Instructions for GEOSS Data Providers
(How to Register and Place Tags in the Metadata for GEOSS Data-CORE)

Point-of-Contact: For assistance with metadata tags for GEOSS Data-CORE, please submit a request for assistance to the Standards and Interoperability Forum (SIF) by filling out a short form at http://bit.ly/MS8COZ

The GEOSS Data Collection of Open Resources for Everyone (GEOSS Data-CORE) is a dynamic collection of data that has been pledged by GEO Members and Participating Organizations, and that is made available to the GEOSS community with full, open and unrestricted access.

The GEOSS Data-CORE is one of the most important added values of GEOSS to the global community to address the priority Societal Benefit Areas identified by GEO. This note provides practical advice on how to turn the pledges made by your organization into discoverable GEOSS Data-CORE data for the user community. Further guidance will be provided as we learn from operational practice.

The official definition of GEOSS Data-CORE is:

> *"The GEOSS Data Collection of Open Resources for Everyone (GEOSS Data-CORE) is a distributed pool of documented datasets with full and open unrestricted access at no more than the cost of reproduction and distribution"*

where:

- ***"full access"*** means that all the data in the GEOSS Data-CORE can be accessed, used, and redistributed;
- ***"open access"*** means that data providers may charge at most the cost of reproduction and distribution of the data, although it is expected that in most cases the data in the GEOSS Data-CORE will be made available at no cost;
- ***"unrestricted access"*** means that no restrictions are placed on the access to, or use and redistribution of, the data in the GEOSS Data-CORE. It should be noted that the following two conditions may be placed on data registered in the GEOSS Data-CORE by data providers: (i) attribution and (ii) user registration. These are not considered to represent restrictions on the access to, or use and redistribution of, the data.

There are four pieces of information identifying data as part of the GEOSS Data-CORE. Such information has to be expressed as special character strings (tags) and placed in the metadata (metadata tags). In the following sections we describe the tags, their placement in the metadata, how to register data and data catalogs in the GEOSS Data-CORE, and how to discover the data using the GEOSS Common Infrastructure (GCI).

Metadata Tags

GEOSS Data-CORE metadata tags must be placed in the metadata in order to:

(i) allow users to discover and identify the GEOSS Data-CORE data, and

(ii) inform the data users of any conditions attached to the use of the data.

The four metadata tags that describe the data in the GEOSS Data-CORE are:

1. **geossDataCore** – this tag identifies the data that belong to the GEOSS Data-CORE. Thus, data without this tag will not be identified by data users as GEOSS Data-CORE data.
2. **geossNoMonetaryCharge** – this tag identifies the data that are available at no cost, (i.e., the cost for reproduction and distribution has been waived by the data provider, and the data are made available for free access and use).
3. **geossUserRegistration** – this tag identifies the data requiring data user registration and login in order to gain access to the data. At the moment, data providers requiring user registration and login should use their existing mechanisms to accomplish this task. A central user registration and single sign-on solution for the GEOSS is being developed and tested in 2012.
4. **geossAttribution –** this tag identifies the data requiring or recommending attribution. The data user should make sure that attribution is provided whenever the data is used, redistributed, derived from, etc. Data providers requiring attribution should ensure that the information they want to be used for attribution is included in the metadata. A Citation standard is being developed and tested in 2012.

Metadata Tag Placement

The metadata tags are not case-sensitive. There are a variety of metadata standards used by various data providers and scientific communities. Although placement in any free-text searchable field of the metadata will result in the tags being discovered by the GCI, and made known to the data users, we show specific examples of preferred metadata fields for the following standards (refer to ANNEX I for the technical description of placing the GEOSS Data-CORE tags in the metadata):

- ISO 19139 metadata
- Dublin Core metadata
- OpenSearch
- WCS, WFS, WMS, WPS metadata
- GBIF metadata
- THREDDS metadata
- NetCDF metadata
- DIF metadata

Components and Services Registry (CSR) Registration

The GEOSS Components and Services Registry provides a formal listing and description of Earth observation systems, data sets, models, and other services, tools, and resources that contribute to the GEOSS. The CSR provides a registration process that resource providers to GEOSS can follow to register their resources, including GEOSS Data-CORE data. In particular, the CSR registration process has a step that allows the GEOSS Data-CORE data provider to specify, using checkboxes, which of the four metadata tags discussed earlier should be associated with the data being registered. This step has the title "Resource Sharing Properties."

If the resource being registered at the CSR is a catalog, then it is important that the catalog be homogeneous with respect to the GEOSS Data-CORE tags. This means that all data resources referenced by records in the catalog must share the same GEOSS Data-CORE tags. The concept is discussed in detail below in the *Metadata and Catalog(ue)s* section.

The success of the GEOSS Components and Services Registry will depend on the commitment of GEO Members and Participating Organizations to input and update their registration details on a regular basis. Registration involves completing a standardized form on-line, and it only takes a few minutes.

Please use the link below to register your components, services, data, and other resources:
http://geossregistries.info/geosspub/

The detail instruction how to register can be found in the appendix titled "Guidelines for registering resources in the GEOSS Components and Services Registry (GEOSS CSR)". It is best to see the *Metadata and Catalog(ue)s* section below for more details and an example of homogeneous catalogs for GEOSS Data-CORE prior to reading the appendix.

