



**Sixteenth Meeting of the  
GEO Science and Technology Committee  
Novotel, Darling Harbour, Sydney, Australia.  
14<sup>th</sup> – 15<sup>th</sup> April 2011  
Draft Meeting Record**

Annex 1: Agenda

Annex 2: List of Participants

## **1) Introduction**

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- S. Minchin welcomed the STC Members and Co-Chairs for their participation in the Meeting.
- S. Marsh welcomed the STC members from the UK, thanked Australia for its work in organizing the meeting and recalled the STC members that the important Work Plan Symposium (WPS) will be held in Geneva on the first days of May.
- T. Newby welcomed the STC members from South Africa, reporting the apologies from I. Saloojee, who was not able to attend the meeting.
- J. Hoffmann welcomed the STC members from the Germany, recalling that the new GMES European regulation is now coming into force and a thorough and comprehensive discussion about the scientific scope of the Sentinel Mission is now in the Agenda of the European Commission and ESA. The Sentinel Mission is a big opportunity for the research Community and the new strategic programme being developed by ESA should be considered to convey GEO contributions to the GMES programme.
- J. Hoffmann was elected chair of the meeting. The STC members approved a number of changes in the timing of some points in the Agenda due to the necessity of some Co-Chair to attend the ISRSE Conference as Session Chair. The intervention of David Halpern expected on the second day of the meeting was withdrawn.
- S. Marsh proposed to split the WPS discussion among the two days.  
The STC approved the proposal of S. Marsh.
- The STC approved the minutes of the 15<sup>th</sup> STC meeting held in Rome on September, 2010.

## **2) Action Items list**

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- 13-10 cancelled (overtaken by the event).
  - 13-22 Open
  - 13-23, 13-24, 13-30 Closed. No response from the PoCs. S. Marsh proposed to consider closed the Actions and to discuss on these topics during the Geohazard Community of Practice Workshop.
- ***Action STC16.01: S. Marsh and H.P. Plag to report to the 17<sup>th</sup> STC meeting about the discussion relevant to the (closed) Actions 13-23, 13-24, and 13-30.***
- 14-05 Closed. H.P. Plag reported there is a high level of activity. There are 2 NASA and 1 ESA project along with the EC FP7's EGIDA and GEOVIQUA projects that are running in the same direction. The STC is trying to coordinate the efforts.
  - 14-06 Closed. H.P. Plag clarified that the Work Package 5 of the EGIDA project is working on an outreach concept paper. The action has to be considered under process.
  - 14-09 Closed. S. Minchin reported that the situation with Australia now seems different since the data is coming into the archive again.
  - 14-10 Closed.
  - 15-07 Closed.



- 15-08 Open. S. Nativi is working on this with L. Ciccarese (ISPRA, Italy).

The STC approved the list of closed Action Items.

### 3) STC input to the 2012-2015 WP

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J. Hoffmann presented the structure of the new GEO Work Plan and the process for its approval. He suggested separating the discussion on the WP into two phases: a general discussion on the WP structure and its related management aspects, followed by a separate discussion on the WP contents.

The STC approved the proposal.

J. Hoffmann proposed to have a first general discussion on the contents followed by the analysis of the single Task (Service) of the new WP.

#### General Comments on the WP contents.

S. Minchin pointed out that the Version 0 (V0) of the new WP does not make any specific mention of the Science and Technology role in GEO and GEOSS.

H.P. Plag expressed his concern for the new structure of the WP since the current structure of the tasks seems to be overtaken and rebuilding new Task teams and Communities of Practices could take years.

J. Hoffmann recalled that the new WP should be seen as an opportunity to integrate new activities in the work done so far within the Task ST-09-02.

H.P. Plag noted a similar approach based on the so called “Overarching tasks” had been implemented in the current WP and did not appear to work.

R. Lefevre warned the STC of what might happen with the SBA teams in the new structure, since they could disappear from GEO.

Both J. Hoffmann and S. Minchin agreed on this and reported that the relationships with SBA must be clarified. S. Minchin proposed to have another category of Information Service relating to specific SBAs.

H.P. Plag reported that the new structure seems to be weakly user-oriented whereas, on the contrary, it was built upon a “provider driven” vision of GEO.

