



Group on  
Earth Observations

# **Introduction to the GEOSS Registries: Components, Services, and Standards**

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# Approach

- GEO Process and GEOSS architecture required registration of contributed components from Members and Participating Organizations
- To facilitate access to GEOSS resources, the automation of the Component registration process and service information was recommended with reference to registered standards
- This supports GEOSS Clearinghouse and GEOSS Web Portal discovery and usage of online services



# Registry credits

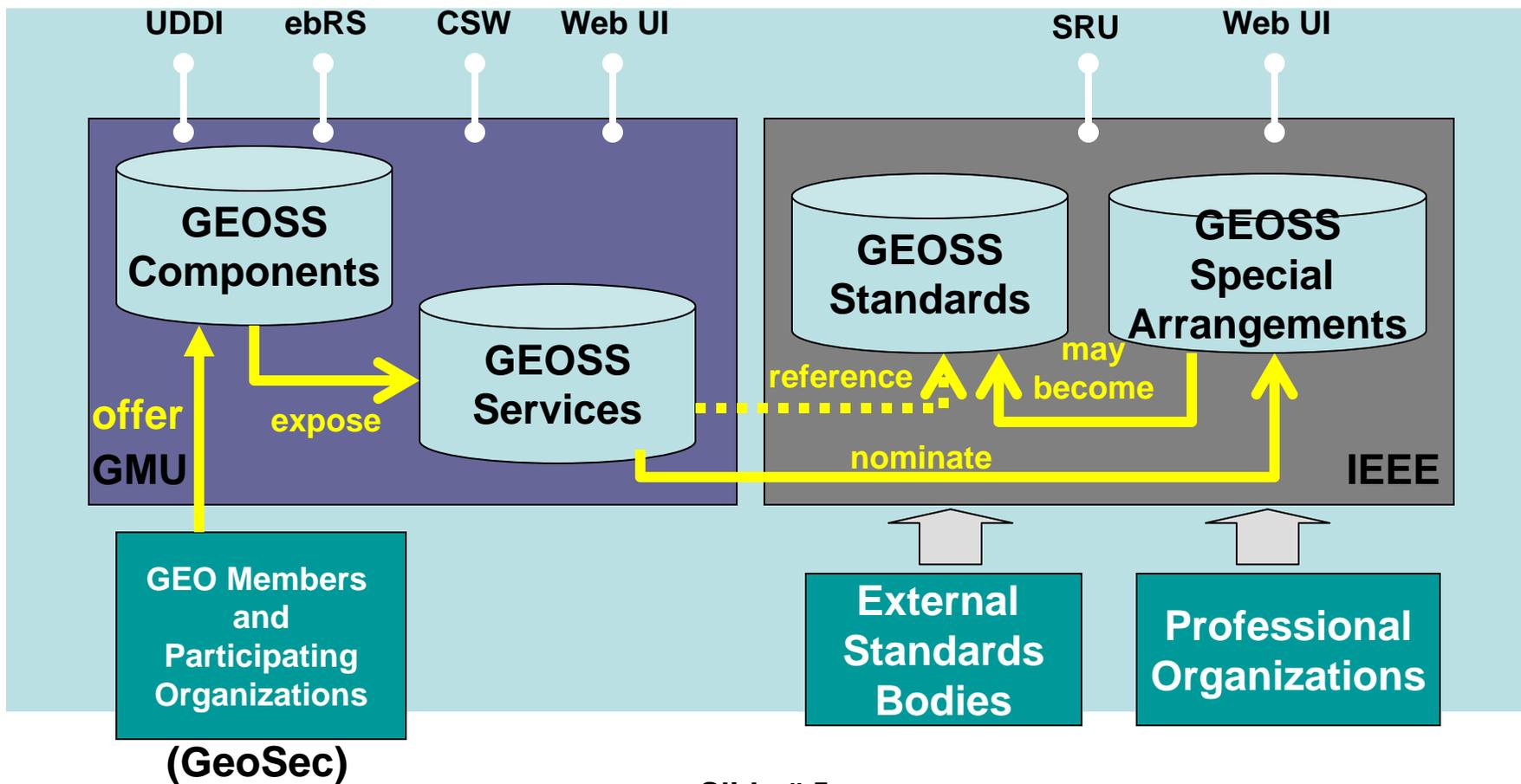
- George Mason University contributed this implementation based on open source registry implementations (Sun Service Registry, GMU CSW service)
- FGDC staff and AR-07-01 and -02 participants have provided design guidance, testing, and comments