Metadata and Catalog(ue)s

For the purposes of the metadata tags discussed earlier, a homogeneous catalog is a catalog where every metadata record in the catalog is associated with the same metadata tags. For example, if all records in a catalog are meant to reflect the geossDataCore tag and none of the other metadata tags discussed, then the catalog is considered homogeneous, and can be registered as GEOSS Data-CORE. Similarly, if all records in a catalog are meant to reflect both the geossDataCore and geossAttribution tags and no other tags, then the catalog is considered homogeneous, and can be registered as GEOSS Data-CORE with attribution. On the other hand, if all records in a catalog are meant to reflect the geossDataCore tag, but only some of the records are meant to reflect the geossUserRegistration tag, then the catalog cannot be considered homogeneous.

One way to achieve an easy and fast metadata updating for each dataset being contributed to the GEOSS Data-CORE is to use homogeneous catalogs. Indeed, only homogeneous catalogs, with respect to the GEOSS Data-CORE metadata tags, can be registered in the CSR to avoid tagging individual metadata records. This is because the CSR, as part of the resource registration process, allows the choice of which of the four metadata tags should be associated with the entire resource being registered. Thus, for example, if a catalog being registered in the

CSR will be associated with the geossDataCore tag, then all records in the catalog will be considered as tagged with the geossDataCore tag.

Of course, not all catalogs will be homogeneous with respect to the GEOSS Data-CORE metadata tags. However, one possible way to allow an easy and fast metadata updating if you have a non-homogeneous catalog, is to split the catalog up into two or more homogeneous catalogs (for the purpose of CSR registration). In this way, each of the homogeneous catalogs can then be registered in the CSR appropriately. This process of splitting requires taking an original catalog and creating one or more additional catalogs so that the metadata records of the original catalog can be placed in the new catalogs in such a way that, in the end, there are catalogs that are homogeneous, as desired.

For example, suppose Catalog A contains 5 records as follows:

Catalog A

1. Copepoda from the coastal upwelling zone of the Chilean Humboldt Current System [cl_udec_copas_copepoda_01]
2. Deep-water and El Niño-related fishes from the northern Humboldt Current System of Chile-Peru [cl_udec_copas_fishes_01]
3. Phytoplankton of the Eastern South Pacific (OBIS, ESPOBIS) [cl_udec_copas_unap_phytoplankton]
4. Deep-water and El Niño-related fishes from the northern Humboldt Current System of Chile-Peru [COPAS_I_Chile]
5. Zooplankton of the Eastern South Pacific (OBIS, ESPOBIS) [zooplancton_copas_cl]

If only records 1 and 3 are GEOSS Data-CORE, then Catalog A is not homogeneous, and prior to CSR registration, the data provider would need to create Catalog B and move records 2, 4, and 5 into it. The final result follows:

Catalog A

1. Copepoda from the coastal upwelling zone of the Chilean Humboldt Current System [cl_udec_copas_copepoda_01]
3. Phytoplankton of the Eastern South Pacific (OBIS, ESPOBIS) [cl_udec_copas_unap_phytoplankton]

Catalog B

2. Deep-water and El Niño-related fishes from the northern Humboldt Current System of Chile-Peru [cl_udec_copas_fishes_01]
4. Deep-water and El Niño-related fishes from the northern Humboldt Current System of Chile-Peru [COPAS_I_Chile]
5. Zooplankton of the Eastern South Pacific (OBIS, ESPOBIS) [zooplancton_copas_cl]

In this case, Catalog A is homogeneous with respect to GEOSS Data-CORE and can be registered as GEOSS Data-CORE. Catalog B can be registered, but will not reflect GEOSS Data-CORE.

Data Discovery and Access

Data registered in the GEOSS can be discovered via the GEO Web Portal:
http://www.geoportal.org/web/guest/geo_home

or via another client of the GEOSS Discovery and Access Broker such as :
http://www.eurogeoss-broker.eu/
(Please note that you will need to run the client using Mozilla Firefox.)

Being able to discover data resources in the GEOSS Data-CORE is an essential first step, and ranking mechanisms are being developed in the GCI to ensure GEOSS Data-CORE resources receive priority in the return of a search. While discovery is necessary, accessing and using the data is the ultimate goal. Data access capabilities are currently under development and will be made available as soon as possible in a separate instruction document.

ANNEX I

Metadata standards, or the organization utilizing the metadata standard, should be consulted as to whether multiple tags should use multiple instances of metadata fields, or whether they can all appear in one metadata field separated by commas, spaces, or some other delimiter. The GCI's ability to recognize the GEOSS Data-CORE tags will succeed in any situation where the tags are placed in a text-searchable metadata field. In the following metadata examples, any expression of a particular tag, such as geossDataCore, can be interchanged by any of the other tags discussed in this document, except where specifically indicated otherwise.

- ISO 19139 metadata
    - This standard is also used by CSW/ISO, OAI-PMH/ISO, GeoNetwork, Deegree, ESRI Geoportal, and SeaDataNet CDI
    - gmd:identificationInfo[1]/*/gmd:resourceConstraints/*/gmd:useLimitation/gco:CharacterString is used
        - <gco:CharacterString>geossDataCore</gco:CharacterString>
- Dublin Core metadata
    - This standard is also used by CSW/core and OAI-PMH/Dublin Core
    - "Rights" element is used
        - Rights = "geossDataCore"
- OpenSearch
    - RSS response is used with "copyright"element of "channel"
        - <channel><copyright>geossDataCore</copyright></channel>
    - RSS response is used with Dublin Core namespace and "channel"
        - <channel><dc:rights>geossDataCore</dc:rights></channel>
    - Atom response is used with "rights" contained in "entry" or "feed"
        - <feed><rights>geossDataCore</rights></feed>
        - <entry><rights>geossDataCore</rights></entry>
- WCS, WFS, WMS, WPS metadata
    - Service level "accessConstraints" element in GetCapabilities document is used
        - <accessConstraints>geossDataCore</accessConstraints>
    - Dataset level uses the ISO 19139 metadata standard as with CSW/ISO
- GBIF metadata
    - Rights element is used
        - <rights>geossDataCore</rights>
- THREDDS metadata
    - Documentation element, "rights" type is used
        - <documentation type="rights">geossDataCore</documentation>
- NetCDF metadata
    - Includes CF and ACDD conventions
    - "license" attribute is used
    - CDL notation as a global attribute
        - license = "geossDataCore"
- DIF metadata
    - Uses "Access_Constraints" for user registration and monetary charge
        - <Access_Constraints>geossUserRegistration</Access_Constraints>
    - Uses "Use_Constraints" for attribution and GEOSS Data-CORE
        - <Use_Constraints>geossDataCore</Use_Constraints>

