Towards a GEOSS Stakeholder Network for Science and Technology

In support of developing GEOSS as a utility for Earth sciences in service of society

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Brief History:
- EGIDA Project initiated the EGIDA Stakeholder network;
- First Workshop held on May 9-11, 2011 in Bonn, Germany;
- Main Conclusion: The Network should be a GEOSS S&T Stakeholder Network with continuation after the EGIDA Project ends.
Goals for the GEOSS S&T Stakeholder Network:
- Originally: Support the Implementation of GEO's S&T Road Map:
  - Facilitate the science and research needed to build GEOSS;
  - Promote GEOSS in S&T communities;

Is there something missing?
- Facilitate the science and technology needed to utilize the benefits of Earth observations:
  - respond to the needs of science and research;
  - support the development of decision support tools.

What should be the role of the GEOSS S&T Network in the post-STC time?

Communication platform focused on S&T as they relate to GEOSS and the societal benefits of Earth observations.
Who should be represented in the GEOSS Stakeholder S&T Network?

The GEO S&T Road Map details two Activities:
- Actively engage and incorporate S&T participants in developing GEOSS;
- Create incentives and promote GEO in S&T communities

We have identified a third activity:
- Facilitate the science and technology required to utilize the societal benefits of GEOSS and Earth observations
<table>
<thead>
<tr>
<th>Organization</th>
<th>Contact Point</th>
<th>Country/Region</th>
<th>Projects/Programmes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Industrial Science and Technology</td>
<td>Satoshi Sekiguchi</td>
<td>Japan</td>
<td>GEO Grid, GEOSS SIF</td>
</tr>
<tr>
<td>Bulgarian Academy of Sciences; Geophysical Institute ‘Acad. L. Krastanov’</td>
<td>Kostadin Ganev</td>
<td>Bulgaria</td>
<td>&quot;ISOIL&quot;: Interaction between soil related sciences — Linking geophysics, soil science and digital soil mapping; &quot;TRANSFER&quot;: Tsunami Risk And Strategies For the European Region; &quot;SEE-GRID&quot;: eInfrastructure for regional eScience</td>
</tr>
<tr>
<td>Comissionere Oceanografica Italiana</td>
<td>Giuseppe Manzella</td>
<td>Italy</td>
<td>Intergovernmental Oceanographic Commission</td>
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<tr>
<td>CSIRO</td>
<td>Stuart Minchin</td>
<td>Australia</td>
<td>STC, CNSS, IEEE GEOSS Workshop</td>
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<tr>
<td>CNRS/INSU</td>
<td>Patrick Monfray</td>
<td>France</td>
<td>IGFA, EUR OCEANS, GMES</td>
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<tr>
<td>Austrian Environment Agency (EAA)</td>
<td>Herbert Haubold</td>
<td>Austria</td>
<td>GAC, GNU, GSE, MACC, PROMOTE, Geoland I, GSE Land, LISA</td>
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<td>ERAWatch</td>
<td>Aris Kaloudis</td>
<td>EC</td>
<td>proVISION, GMES</td>
</tr>
<tr>
<td>Institut Cartogràfic de Catalunya</td>
<td>Jaume Miranda</td>
<td>Spain</td>
<td>EUREF, INSPIRE, CS PCOT, CS IDEC</td>
</tr>
<tr>
<td>Instituto Nacional de Pesquisas Espaciais</td>
<td>João Vieale Soares</td>
<td>Brazil</td>
<td>CRFRS, GEO CRC</td>
</tr>
<tr>
<td>National Centre of Geographic Information/National Geographic Institute</td>
<td>Sebastián Mas-Mayoral</td>
<td>Spain</td>
<td>Spanish SDI, INSPIRE</td>
</tr>
<tr>
<td>Research Council of Norway</td>
<td>Kirsten Broch Møllersen</td>
<td>Norway</td>
<td>Global Change Committee</td>
</tr>
<tr>
<td>South African National Space Agency; Department of Science and Technology</td>
<td>Val Munsami</td>
<td>South Africa</td>
<td>GEOS/GEOSS co-chair STC</td>
</tr>
<tr>
<td>IEEE South Africa Section</td>
<td>Saurabh Sinha</td>
<td>South Africa</td>
<td>GEO/GEOSS</td>
</tr>
<tr>
<td>Tsinghua University</td>
<td>Jiming Iao</td>
<td>China</td>
<td>Global Monitoring Plan for Atmospheric Mercury</td>
</tr>
<tr>
<td>TÜBITAK</td>
<td>Tamer Özalp</td>
<td>Turkey</td>
<td>National/Space Research Programme, Public Research Programme, TR-GRID</td>
</tr>
<tr>
<td>University of Belgrade; Faculty of Mining and Geology</td>
<td>Ivana Vasiljevic</td>
<td>Serbia</td>
<td>RESTCA-TERCE-NIPMSS, SourceSink, “Sustainable Aggregates Resource Management”, CC-WaterS</td>
</tr>
<tr>
<td>Universität Bonn</td>
<td>Michael Nyenhuis</td>
<td>Germany</td>
<td>GEOSS studies, EUCENE, Analyst of the GEO’s Societal Benefit Area “Weather”</td>
</tr>
<tr>
<td>University of Nevada, Reno</td>
<td>Hans-Peter Flag</td>
<td>USA</td>
<td>GEO STC, Point of Contact of GEO Task ST-00-02</td>
</tr>
</tbody>
</table>
Actively engage and incorporate S&T communities in developing GEOSS