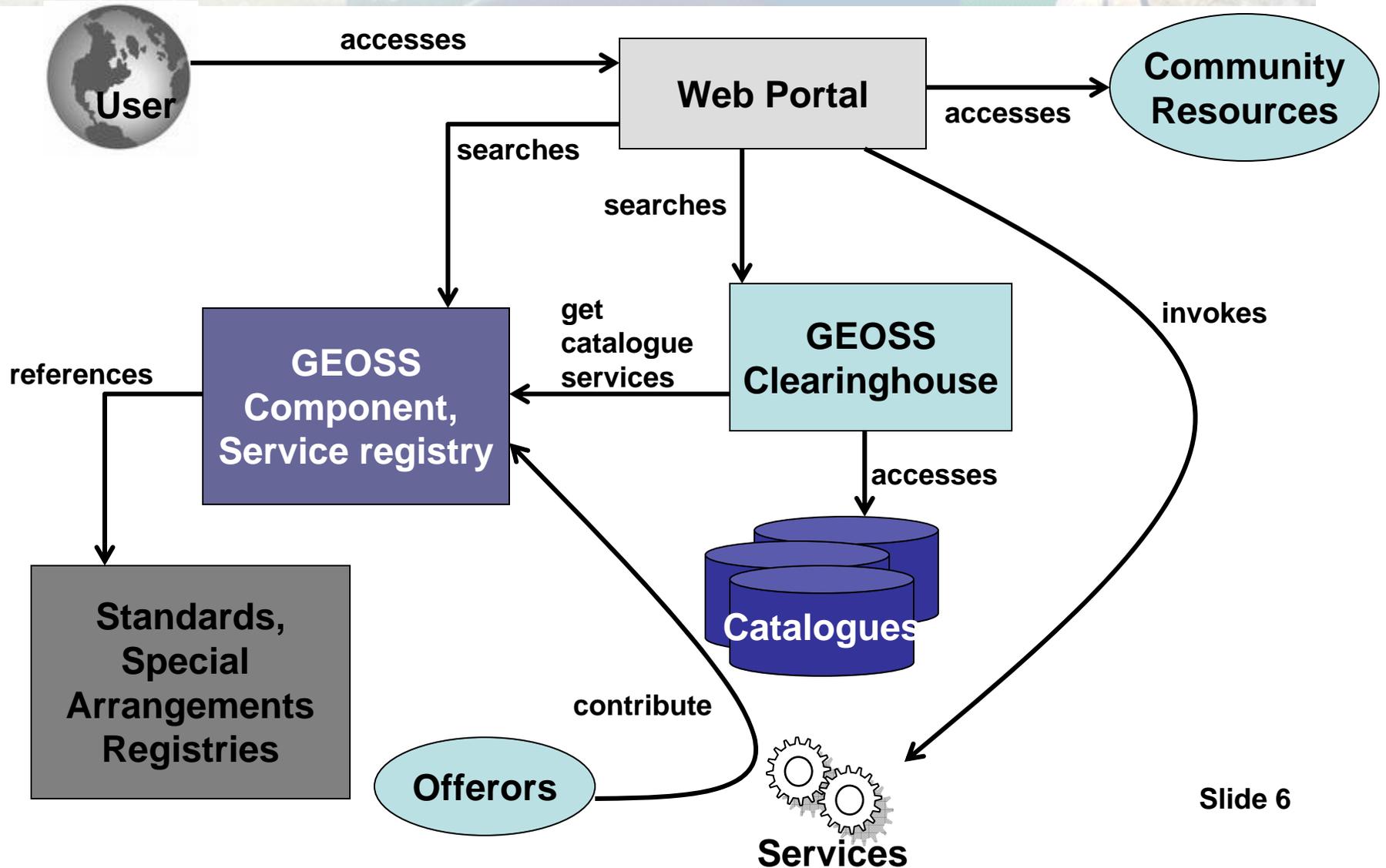
# Managed information resources

- GEOSSE Components Registry
- GEOSSE Services Registry
- GEOSSE Standards Registry (external, hosted by IEEE) for service types, data formats, schemas, and other standards
- Identification of “special arrangements” (non-standard practice)