Appendix

Guidelines for registering resources in the GEOSS Components and Services Registry (GEOSS CSR)

1. Introduction

2. Creating an account and accessing the GEOSS CSR

3. Registering resources for the first time: resource categories

3.1 Registering Components in the CSR

3.2. Registering a GEOSS Service Instance

4. Modification of information of registered resources

5. Resource discovery in the CSR

6. Technical support

Guidelines of Components and Services Registry (CSR) Registration

1. Introduction

The GEOSS Components and Services Registry (CSR) provides a formal listing and description of Earth observation systems, data sets, models, and other services, tools, and resources that contribute to the GEOSS (Global Earth Observation System of Systems).

The CSR provides a registration process that resource providers to GEOSS can follow to register their resources, **including GEOSS Data-CORE data**. In particular, the CSR registration process has a step with check boxes that allows the GEOSS Data-CORE provider to flag their resources as such, as well as the conditions of their use if existing. This step has the title "Resource Sharing Properties" and it is explained in section 3.1.

The success of the GEOSS Components and Services Registry will depend on the commitment of GEO Members and Participating Organizations to input and update their registration details on a regular basis. Registration involves completing a standardized form on-line, and it only takes a few minutes. These guidelines try to provide some help to users when filling in the registration form.

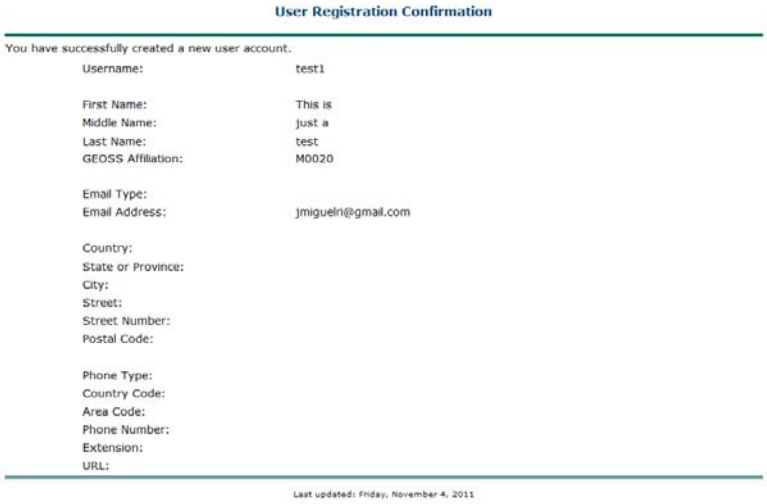
2. Creating an account and accessing the GEOSS CSR

Please use the link below to **access the front page of the GEOSS CSR**:

http://geossregistries.info/geosspub/

If it is the first time accessing the CSR you should go first to "**Create an Account**" clicking on "**Continue**".

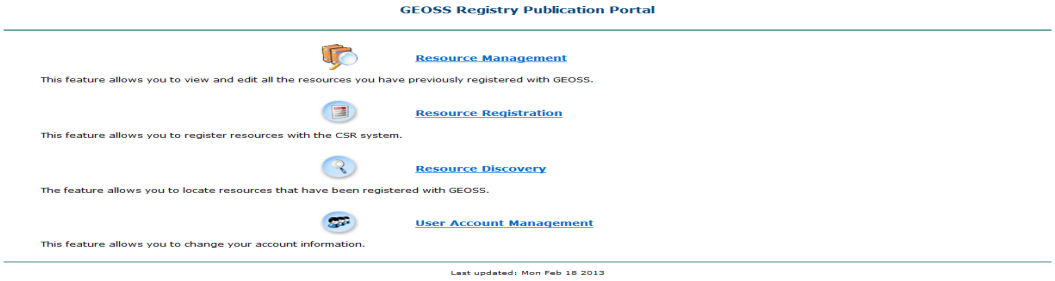
Then you will need to introduce at least the required information highlighted with a star (*). Once you have filled in the form, please click on "**Register**". A new window will appear with the information you have just introduced:



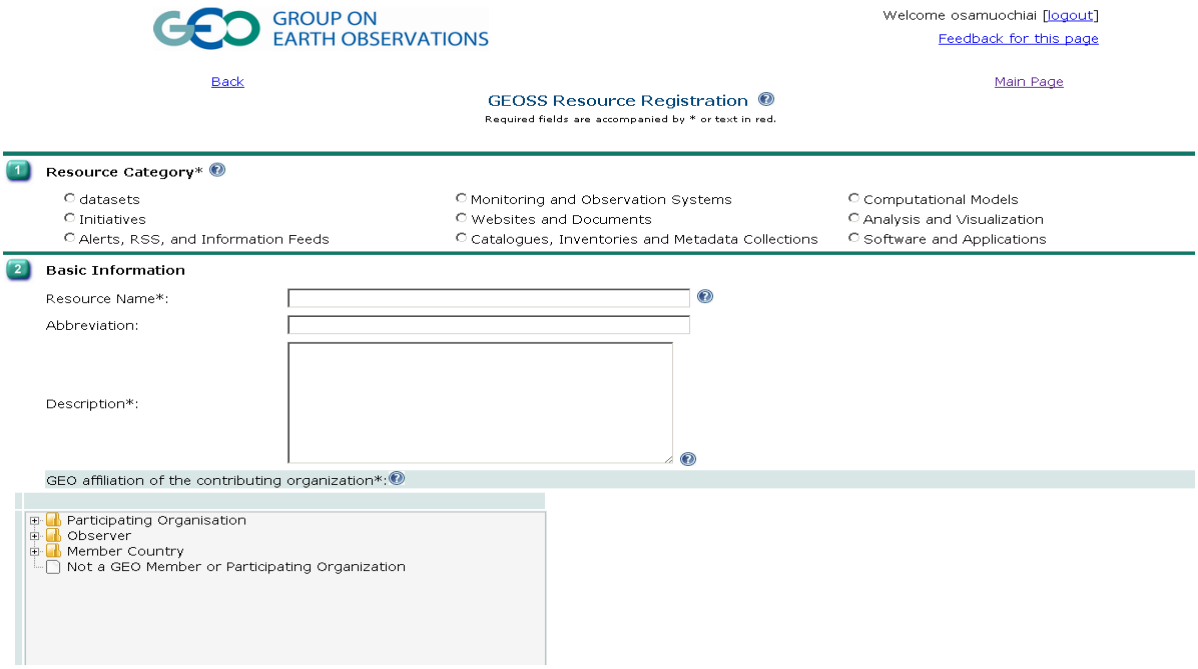
You also will have received an email in the email address provided with your login details. If you forget your password, please go to: https://geossregistries.info/geosspub/user_retrieve_password.jsp and provide your user name or email in order to retrieve your password.

3. Registering resources for the first time: resource categories

Once you have created a CSR account, or you already have one, then you can sign in with your user and password, being redirected to the **GEOSS Registry Publication Portal**.



If you are to register a resource for the first time, then you should click on "**Resource Registration**". The following on-line form will appear. You are requested to fill in at least those fields with a star (*) or highlighted in red.



The GEOSS CSR considers the following categories of resources when registering:

- **Datasets**
- **Monitoring and Observation Systems**
- **Computational Models**
- **Initiatives**
- **Websites and Documents**
- **Analysis and Visualization**
- **Alerts, RSS and Information Feeds**
- **Catalogues, Inventories and Metadata Collections**
- **Software and Applications**
- **Service Interfaces**[1]

[1] "Service Interfaces" category refers to standard web services, i.e. software systems provided at a network address with a named set of operations (interface) that facilitate data access, visualization or any other transformation or query to datasets in an interoperable way.

The following examples may help you to select the correct category your resource belongs to:

- If you are registering a collection of satellite images or a map series the appropriate category is "**Datasets**".
- In case you are registering a standard web service like a Web Map Service (WMS) or a Web Coverage Service (WCS), the resource category shall be "**Service Interfaces".**
- However, if you are registering a Catalogue Web Service (CWS) there is a special category called "**Catalogues, Inventories and Metadata Collections**", which should be selected.
- If you are registering your project web page, the appropriate category is "**Websites and Documents".**

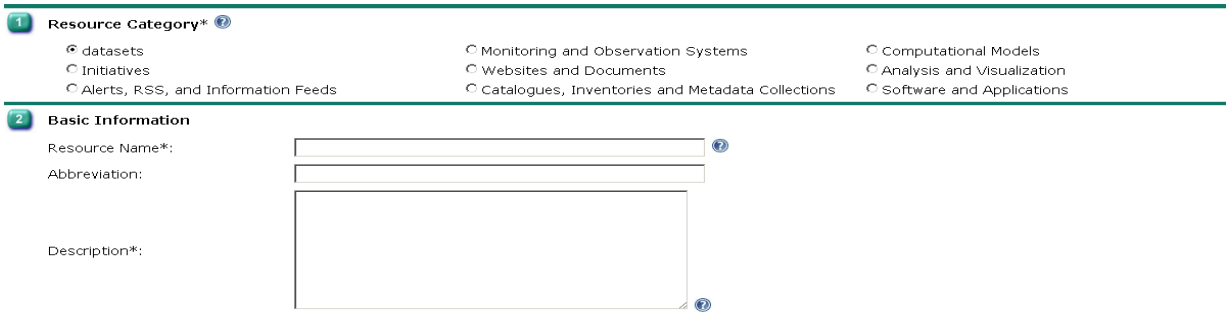
The correct selection of the relevant resource category is of critical importance to the correct retrieval of your resources through the GEO Portal.

In these guidelines the registration of a service interface (**GEOSS Services**) is described in section 3.2, whilst the registration of resources belonging to the rest of categories (**GEOSS Components**) is described in the next section 3.1.

