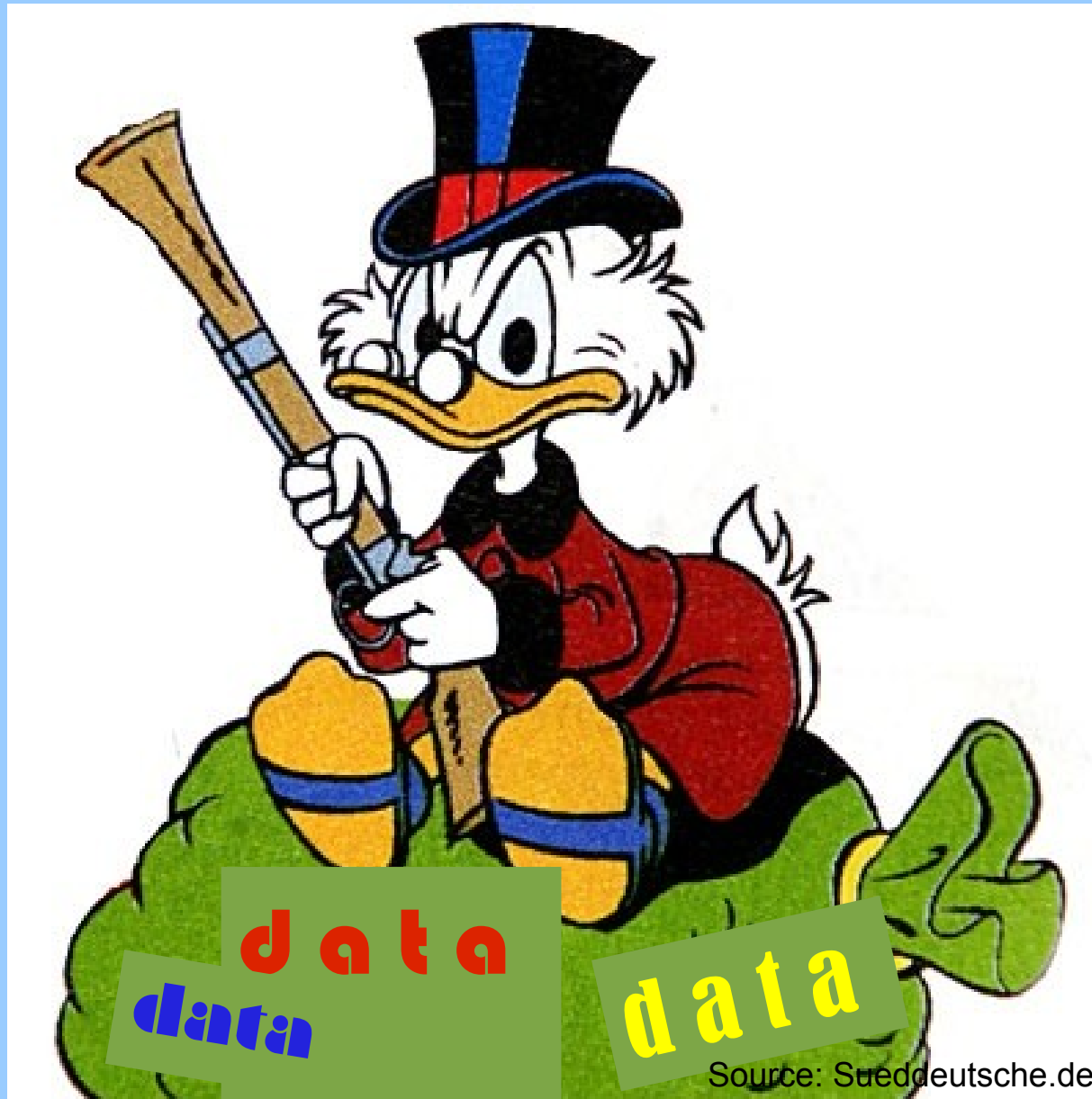
See presentation from Post-GEO workshop, Istanbul, Nov. 2011

https://portal.opengeospatial.org/files/?artifact_id=46792



What is it all about?

