The GEOSS Science and Technology Service Suite: Linking Science and Technology Communities and GEOSS

Hans-Peter Plag, Ian McCallum, Steffen Fritz, Shelley Jules-Plag, Michael Nyenhuis, Stefano Nativi
The Group on Earth Observations (GEO):
- Was created in response to the 2002 WSSD
- Envisions a future where decisions are informed by Earth observations;
- Aims to utilize the societal benefits of Earth Observations in nine Societal Benefit Areas;
- Has more than 90 Member Countries;
- Has more than 60 Participating Organizations;
- Has major international science organizations and research programmes involved;
- Implements the Global Earth Observing System of Systems (GEOSS).
GEO and Science and Technology

The Global Earth Observation System of Systems

Information for the benefit of society

- Disasters
- Health
- Energy
- Climate
- Agriculture
- Ecosystems
- Weather
- Water
- Biodiversity
Building a GEOSS that supports decision making at all levels requires input from many S&T communities.

A strong engagement of S&T communities in the DEVELOPMENT of GEOSS is necessary to:
- improve interoperability between global observing, modeling, and information systems;
- facilitate data sharing, archiving, dissemination, and reanalysis;
- optimize the recording of observations, assimilation of data into models, and generation of data products;
- enhance the value of observations from individual observing systems through their integration in the SBAs;
- harmonize well-calibrated, highly accurate, stable, sustained in-situ and satellite observations of the same variable recorded by different sensors and different agencies.
GEO and Science and Technology

Utilizing the Benefits of Earth Observations requires a translation of data into knowledge.

A strong engagement of S&T communities in the USE of GEOSS is necessary to:
- Interpret the observations;
- Address the complex issues of the global integrated Earth system;
- Conduct multidisciplinary research programs;
- Translate observations into knowledge supporting sustainable development;
- Develop services that provide access to knowledge (not data).
The Implementation of GEOSS is guided by GEOSS Strategic Targets.

Strategic Target 1.4 Science and Technology

Before 2015, GEO aims to:

4. Ensure full interaction and engagement of relevant science and technology communities such that GEOSS advances through integration of innovations in Earth observation science and technology, enabling the research community to fully benefit from GEOSS accomplishments.
GEO’s Approach

To achieve this GEOSS Strategic Targets:

A GEO S&T Road Map was developed to support the Strategic Target.

The Road Map identifies concrete activities to advance the scientific and technological content of GEOSS to ensure that GEO has access to scientific and technological advice.

Two lines of action:
- Actively engaging and incorporating science and technology participants in the development of GEOSS
- Creating incentives and promoting GEOSS in S&T communities
GEO’s Approach

To achieve this GEOSS Strategic Targets:

Implementation of the Road Map through several GEO Work Plan Tasks:
- ST-09-01/ST-09-02: 2009-2011 Work Plan
- ID-03/ID-05: 2012-2015 Work Plan

Support from several EC-funded Projects, in particular GeoViqua and EGIDA
EGIDA FP7: Coordination and Support Action, co-funded by the European Commission; 2010 – 2012

• Project goal, inter alia:
  • Support broader implementation and effectiveness of the GEOSS Science & Technology Roadmap

• EGIDA Stakeholder Network:
  - Provide a link between the EGIDA project and the broad European and international S&T community
  - Enhance information exchange, knowledge creation, and sharing good practices
  - Basis for sustained continuation of European engagement in GEOSS beyond the project lifetime
EGIDA Stakeholder Network workshop 2011, Bonn:
- To continue the Network as “GEOSS Science & Technology Stakeholder Network” throughout and beyond the project lifetime

- Communication platform focused on S&T as they relate to GEOSS and the societal benefits of Earth observations

- Workshops are organized to assemble an open and flexible Network

- Goals:
  - Facilitate the science and research needed to build GEOSS
  - Promote GEOSS in S&T communities
  - Facilitate the science and technology needed to utilize the benefits of Earth observations

- GEO Work Plan Task ID-03: Science & Technology in GEOSS
The GSTSS

The GEOSS Science and Technology Stakeholder Network aims to give a voice to S&T Stakeholders in the development of GEOSS.

