GEOSS Data Sharing Task Force (DSTF) “Scoping” Meeting

Summary of Outcomes

1. GEOSS Data-CORE:
   - A Roadmap on Implementation of the GEOSS Data-CORE (Annex 1) was developed;
   - A Guidance document on implementation of the GEOSS Data-CORE in the GCI will be developed;
   - Initially, at least three user scenarios will be tested:
     - New Data-CORE resources are registered in the GCI;
     - Data already in the GCI are added to the GEOSS Data-CORE and the metadata are updated;
     - Catalogue providers identify and label GEOSS Data-CORE data in their existing catalogues.

2. Basic Framework for the implementation of the Action Plan (during 2011)
   - Three data categories will be used initially, (i.e., until at least GEO VIII):
     - geossDataCore;
     - geossNonCommercial;
     - geossOther.
   - GEO will not act as a banker. Where costs are charged by the provider, then any financial transactions and transfer of funds must be undertaken directly between the user and data provider.
   - The data provider will be required to work with the user to enforce any restrictions placed on data. The task of the GEO will be to make these restrictions known to the user, based upon the information provided by the data provider, and to facilitate the contact between the user and the provider.
   - No personally identifiable information will be held by GEO in the GEOSS Common Infrastructure (GCI). All usage information will be aggregated to prevent the identification of individual users.
   - GEO will take a combined GCI-centric approach with a federated User ID approach, using the GCI as a pass-through for user metrics. (Note: GEO needs usage metrics to demonstrate the value of GEOSS.)

3. Attribution:
   - The process should allow for attribution requests as well as requirements;
   - The data provider is responsible for putting attribution requests and requirements in the metadata;
   - The DSTF report to the GEO-VIII Plenary should include a section on attribution.

4. Legal Liability:
   - GEO is not a legal entity / juridical person. So it cannot enter into contracts, does not have legal liability, and cannot be sued. It is also questionable whether it could enter directly into licenses.
   - Governments generally cannot be sued since they have sovereign immunity, and UN organizations most probably can also not be sued. This leaves some Participating Organizations exposed to risk, but the risk is likely to be minimal.
Nonetheless, GEO should take a common sense approach toward decreasing risk to GEO, Participating Organizations and GCI service providers. In the interest of full disclosure, GEO should put appropriate legal disclaimers and/or waivers on the GCI website, (but not on individual data sets), and it should be clear when a user is leaving the GEOSS website.

- Legal liability clauses are (so it was reported) no longer included in Creative Commons licenses, so it is important to put a disclaimer on the GCI website and to possibly give guidance to data providers.
- A Sub-Group, (led by H. Onsrud, G. Talia and J. Heninger), will draft possible legal terms and disclaimers for consideration by Executive Committee.

5. IPR, Licensing and Other Frameworks;

- The DSTF created a Legal Sub-Group, to help advise the DSTF on these issues.
- The Legal Sub-Group will be involved in drafting a high-level functional requirements paper. (Led by P. Uhlir/P. Kishor and J. Gabrynowicz) This Sub-Group will put together a draft high level document for the July Executive Committee articulating the general problem, issues and benefits of adopting existing or other schemes of licensing, in order to present options.
- Proposals in this area would not oblige US federal data contributed to the GEOSS to be covered by a license.
- The Plenary will decide whether a licensing structure should be introduced into GEOSS and what form that structure should take, if a licensing scheme is adopted. The DSTF will provide a report to Plenary describing various options and their respective ramifications, and it may also make recommendations.

Addressing the other actions in the Data Sharing Action Plan;

- Action 1: CODATA will address the issue of data quality within the context of the requirement that datasets submitted to the Data-CORE are documented.
- Action 2: The DSTF should establish a list of outreach events at which data sharing, the GEOSS Data-CORE and the Action Plan could be publicised.
- Action 3: Covered by earlier bullets. Need for the DSTF to establish an effective working relationship with the GCI-CT, GCI Component Providers, ADC, A&D Tasks, Architecture Implementation Pilots, etc.
- Action 4: Look to organise a dedicated session at the time of the Work Plan Symposium.
- Actions 5 & 6: Prepare a package to be sent out to Members (Principals) to establish contact and to ask if actions are being taken on national coordination mechanisms. The DSTF should also prepare a report to the Plenary, showcasing / highlighting to Plenary those GEO Members who are actively national coordination mechanisms.
- Actions 7 & 8: Addressed under previous bullets.
Annex 1: Roadmap for the GEOSS Data-CORE
Annex 2: Participants List

1. Welcome and Introduction
The Co-Chairs highlighted the objective of the meeting which is to layout work for 2011 in order to develop recommendations for 2011 Plenary. All participants introduced themselves.