Making your treasures accessible

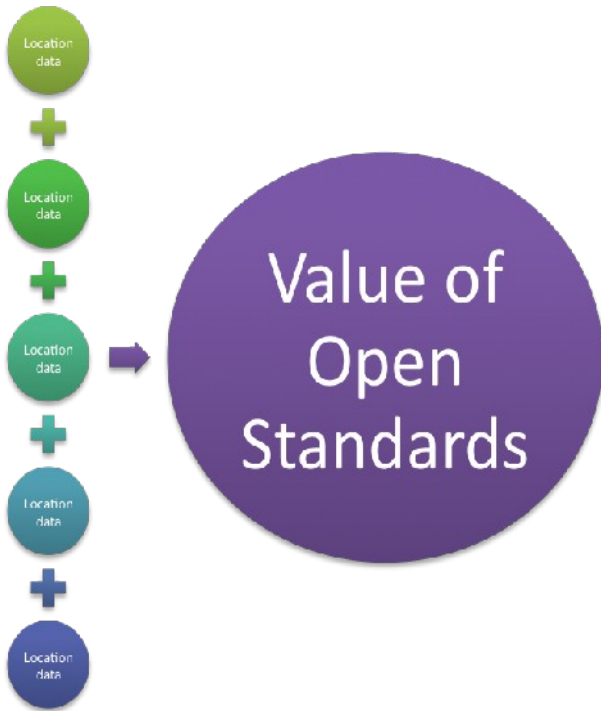


Source:



http://de.wikipedia.org/w/index.php?title=Datei:Blaues_Wunder_Hochwasser_2002.JPG

Interoperability Issues



- „We **can't share** maps on the Web.“
- „We **can't deliver** data to different systems easily.“
- „We **don't have** a common language to speak about our geospatial data or our services.“
- „We **can't find** and pull together data from our automated sensors.“

So what does OGC do?



The Vision

Achieve the full societal, economic and scientific benefits of integrating location resources into commercial, institutional and organisational processes worldwide.

The Mission

To serve as a global forum for
and lead the development, promotion and harmonization of
open and freely available geospatial standards.

What is the OGC?



<http://www.youtube.com/ogcvideo>

→ more videos on OGC's Youtube Channel:

<http://www.youtube.com/user/ogcvideo/videos>



Some more facts about the OGC

OGC at a glance



- Founded in 1994, not for profit, consensus based and voluntary
- 470+ member organisations (industry, government, academia) (Oct. 2012) <http://www.opengeospatial.org/ogc/members>
- 23 staff members
- 35+ adopted OGC Standards (some are ISO Standards) <http://www.opengeospatial.org/standards>
- Several hundred software products, implementing OGC Standards <http://www.opengeospatial.org/resource/products>
- Broad user community worldwide, many policy positions for NSDI based on OGC standards
- Cooperation with other standards organisations and foundations, GEO, ISO/TC 211, OSGeo, W3C, OASIS and others <http://www.opengeospatial.org/ogc/alliancepartners>



European OGC Members (in your region)

<http://www.opengeospatial.org/ogc/members/report/?sortby=%27country%27>



Bulgaria (1)

- URSIT Ltd.

Croatia (1)

- Državna geodetska uprava (State Geodetic Admin, Croatia)

Czech Republic (2)

- HELP SERVICE - REMOTE SENSING
- Masaryk University

Greece (2)

- Ktimatologio SA
- Nat'l & Kapodistrian University Athens

Hungary (1)

- Károly Róbert Főiskola

Poland (1)

- Polish Association for Spatial Information

Romania (1)

- National Meteorological Administration

Serbia (1)

- University of Novi Sad, Fac. Technical Sciences

Turkey (1)

- NETCAD Ulusal



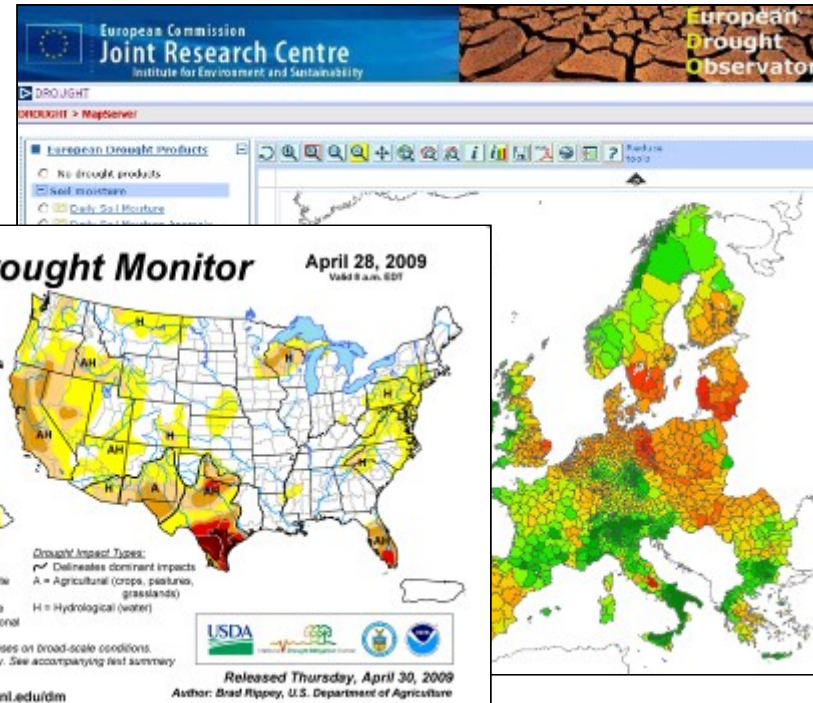
Why
→ **interoperability?**
→ **open standards?**