3.1 Registering Components in the CSR

In case you are **not** registering specific **services interfaces,** then in the GEOSS CSR terminology you are registering a **Component** and these are the steps you will have to follow to appropriately fill in the form:

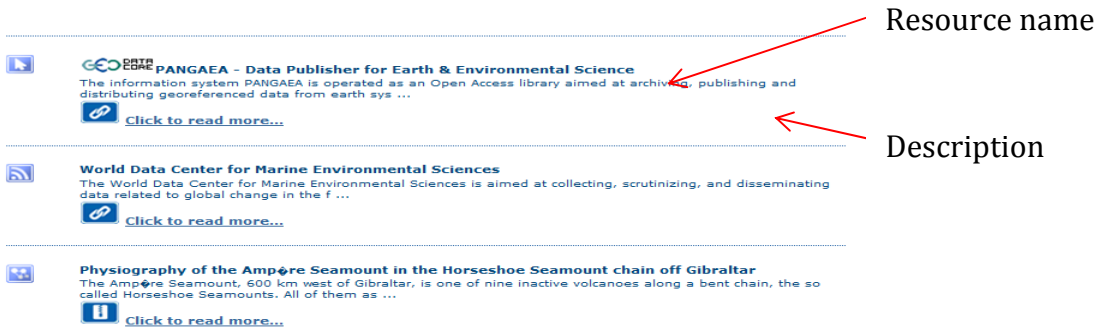
Step 1: Firstly, data providers have to select the appropriate **Resource Category**, that is, the type of resource most suitable to the resource being registered, according to what has been indicated above.



Please remember that **if you are registering a web service you should go to section 3.2**.

Step 2: The **resource name,** an optional **abbreviation and a short description** of the resource you are registering should be introduced here.

Please note that the **resource name** will be used as a title for your resource when appearing in the result lists in the GEO Portal after a query. Therefore it should not be too long but it has to be sufficiently explanatory.



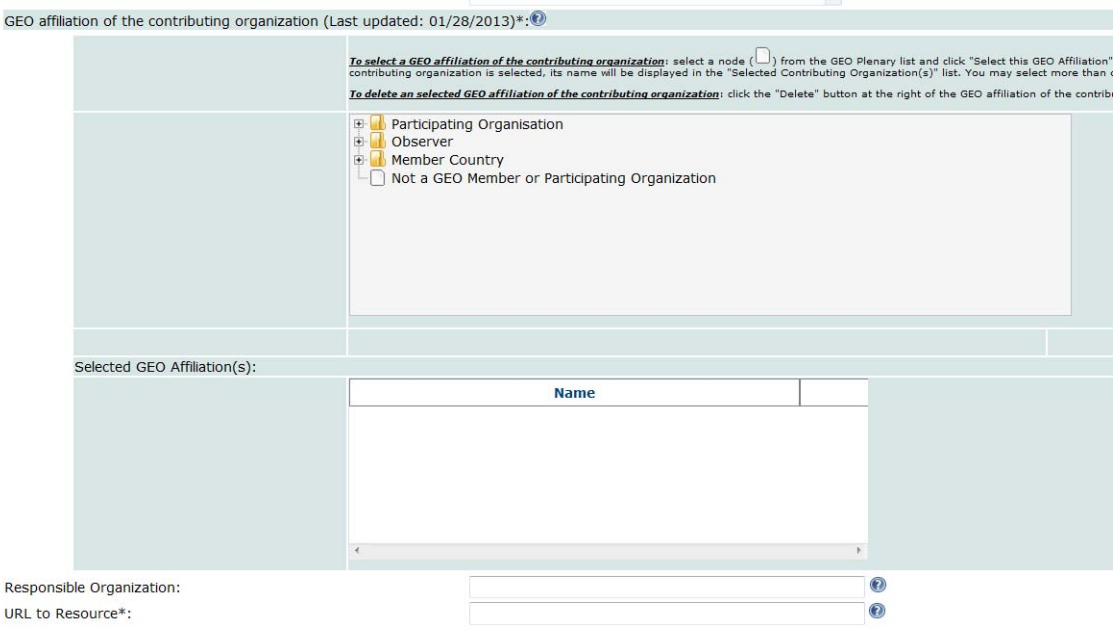
After that, you should select the "**GEO affiliation of the contributing organization**" following the instructions provided in the form. It may be a GEO Member Country, a Participating Organization or an Observer. Should your organization not belong to any of the former categories, you will have to select "Not a GEO Member or Participating Organisation".

Please remember to click on "Select this GEO Affiliation" once you have selected the appropriate one in order to confirm the information.

In the "**Responsible Organization** "box you are asked to introduce the name of your organization.

In the mandatory field "**URL to Resource** "you will have to introduce the URL of the webpage of the initiative or system, or FTP repository of your dataset if this applies. **This field is critical to allow users to access your resource, so it should be carefully completed.**

Please note that, in case your resource is available through a web service, a separate registration for that service will be necessary, as it is explained in section 3.2.

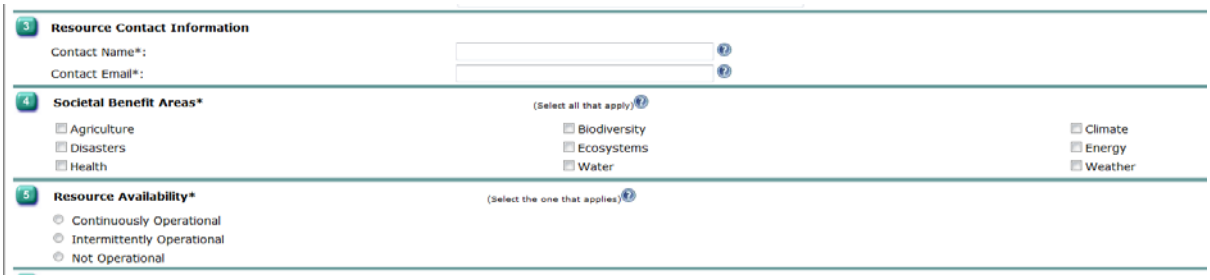


Step 3: The contributing organisations are requested to introduce the **name of the contact person** of the resource registered and the corresponding **email address**.