2. Report on the GEO-VII Plenary
A. Edwards presented the Data Sharing Action Plan (See presentation). The Data Sharing Action Plan has been accepted by Plenary with revisions. He pointed out that the next important step is the implementation of the GEOSS Data-CORE.

The immediate steps were discussed. It was agreed that the TF should target at submitting draft recommendations for official government review by the end July after Executive Committee.

3. Basic Implementation of the GEOSS Data-CORE
B. Chen presented the basic implementation of the Data-CORE. A list of pledged datasets have been developed based on the announcements at the Beijing Summit. The Data-CORE needs to be populated, and there are issues on technical implementation, institutional and legal, outreach, resources, milestones, actions and assignments.

Questions to be asked in the registration process were discussed. It was also discussed that the focus should be to provide data for Societal Benefit Areas (SBAs), rather than for commercial purposes.

4. Metadata Issues, Including a GEOSS CORE Metadata Flag
M. Craglia presented the European Commission – Infrastructure for Spatial Information in Europe (INSPIRE) project. He highlighted the need to extend minimum GEOSS metadatasets; the need to make conditions applying to access and use queriable; the need to define services needed in the GCI to allow access and effective use of resources; and the need for accessible (Open Source) tools to facilitate Population and access to GEOSS Data-CORE.

Discussions followed on flagging metadata, and applicable Creative Commons (CC) licenses. It was agreed that a simple implementation for the GEOSS Data-CORE is required.

The International Polar Year (IPY) Catalogue and the Global Change Master Directory (GCMD) (http://gcmd.nasa.gov) were demonstrated. It was also indicated that there was ongoing Science and
Technology Committee (STC) work on citation, and dealing with datasets from multiple data sources.

S. Browdy noted that there are 2 ways of presenting the catalogue: as homogeneous or heterogeneous; and that communities (technologies) are evolving fast. M. Craglia shared the European experience and pointed out that the majority of GEO-GEOSS catalogues are heterogeneous, and that the value of GEOSS will be on access to the GEOSS Data-CORE. B. Chen added that a basic simple instruction to add tags of the pledged datasets and to populate the Data-CORE quickly should be the aim.

The meeting agreed that a series of questions will be drafted by E. Christian, S. Browdy and M. Craglia to determine whether data provided qualify as GEOSS Data-CORE. The questions were presented the next day and incorporated into the guidance document for GCI drafted by S. Browdy.

B. Greenaway indicated that UK is waiting and wants to know what needs to be done next with regard to the datasets pledged in Beijing. The meeting noted that outreach will happen once technical implementation issues are resolved.

5. Populating the GEOSS Data-CORE

In order to populate the GEOSS Data-CORE the following issues should be addressed: a) new datasets (b) registered datasets (c) outreach (d) process of additional elements for registration.

It was agreed that S. Browdy will draft a guidance document on the implementation of the GEOSS Data-CORE for consideration by DSTF, ADC, and GCI-CT, for discussion later in the meeting. It was also agreed that A. Edwards and B. Chen will provide a Roadmap with time frames and milestones for GEOSS Data-Core implementation to be presented on Day 2.

The guidance document was drafted and discussed on Day 2 and 3.

Action TF3-1: Steve Browdy to draft a refined GEOSS Data-CORE guidance document.

The “Roadmap for GEOSS Data-CORE” was also drafted and presented the next day. M. Onoda said that the point of contacts within the DSTF and for each data provider need to be established. A. Edwards said that for DSTF it is presumably the Co-chairs and the Secretariat. It was noted that the DSTF needs to clarify with those datasets that were announced by unclear if they were intended for the Data-CORE, perhaps by writing to the Member or Organization. It was agreed that the UIC should be included in the prototype testing. On Day 3 the refined Roadmap was agreed (See Attachment 2).