Improving Knowledge Sharing and Transfer



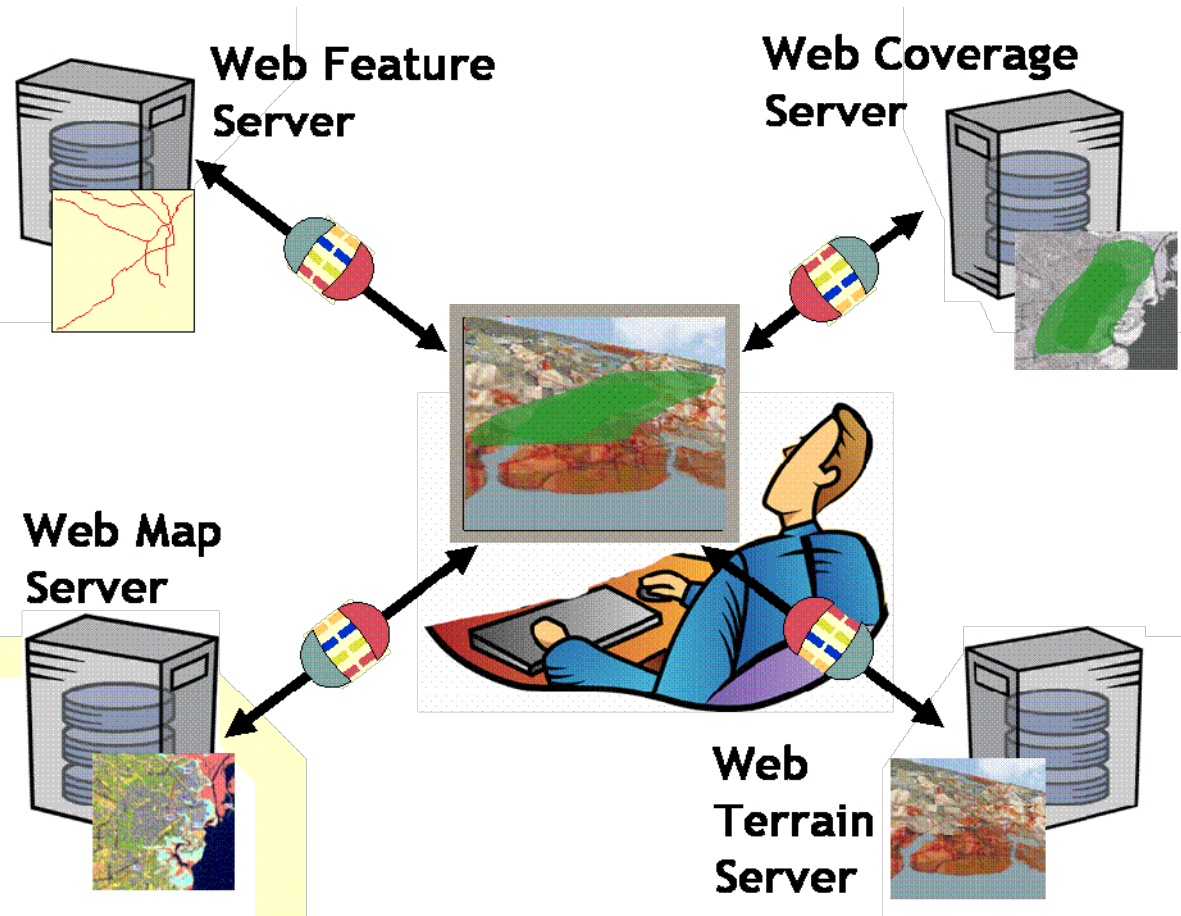
We are addressing critical issues, that need cooperation:

- Growth in urban centers and coastal areas
- Climate Change, Environmental Monitoring
- Water Resource availability and quality
- Emergency planning, preparedness & response
- Aviation Safety
...and many more



<http://www.ogcnetwork.net/pub/ogcnetwork/GEOSS/AIP3/index.html>

Geo* and Location* on the Web



Just as http:// is the dial tone of the World Wide Web, and html / xml are the standard encodings, the geospatial web is enabled by OGC standards.