Activity:
1a Revolving scientific review of each Work Plan, starting with the current work plan for 2009-2011 on grounds of scientific and technological soundness and completeness against the outstanding scientific questions and challenges in each of the SBAs.

Stakeholders:
- Users of EO data (researchers, managers, policy makers, civil society, (non)governmental organizations, international organizations)
- EO data providers
- Funding agencies
- GEO Task Leads, GEO Committees/Boards, GEOSS Gap Analysis Team

Representatives:
Funding agencies, Committees, Participating Organizations
Actively engage and incorporate S&T communities in developing GEOSS

<table>
<thead>
<tr>
<th>Activity</th>
<th>Short description</th>
<th>Stakeholder</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Scientific review of Work Plan</td>
<td>Users of EO, EO providers, Funding agencies, Task leads, Board, Gap analysis team</td>
</tr>
<tr>
<td>1b</td>
<td>Review Indicators as measure for progress</td>
<td>Task leads, Boards, M&amp;E Working Group, POs</td>
</tr>
<tr>
<td>1c</td>
<td>Continuity requirements for long-term observations</td>
<td>Users of EO (research and decision making), funding agencies, Task leads, Boards</td>
</tr>
<tr>
<td>1d</td>
<td>State-of-the-art infrastructure</td>
<td>Users of EO (research and decision making), EO providers, Funding agencies, Task leads, Boards</td>
</tr>
<tr>
<td>1e</td>
<td>Responding to S&amp;T needs</td>
<td>Users of EO (research and decision making), EO providers, Funding agencies, Task leads, Boards</td>
</tr>
</tbody>
</table>
Actively engage and incorporate S&T communities in developing GEOSS

**Activity:**
1b Implement review indicators in the GEO Work Plan reporting to ensure that activities in individual GEO Tasks and Sub-Tasks meet the applicable scientific and technological standards.

**Stakeholders:**
GEO Task Leads, GEO Committees/Boards, M&E Working Group, Participating Organizations

**Representatives:**
Participating Organizations, Committees/Boards
Actively engage and incorporate S&T communities in developing GEOSS

Activity:
1c Assess the requirement for continuity and long-term monitoring by Earth observation systems of essential data from GEOSS components.

Stakeholders:
- Users of EO data (researchers, managers, policy makers, civil society, (non)governmental organizations, international organizations)
- Funding agencies
- GEO Task Leads, GEO Boards

Representatives:
Users, Participating Organizations
Actively engage and incorporate S&T communities in developing GEOSS

Activity:
1d Ensuring state-of-the-art technology in the GEOSS Common Infrastructure (GCI) and Observation Infrastructures.

Stakeholders:
- Users of EO data (researchers, managers, policy makers, civil society, (non)governmental organizations, international organizations)
- EO data providers
- Funding agencies
- GEO Task Leads, GCI Coordination Team, GEO Committees

Representatives:
Users, Participating Organizations
Actively engage and incorporate S&T communities in developing GEOSS

Activity:
1e Responding to S&T needs and priorities in Earth observation for GEOSS.

Stakeholders:
- EO data providers
- Funding agencies
- GEO Task Leads, GEO Committees/Boards

Representatives:
Funding agencies
Create incentives and promote GEO in S&T communities

Activity:
2a Get GEO/GEOSS better acknowledged in the scientific community.

Stakeholders:
Outreach experts, publishers, science organizations, EO providers

Representatives:
Science organizations, providers
Create incentives and promote GEO in S&T communities

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<tr>
<th>Activity</th>
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<th>Stakeholder</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a</td>
<td>Get GEOSS better acknowledged</td>
<td>Outreach experts, Publisher, Science Organizations, EO providers</td>
</tr>
<tr>
<td>2b</td>
<td>GEO Label</td>
<td>Experts in data quality, user feedback, certification, EO providers, Science organizations, Users in S&amp;T</td>
</tr>
<tr>
<td>2c</td>
<td>Building awareness of GEOSS</td>
<td>Outreach experts, Science organizations</td>
</tr>
<tr>
<td>2d</td>
<td>Showing GEOSS at work</td>
<td>Media experts, Task leads, experts</td>
</tr>
<tr>
<td>2e</td>
<td>Enhancing registration of scientific data</td>
<td>POs, Science organizations, EO providers, Scientists</td>
</tr>
<tr>
<td>2f</td>
<td>Identify key commercial partners</td>
<td>Outreach experts, Commercial organizations</td>
</tr>
<tr>
<td>2g</td>
<td>Catalyze research and development resources</td>
<td>Outreach experts, Scientists, Science organizations, Funding agencies</td>
</tr>
</tbody>
</table>
Create incentives and promote GEO in S&T communities

Activity:
2b Establishing a "GEO label" to recognize the scientific relevance, quality, acceptance and societal needs for activities in support of GEOSS.