# GEOSS Registries



# GEO Registries Context





# Populating the Registers

- Populate the GEOSS registers
  - Identify the standards, interface protocols and interoperability agreements in use
  - Provide information to the Clearinghouse as it is brought online
- Analyze successful data integration projects, showing
  - why and how interoperability arrangements were made and maintained
  - how the interoperability arrangements worked under the computer and network environment of the time
  - what the impacts were of these arrangements



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# The Standards and Interoperability Forum

- A Standards and Interoperability Forum (SIF) is being formed to carry out impartial review of GEOSS interoperability issues and to recommend solutions.
- Helping to establish the SIF and refining its protocols and procedures is one of the key objectives of the IP3.



# Demo of GEOSS Component and Service Registry

- The following slides are screenshots of interaction with the GEOSS Component and Service Registry
- Content reflects on-line capabilities as of June 1, 2007
- Changes are being made constantly in response to requests and comments



# GROUP ON EARTH OBSERVATIONS

## GEOSS Registry Publication Portal

---

 **2**

User Name:

Password:

---

[Create New User Account](#) **1**

*This is the login screen. Choices are to:*

- 1. Create a New User Account*
- 2. Login with self-assigned user name and password*

## User Registration

\* Required Fields

Username \*:

Password \*:

Reenter Password \*:

### Personal Info

First Name \*:

Middle Name:

Last Name \*:

GEOSS Affiliation \*:



### Email

Email Type:

Email Address \*:

### Postal Address



### Phone Information



Register

Clear

*Basic user information is captured once  
and is reused in the Registry*

## GEOSS Registry Publication Portal

---



### [Component Registration](#)

A "GEOSS Component" is a part of GEOSS contributed by a GEO Member or Participating organization. Example types of components include observing systems, data processing systems, dissemination systems, educational programmes, or other initiatives. Components may expose service interfaces to provide access to earth observation-related functions and/or data. Components are described in the GEOSS Component Registry.



### [Service Registration](#)

A "Service" in GEOSS is functionality provided by a component through component system interfaces. Services communicate primarily using structured messages, based on the Services Oriented Architecture view of complex systems. Services may be associated with GEOSS-registered standards to promote interoperability. Services are described, along with information about their operating organizations, in the GEOSS Service Registry.



### [Search and Modify](#)

The "Search and Modify" feature allows a user to locate components and services that have been registered with GEOSS, primarily to update them. This basic search interface can be emulated and

*Once logged in, these are the choices shown. Although this user interface allows for limited search, the capabilities are intended only for identifying and updating entries internally. The GEOSS Web Portal and Clearinghouse are designed to handle primary public interaction*

*Once registered as a user, one can enter Component information.*

ne ddnebert [\[logout\]](#)  
[Country Publication Portal](#)  
[Feedback for this page](#)

## GEOSS Component Registration

\* Required Fields

### Component Basic Information

Component Name*:	<input type="text" value="U.S. Geospatial One-Stop"/> 
Abbreviation:	<input type="text" value="geodata.gov"/>
Description*:	<input type="text" value="This Component provides comprehensive access to U.S. geospatial data and services. It enables publishing of data sets through the collection or harvest of descriptive metadata and enables search and visualization of geospatial data through certain standards-based services."/> 
GEO Sponsor*:	<input type="text" value="United States"/> 
Responsible Organisation:	<input type="text" value="U.S. Geological Survey"/> 
URL to Component Information:	<input type="text" value="http://geodata.gov"/> 

### Component Contact Information

Contact Name*:	<input type="text" value="User Support"/> 
Contact Email*:	<input type="text" value="support@geodata.gov"/> 

URL to Component Information:

**Component Contact Information**

Contact Name\*:

Contact Email\*:

**Component Category\*** (Select all that apply)

- Observing System
- Exchange and Dissemination System
- Modeling and Data Processing Center
- Other

