

Activités SDI

UNIGE/Inst. des Sciences de
l'Environnement/enviroSPACE Lab.
&
UNEP/GRID-Geneva

Activités SDI UNIGE/GRID

Journée LSSR

17 Juin 2014, HEPIA, G.Giuliani & N.Ray



UNIVERSITÉ
DE GENÈVE

enviroSPACE et UNIGE/GRID



Prof. Anthony Lehmann

Dr. Nicolas Ray

Dr. Gregory Giuliani

Dr. Pierre Lacroix

Dr. Martin Schlaepfer

Yaniss Guigoz

Karin Allenbach

Ana Gago da Silva

Denisa Rodila

(Alain Dubois)

Prof. Hy Dao

Dr. Nicolas Ray

Dr. Gregory Giuliani

Dr. Pierre Lacroix

Dr. Andrea de Bono

Yaniss Guigoz

Karin Allenbach

Bruno Chatenoux

Pierric de Laborie

Christian Herold

Jean-Philippe Richard

Stefan Schwarzer

Cédric Gampert

Dr. Carmen Cianfrani

FP7 EOPOWER & FP7 IASON



Earth Observation for Economic Empowerment
Coordination, 13 partners (2013-2015)

<http://www.eopower.eu>



**Fostering sustainability and uptake of
research results through Networking activities
in Black Sea & Mediterranean areas**

Partner, WP leader (2013-2015)

<http://iason-fp7.eu>

- promouvoir l'utilisation des données d'observation de la Terre
- faciliter le développement de modèles hydrologiques
- renforcer les capacités en SDI
- faciliter la collaboration entre Commissions de la Mer Noire et Commission du Danube (ICPDR et BSC)

FP7 EcoArm2ERA & SCIEX enviroPAD



Towards Armenia's integration into the ERA

Partner, WP leader (2011-2014)

<http://www.ecoarm2era.eu>



enviroPAD : Efficient Development and Execution of Environmental Applications on Parallel and Distributed Infrastructures

Coordination (2013-2014)

<http://www.unige.ch/envirospace/Projects/enviropad.html>

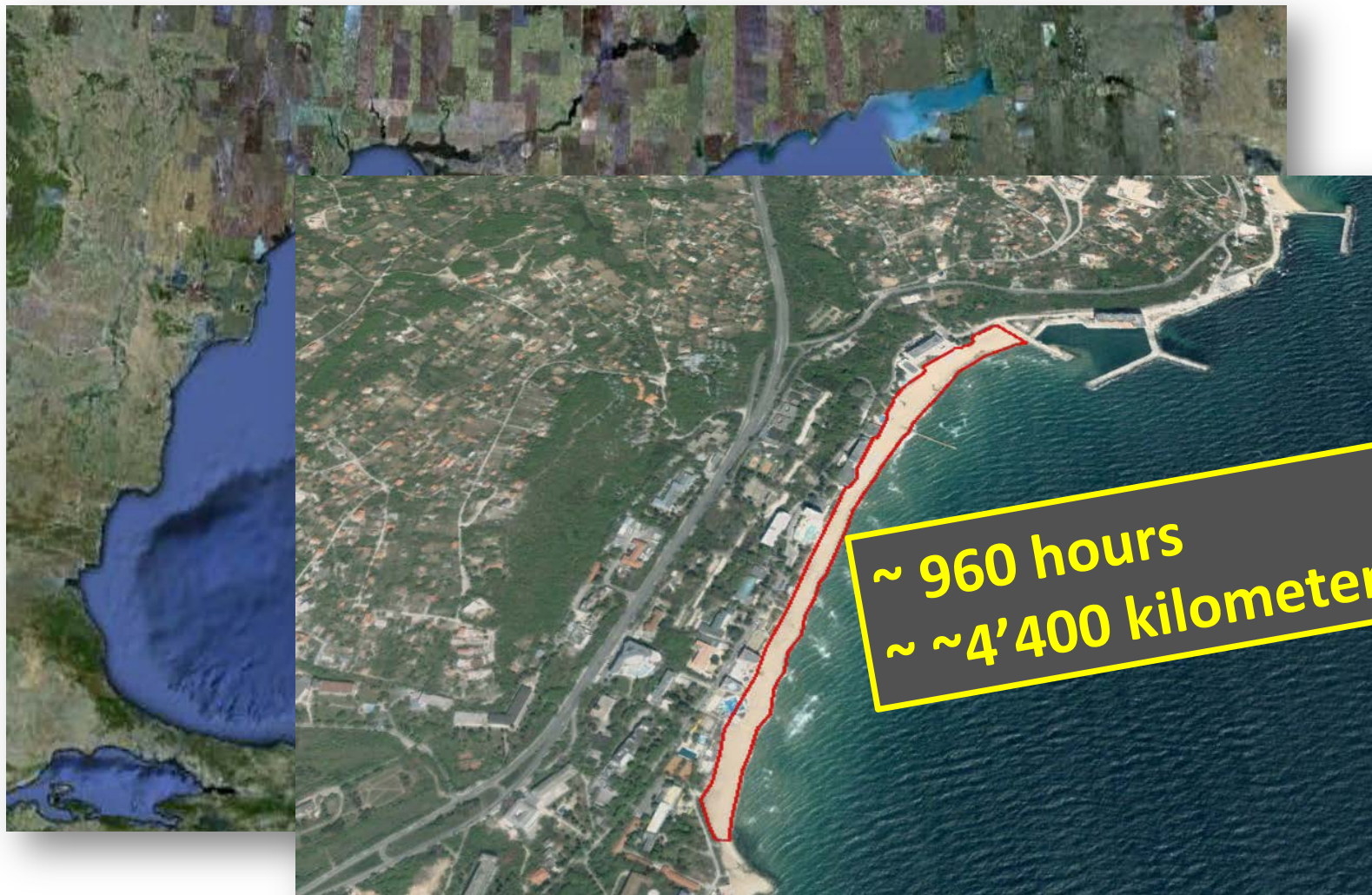
- optimisation de la modélisation par calcul distribué
- modélisation hydrologique du Lac Sevan en Arménie

Integrated Coastal Zone Management (ICZM)



Partner (2010-2014)

<http://www.pegasoproject.eu>



~ 960 hours

~ ~4'400 kilometers

RAMSAR – Sites Information Service

The image shows a composite of three overlapping screenshots of the Ramsar Sites Information Service (RIS) website. The top screenshot shows the main header with the Ramsar logo and navigation links. The middle screenshot shows a search interface with filters for country, region, site name, wetland category, and designation date. The bottom screenshot shows the detailed information for the Becher Point Wetlands in Australia, including its area, coordinates, and a map.