This will help GEO to contact you in case some clarification regarding the registered resource is needed.

Step 4: the **GEOSS Societal Benefit Areas** relevant to the resource to be registered should be also selected. Please note that you can select more than one.

Step 5: With "**Resource Availability**" you are requested to give information about the **current operational status** of your resource: it is continuously operational and available; it is intermittently operational; or is it not operational.



Step 6: This step corresponds to the selection of the "**Resource Sharing Properties**" of your resource. **This step is mandatory to flag your data as GEOSS DataCORE**, (if this applies to the data being registered).

Data providers should here select the following most suitable, if any, option(s):

a) **geossUserRegistration** – this checkbox identifies the data requiring data user registration and login in order to gain access to the data.

b) **geossNoMonetaryCharge** – this checkbox identifies the data that are available at no cost, (i.e., the cost for reproduction and distribution has been waived by the data provider, and the data are made available for free access and use).

c) **geossAttribution –** this checkbox identifies the data requiring or recommending attribution. The data user should make sure that attribution is provided whenever the data is used, redistributed, derived from, etc. Data providers requiring attribution should ensure that the information they want to be used for attribution is included in the metadata.

d) **geossDataCore** – this checkbox identifies the data that belong to the GEOSS Data-CORE. **This checkbox is essential** to identify all those resources that are available on the basis of full and open, unrestricted access and at no more than the cost of reproduction or distribution.

Those resources that have been registered as **geossDataCORE** will be shown in the GEO Portal, when retrieved[2], accompanied with the GEOSS DataCORE identification flag.

If the resource being registered at the CSR is a Catalogue, then it is important that the catalogue be homogeneous with respect to the GEOSS Data-CORE tags. This means that all data resources referenced by records in the catalogue must share the same GEOSS Data-CORE tags. [See the *Metadata and Catalog(ue)s* section on Page 3 for more details and an example of homogeneous catalogs].

[2]Ranking mechanisms are being analysed and tested to ensure GEOSS Data-CORE resources receive priority in the return of a search.

Step 7: Contributing organisations are asked to select one or more terms from **the GEOSS Earth Observation Vocabulary**, related to the resource they are registering.

This controlled vocabulary has been established by combining existing and well-established dictionaries and glossaries with the aim of improving data discovery through the GEOSS. By selecting those terms that best describe the resource being registered, the probability of this resource being retrieved in a relevant query will be higher.

Do not forget to click on "Select this Earth Observation (EO) vocabulary term" once you have selected each term to add it to the list to confirm your selection.

Step 8: This step corresponds to the **identification of standards and/or special arrangements** associated to the resources to be registered.

Following the instructions in the form, you will be able to select the classification information standard(s) or special arrangement(s) under the categories mentioned below:

- Data Access (this category includes standards used to implement services allowing users to download the actual data, e.g. FTP, OGC Web Feature Service (WFS), OGC Sensor Observation Service (SOS)).

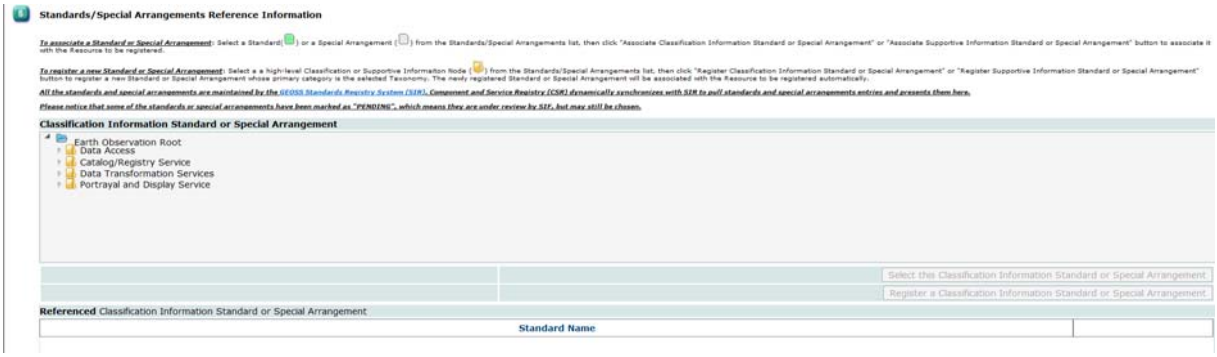
- Catalog/Registry Service (this category includes standards to implement services allowing users to register or discover datasets or other services, e.g. OGC Catalogue Web Service).

- Data Transformation Services (this category includes standards to implement services allowing users to transform the data format or their Coordinate Reference System, e.g. OGC Coordinate Transformation Service).

- Portrayal and Display Service (this category includes standards to implement services allowing users view –but not download- the data, e.g. OGC Web Map Service).

It is also possible to select a relevant **Supportive Information Standard or Special Arrangement** in the second list provided, which contains standards on data format, metadata, semantics, etc.

Do not forget to click on "Select this Classification Information Standard or Special Arrangement" or "Select this Supportive Information Standard or Special Arrangement" respectively once you have selected the appropriate standard or special arrangement from the corresponding list.