Major OGC Standards

<http://www.opengeospatial.org/standards>

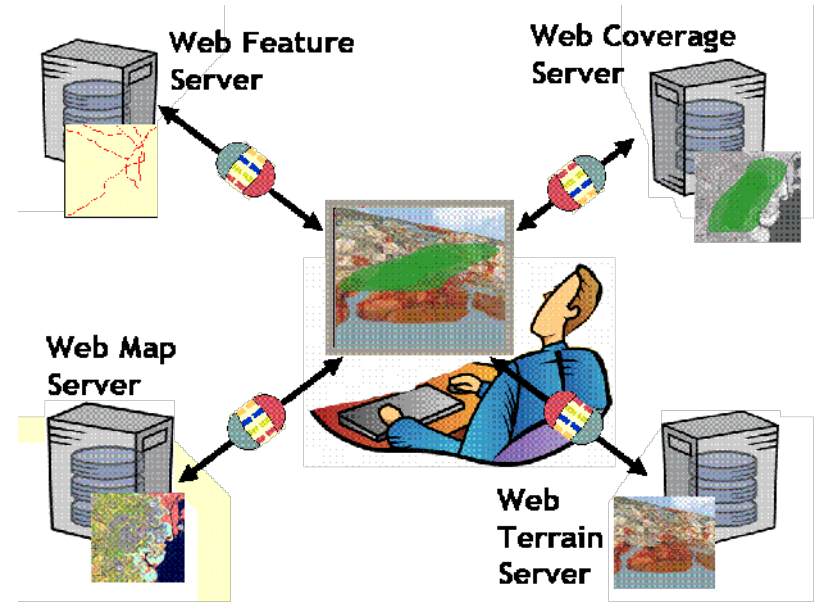


Some examples

- **Web Map Servers (WMS)**
- **Web Feature Servers (WFS)**
- **Web Coverage Servers (WCS)**

As well as the:

- **KML (formerly Keyhole Markup Language)**
- **Web Map Context (WMC)**
- **Geography Markup Language (GML)**
- **CF-netCDF** (SWG: <http://www.opengeospatial.org/projects/groups/cf-netcdf1.0swg>)





**Standards are
like parachutes:
they work best
when they're
open.** Mary Mc Rae, OASIS*

* "Minds, like parachutes, function better when open, but, like fists, they strike harder when closed." — L.E. Modesitt, Jr., *American Author* (1943 --)

Source picture: <http://www.all-hd-wallpapers.com/wallpapers/sports/425236.jpg>

Why Open Standards?



- **Prevents a single, self-interested party from controlling a standard**
- **Lower systems and life cycle costs**
- **Encourage market competition**
 - Choose based on functionality desired
 - Avoid “lock in” to a proprietary architecture
- **Stimulates innovation beyond the standard by companies that seek to differentiate themselves.**

„What OGC brings to the table is...everyone has confidence we won't take advantage of the format or change it in a way that will harm anyone”

**Michael Weiss-Malik,
Google KML product
manager**

What is an OGC Standard?



- A document, established by consensus, approved by the OGC membership (balance of interest, all members have an equal vote)
- Provides, rules, guidelines or characteristics
- Implementable in software
- Open standards does not mean open source software (Free Software). OGC/OSGeo Paper on Open Source Software and Open Standards: http://wiki.osgeo.org/wiki/Open_Source_and_Open_Standards
- OGC standards are **Open Standards**
 - Freely and publicly available
 - No license fees
 - Vendor neutral

„People want the government to be transparent, so why shouldn't the technology be?“

**Jim Willis, Director of e-Government at
theRhode Island Secretary of State
Office**



OGC Programs and GEO

The OGC's Interoperability Program



<http://www.youtube.com/user/ogcvideo/videos>
→ OGC Interoperability Program Introduction

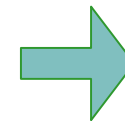
→ more videos on OGC's YouTube Channel:
<http://www.youtube.com/user/ogcvideo/videos>

How does OGC work?

<http://www.opengeospatial.org/ogc/programs>



- **Consensus process** – that is reflecting a common understanding of requirements and a membership driven process.
- **Formalised standards development process** – based on commonly agreed, structured and well defined policies and processes (→ Standards Program <http://www.opengeospatial.org/ogc/programs/spec>).
- Making use of **innovative processes** – for testing, verifying and documenting user requirements (→ Interoperability Program <http://www.opengeospatial.org/ogc/programs/ip>).



Standards
Setting



Rapid Interface
Development

...plus **Compliance Testing & Certification Program** (<http://www.opengeospatial.org/compliance>) and **Marketing & Communication Program** (<http://www.opengeospatial.org/ogc/programs/ocap>).