Ramsar Sites Information Service
My account | Log out | EN | FR | ES

Ramsar Sites Information Service
My account | Log out | EN | FR | ES

Ramsar Sites Information Service portal
Ramsar Sites database search and management for Contracting Parties

Home | Map services | Search tool | Statistics

Search for a Ramsar Site
Ramsar

Or/and filter your search
Filter by country

- Afghanistan
- Albania
- Algeria
-

Filter by Region

- Afghanistan
- Albania
- Algeria
-

Filter by Site Name

Filter by wetland category

Filter by Ramsar criteria

Filter by designation date

Search for a Ramsar Site
Ramsar

Or/and filter your search
Filter by country

- Afghanistan
- Albania
- Algeria
-

Filter by Region

- Afghanistan
- Albania
- Algeria
-

Filter by Site Name

Filter by wetland category

Filter by Ramsar criteria

Filter by designation date

Becher Point Wetlands
Australia

Area : 52'023 km²
Coordinates: 32°23' S, 115°44' E

....

....

....

Overview | Gallery | Supp.info

Overview:.....

Key features of the site:
The Becher Point Wetlands Ramsar site is a system of about sixty small wetlands located near Rockingham in south-west Western Australia. The wetlands are made up of chains of small linear, ovoid or irregular shaped basins arranged in five groups, each roughly parallel to the coast and separated by sand ridges.

.....

Download RIS

Map download | **GIS download**

THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

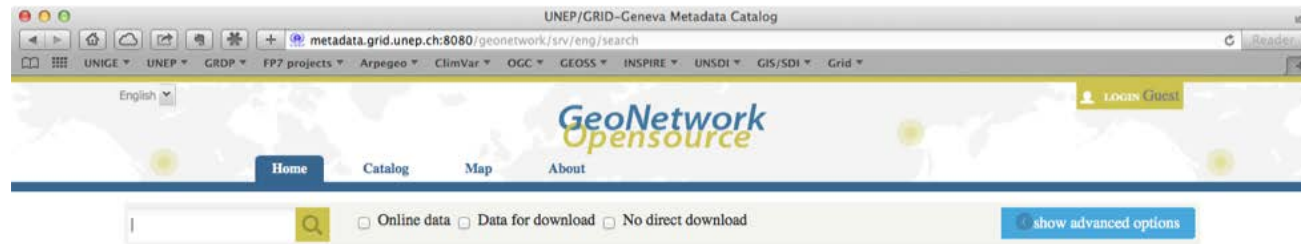


Plusieurs projets soumis ou à soumettre

- services écosystémiques
- renforcement des capacités EO
- interopérabilité des SDI (forêts, climat)

UNIGE/GRID SDI

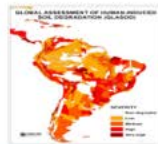
New metadata catalog: <http://metadata.grid.unep.ch>



Welcome to GeoNetwork

TAGS

LATEST



Global assessment of...

Background The Global Assessment of Human Induced Soil Deg...



Cloudiness, long-term mean...

The IIASA Climate Database was created at the International ...



European remote sensing...

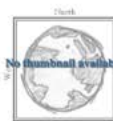
The European Remote Sensing Forest/Non-forest Digital Map wa...

POPULAR



Global assessment of...

Background The Global Assessment of Human Induced Soil Deg...



Tsunami exposure-monetary...

This dataset presents a global value of urban buildings expo...



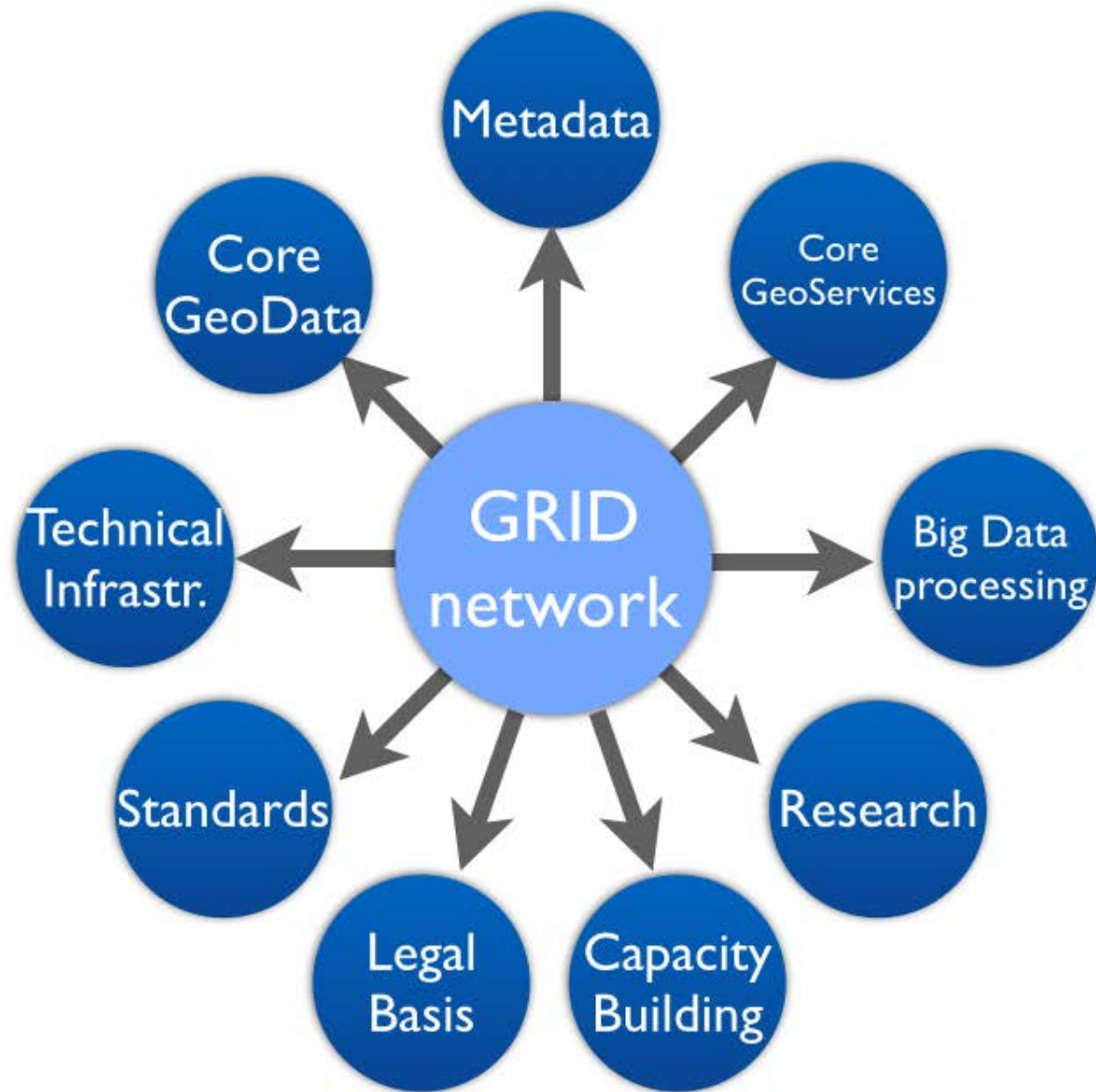
Tropical cyclones windspeed...

