

Sub-task Number: AR-09-01d

Sub-task Title: Ontology and Taxonomy Development

Overarching Task: GEOSS Common Infrastructure

Area: ARCHITECTURE

Relevant Committee: ADC

Related Targets: (to be included in 2009)

Sub-task Definition (as given in the 2009-2011 Work Plan):

As part of the Best Practices Registry, create an Ontology and Taxonomy section to get an overview of available ontologies and taxonomies. Compare and analyze ontologies and taxonomies such as to avoid unnecessary overlaps and conflicts. As appropriate, develop ontologies and taxonomies stored in the Best Practices Registry into standards. Assist in the deployment of a reference able ontology for Earth observation to link the User Requirements Registry with the Components and Services Registry. Assess how to use the ontology and taxonomy section of the best practices registry for discovery composition and access in the frame of the GEOSS architecture.

Leads (GEO Member or PO, Entity carrying out the work, Contact: e-mail):

Japan (University of Tokyo), Point of Contact: Ryosuke Shibasaki, shiba@csis.u-tokyo.ac.jp

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Motivation/Background

There are many kinds of ontology, taxonomies, thesauruses, and gazetteers in various fields. This task will collect them to conduct comparative analysis for better semantic interoperability between diversified earth observation data in GEOSS. A ontology registry need to be developed as a showcase and as a basis for the comparative analysis. The ontology registry will become a component of GEOSS Interoperability Infrastructure. In addition, digital gazetteers as a kind of geo-spatial ontology need to be collected and examined for geo-coding services of earth observation data

Outputs (e.g. products and services which result from the activities of the Task/sub-task; outlined in the form of deliverables with timelines)

Planned:

1. An ontology registry is developed to collect, compare and analyze available ontologies and taxonomies.
2. Existing digital gazetteers are collected and integrated including governmental administrative region names, authoritative standardizing names, or widely known place names.
3. A guideline is provided for GEO members how to register ontology and use the registry.
4. A guidance document for GEO members is provided to use and develop a more interoperable and appropriate ontology, taxonomy, thesauruses, and gazetteers by referring to the registry

Produced (current status):

1. A prototype of ontology registry has been developed based on Semantic MediaWiki.
2. A prototype of the digital gazetteer has been designed and developed in 2008.
3. Available ontologies, taxonomies and classification schema have been investigated and some of them are collected and register to the registry.

Activities (operations or work processes through which resources are mobilized to produce specific outputs; outlined in the form of milestones including timelines)

Planned:

1. Sending questionnaire and having an interview with researchers of each tasks of GEOSS to list existing ontology, taxonomy, thesauruses, and gazetteers. (~July, 2009)
2. Survey on more details including international standards, such as ISO, OGC. (August, 2009)
3. The registry which allows users to freely create and edit contents using any Web browser is developed. (September, 2009)
4. Start experimental operation of the registry. (October, 2009)

Progress (current status): ...

GEOSS best practices are organized in this wiki by GEOSS theme or transverse area, including ontologies best practice. Surveying for existing ontology, such as INSPIRE, has been conducted, and the possibility of the association has been discussed.

Resources (indication of resources – e.g. financial, human – contributed by GEO Members or Participating Organizations to produce outputs)

The available ontological information need to be contoributed by GEO members and researchers of each task of GEOSS.

Architecture and Data Component

1) Please briefly describe any task-related Earth observation resources (data set, system, website/portal) and any related Web Service interfaces that are contributed to GEOSS. State whether these items are or will be registered with the GEOSS Component and Service Registry for access via the GEO Web Portals, and whether any associated standards or other interoperability arrangements will be registered in the Standards and Interoperability Registry.

2) Please also describe what data and information your activity/system needs that you would request to be accessible through the GEOSS Common Infrastructure.

Capacity Building Component

(capacity building is defined to include the development of capacity related to: (i) Infrastructure and technology transfer (Hardware, Software and other technology required to develop, access and use EO); (ii) Individuals (education and training of individuals to be aware of, access, use and develop EO) and (iii) Institutions – building policies, programs & organizational structures to enhance the value of EO data and products).

1) In accordance with the above definition does this Task have a capacity-building component? If so, please provide a short description of this component including a description of end users.

In parallel with the development of guideline and guidance documents on ontology registry and gazetteers, workshops will be jointly provided with the other tasks and GEO member organization like IEEE, to contribute to the capacity building for data retrieval and usage using ontology information.

2) Have any additional CB needs for this Task been identified? Please provide a short description.

Not yet identified

User Engagement Component

(please briefly describe to what extent end users are engaged in this Task and influence the nature of the outputs produced)

Science and Technology (S&T) Component

1) Please briefly describe the elements of scientific research or technological development contained in this Task.

2) In relation to the S&T component(s) of this task, please describe gaps, priorities, continuity needs, barriers, scientific expertise and additional resource needs (this information will be used for developing a gaps and needs assessment in Task ST-09-01)

Members and POs' Contributions to Outputs and Activities above:

(Input is optional. This section gives the chance to Members and POs to provide more details (3-5 lines) on their individual activities, making a clear connection with the Outputs and Activities outlined above).

Participation (Table to be filled in 2009):

Type	Member or PO	Representing	Contact Name	EmailAddress
Lead(PoC)	Japan	University of Tokyo	Ryosuke Shibasaki	shiba@csis.u-tokyo.ac.jp
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