GEOSS connects Observations to Decisions



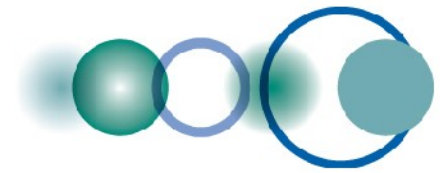
Architecture Implementation Pilot

<http://www.ogcnetwork.net/Alpilot>



- ***„The GEOSS Architecture Implementation Pilot (AIP) develops and deploys new process and infrastructure components for the GEOSS Common Infrastructure (GCI) and the broader GEOSS architecture.“*** (<http://www.ogcnetwork.net/AIP>)
- **AIP is an agile, evolutionary development process (with series of pilot projects), that proves the maturity of the infrastructure components and help the evolution of the GEOSS architecture.**
- **There is a need to establish a good set of standards and results that show web access to EO data.**
- **The process was initiated in 2007.**





AIP Agile Development previous phases

- **AIP-1** Kickoff: Jun 2007; Alpha operations Nov 2007; Arch Workshop Feb 2008
 - "Core" Architecture defined initial version of GCI
- **AIP-2** Kickoff Sep 2008; demo ISRSE May 2009; Beta operations Sep 2009
 - SBA implementations of common cross-cutting architecture; Refined GCI concept supporting transition to operations
- **AIP-3** Kickoff Mar 2010; results to Beijing Plenary; Complete Feb 2011
 - Enabled network building in GEOSS SBA communities; Piloted Broker and Processing capabilities
- **AIP-4** Kickoff May 2011; results to Istanbul Plenary; Complete Dec 2011
 - Increased access to priority earth observation data; via server software, tutorials and application clients

“Fostering interoperability arrangements and common practices for GEOSS”



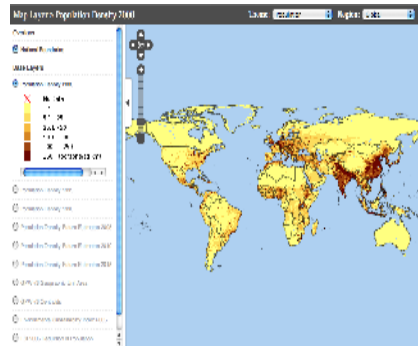
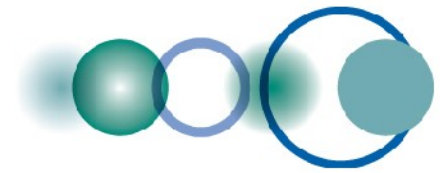
AIP-4

Accessibility
to Critical
Earth
Observation
Priority Data
Sets

Thesaurus for
Earth
Observation
Parameters

General and
specialized
software
tools for
using data

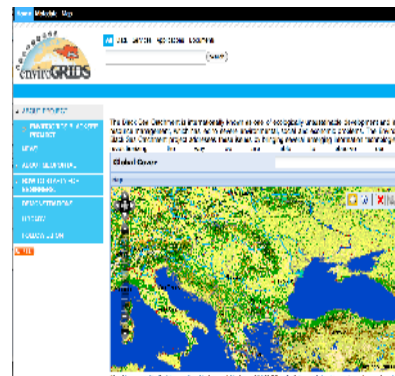
Tutorials to
support data
providers to
get data
online



CIESIN Map Client



SOS Generator



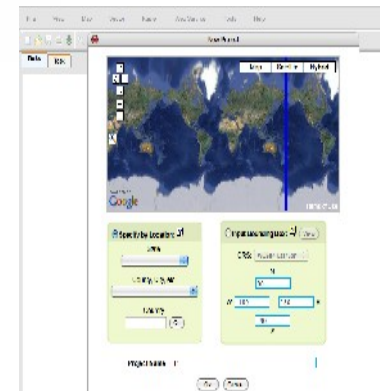
enviroGRIDS Client



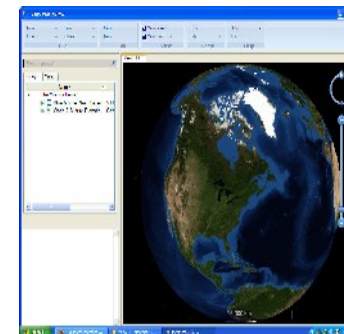
Graphitec BRISEIDE Client



GENESIS WebGIS



NOAA GMU GeOnAs



PYXIS Worldview

Activity #2

AIP-4

Enabler
components
to explore
earth
observation
data

Compusult GEO Portal



“Infrastructure” Task: GEOSS Design and Interoperability

Priority Actions

- GEOSS Research and Prototyping
- GEOSS Interoperability Analysis and Support
- Encourage mature systems to interoperate with GCI
- Ensure access to GEOSS Data-CORE

Approach

- Manage evolutionary architecture of GEOSS
- Standards and Interoperability Forum (SIF)
- **Architecture Implementation Pilot, Phase 5 (AIP-5)**



AIP-5 Kickoff Objectives, May 2012

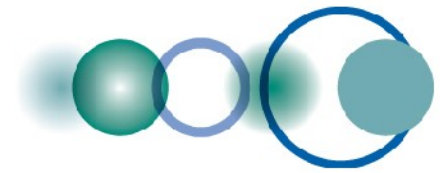
- Refine collaboration and interoperability goals
- Develop
 - Scenarios meeting SBA needs
 - Initial design based on GEOSS AIP Architecture
 - Plan the work and schedule
- Determine Working Groups to be formed