This dataset includes a compilation of estimated tropical cy...

UNIGE/GRID SDI

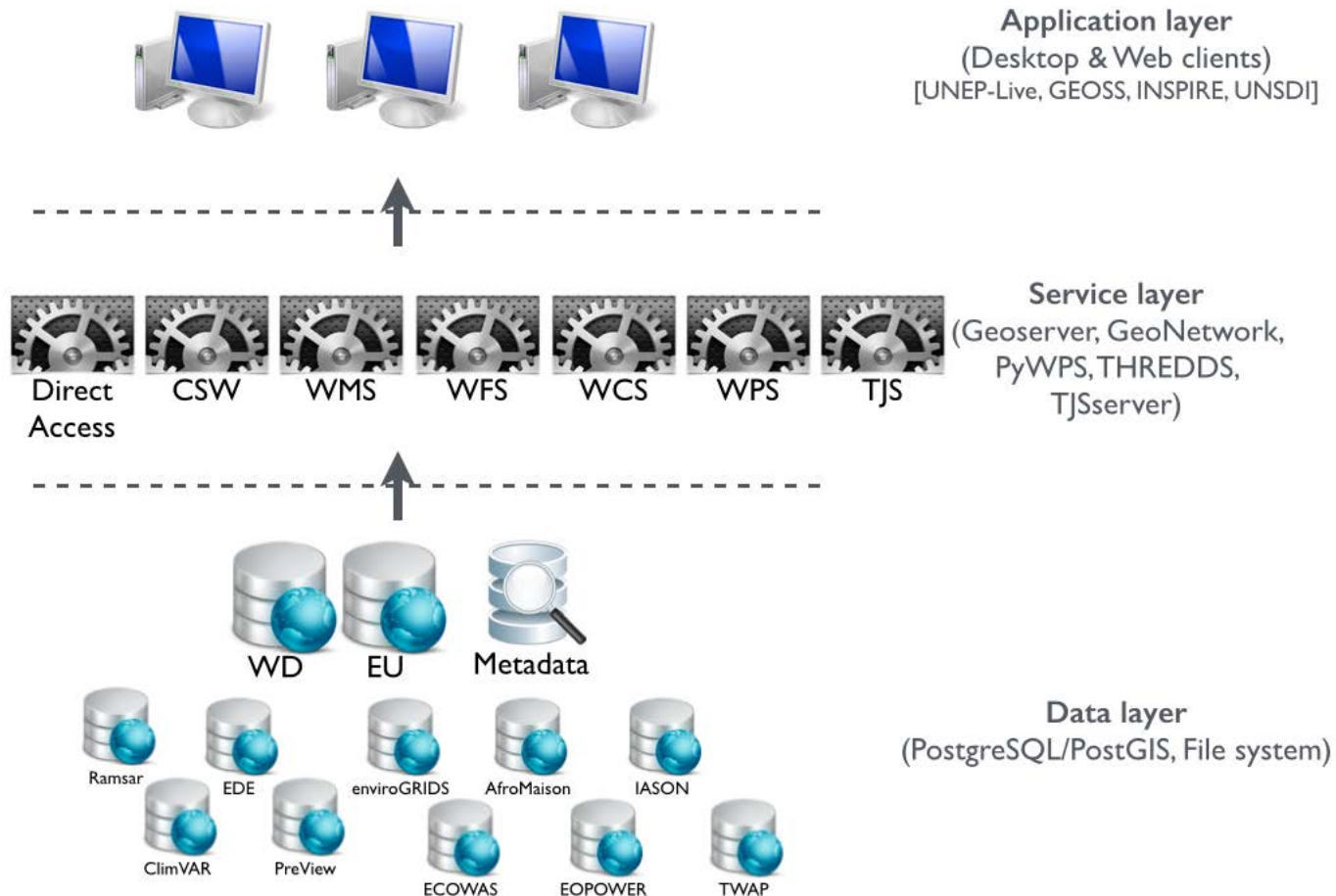
Services registry: <http://services.grid.unep.ch>

The screenshot displays the UNEP/GRID-Geneva Services Registry website. The browser address bar shows the URL services.grid.unep.ch/geonetwork/srv/eng/main.home. The page header includes the UNEP logo, the GRID Geneva logo, and the GeoNetwork OpenSource logo with the tagline "Geographic data sharing for everyone". Navigation links for Home, Contact us, Links, About, and Help are provided. A search interface is visible, featuring a "Simple Search" tab and a search input field. Below the search field, there are icons for map navigation and a "Search" button. A "Show map" button is also present. The main content area is titled "FIND INTERACTIVE MAPS, GIS DATASETS, SATELLITE IMAGERY AND RELATED APPLICATIONS". Under the heading "GEONETWORK'S PURPOSE IS:", there is a list of bullet points: "To improve access to and integrated use of spatial data and information", "To support decision making", "To promote multidisciplinary approaches to sustainable development", and "To enhance understanding of the benefits of geographic information". Below this, a paragraph states: "GeoNetwork opensource allows to easily share geographically referenced thematic information between different organizations. For more information please contact". A "Featured map" section is visible, listing "ENVIROGRIDS - WMS" with a description: "With 30 partners distributed in 15 countries, the enviroGRIDS project is contributing to the Global Earth Observation System of Systems (GEOSS) by promoting the use of web-based services to share and ...more...". A placeholder box indicates "No preview available".