6. User Registration

S. Browdy gave a presentation on User Registration (See presentation). He explained that the AIP-3 assumed Single Sign-On (SSO) from two perspectives: a federated solution, and a GCI centric solution; For the former, two technologies were researched: Open ID and Shibboleth. Open ID is a federated solution for authentication, and the impact is relatively light on the data provider. The GCI may use one of the
well-known Open ID solutions (e.g. Google, Yahoo, Paypal). Shibboleth is a federated solution for authorization as well as authentication. There must be an Identity Provider (IdP) and implies very heavy impact on data provider and potentially to the GCI. Metrics across multiple providers will be problematic without a GCI provided IdP. Machine-to-machine issues may exist without a GCI-provided IdP. The GCI centric solution with an SSO central component enables the time-out problem to be managed. Lastly, he raised points for consideration including whether a “GEOSS User” should be distinguished from other users.

It was asked why SSO should be a necessary part of GEOSS Data-CORE. S. Browdy answered that SSO was a requirement for GEOSS in general, for providers that have registration and log-in requirements. The meaning of “GEOSS Users” was questioned, and some suggested if that GEOSS data should be available for everyone, regardless who the user is. Members such as the US will not be able to hold personally identifiable information. G. Foley suggested that the User Interface Committee (UIC) is also looking into user log-in and User Requirements Registry, and that any log-in system would need to adopt an approach that can be consistently used across all of GEO.

M. Craglia pointed out several opportunities: one is the metrics that could be measurements of the added-values of GEOSS; secondly, clearly for the user it is better to register only once; thirdly, potentially this also opens access to a lot of other data. He suggested that many governments will contribute data as long as it is for non-commercial purposes, which requires some degree of registration. Others thought that GEOSS should not set up a flag that the user is commercial or not, which may give the impression that GEOSS is policing it, and that the user should self-certify.

As a conclusion, it was agreed that GEOSS should not hold personally identifiable data. It was also agreed that the GCI should consider a combined approach of an Open ID type solution and GCI central component solution.

**Action TF3-2:** S. Browdy to draft a guidance document on User Registration for AIP-4.

### 7. Data Tagging and Attribution

S. Browdy gave the presentation on data tagging and attribution (See presentation). He suggested that Data-tagging can presumably be seen as a subset of the issues around data-citation and tracking. A CODATA-ICSTI task group on data citation standards and practices has been created and has recently started work. EEA is also interested in this issue. AIP-3 worked on attribution along with licenses, and specified the CI_Citation ISO 19115 metadata class to be used. In the last Plenary it has been agreed that attribution is not to be regarded as a restriction.

R. Lowson added that EEA is of the view that there should be ways to enable tracing data back to the source. This provides a safeguard in the face of the growing availability of data from GEOSS. Attribution and tagging studies have gone on in many places, such as the CODATA task group. He suggested to look at issues such as how to define the terms, issues, what fields need to be covered, and how to look to these. He noted that this is not just about the Data-CORE, but that it applies to all data registered in GEO, and ideally
as much as possible on the mass of environmental data handled globally.

**Action TF3-3: R. Lowson to share the CODATA project proposal on data tagging.**

M. Craglia pointed out that in the GEOSS context, this issue could be very complicated. Steve Browdy said that this was partly discussed in AIP-3. B. Chen suggested that while the DSTF only has lifetime till next Plenary and the CODATA group is a two year mandate, there could be some discussion, and that P. Uhlir is one of the leaders of the CODATA group. E. Christian said that in IPCC they are working on a system so that one can click on the data and go all the way down to the model used, while the big challenge is to develop taxonomy and put tags on.

M. Gabriel suggested that there is need to address not just citation and attribution for copies or reuse, but also for derivation of new datasets. E. Christian said that it should be made clear in the guidance that the GCI will address just the components and not what to do with the data derived.