Please note that here you are just indicating which standards or special arrangements are related to the dataset or other kind of resource you are registering. If the related standard or special arrangement in particular is that of a web service you should inform users selecting an option from the corresponding list and **for an appropriate registration of the actual web services instances, you should follow as well the steps specified in section 3.2.**

For example, if your data are available through a WMS and WFS, you should select OGC Web Map Service and OGC Web Feature Service from the list. But in order to register the specific WMS or WFS instances you shall register them separately, as it is explained in section 3.2.

In case you do not find the standard or special arrangement, you could always ask for its registration in the Standards and Interoperability Registry, by selecting a high-level Classification or Supportive Information Node from the Classification Information Standards/Special Arrangements list or Supportive Information Standard/Special Arrangements list, then click "Register Classification Information Standard or Special Arrangement" or "Register Supportive Information Standard or Special Arrangement" button respectively to register a new Standard or Special Arrangement whose primary category is the selected Taxonomy. The newly registered Standard or Special Arrangement will be associated with the Resource to be registered automatically.

Finally, contributing organisations can send out a "**Request for Approval**" notice to the GEOSS CSR Record Review Working Group. By choose this option, you allow the GEOSS CSR Record Review Working Group to manually review this record. Only approved record will be listed in the **CSR holdings page**, searchable through the public search interface and viewable to the GEOSS Clearinghouse through the API interface.

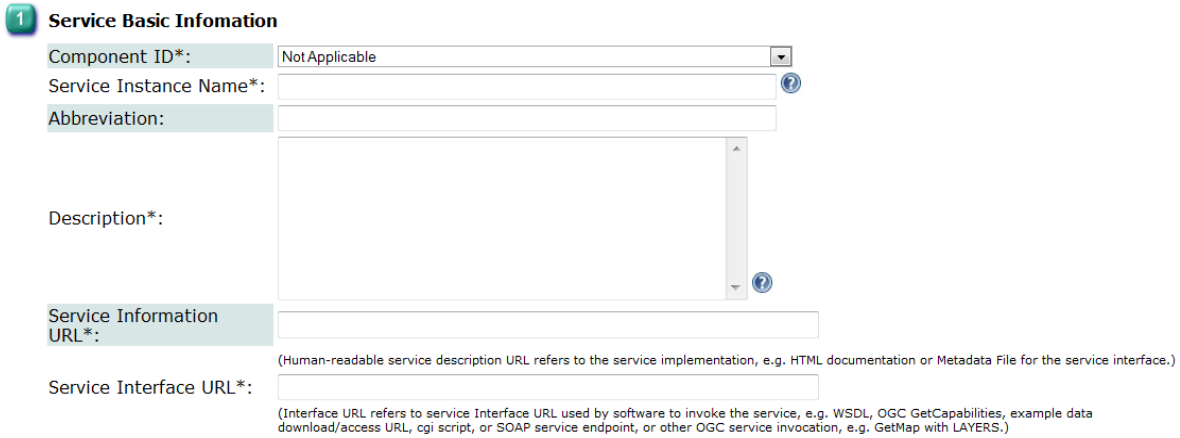
You may also request for approval of this resource later in the **Resource Management** page.

3.2. Registering a GEOSS Service Instance

In case of registering specific **services interfaces,** then in the GEOSS CSR terminology you are registering a **Service** and the information to be provided is slightly different. Additionally if you have already registered datasets or any other kind of resources that are also available (i.e. accessible or queryable) through standard web services, the CSR offers providers the possibility to register the specific information related to that web service and **associate this instance to the components already registered.**

These are the steps you will have to follow to fill in the Services registration form appropriately once you have selected as Resource Category "**service interface**":

Step 1: This corresponds to the basic information regarding your web service, like the **name, an abbreviation or a description of the functionalities** your service provides.



If you have already registered a component that is available through this web service please select this component in the field "**Component ID**".

Please note that the **Service Instance name** will be used as a title for your resource when appearing in the result lists in the GEO Portal after a query. Therefore it should not betoo long but it has to be sufficiently explanatory.

In "**Service Information URL"** you may provide a URL allowing users to know more about your service – a link to a web page containing information of your service or even a link to a metadata file.

Service Interface URL is fundamental to facilitate the use of your service by other users, clients or applications. In this box you should introduce the **URL of your service instance** which will allow users to invoke an action, a transformation or query, that the service shall execute, like that of downloading or displaying some specified datasets using operations defined for that standard interface.

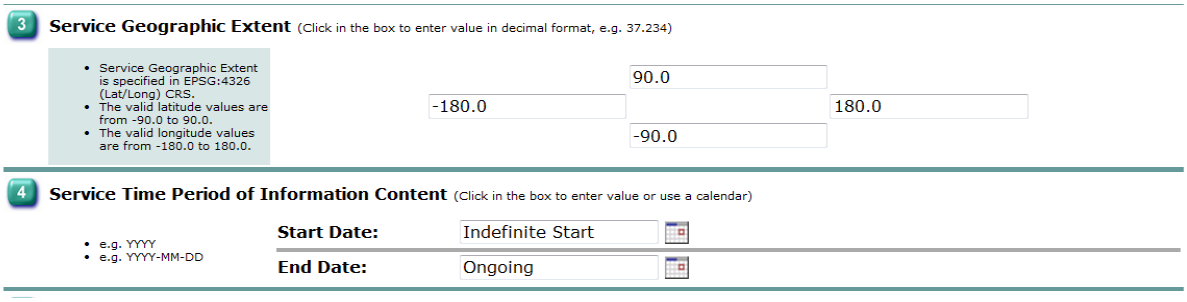
Step 2: This is to include the Service Contact Information.