**Societal Benefit Areas\*** (Select all that apply)

- |   |  |   |
|---|--|---|
| <input checked="" type="checkbox"/> Agriculture | <input checked="" type="checkbox"/> Biodiversity | <input checked="" type="checkbox"/> Climate |
| <input checked="" type="checkbox"/> Disasters   | <input checked="" type="checkbox"/> Ecosystems   | <input checked="" type="checkbox"/> Energy  |
| <input checked="" type="checkbox"/> Health      | <input checked="" type="checkbox"/> Water        | <input checked="" type="checkbox"/> Weather |

**Component Status\*** (Select the one that applies)

- Continuously Operational
- Intermittently Operational
- Not Operational

**If component is already listed in a catalogue, please select its catalogue or type the catalogue information if it not registered yet.**

- 
- Please provide information for unregistered catalog

## GEOSS Component Registration Confirmation

---

You have successfully registered a GEOSS Component.

Component Id: urn:uuid:4509b59b-ce95-4d71-ae1c-a7dc04867606

Component Name: U.S. Geospatial One-Stop

---

[Register a Service for this Component](#)

*Once a Component entry is complete, it is saved and can be edited and/or approved by the GEO Secretariat as having come from a GEO Member or Participating Organization.*

*Next Step: Enter Service or Quit.*

*Most pages have an option for a user to enter feedback in the form of bugs, enhancements, or questions that will be considered in Registry deployment*

Component Registration  
Confirmation

Component.

id:4509b59b-ce95-4d71-ae1c-a7dc04867606

Geospatial One-Stop

Service for this Component

i.csiss.gmu.edu - Feedback - Mozilla Firefox

### Welcome to the Feedback Page

\* Required Field

component\_register\_confirm.jsp

Email:

Report Type:  bug  enhancement  question

It would be appropriate to include an alternative button to "Not registering a service at this time"

Comment:

Submit

Close

## GEOSS Service Instance Registration

\* Required Fields

### Service Basic Information

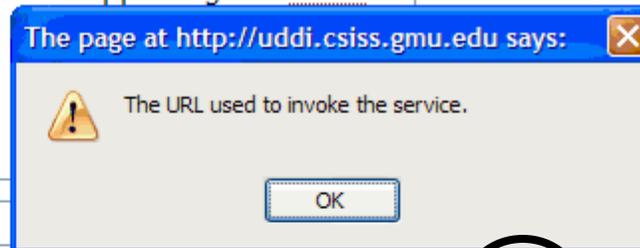
Component ID\*:  

Service Instance Name\*:  

Abbreviation:

This interface provides standard access to the Geospatial One Stop national metadata catalog through the Open Geospatial Consortium (OGC) Catalogue Service interface, Version 2.0.1 supporting the FGDC

*“Help” is available on most entry fields in the forms in the form of a blue question mark that causes a pop-up note to appear*



metadata.gov

mscsw/csw2.0?service=CSW&request=getcapabilities 

metadata.gov   


Click in the box to enter value in decimal format, e.g. 37.234)

Extent is specified  
in EPSG:4326

...

Description\*:

This interface provides standard access to the Geospatial One Stop national metadata catalog through the Open Geospatial Consortium (OGC) Catalogue Service interface, Version 2.0.1 supporting the FGDC Profile.

*The geographic extent of service coverage can be captured here and will be supplemented with a javascript placename gazetteer and map search widget*

- Service Geographic Extent is specified in EPSG:4326 (Lat/Long) CRS.
- The valid latitude values are from -90.0 to 90.0.
- The valid longitude values are from -180.0 to 180.0.

<input type="text" value="-180"/>	<input type="text" value="71"/>	<input type="text" value="-65"/>
<input type="text" value="18"/>		

**Service Time Period of Information Content** (Click in the box to enter value or use a calendar)

- e.g. 2001
- e.g. 2001-01-01

**Start Date:**    or  Indefinite Start

**End Date:**    or  Ongoing

*The time period of service operation is also captured*

## GEOSS Service Instance Registration

\* Required Fields

### Classify the Service Instance

GEOSS Service Standard Type:

GEOSS Service Standard:

- Any
- Any
- Catalog/Registry Service
- Data Access Service
- Portrayal and Display Services
- Data Transformation Services