Stakeholders:
Data quality experts, user feedback experts, providers, users, labeling/certification organizations, science organizations

Representatives:
Providers, users, science organizations
Create incentives and promote GEO in S&T communities

**Activity:**
2c Building awareness of GEO and GEOSS in the different S&T communities, within the scope of GEOSS development.

**Stakeholders:**
Outreach experts, experts, science organizations

**Representatives:**
Science Organizations
Create incentives and promote GEO in S&T communities

**Activity:**
2d Showing GEOSS at work with a set of compelling examples demonstrating how GEOSS serves the S&T communities in their work.

**Stakeholders:**
Media experts, Task Leads, experts

**Representatives:**
Experts
Create incentives and promote GEO in S&T communities

Activity:
2e Enhancing registration of scientific data sets as an important indicator for potential contributors from the science communities in assessing the relevance of GEOSS for their work.

Stakeholders:
Science/Participating organizations, scientists, EO providers

Representatives:
Science organizations, scientists, providers
Create incentives and promote GEO in S&T communities

**Activity:**
2f Identify key commercial partners who could contribute to GEOSS and also benefit from improved observational means, products and services and might therefore support certain S&T development.

**Stakeholders:**
Outreach experts, commercial organizations

**Representatives:**
?
Create incentives and promote GEO in S&T communities

Activity:
2g Catalyze research and development resources to help engage the S&T communities in implementing GEOSS.

Stakeholders:
Outreach experts, scientists, science organizations, funding organizations

Representatives:
Funding agencies
Facilitate the R&D required to utilize GEOSS and Earth observations for decision support

Activity:
3a Identify R&D needs in support of decision making (URR)

Stakeholders:
Decision makers, Scientists, Researchers, Task leads, Boards
Facilitate the R&D required to utilize GEOSS and Earth observations for decision support

<table>
<thead>
<tr>
<th>Activity</th>
<th>Short description</th>
<th>Stakeholder</th>
</tr>
</thead>
<tbody>
<tr>
<td>3a</td>
<td>Identify research needs for decision support</td>
<td>Decision makers, Scientists, Researchers, Task leads, Boards</td>
</tr>
<tr>
<td>3b</td>
<td>Facilitate R&amp;D in support of decision making</td>
<td>Scientists, researchers, EO providers, Decision makers, Funding agencies, Task leads, Boards</td>
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</table>
# Gaps in Membership

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1a</td>
<td>Task leads</td>
</tr>
<tr>
<td>1b</td>
<td>M&amp;E Task Group</td>
</tr>
<tr>
<td>1c</td>
<td>Task leads, science communities</td>
</tr>
<tr>
<td>1d</td>
<td>S&amp;T communities</td>
</tr>
<tr>
<td>1e</td>
<td>Task Leads, S&amp;T communities</td>
</tr>
<tr>
<td>2a</td>
<td>Outreach experts</td>
</tr>
<tr>
<td>2b</td>
<td>Certification/labeling organizations</td>
</tr>
<tr>
<td>2c</td>
<td>Outreach experts</td>
</tr>
<tr>
<td>2d</td>
<td>Media experts, Task Leads</td>
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<tr>
<td>2e</td>
<td></td>
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<tr>
<td>2f</td>
<td>Outreach experts, commercial organizations</td>
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<tr>
<td>2g</td>
<td>Outreach experts; relevant science organizations</td>
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Specific contributions:

- 1a (work plan review): participate, provide feedback
- 1d (state-of-the-art technology for GCI): provide feedback
- 2a (citation standard): participate in phase 2
- 2b (GEO Label): contribute
- 2d (GEOSS Portfolio): proposals for Compelling Examples
- 2e (registration of scientific data): facilitate

- 3a Identify research needs in support of decision making (URR)
- 3b Work with science communities to facilitate the research and development
Activities in 2012:

Second Workshop, tentatively:
- August 30-31, 2012, Cologne/Bonn, Germany
- Topic: GEOSS: a utility for Earth sciences in service of society
- Co-located with the Communities of Practice Conference
- Co-located with the 32nd International Geographical Congress 2012, 26-30 August 2012, Cologne.