R. Lowson suggested that a paper including the meaning of different terms, existing standards, and relevant activities could be presented to Plenary for the work next year. It was further discussed that the AIP-4 should be considered for this issue. The need to check to what extent the Member components at present conform to the standard used in AIP was also pointed out.

**8. Brainstorming Session**

**1) Handling Data with Restrictions**

C. Kawamoto presented on Handling data with restrictions, using the case of the ALOS data of Japan. The ALOS Data policy categorizes data use into 2 groups and RESTEC covers commercial use distribution. After 5 years of operation, the ALOS Data Node framework will expire this week. Commercial use requires payment, and there are certain prohibited uses. IPR and Copyright notice should be made. For research, up to limitation of 50 scenes will be provided. From 1st April, Japan will have a PPP (Public-Private Partnership) scheme for ALOS data, so JAXA itself will have to by data from the private company.

It was generally agreed that many different conditions cannot all be addressed by the GCI, while the GCI could point to them. The GCI could capture the fact that there is a cost, but that the GCI should not capture the actual cost or become the cost broker. The possibility of having a taxonomy of restrictions was also discussed. This could be captured in the registration process (in the questions) which could be a process to define the potential “categories”. There was much discussion around terms such as “minimum cost”, “as few restrictions as possible”, “free” or “not free”. It was also suggested that the number of people who search for price ranges far exceeds those who search for free or not free.

It was suggested to refine the questionnaire to generalize some categories. After some discussion it was agreed that the categories should be kept as simple as:

- Data-CORE – Free
- Non-commercial – free/marginal cost
- Other

Some pointed out that GEO should not enforce the perception that commercial use is unwelcome. Others felt that non-commercial is still somewhat vague. It was also pointed out that we should go to commercial vendors to put a subset of data. Some suggested that all data should be made open to everybody and GEO should have a policy to encourage commercial use of it.

**Action TF3-4:** S. Browdy to refine the questionnaire for data registration based on this discussion.

2) Data Quality

D. Halpern presented on data quality (See presentation). The COSPAR Task Group on GEO examined the Data Sharing Action Plan and recommended that data quality should be a strong attribute of the future development of the Action Plan. He described this in more detail using the cases including global sea level, total solar irradiance, atmospheric carbon dioxide, and others. Quality data attributes include: multiple instruments characterization, calibration, data processing and product generation, interaction with scientific community, continuous vigilance, expert scientific staff, and open and transparent data processing information. COSPAR would like to help DSTF enhance the data quality in GEOSS.

It was suggested that COSPAR could work with the Task QA4EO, STC and CEOSS WGISS/ WGCV. B. Chen said that data quality is obviously one of the justifications of Data Sharing. Some reminded that it is difficult to rule someone out because the quality is not “high” enough, and that it was why the Action Plan wording fell back to “documented”. David Halpern proposed working with the SBAs and the Communities of Practice. M. Maiden felt that the TF could work with COSPAR to see what parts of data quality could come more into GEOSS products. She also said that QA4EO is not addressing including data quality in metadata, and that “documentation” can include quality information. It was suggested that this issue should be discussed at the Work Plan symposium.

**Action TF3-5:** COSPAR to work on defining “documented data” (e.g. whether or not it means to have a metadata field on data quality) for the GEOSS Data-CORE. COSPAR will further interact with other existing groups in the GEO community such as the ADC, STC and the QA4EO Task to explore this cross-cutting issue.

3) Legal Liability

G. Talia, legal counsel of NOAA, initiated the discussions on the potential liability issues relevant to GEO. He explained that the law recognizes (i) natural people and (ii) juridical person, i.e. person created by law, including corporations and public international organizations by multilateral treaties. Juridical persons have legal personality. They can enter into contracts and sue and be sued, having basically the same legal rights and obligations as natural people. He said that GEO is close to an intergovernmental organization while it is not established by a multilateral treaty or document, and therefore it is not a legal person. He further suggested that GEO does not have the right to contract, and that there is a question if GEO can even license people to use data. GEO might be able to make people sign agreements but this will not be binding under law. Therefore he said that GEO does not have much liability exposure.
In answer to what the liability would be for people acting under the GEO, G. Talia said that that the exposure depends on what is being claimed and on what they have agreed to be sued for. He suggested that one potential way to deal with issues is disclaimers, e.g. “We are not going to be liable for any types for damage from the use of data.” If a party or a user signs an agreement with the provider, and then it would be an action between the two of them. Most governments enjoy sovereign immunity whereas organizations or companies may not. However someone will have to claim they were negligent to the standard to care, and so far no one has brought such a case to court in the US. He explained that this kind of loss is very difficult to prove and cost more than the cost of suing and collecting the loss. He did not see any legal problem with the GEO principle that the default position being full and open access unless indicated otherwise.