Like in the case of a Component, contributing organisations are requested to introduce the **name of the contact person** of the resource registered and the **email address**.

Step 3: This step allows you to include the Geographic Extent of your service.

In order to facilitate spatial queries, the information of the spatial extension of the data available through your web service shall be given. Providers are here requested to introduce **the latitude and longitude coordinates** (in decimal format) **in WGS84**[3] of the minimum enclosing rectangle where the service applies.

By default the world extension is provided but, unless your web service actually covers the whole world, you shall indicate the **actual spatial extension**.



Step 4: This concerns the Service Time Period of Information Content.

This is very helpful in case your service provides **information with a time dimension**.

Step 5: The last step deals with the Standards/Special Arrangements Reference Information.

When registering a web service it is essential to indicate which standard has been used to implement the service instance, as it was indicated in the section 3.1. Supportive standards can also been selected, for example, in the case of an access data service it will be useful if you provide the information regarding the format of the downloadable data.

More information about this step was provided in the step 8 in section 3.1.

[3]WGS84 stands for World Geodetic System 1984, the **global reference coordinate system** used by the Global Positioning System.

4. Modification of information of registered resources

In order to check or modify the information related to a resource you have already registered, you should click on "**Resource Management**".

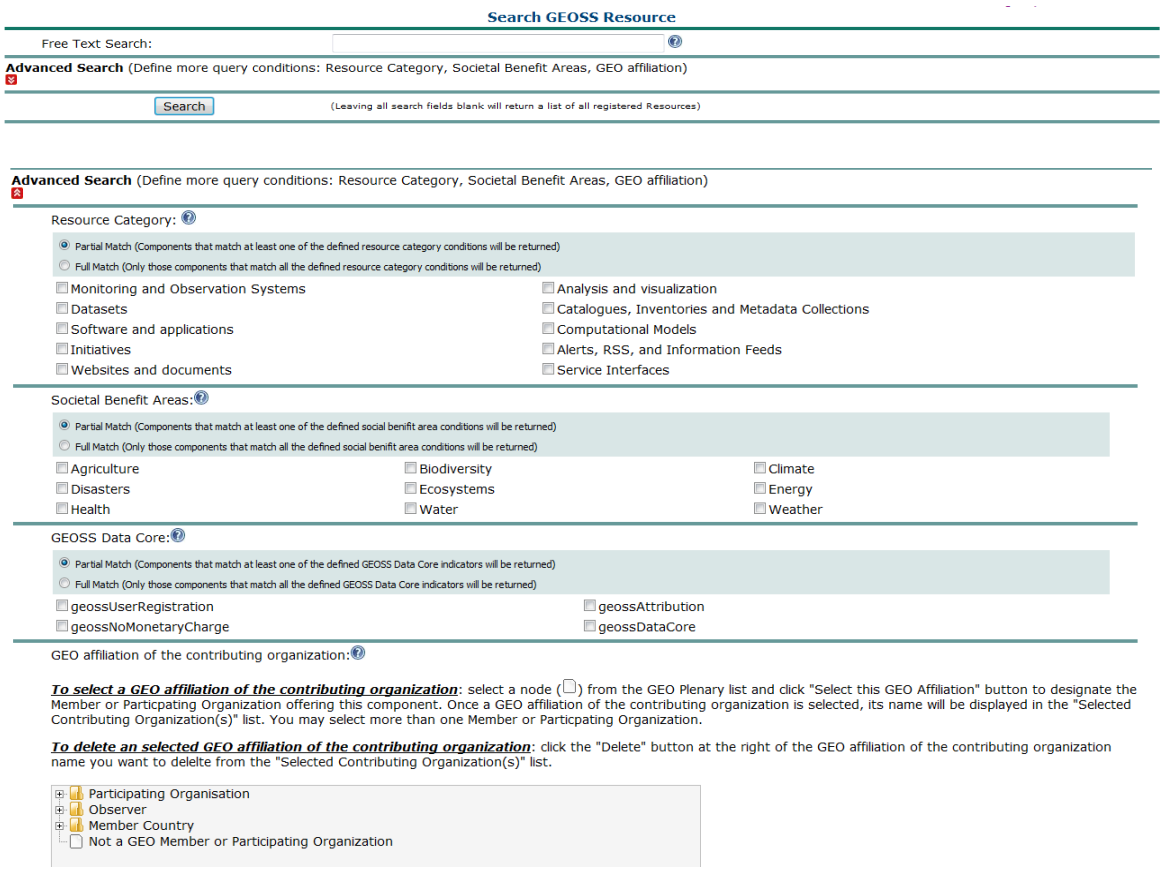
In this window, data providers may delete or modify their records, and also view the details of the registered resources as CSR users do.

It is also possible to send a request for approval by the GEOSS CSR Record Review Working Group as it is explained in the section 3.1.

Please note that in the 3rd column a **C** or an **S** will appear indicating whether you have registered a **Component** or a **Service.**

5. Resource Discovery in the CSR

By clicking on "**Resource Discovery**" providers and users can search for resources using a **free text search box** or an **advanced search interface** filtering by certain conditions like **resource category, societal benefit area, data sharing properties**, etc.



6. Technical support

Should you need to report any issue about the CSR web pages, you will have to fill in a form that appears after clicking on "**Feedback for this page**", located at the top right of each page.

In case you want to ask any general question or doubt regarding your registration please submit a request for assistance to the Standards and Interoperability Forum (SIF) **by filling out a short form at http://bit.ly/MS8COZ.**