Responses to AIP-5 Call for Participation

- Aquatic Informatics
- CAAS and Tsinghua
- CIESIN
- Compusult
- CSISS – GMU
- CUAHSI
- EO2HEAVEN
- GeoViQua
- GEOWOW Hydrology
- GEOWOW Architecture
- GIS-FCU
- IEEE
- INCOSE
- MINES ParisTech/
ENDORSE
- NASA
- NASRDA
- NIWA
- NOAA
- PML
- PYXIS
- TUD-GLUES
- UNEP Live
- Univ of Tokyo

Responses to AIP-5 CFP are [posted](#) CFP remains open.

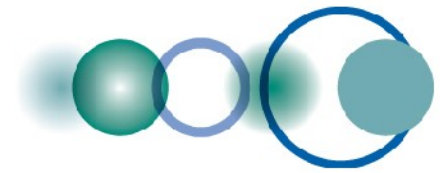


AIP-5 Working Group Leaders

- Disaster Management
 - Herve Caumont
- Water
 - Matt Austin
 - Stefan Fuest
- Health
 - Ingo Simonis
- Agriculture
 - Liping Di
- Authentication & Licenses
 - Steve Browdy
- UUID
 - Joan Maso
- GCI Research
 - Stefano Nativi
- System Design
 - Larry McGovern
 - Herve Caumont

Topics to be addressed in AIP Plenary

- Energy SBA – Lionel Menard
- Capacity Building – Lucia Lovinson
- Tutorials – Steve Browdy, SIF



AIP-5 Master Schedule

CFP Issues	28 Feb 2012
CFP Response Due for Kickoff	11 April 2012
Kickoff Workshop, Geneva	3-4 May 2012
Interoperability Testing Begins	1 Sept 2012
SBA Testing	1 Oct 2012
GEO Plenary, Brazil	Nov 2012

The schedule is always available on the AIP Plenary Telecon agenda:
<http://www.ogcnetwork.net/AIPtelecons>



Thanks to all who make AIP-5 a success

- Thanks to Session Leaders and Participants for an excellent Kickoff Workshop
- Thanks to UNEP for hosting the workshop
 - Gregory Giuliani
- OGC thanks sponsors: USGS, EC

AIP-5 is Underway!!