In answer to questions about liability of provider organizations, he answered that in general things that could lead to liability should be proactively prevented. This could be done by taking common sense measures to reduce exposure, such as giving guidance to providers recommending some level of attachment for users to agree to. On the question of unfair market competition, he said that it depends partially on where the case is brought to. In the US there is no law preventing this, and it is essentially a policy question.

It was asked if a disclaimer that “you are leaving our site you are going somewhere else” might be important, since the default is full and open in GEOSS, but outside it is not. Glenn Talia thought that it is important, so people know that the link is not an appearance of endorsement.

C. Kawamoto said that there are various ways to address these issues, and that for example in Japan copyright does not apply to data, therefore there is a need to enter into contracts with users.

4) Intellectual property, licensing and other frameworks
H. Onsrud introduced the Script for Deciding if a Data Set qualifies to be included in the GEOSS Data Core, Results of a GEOSS common infrastructure search for data that meets a set of specific technical criteria, and Standard Industry-Wide License (see document). He said that up to category 5 in the proposed criteria, it could be made legally interoperable. For the standard Industry–wide license, if industry wants to set up something like this standardized market place, they could, but GEO should not.

It was pointed out that Creative Commons (CC) is not fully vetted for data. It was also noted that US data cannot be copywrited.

M. Carrol discussed that Intellectual Property Rights as being effectively terms of use, if nothing is written then the law tells what to do. The law is national in scope, and there is a hugely varied landscape of data and no standard knowledge of what the rights and terms on use are. Therefore he suggested important points: (1) Provide clarity (2) Standardization/Interoperability (3) Actual terms of the license accomplish the goal.

P. Kishor emphasized that encouraging standardization would be the best added value of GEO. Paul Uhlir
said that databases are constructed by data from different levels and that the challenge is how to reconcile those rights in providing the data to other users. There was further discussion on aggregated data sets being ruled by the most restrictive terms, contract rights only being effective under the two parties, on the GEO definition of “full and open”, and on “as few restrictions as possible”. Other similar schemes such as the Open database license were discussed. It was then suggested that based on the categories proposed, it would be good to have some kind of standardized terms of licenses that would work like CC. It was pointed out that the DSTF has not made any decisions on licenses. It was confirmed that the DSTF will submit recommendations on this matter for the Plenary to make the decisions.

H. Onsrud suggested that the proposal is not condoning CC but just enabling. Within this environment, some government agencies may impose cost of dissemination even though there is no redistribution for use after that. Mike Carrol agreed that the terms of use and access is two separate issues. It was noted that there would be no license for US data.

**Action TF3-6:** The legal group led by H. Onsrud, G. Talia and J. Heninger will draft a proposal on legal terms and disclaimers for consideration by the Executive Committee.

It was agreed to use the AIP-4 to examine the category options and test them, as a basis to the Plenary recommendation. Jeff Heninger suggested that for this level likely it doesn’t need to be CC license, that just some standard statement may suffice.

**Action TF3-7:** S. Browdy will draft a call for AIP-4 using the categories agreed by DSTF.

**Action TF3-8:** P. Uhlir, P. Kishor and J. Gabrynowicz will draft a short (2page) document for an analysis articulating the general problem, issues and benefits of adopting existing or other schemes of licensing to put forward options for the Plenary.