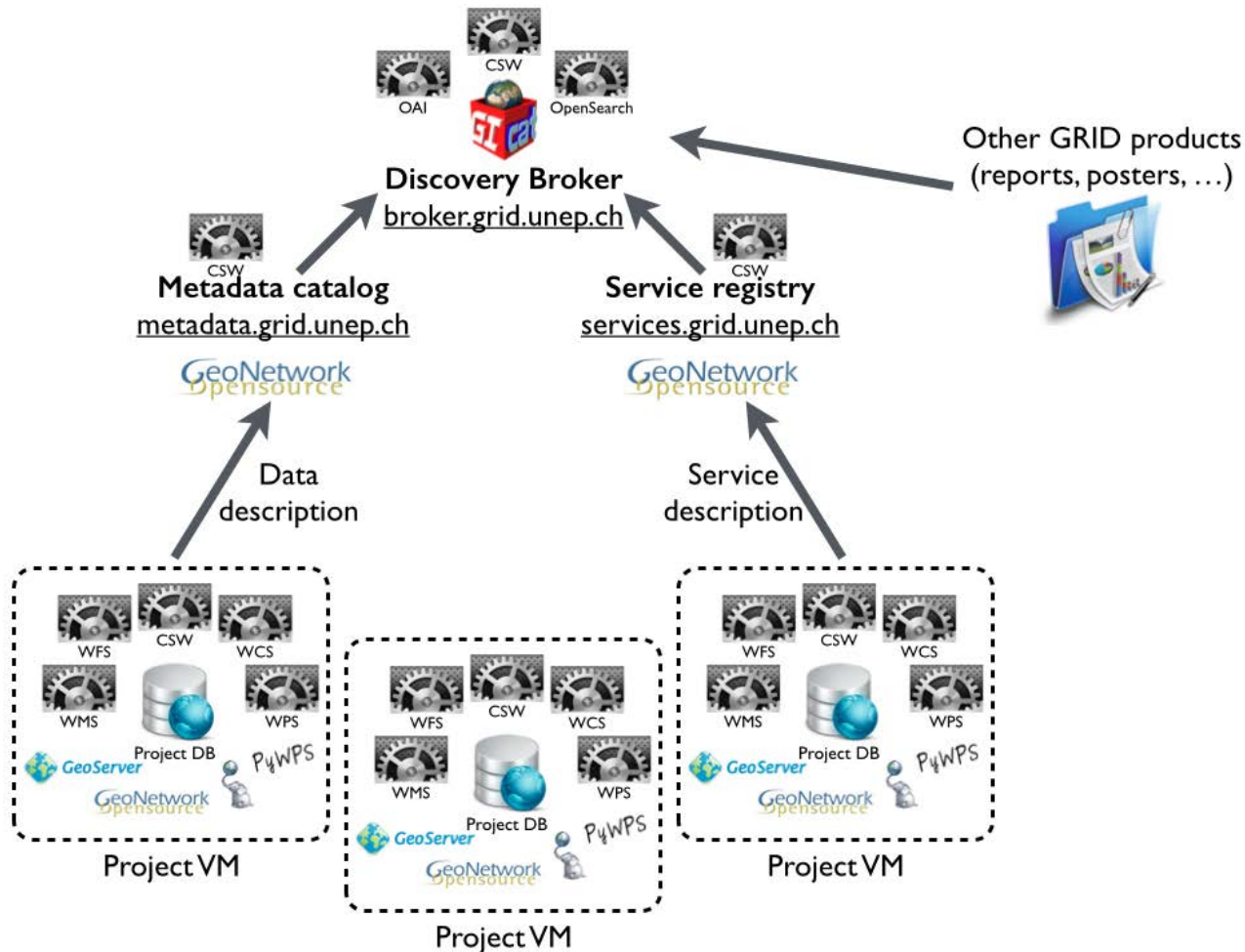
UNIGE/GRID SDI

Service Oriented Architecture



UNIGE/GRID SDI

Service Oriented Architecture



UNIGE/GRID SDI

Guidelines



Spatial Data Infrastructure (SDI) Architecture

Title: Spatial Data Infrastructure (SDI) Architecture
Creator: Gregory Galois
Creation date: 07.11.2013
Date of last revision: 23.02.2014
Subject: Architecture of the UNIGE/GRID SDI
Issue: Final - version 1.0
Publisher: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Type: This document describes the general architecture of the UNIGE/GRID SDI.
Description: This document describes the general architecture of the UNIGE/GRID SDI.
Contributors: Gregory Galois, Pierre Lacroix, Vincent Gagnon, Jean-Philippe Hubard
Format: Word document
Source: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Rights: Internal documentation
Identifier: sd_i_architecture.docx
Language: EN
Subject: SDI Organization and Governance
Publication: [sd_i_organization.docx], [sd_i_program.doc], [sd_i_projects.doc], [sd_i_tools.doc], [sd_i_architecture.doc], [sd_i_governance.doc], [sd_i_governance.doc]
Coverage: -



Spatial Data Infrastructure (SDI) Organization & Governance

Title: Spatial Data Infrastructure (SDI) Organization & Governance
Creator: Gregory Galois
Creation date: 07.11.2013
Date of last revision: 27.03.2014
Subject: Organization & Governance of the UNIGE/GRID SDI
Issue: Final - version 1.1
Publisher: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Type: This document describes the organization and governance of the UNIGE/GRID SDI.
Description: This document describes the organization and governance of the UNIGE/GRID SDI.
Contributors: Gregory Galois, Pierre Lacroix, Jean-Philippe Hubard
Format: Word document
Source: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Rights: Internal documentation
Identifier: sd_i_organization.docx
Language: EN
Subject: SDI Tools (sd_i_tools.doc), SDI Architecture (sd_i_architecture.doc), SDI Programs (sd_i_program.doc)
Coverage: -



Metadata Production Guideline

Title: Metadata Production guideline
Creator: Gregory Galois
Creation date: 17.05.2013
Date of last revision: 23.02.2014
Subject: Metadata production
Issue: Final - version 1.0
Publisher: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Type: This document describes the procedure to prepare Metadata using SDI (SDI) (SDI) (SDI)
Description: This document describes the procedure to prepare Metadata using SDI (SDI) (SDI) (SDI)
Contributors: Gregory Galois, Jean-Philippe Hubard, Andrew De Boer, Vincent Gagnon, Pierre Lacroix
Format: Word document
Source: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Rights: Internal documentation
Identifier: metadata_production.docx
Language: EN
Subject: -
Coverage: -



Data and Metadata Publication Guideline

Title: Data and Metadata Publication guideline
Creator: Gregory Galois
Creation date: 07.11.2013
Date of last revision: 23.02.2014
Subject: Data and Metadata publication/preparation
Issue: Final - version 1.0
Publisher: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Type: This document describes the procedure to publish Data and Metadata.
Description: This document describes the procedure to publish Data and Metadata.
Contributors: Gregory Galois, Jean-Philippe Hubard, Andrew De Boer, Vincent Gagnon, Pierre Lacroix
Format: Word document
Source: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Rights: Internal documentation
Identifier: data_publication_guideline.docx
Language: EN
Subject: -
Coverage: -