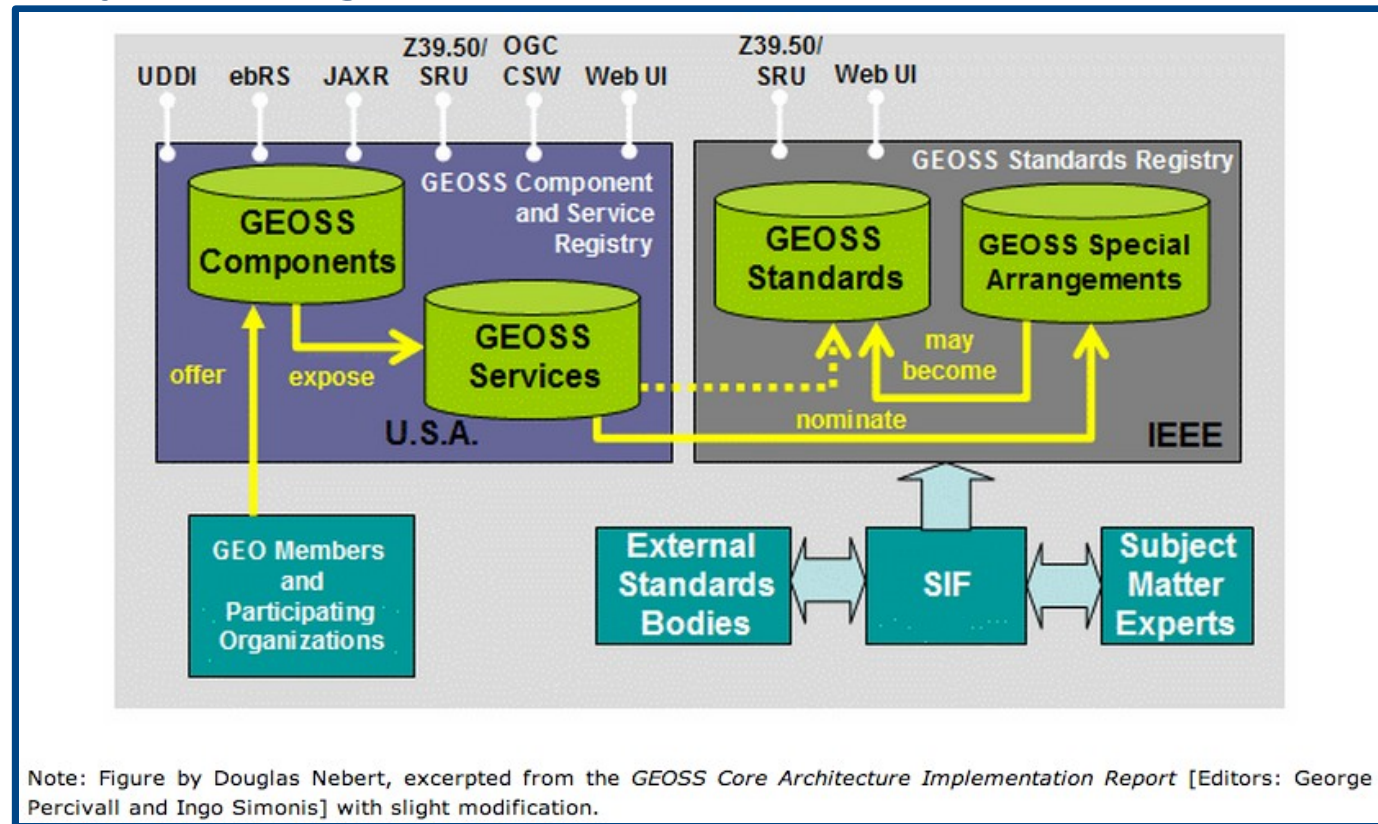
The GEOSS Registries

<http://geossregistries.info/>

About - <http://geossregistries.info/about.htm>



- Register and/or search components and services
- Get information about standards and interoperability arrangements



Search -

http://geossregistries.info/geosspub/resource_search_ns.jsp



• By project



[Feedback for this page](#)

[Back](#)

[GEOSS Registry
Publication Portal](#)

Search GEOSS Resource

Free Text Search:












Advanced Search (Define more query conditions: Resource Category, Societal Benefit Areas, GEO affiliation)



(Leaving all search fields blank will return a list of all registered Resources)

9 Matched Resource (indicates Approved)

[First Page](#) [Previous Page](#) [Next Page](#) [Last Page](#)

1.	EnviroGRIDS Climate scenarios	C	Details	
2.	Black Sea Catchment DEM - WMS	S	Details	
3.	EnviroGrids BlackSee GeoPortal	C	Details	
4.	EnviroGRIDS Hydrological modeling (Wp4) - WMS	S	Details	
5.	EnviroGrids BlackSee catalogue	S	Details	
6.	EnviroGRIDS URM Portal - Catalog	S	Details	
7.	enviroGRIDS - Bringing GEOSS services into practice	C	Details	
8.	EnviroGRIDS Map toolkit - WMS	S	Details	
9.	enviroGRIDS	C	Details	

Search -

http://geossregistries.info/geosspub/resource_search_ns.jsp



- By standard

Search GEOSS Resource

Free Text Search:

netCDF


















Advanced Search (Define more query conditions: Resource Category, Societal Benefit Areas, GEO affiliation)



(Leaving all search fields blank will return a list of all registered Resources)

28 Matched Resource (indicates Approved)

1.	EnviroGRIDS Climate scenarios	C	Details	
2.	DataFed EPA Data Sources Web Coverage Service (WCS)	S	Details	
3.	Unidata Real-time weather data service	S	Details	
4.	Remote Sensing Information Gateway	C	Details	
5.	GMU GeoBrain	C	Details	
6.	DataFed Air Emissions Web Coverage Service (WCS)	S	Details	
7.	Daily Ice Concentration Products from SSM/I (Special Sensor Microwave/Imager) and SSMR (Scanning Multichannel Microwave Radiometer)	C	Details	
8.	GMU Web Coverage Service version 2.0	S	Details	
9.	CEOS Water Portal	C	Details	
10.	NOAA Unified Access Framework Catalog	C	Details	
11.	CORIOLIS	C	Details	
12.	COSYNA OPeNDAP	S	Details	
13.	Prototype OGC WCS for NOAA GOES data	S	Details	
14.	Prototype OGC CSW for NOAA GOES data	S	Details	
15.	OGC/WCS server for Task Force Hemispheric Transport of Air Pollution Multi-Model Data Archive: monthly data	S	Details	

Search -

http://geossregistries.info/geosspub/resource_search_ns.jsp



• By SBA

Search GEOSS Resource

Free Text Search:

Health



Advanced Search (Define more query conditions: Resource Category, Societal Benefit Areas, GEO affiliation)



Search

(Leaving all search fields blank will return a list of all registered Resources)