9. The way forwards

The TF went through each Action in the Action Plan:

For Action 1, The GEOSS Data-CORE was extensively discussed, and a Roadmap was produced. On Action 2, while the general view was that there is a need of a continuing TF after 2012, it was decided to revisit this issue based on the discussions at the Work Plan symposium. Action 3 was addressed in meeting. On Action 4, it was agreed to take into account the 2012-15 Work Plan when the draft comes out. In the interest of information and transparency it would be good to inform the Committees of the outcomes of this meeting.

**Action TF3-9:** GEO Secretariat to coordinate a session dedicated to Data Sharing at the GEO Work Plan Symposium in May, in the afternoon before or during the symposium.

**Action TF3-10:** TF to work with GEO Secretariat to establish a list of targeted events (for internal use), in relation to Action 2b of Action Plan.

On Action 5 and 6 – Members to highlight what the members have done on the positive at the next plenary. Individual members to work with their own countries.

**Action TF3-11:** M. Maiden to work with GEO Secretariat to make a package to be sent out to
Members (Principals) to ask of actions taken for national coordination mechanisms and to establish contact. This will be the basis for a report to the Plenary in order to showcase these cases.

Action 7 was covered in the GEOSS Data-CORE and covered documented in data quality. Action 8 was covered with the outreach to events.

**Action TF3-12:** In relation to chapter 4 of the Action Plan, B. Chen will follow up on the Beijing side event by making a publication or organizing events including at the Asia Pacific Symposium.

**10. Outcome, deliverables, Time frame, responsibilities**
Alan Edwards summarized the outcomes of the meeting. (See “Summary” at the beginning of this report.)

**11. Closing**
The TF congratulated Linda Moodie for her outstanding leadership and excellent stewardship as a Co-chair of the Data Sharing Task Force and wished her all the best on her retirement. The next TF telecom was decided to be held on 26 January, 12h00 UTC.
Annex 1: Roadmap for the GEOSS Data-CORE

1) Guidance document on GCI implementation of the GEOSS Data-CORE, addressing at least three user scenarios:
   a) new Data-CORE data are registered in the GCI
   b) data already in the GCI are added to the GEOSS Data-CORE and metadata are updated
   c) catalog providers identify and label GEOSS Data-CORE data in their existing catalogs

   - Circulated to DSTF, GCI team and ADC for input and review **(end of January)**

2) Registration prototypes implemented and tested
   - **Confirm contacts on GEOSS Data-CORE pledge list and identify groups to help test prototypes for corresponding user scenario (end of January)**
     o UK and others TBD for 1a
     o NOAA and others TBD for 1b
     o GCMD, JRC, and UK catalog TBD for 1c
   - GCI team asks component providers (portal, clearinghouse, and CSR) to implement one or more user scenarios according to guidance document **(end of February)**
   - Initial iteration/prototypes for ExCom **(slide or demo ready by mid March)**
   - Testing process continues iteratively including inputs from ADC, UIC, STC **(end of April)**

3) Search and discovery of GEOSS Data-CORE implemented
   - Modifications to clearinghouse to allow users to search on GEOSS Data-CORE tag **(end of April)**
   - Portal modified to display search results (graphic, tag, text) **(end of April)**
   - Add ability to summarize number and volume of Data-CORE holdings **(end of April)**

4) Notification to GEO community about process for implementing the GEOSS Data-CORE
   - Send notice to all members who pledged data in November 2010 about plans for implementing the GEOSS Data-CORE **(first week of February)**
   - Submit report/plan to March ExCom meeting (seen by all GEO community) and suggest that ExCom send out general notice to GEO community **(7 March)**
   - **Session and outreach activities at Asia-Pacific Forum (mid March)**
   - Announce initial operational version of the process for registering data as part of the GEOSS Data-CORE at July ExCom meeting **(end of June)**
   - ExCom invites broad GEO community to register more data in the Data-CORE in run-up to Plenary **(end of July)**
   - **Summary materials on Data-CORE prepared for Plenary (end of September)**
     - **Launch event, exhibit, and other related announcements/activities at GEO-VIII Plenary (mid November)**
### Annex 2: Participants List

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<td>1</td>
<td>Bratina, Vojko</td>
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<td>Browdy, Steve</td>
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<td>Carroll, Michael</td>
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### <WebEx Participants>

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