UNIGE/GRID SDI tasks

Title: UNIGE/GRID SDI tasks
Creator: Gregory Galois
Creation date: 23.11.2013
Date of last revision: 10.12.2013
Subject: Ongoing tasks of UNIGE/GRID SDI
Issue: Final - version 1.0
Publisher: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Type: This document describes the tasks related to the implementation of the UNIGE/GRID SDI.
Description: This document describes the tasks related to the implementation of the UNIGE/GRID SDI.
Contributors: Gregory Galois
Format: Word document
Source: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Rights: Internal documentation
Identifier: sd_i_tasks.docx
Language: EN
Subject: -
Coverage: -

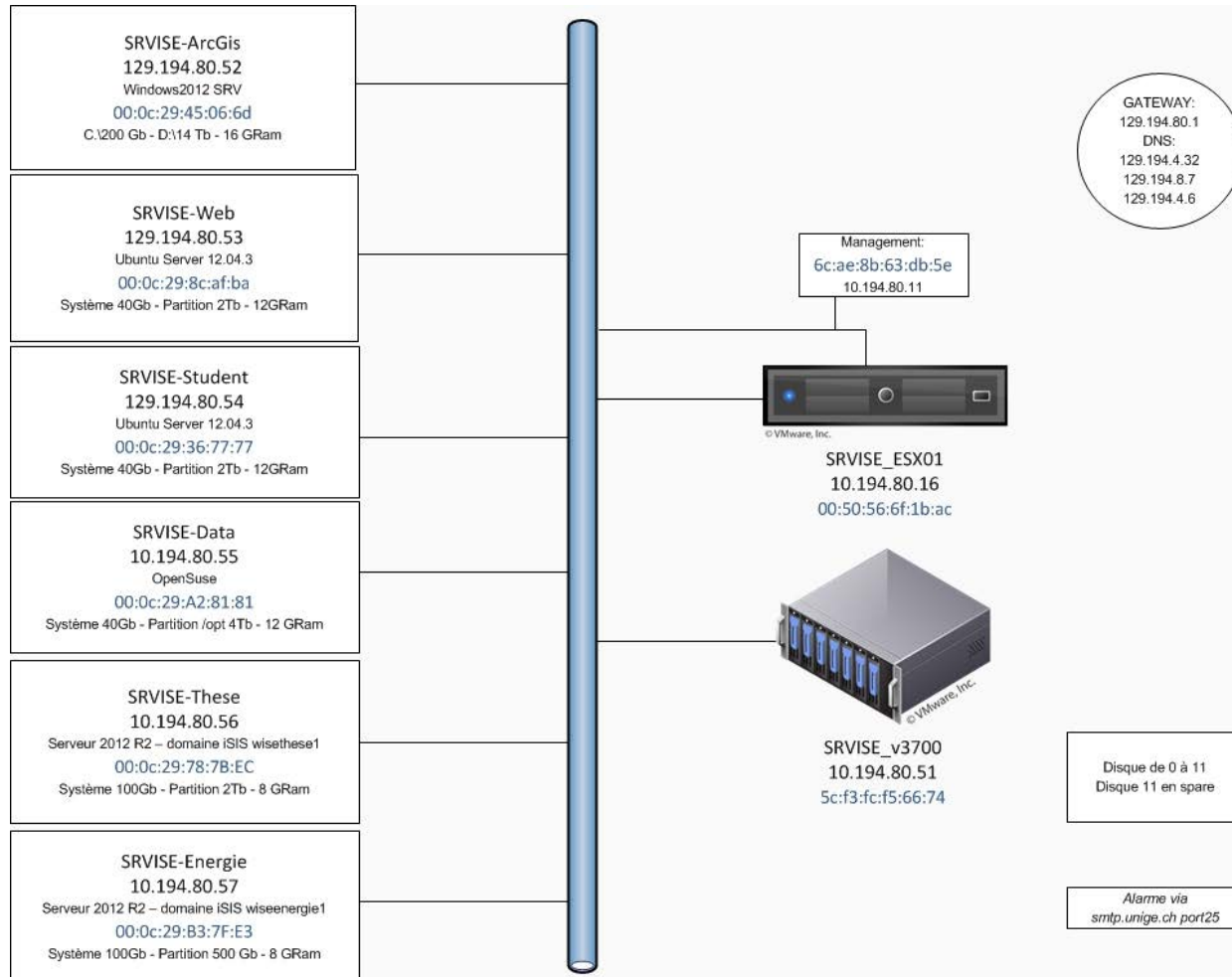


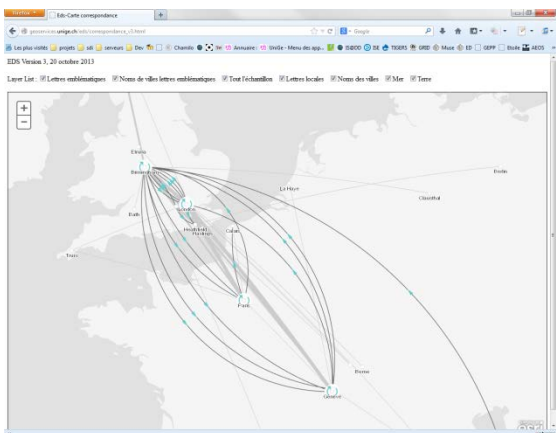
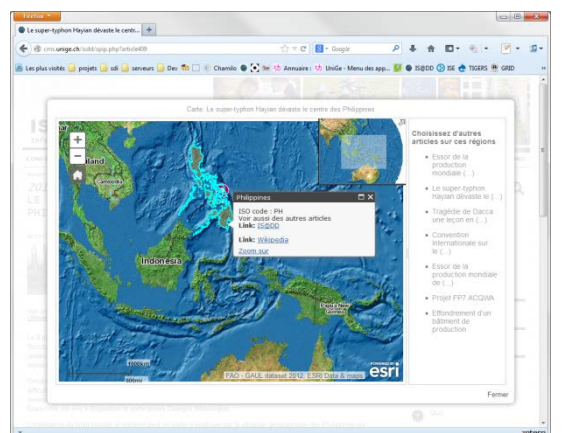
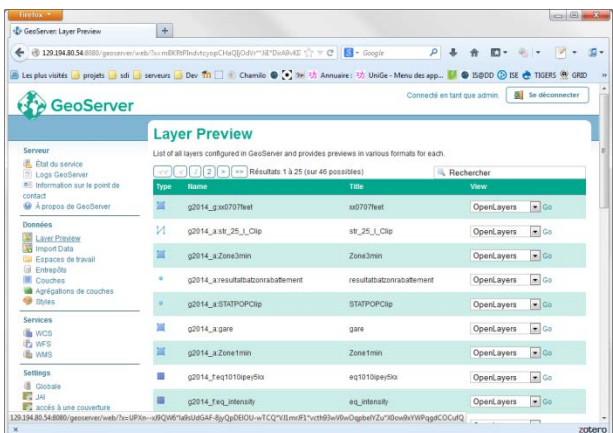
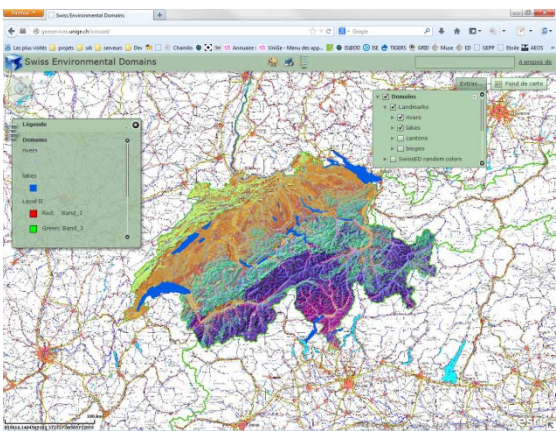
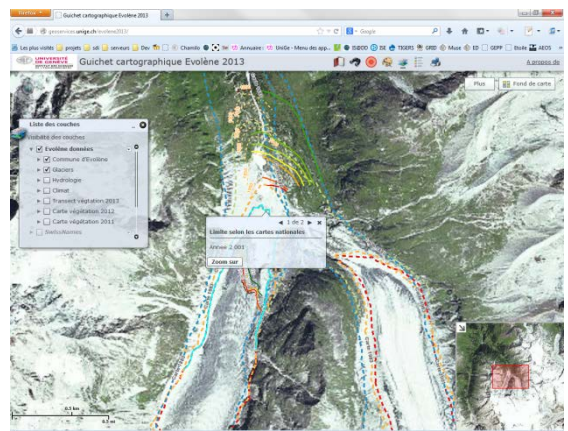
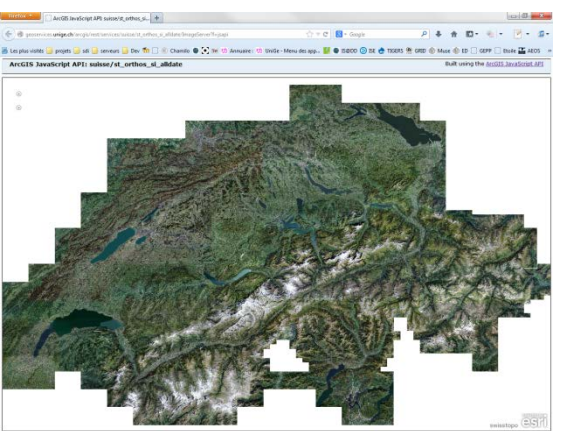
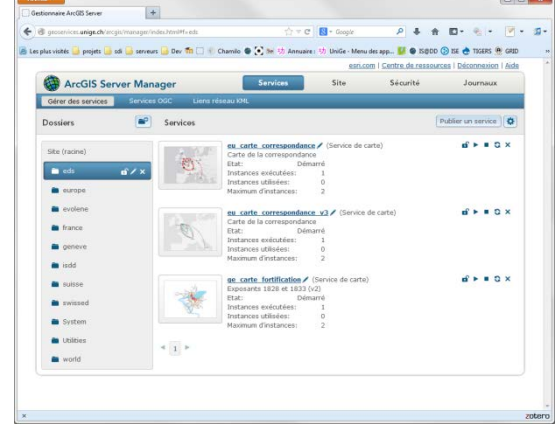
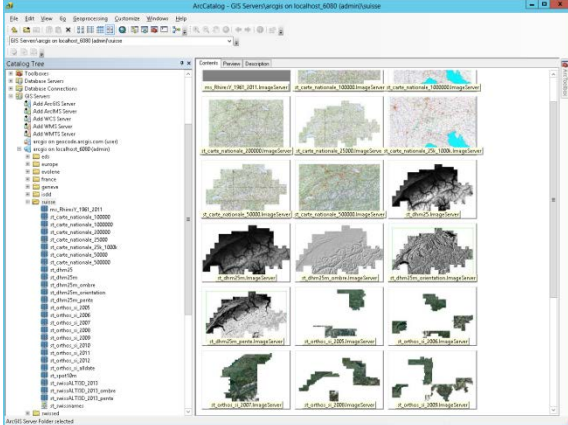
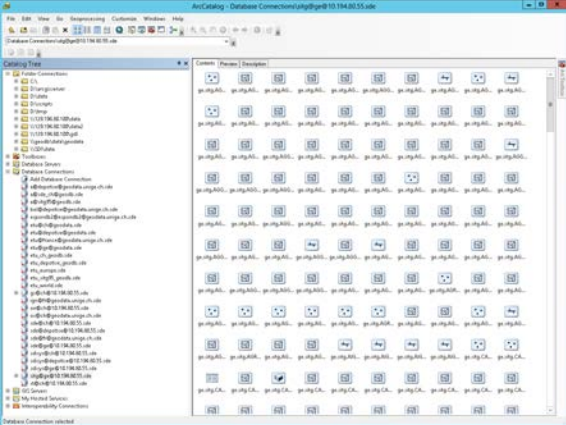
SDI-related projects

Title: SDI-related projects
Creator: Gregory Galois
Creation date: 07.11.2013
Date of last revision: 10.12.2013
Subject: Projects related to the UNIGE/GRID SDI
Issue: Final - version 1.0
Publisher: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Type: This document describes the projects that are supported by the UNIGE/GRID SDI.
Description: This document describes the projects that are supported by the UNIGE/GRID SDI.
Contributors: Gregory Galois, Pierre Lacroix, Vincent Gagnon, Jean-Philippe Hubard, Andrew De Boer
Format: Word document
Source: UNIGE/GRID/GRID Geneva, UNIGE/GRID/GRID
Rights: Internal documentation
Identifier: sd_i_projects.docx
Language: EN and FR
Subject: -
Coverage: -

UNIGE/GRID SDI

Ongoing work: data publication of PhD/Masters students





UNEP Live

<http://www.uneplive.org>

The need:

UNEPLive aims to support the growing demand for substantiated, contextualised knowledge about the environment, UNEP has developed richer sets of data and knowledge flows and communities of networks.