*Services are then classified by the user and then one can either pick a named standard from a pull-down list or create an entry as a "Special arrangement" to document their non-standard service type.*

*For each service, additional standards or arrangements can be associated, e.g. metadata, schema, or data format*

dnebert [[logout](#)]

[Publication Portal](#)

[Feedback for this page](#)

## GEOSS Service Instance Registration

\* Required Fields

### Supportive Information

GEOSS

Recognized Standard:

Type:

GEOSS

Recognized Standard:

### Supportive information related to (service category, type, arrangement)

GEOSS Service Standard Type: Catalog/Registry Service

GEOSS Service Standard: urn:ogc:serviceType:CatalogueService:2.0.1:HTTP:FGDC-CSDGM

### Associated GEOSS Recognized Standards

### Added Arrangements

## GEOSS Service Registration Confirmation

---

You have successfully registered a GEOSS Service.

Component Id:	urn:uuid:4509b59b-ce95-4d71-ae1c-a7dc04867606
Service Id:	urn:uuid:d9840427-d361-480c-a7d6-d26cfe48e320
Service Name:	Geospatial One Stop Catalog Service (OGC CSW FGDC)

---

[Register Another Service for this Component](#)

*This shows completion of a Component and single Service registration. Multiple services may be associated with a Component.*

## GEOSS Registry Publication Portal

---



Component Registration



Service Registration



Search and Modify

---

*This main page provides an entry point to search. It will also be edited to include definitions and examples for the terms Component and Service.*

*Next Step: Search/Browse*

## Choose GEOSS Component

---



Already have a Component? Find it



Register a new Component first

---

## Search GEOSS Components

### Specify Component Attributes

Component Name:  

Component Description:

GEO Sponsor:  

### Found Components (Click on the Component name to register Service instances for that Component)

1. [Center for Spatial Information Science and Systems](#) [Details](#)
2. [Global Atmosphere Watch](#) [Details](#)
3. [U.S. Geospatial One-Stop](#) [Details](#) [Modify](#) [Delete](#)
4. [WMO Information System](#) [Details](#)
5. [World Weather Watch Global Observing System](#) [Details](#)

*An "Any" search will show all Components. A given user can only modify their own entries. Search on SBA and Component Type will be added.*

# Display of formatted Component Information

bert [\[logout\]](#)

[Application Portal](#)

[Feedback for this page](#)

## GEOSS Component Details

---

### Component Basic Information

Component Id:	urn:uuid:4509b59b-ce95-4d71-ae1c-a7dc04867606
Name:	U.S. Geospatial One-Stop
Abbreviation:	geodata.gov
Description:	This Component provides comprehensive access to U.S. geospatial data and services. It enables publishing of data sets through the collection or harvest of descriptive metadata and enables search and visualization of geospatial data through certain standards-based services.
GEO Sponsor :	United States
Responsible Organisation:	U.S. Geological Survey
URL to Component Information:	<a href="http://geodata.gov">http://geodata.gov</a>

---

### Component Contact Information

Contact Name:	User Support
Contact Email:	<a href="mailto:support@geodata.gov">support@geodata.gov</a>

---

### Component Category

dataExchangeAndDisseminationSystem

---

### Societal Benefit Areas

Agriculture  
Biodiversity  
Climate

*One can also search/browse Services...*

### Search GEOSS Services

#### Specify Service Attributes

Service Name:  

Service Description:

Implementation Category:

Geographic Extent: (Click in the box to enter values in lat/long CRS, e.g. 37.234)

Service Time Period: (Click in the box to enter value or use a calendar)

Start Date:   End Date:  

- Find services that fully cover this date range
- Find services that partially cover this date range

#### Found Services

1. Geospatial One Stop Catalog Service (OGC CSW FGDC) [Details](#) [Modify](#) [Delete](#)
2. CSISS OGC CSW 2.0.1 [Details](#)

## Display of formatted Service Information

### GEOSS ServiceInstance Details

---

#### Service Basic Information

Component Id: urn:uuid:4509b59b-ce95-4d71-ae1c-a7dc04867606

Service Id: urn:uuid:d9840427-d361-480c-a7d6-d26cfe48e320

Name: Geospatial One Stop Catalog Service (OGC CSW FGDC)

Abbreviation: gos-csw

Description: This interface provides standard access to the Geospatial One Stop national metadata catalog through the Open Geospatial Consortium (OGC) Catalogue Service interface, Version 2.0.1 supporting the FGDC Profile.