Two main avenues:
- Organization of GEOSS S&T Stakeholder Workshops
- The GEOSS S&T Service Suite (gstss.org)
The GSTSS

First avenue:
Organization of GEOSS S&T Stakeholder Workshops

2nd GEOSS S&T Workshop “GEOSS: Supporting Science for the Millennium Development Goals and Beyond:”
- Tested human interoperability by bring together representatives of 21 international organizations;
- Resulted in three documents, including recommendations:
  - capacity building needs to include the decision makers’ capacity to utilize the knowledge;
  - co-design, co-development of knowledge;
  - What we don’t measure today, we will never be able to reconstruct (“black box” in airplanes; Sunderland: “don’t need more model, need more observations”).
The GSTSS

Second avenue: The GEOSS S&T Service Suite (gstss.org):
The GSTSS

The GEOSS S&T Portfolio demonstrates how GEOSS works for S&T Communities

GMOS: Global Mercury Observing System
The GSTSS

The GEOSS S&T Meeting Portal Facilitates Coordination and Documentation of GEOSS-related at S&T meetings
The GSTSS

The GEOSS User Requirement Registry allows publication of user types, application, requirements, research needs, infrastructure needs, ...
The GSTSS

The Earth observation system blog will allow the discussion and promotion of candidate systems for the transition from research systems to sustained systems ...
The GSTSS

The User Feedback and Rating, for the first time, allows comprehensive user feedback on datasets and services:
The GSTSS

The User Feedback and Rating, for the first time, allows comprehensive user feedback on datasets and services:

Feedback on the GEO Web Page

The GEO Home Page provides information about GEO, its activities, and its outputs.

Submit Rating and Feedback on the GEO Web Page

For an explanation of the ratings on a scale from 1 to 5, see the table at the bottom of the page.

Your Use of the GEO Web Page:
What did you use the GEO Web Page for?
- Get a general overview of GEO
- Access to GEO Document
- Read the GEO Newsletter
- Access the Work Plan tools
- Access the Meeting Calendar
- Access the Meeting Outputs
- Learn about Communities of Practice
- Never visited the GEO Home Page
- Other:

Are you planning to visit the GEO Home Page again?
- Yes
- No

Usability, contents, and relevance of the GEO Home Page:

Value of the GEO Web Page as an information source for you:
- 1
- 2
- 3
- 4
- 5

Completeness, quality, and timeliness of information on GEO and its components:
- 1
- 2
- 3
- 4
- 5

Completeness, quality and timeliness of information on Communities of Practice:
- 1
- 2
- 3
- 4
- 5

Comprehensiveness of the GEO document library:
- 1
- 2
- 3
- 4
- 5

Access to documentation of future and past meetings:
- 1
- 2
- 3
- 4
- 5

Relevance, quality of contents, and timeliness of the GEO Newsletter:
- 1
- 2
- 3
- 4
- 5
The GSTSS

The User Feedback and Rating, for the first time, allows comprehensive user feedback on datasets and services:

Feedback on the GEO Web Page

The GEO Home Page provides information about GEO, its activities, and its outputs.

Submit Rating and Feedback on the GEO Web Page

For an explanation of the ratings on a scale from 1 to 5, see the table at the bottom of the page.

Your Use of the GEO Web Page:

What did you use the GEO Web Page for?

- Get a general overview of GEO: 2 of 2 users (%100.00)
- Access to GEO Document: 1 of 2 users (%50.00)
- Read the GEO Newsletter: 2 of 2 users (%100.00)
- Access the Work Plan tools: 1 of 2 users (%50.00)
- Access the Meeting Calendar: 2 of 2 users (%100.00)
- Access the Meeting Outputs: 1 of 2 users (%50.00)
- Learn about Communities of Practice: 1 of 2 users (%50.00)
- Never visited the GEO Home Page: 0 of 2 users (%0.00)

Number of users who plan to return: 1 users

Usability, contents, and relevance of the GEO Home Page:

- Value of the GEO Web Page as an information source for you: Avg: 2.5
- Completeness, quality, and timeliness of information on GEO and its components: Avg: 2.5
- Completeness, quality and timeliness of information on Communities of Practice: Avg: 2
- Comprehensiveness of the GEO document library: Avg: 2
- Access to documentation of future and past meetings: Avg: 2.5
- Relevance with the feedback publication: Avg: 2.5
The GSTSS

The User Feedback and Rating, for the first time, allows comprehensive user feedback on datasets and services:
- usability;
- traceability;
- quality.

Is related to data citation and GEO Label.