The aim:

UNEPLive[1] is a web-based platform to:

- facilitate the exchange and sharing of up-to-date data, information, assessments and knowledge amongst member countries, research networks, communities of practice, indigenous peoples and society, in order to keep the environment and emerging issues under review.
- provide open access to national and regional information and global datasets
- provide a range of big-data, visualisation, mapping and publishing tools via local and cloud services
- underpin UNEP's role as UNEA's information and knowledge service provider especially in the delivery of information and evidence to support the SDGs and post 2015 agenda.

UNEP Live



UNEP Live

Home » Region

Select Country/Region/Global Or Select Theme

MyUNEP Live Search

Europe

Map - Charts Traditional Knowledge



- The UNEP Regional Breakdown for Europe includes the following countries:
- Albania
 - Andorra
 - Armenia
 - Austria
 - Azerbaijan
 - Belarus
 - Belgium
 - Bosnia and Herzegovina
 - Bulgaria
 - Croatia
 - Cyprus
 - Czech Republic
 - Denmark
 - Estonia

[Disclaimers](#)

More information

[UNEP Resources](#) - [Partner Resources](#) - [Latest Knowledge](#) [Knowledge Providers](#) [Apps](#)

Publications

Total: 22 [View all](#)

UNEP in Europe: newsletter - 2013

A practical framework for planning pro-development climate policy - 2012

The fifth Global Environment Outlook, GEO-5 - 2012

Capacity Building in GEO

Since January 2014, UNIGE is task coordinator of ID-02
“Developing Institutional and Individual Capacity”.

Next Capacity Building Event: GEOXI plenary in Gabon –
November 2014

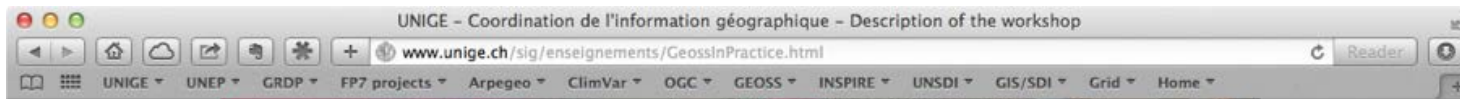


The screenshot displays the GEONETCAB Catalog interface. At the top, the logo 'GEONETCAB' is visible, along with the text 'GEONETCAB CATALOG' and 'Capacity Building resources for Earth Observation'. A search bar contains the word 'Disaster', and the results show '23 RESULTS FOUND FOR «DISASTER, BKIX--180,-90,180,90»'. The results are listed in a table with columns for 'Title', 'Date', and 'Description'. The first result is 'Disaster management marketing toolkit' dated 2012-07-01. Other results include 'GDACS : Global Disaster Alert and Coordination System' (2011-11-09), 'Master of Science in Natural Hazards and Disaster Risk Management' (2011-05-02), 'UNOSAT' (2011-11-06), and 'UNOSAT' (2011-11-07). On the right side of the page, there is a circular diagram with 'Disaster' in the center, connected to 'Natural disaster' and 'Thematic thesaurus'.

Title	Date	Description
Disaster management marketing toolkit	2012-07-01	After the completion of the regional studies on opportunities and bottlenecks in earth observation, promotion activities... agriculture, marketing toolkit, document/graphics...
GDACS : Global Disaster Alert and Coordination System	2011-11-09	The Global Disaster Alert and Coordination System (GDACS) is a cooperation framework under the United Nations umbrella w... disasters, alert system, volcanoes...
Master of Science in Natural Hazards and Disaster Risk Management	2011-05-02	Master of Science degree course in Geo-information Science and Earth Observation for Natural Hazards and Disaster Risk M... disasters, training, others...
UNOSAT	2011-11-06	UNOSAT is the UN/ITAR Operational Satellite Applications Programme, implemented with the support of the European Organiza... disasters, disaster monitoring, humanitarian relief...
UNOSAT	2011-11-07	

Bringing GEOSS services into practice

<http://www.geossintopractice.org>



- Partenaires
- Enseignements
 - Certificat de géomatique
 - Cours SIG
 - Formation continue
 - GEOSS in practice**
 - Description (français)
 - Start with the workshop
 - FAQ
 - Supporting projects and authors
 - Agenda
- Activités
- Outils SIG
- TIGERS
- Données
- Logiciels
- Infrastructure
- Contact

Description of the workshop

The "Bringing GEOSS services into practice" workshop aims at teaching how to configure, use and deploy a set of open source software to set up a spatial data infrastructure (SDI). Trainees will learn how to publish and share data and metadata using OGC and ISO standards and how to register services into the Global Earth Observation System of Systems (GEOSS).

The material related to the workshop (a tutorial in PDF, a virtual machine in OVA format and some general documentation on SDIs) can be downloaded here. The tutorial is available in iTunesStore and Google Play Books. More precise information on how to start with the workshop is available from here.

The programme of the workshop is the following:

- Concepts on spatial data infrastructures
- How to store geospatial data? (PostGIS and flat rasters)
- How to publish geospatial data? (GeoServer, WMS, WFS, WCS, KML, SLD)
- How to document and search geospatial data? (GeoNetwork, CSW, ISO metadata)
- How to process geospatial data? (Python, WPS, PyWPS)
- How to view geospatial data? (WMS, OpenLayers, QGIS, KML)
- How to download geospatial data? (WFS, WCS, QGIS)
- How to analyze geospatial data? (WPS local/remote)
- How to share geospatial data? (GEOSS, Discovery and Access Portal)

Practical information

More than 400 people have already been trained on this workshop, in Bulgaria, Georgia, Morocco, the Netherlands, Romania, Serbia, Switzerland and Turkey.