Information URL: <http://geodata.gov>

Interface URL: <http://www.geodata.gov/aimscsw/csw2.0?service=CSW&request=getcapabilities>

---

#### Service Contact Information

Contact Name: User Support

Contact Email: [support@geodata.gov](mailto:support@geodata.gov)

---

#### Service Geographic Extent

Min Longitude: -180.0

Min Latitude: 18.0

Max Longitude: -65.0

Max Latitude: 71.0

---

#### Service Time Period of Information Content

Begin Date: Indefinite Start



# GEO URLs to Registries

## GEOSS Component and Service Registry

- <http://uddi.csiss.gmu.edu/geosspub>

## GEOSS Standards Registry

- <http://seabass.ieee.org/groups/geoss/>

The banner features the text 'GEOSS Web Portals' in a bold, blue, sans-serif font. To the left of the text is a stylized logo consisting of three overlapping circles in shades of blue and green. The background of the banner is a composite image showing a satellite view of Earth, a globe, and a partial view of the Earth from space.

# GEOSS Web Portals

- General and adaptive user interface capabilities sought to organize access to GEO information
- Could be deployed as a GEO front-end to all GEOSS resources and SBA
- Could be re-deployed by any entity to provide standards based access to GEO-wide and community resources.

The slide features a header banner with a background image of a globe. On the left, the 'GEOSS' logo is visible in a light blue, semi-transparent font. Overlaid on this is the main title 'Functional Requirements' in a large, bold, dark blue font. The banner also includes faint, semi-transparent text that reads 'GEOSS Earth Observations'.

# Functional Requirements

- Support client access to catalogs, map services, and data services through standards-based interfaces
- Provides user interface for search on the GEOSS Registry
- Low/minimal cost of re-deployment
- Readily customizable and extensible



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## Nice-to-haves

- Community-management tools and portlets
- Content management capabilities including teaching materials, documents
- Ability to integrate multiple disparate resources and services
- Place to reference or host end-user support applications



# GEOS Web Portals

- RFI issued to identify capabilities in late 2006 of re-deployable geospatial portals
- Call for Participation issued in early 2007 to identify offers of portal solutions
- Web Portal offers will be technically qualified in fall 2007
- Opportunity for usability analysis and further user community engagement into 2008

# ESA/FAO GeoPortal

Under Construction (Click to provide Feedback)