174 Matched Resource (indicates Approved)

First Page

Previous Page

Next Page

Last Page

1.	Pan American Health Organization Influenza Atlas	C	Details	
2.	European ground level ozone air quality pollution mapping portal	C	Details	
3.	World Climate Programme	C	Details	
4.	World Health Organization Health Facilities	C	Details	
5.	The National Atlas of the United States of America	C	Details	
6.	Air Quality Community Catalog	C	Details	
7.	GEOSS Air Quality and Health Working Group CSW Client	C	Details	
8.	HE-09-02a	C	Details	
9.	Public Health Applications in Remote Sensing	C	Details	
10.	Climate Data Online	C	Details	
11.	AIRNow Gateway Web Service	C	Details	
12.	UNEP GEO Data Portal - WFS	S	Details	
13.	World Health Organization Facility Catalog	S	Details	
14.	Community Image Data portal	C	Details	
15.	World Health Organization Statistical Information System (2009 data)	C	Details	
16.	UNEP GEO Data Portal	C	Details	
17.	DataFed Air Quality Portal	C	Details	
18.	Demonstration of the Dust Forecast Module	C	Details	
19.	UNEP GEO Data Portal - WMS	S	Details	
20.	EEA dataservice	C	Details	

Search - <http://geossregistries.info/holdings.htm>



- All components

Component and Service Registry - Registration Holdings

These two charts were automatically generated on Oct 14, 2012 at 2:00AM EDT. You might want to check out the public search interface to know the most current data holdings information.

Please note that only approved Components and Service Instances are listed here. You may login to the secure publication portal to search all Components and Service Instances including pending records. After login, you can also request for approval of pending Components or Service Instances records you registered.

[Click to see all the Components](#)

[Click to see Data-Core Information](#)

[Click to see all the Services](#)

Component List

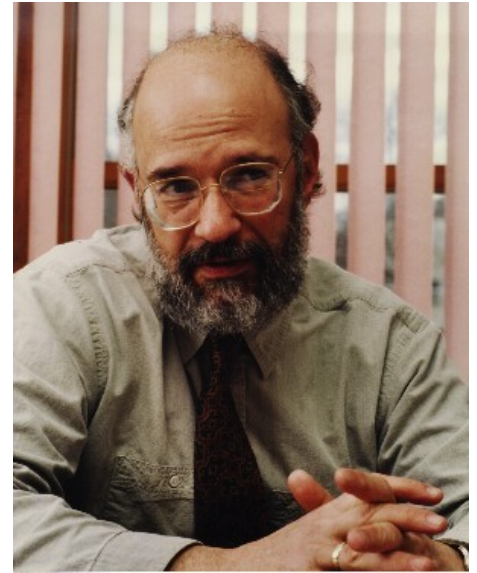
Click on the heading to sort the column.

List	Component Name	Agriculture	Biodiversity	Climate	Disasters	Ecosystems	Energy	Health	Water ▼	Weather	Details
216.	WIST (Warehouse Inventory Search and order Tool)										Details
71.	The Antarctic Cryosphere Access Portal (A-CAP)										Details
176.	EnviroGrids BlackSee GeoPortal										Details
427.	ITC GEONETCast DevCoCast Application Manual										Details
426.	Medspiration										Details
425.	Freeze-Thaw Earth System Data Record										Details
175.	ESRI CS-W Client for ArcGIS										Details
70.	ECMWF Interim Reanalysis (ERA-Interim): 1979-present										Details
173.	COCOS carbon data portal										Details
421.	Global Flood Alert System										Details

Some last thoughts...



“What we are doing is facilitating a common picture of reality for different organizations which have different views of the reality, the disaster, the catastrophe, that they all have to deal with collectively.”



*David Schell,
Founder OGC*

Some closing thoughts



- *Participate and experience* what GEO/GEOSS means
- Add value to (scientific) data through (AIP) scenarios / applications.
- AIP provides a forum, visibility, state-of-the-art technology input and a ground-rooted approach to the GCI
- **AIP helps cross-checking GEOSS needs and priorities with industry, government and other (S&T) communities, outputs can contribute proposals and guidelines to assist (national) R&D agencies in addressing GEO needs.**



**Watch out for AIP-5 results and
next activities!**

Athina Trakas

**Director European Service
OpenGeospatial Consortium, Inc.**

**Heerstr. 162
53111 Bonn**

Tel.: +49 – 228 – 54 88 99 42

Mobil: +49 – 173 – 211 2623

eMail: atrakas@opengeospatial.org

web: <http://www.opengeospatial.org>

Other topics touched: INSPIRE



This purpose of this special OGC market report is to provide INSPIRE stakeholders with an overview of OGC, CEN and ISO standards in INSPIRE and to provide clarification of the Implementing Rules with respect to standards. The report highlights the fact that INSPIRE has some elements that are legally binding and other elements that are not. INSPIRE Implementing Rules are legally binding, but they do not specify particular standards or technologies. Technical Guidance documents accompanying the Implementing Rules provide the implementation details but they are not legally binding documents. Technical Guidance documents reference OGC, ISO and other standards.



<http://www.opengeospatial.org/pressroom/marketreport/inspire>