The complete agenda of the workshop can be found here

For more information contact:

- Grégory Giuliani
- Pierre Lacroix

Gregory Giuliani, Pierre Lacroix, Yanies Guigoz, Lorenzo Bigagli, Nicolas Ray, Anthony Lahmann

Bringing GEOSS services into practice



GEO Discovery & Access Broker

Implementation of Brokers for Africa and for UNEP Live



GEO Discovery & Access Broker

The screenshot displays the AFROMAISON DISCOVERY BROKER interface. At the top, the title "AFROMAISON DISCOVERY BROKER" is prominently displayed. Below the title is a large satellite map of Africa with several yellow rectangular search areas overlaid. To the right of the map is a search and filter panel with the following sections:

- Query constraints selection** and **My resources** tabs.
- Keyword**: A search box containing "boundaries" and a "Show Advanced Options" button.
- Location**: A search box with the instruction "Enter a location name (does not ground), e.g., 'Nigeria, Abuja, Rome, etc.'".
- Selected area**: A blue panel with coordinate input fields for longitude (-24.5, 40, 94) and latitude (-40).
- Overlap**: Radio buttons for "Overlap", "Contains", and "Disjoints".
- Time**: A blue panel with date pickers for "From" (2009-01-01) and "To" (2012-01-01).
- Results per page**: A dropdown menu set to "10".
- Start search**: A large button with a green arrow.

Below the map, a status bar indicates "Search results: 94 - Elapsed time: 26 seconds". Below that, a search results table is shown with the following columns: "Access/Use Constraints", "Title", and "Action".

Access/Use Constraints	Title	Action
Help	Niger, SALB Second Administrative Level Boundaries (January 2000-April 2009)	
Help	Iran (Islamic Republic of), SALB Second Administrative Level Boundaries (December 2004 - February 2009)	
Help	Iran (Islamic Republic of), SALB Second Administrative Level Boundaries (February 2009 - February 2009)	

At the bottom right, there are links for "GISCat Welcome Page" and "GISCat".

GEO Discovery & Access Broker

Exploration of the GEOSS DAB API

<http://api.eurogeoss-broker.eu/docs/index.html>

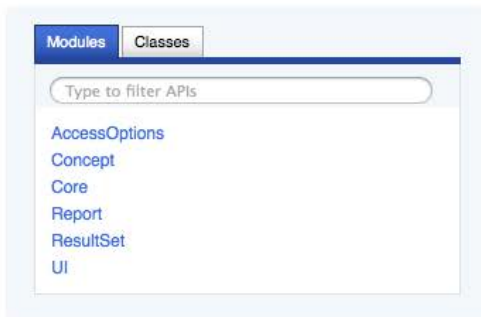


The GEOSS Discovery And Access Broker APIs

Authors: Fabrizio Papeschi, Mattia Santoro, Stefano Nativi



API version: 1.1.11-beta



The **GEO Discovery and Access Broker (DAB)** is a middleware component which is in charge of interconnecting the heterogeneous and distributed capacities contributing to **GEOSS**; it became part of the **GEOSS Common Infrastructure (GCI)** since November 2011. The DAB provides three main functionalities:

1. Discovery of **resources** from **brokered sources**
2. **Semantics-enriched** discovery
3. **Access** of resources

Since it is a middleware component, DAB users are typically software agents, such as web-based or desktop client applications. These can exploit the DAB functionalities implementing the client-side of one (or more) of the protocols published by the DAB for the above functionalities. The available protocols include:

- OGC Catalog Service for the Web (CSW)
- OpenSearch with geo, time and semantic extensions
- Open Archive Initiative (OAI) PMH
- OGC Web Processing Service
- etc

Metadata generation

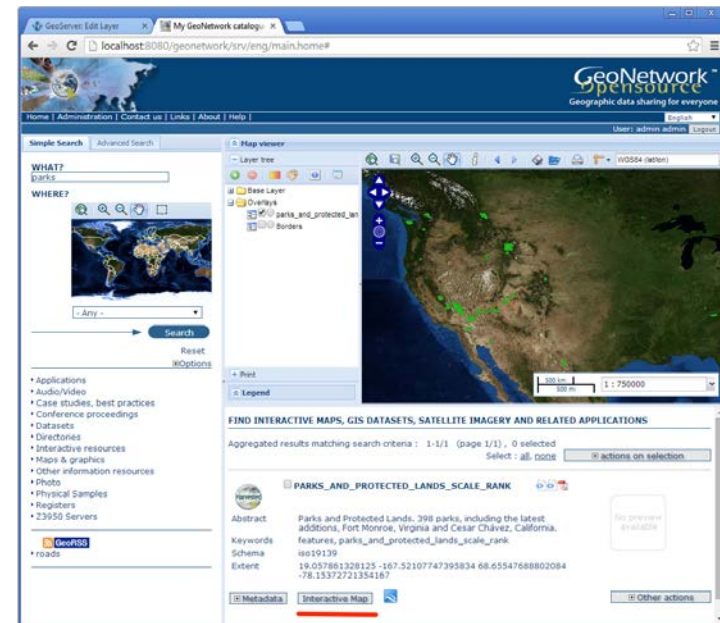
Metadata are essential... but boring to prepare.

Using GeoServer and GeoNetwork CSW interfaces.

Users are only required to insert Title, Abstract, Keywords when publishing data.

Automatic generation of ISO-compliant metadata while harvesting.

Paper under preparation!



Geo For All

<http://www.geoforall.org>

Making geospatial education and opportunities accessible to all!

The image shows a screenshot of the Geo For All website. At the top, there are logos for OGC, GDAL, Python, PHP, and Node.js. Below these is the text "Making location count." and "www.opengeospatial.org". A navigation menu on the left includes: Home, About, Advisory board, How to join, Locations, News, Past events, Training, Training resources, and Webinars. The main content area features the heading "Be part of 'Geo for All'" and a "Mission - 'Making geospatial education and opportunities accessible to all'" section. The mission text states: "The motto of ICA-OSGeo Labs initiative is 'Geo For All.' The creativity, dynamism and high-profile success stories of the Free and Open Source Software for Geospatial applications (FOSS4G) movement are attracting increasing attention from end users, developers, businesses, governments, educators and researchers around the world. The goal of the initiative is to promote and enhance education, research and service activities carried out by these stakeholders in the area of OpenGIS all over the world. By combining the potential of free and open GI software, open data, open standards, open access to research publications, open education resources in Geospatial education and research will enable creation of sustainable innovation ecosystem to advance...". A map of Europe shows the "ICA-OSGeo Network expanded" with green dots representing labs. A text box on the map says "78 labs worldwide as of 19th May, 2015". Another text box says "Welcome to our 50th lab" and "We are pleased to welcome Remote Sensing UNIT at Fo Edmund Mach (FEM), Italy 50th lab. FEM have strong research and development capabilities and are co-developing...". The OSGeo logo is in the bottom left corner. The map is credited to "Luca Delucchi & Václav Petráš — © OpenStreetMap contributors, CC BY-SA".



Thank you!

gregory.giuliani@unige.ch

gregory.giuliani@unepgrid.ch

<http://www.unige.ch/envirospace/People/giuliani.htm>