Home - About GEOportal - How to use GEOportal - Contacts

News

GO

- Advanced Search

Download GEOportal - MyGEO

## Browse Resources by Societal Benefit Areas

DISASTERS

HEALTH

ENERGY

CLIMATE

WATER

WEATHER

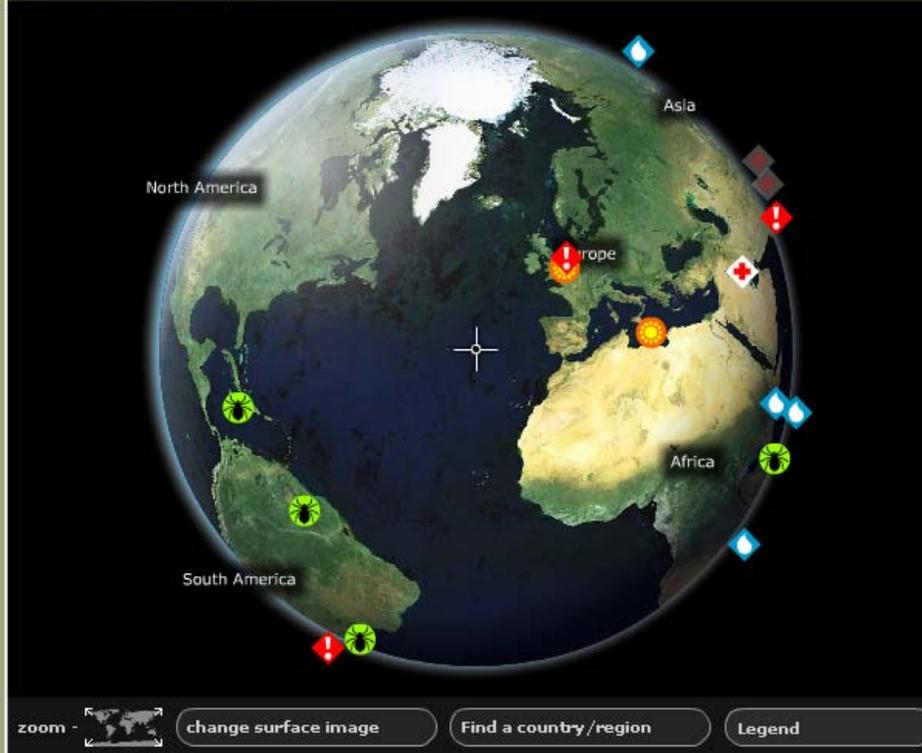
ECOSYSTEMS

AGRICULTURE

BIODIVERSITY

GEO Clearinghouse ▶

## Browse Resources by Location



## FOCUS ON

### IGARSS, 23-27 July 2007, Barcelona, Spain

The 27th International Geoscience And Remote Sensing Symposium (IGARSS) will be held this year in Barcelona, Spain. IGARSS has become an international focus for remote sensing theory, programs, applications and state of the

## SHOWCASE

The Elbe region in Saxony was affected by heavy flooding following strong rainfall in conjunction with snowmelt in the Krkonose Mountains (Czech Republic). The Elbe river rose to a level of 7.45 meters. In the city of Dresden, areas near the river had to be evacuated. Along the Elbe, whole districts of several towns were flooded. A state of emergency was declared in

## Breaking News

Widespread flooding, the worse since 1954, over 24 Chinese provinces caused over 500 deaths and 3 million evacuations, with enormous damage to dams, roads, buildings and crops. In Mengwa, near Chongin in the Fujian basin, about 150,000 people were stranded on high ground when the Wangjia dam was opened to evacuate floodwaters. In Chongqing Municipality about 29,500 houses collapsed between 17 and 18 July.

[more...](#)

## Welcome to GEOportal

The GEOportal provides an entry point to access remote sensing, geospatial static and in-situ data, information and services. The site is currently under construction. **Please take a few minutes to browse through the GEOportal and let us what you think.**

[more...](#)

MY GEO ▶

TUTORIALS ▶

# NASA SERVIR

de Monitoreo y Visualización para Mesoamérica

● Español

● English

[Información Mesoamericana](#) | [Mapas en Línea](#) | [Apoyo a la Toma de Decisiones](#) | [Visualizaciones 3-D](#)

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[Descargas](#)

[Noticias](#)

[Acerca de SERVIR](#)

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**NASA Earth Science  
Applications**

Búsqueda

Ir ►

*Su "Tienda de una sola Parada" para obtener datos regionales,  
Apoyo en Decisiones y Visualizaciones interactivas.*

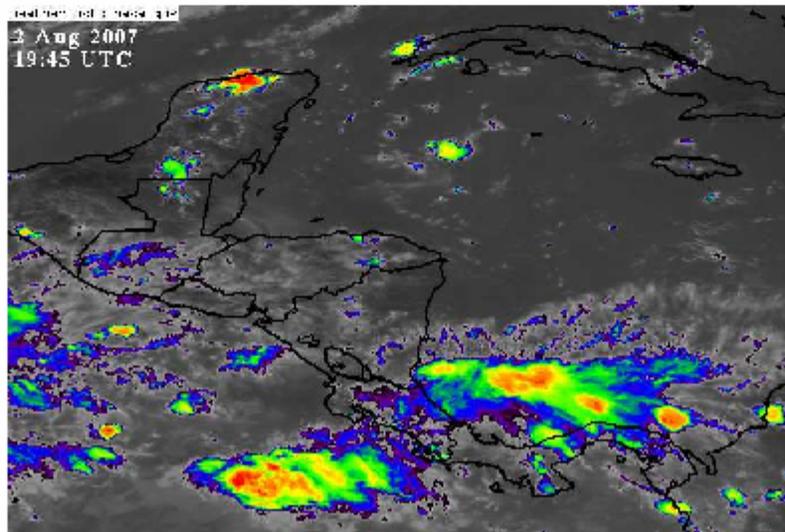
**Mesoamerica Hoy, Thursday, Aug. 2, 2007**

**Ir al Visualizador de imágenes en tiempo real de SERVIR >>**

Visualiza imágenes GOES de un país específico

Construye tus propias animaciones GOES

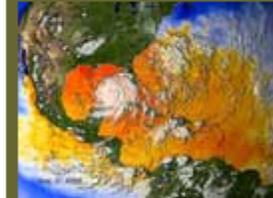
Última imagen GOES



**Videos de  
SERVIR**

*Pulsa sobre la imagen  
para ver el video.*

*First 21 Named Storms  
of 2005 Atlantic  
Hurricane Season*



*Una visión del  
futuro(18.2 MB).*



*Video Tierra ceniza...  
o bosques saludables*



# Compusult WES

Welcome! [Home](#) - [Language](#) - [Sign In](#)

Home

Find/View

Browse

## My Account

mail address   
password   
  
[Create Account / Forgot Password?](#)

## Navigation

[General Guest {Home}](#)

## Additional Applications

- ◆ [Agricultural Efficiency](#)
- ◆ [Air Quality](#)
- ◆ [Aviation](#)
- ◆ [Carbon Management](#)
- ◆ [Coastal Management](#)
- ◆ [Disaster Management](#)
- ◆ [Ecological Forecasting](#)
- ◆ [Energy Management](#)
- ◆ [Homeland Security](#)
- ◆ [Invasive Species](#)
- ◆ [Public Health](#)
- ◆ [Water Management](#)

## Life on Earth

Life on Earth Features **07.13.07**



### Hot, Dry Conditions Spark Fires Across West

Western states have been affected by fire activity, made worse by dry conditions, high temperatures and strong winds.

[+ Read More](#)



### Moon Buggy Palooza

Proving that hard work can be fun, NASA summer interns and employees chase the spirit of exploration in a moon buggy race.

[+ Read More](#)

[+ View Video](#)



### AIM Gets First View of 'Night-Shining Clouds'

A NASA satellite has captured the first occurrence this summer of mysterious iridescent...

[+ Read More](#)



### Classroom Above the Clouds

The International Space Station provides a 'hands-on classroom' for students around the world.

[+ Read More](#)



### Strong Winds Fan Flames in Lake Tahoe Fire

A fire raging out of control just southwest of Lake Tahoe is threatening homes and has burned close to 3,100 acres.

[+ Read More](#)



### Cyclone Enters Arabian Sea

NASA's Hurricane Resource Page provides the latest imagery and science data showing how these massive storms work.

## Simple Search

## About



NASA's Earth Science Gateway (ESG) streamlines access to remote geospatial data, imagery, models, and visualizations through open, standard Web protocols. By organizing detailed metadata about online resources into a flexible, searchable registry, it lets scientists, decision-makers, and others access a wide variety of observations and predictions of natural and human phenomena related to Earth Science, from NASA and other sources.

## Featured Maps

**Featured Context Maps** are predefined map links that are based upon geospatial theme content. When a link is selected, th

# ESRI Portal Toolkit



## Portal Functions

- Home
- Advanced Search
- Map Viewer
- Login (optional)  
Username   
Password
- Join  
Why should I join?  
Forgot Password?

## About this Site

- What is it?
- Partners
- How do I participate?
- Frequently Asked Questions

## Help

- Quick Start Guide
- General Help
- Metadata Resources

## Portal Functions

Search Terms:

### Advanced Search



### Map Viewer



## Data Channels

- Conservation Areas
- Species
- Habitats
- Threats
- Environmental Factors
- Socioeconomics
- Base Map Layers

## Partners

- Data Providers
- Regional Collaborations
- Sponsors

## What's New?

- New Data & Maps
- New Clearinghouses

## Featured Map

### Great Apes



Estimated range of Bonobos, Chimpanzees, Gorillas and Orangutans alongside Protected Areas - [UNEP-World Conservation Monitoring Centre](#) and [Great Apes Survival Project \(GRASP\)](#)