J. Hoffmann summarized the discussion into the following points:

- 1) STC expressed its expectation in having an additional level of detail both structural and in terms of contents.
- 2) The scientific elements of the tasks could be brought forward. The WP needs to better clarify on the methodology needed to obtain the services reported in its structure.

#### Recommendations

- STC recommends main contributors (responsible implementing organizations) should be indicated in the new WP.
- The STC asks the GEO Community to have a further discussion on how to review the S&T soundness of the Tasks and, eventually, to include these findings in the Terms of Reference.

#### Specific Comments on the WP' ST contents.

##### IN-01 GEOSS Common Infrastructure

J. Hoffmann and S. Marsh pointed out the lack of a test and validation mechanism in the Task and, in general, the absence of a list of specific measurable, achievable, realistic and timely deliverables.

J. Hoffmann noted that the ST Review elements should be also considered in the task.

The STC noted that a validation deliverable for the task should be considered in the WP.

##### IN-02 Earth Observing Systems

S. Minchin and J. Hoffmann noted that IN-02 is not addressing a specific task in GEOSS, while it will focus



on the individual components system building GEOSS. IN-02 should emphasize the integration of Earth Observing Systems.

R. Lefevre expressed his wish to see a map between each Task and the SBA they are supporting.

#### Recommendations

- Change the title of the task in Integrating Earth Observations Systems
- There should be an additional deliverable for gap analysis and continuity.

#### IN-03 Earth Data Sets

S. Minchin reported his concern on the scope of this Task, since it is not clear to what extent it is focused on datasets or on the products created from global datasets.

#### Recommendations

- Change the title of the task in Global Data Sets.

#### IN-04 GEOSS Communication Networks

#### Recommendations

- Optical datalink (satellite to satellite) should be added in the Task definition.
- The connections between Tasks IN-04 and IN-01 should also be highlighted.

#### IN-05 Gap Analysis

The deliverables of this Task should be in line with the work done so far through the Gap Analysis.

#### Specific Comments on the WP' ST contents.

- ***STC16.02: The STC to send specific comments on the Work Plan before the WP Symposium (4-6 May, 2011)***

#### **4) Keynote speech: Agriculture (M. Grundy)**

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M. Grundy noted that the soil community is not benefitting enough from its involvement in GEO and, vice versa, the SBAs in GEOSS are not taking advantage from the Soil Community.

M. Grundy, on behalf of Global Soil Map (GSM) expressed his interest in increasing the involvement of GSM within GEO and, in general, the EO community.

The STC congratulated M. Grundy for his presentation and expressed their wishes for a more strength involvement of the Soil Community in the new Work Plan.

#### **5) SBA review: Agriculture (I. Becker-Reshef, M. Grundy)**

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##### **Tasks AG.07.03(a, b, c): Global Agricultural Monitoring**

The STC is please to note the work done so far in the tasks. However, the only active task is AG.07.03a, whereas the other two tasks seem scarcely active with little interactions among them. The STC also noted the need for enhancing the scientific interest in the SBA rather than its operational applications. The STC stressed the importance of Agriculture SBA as a strategic area for GEO, whose direct and indirect effects on



all the other SBAs of GEO (Energy, Climate, Ecosystems, Water, Disasters and Health) are apparent.

#### Recommendations

- The STC suggests considering also the impacts that agriculture and production have on society and economy and vice-versa.
- The STC hopes FAO will become more engaged in the Task activities.

#### **Task AG.06.02: Data Utilization in Fisheries and Aquaculture**

The STC is pleased to note the work done so far in the task.

#### Recommendations

- The task should consider broadening the task participation that now is mostly from North America.
- The STC suggests involving in the task new organizations with substantial capability and funds. World Fish and SIGRA (??) could be considered as valuable options in this direction.

- **Action STC16.03: The ST-09-01 Task Lead to follow up with the Fresh Water group to clarify if and how integrate its contribution in the new Work Plan of GEO.**

#### **Task DA.09.03a: Global Land Cover**

The presentation on Global soil data given by M. Grundy on behalf of CSIRO provided STC with a detailed description of the work ongoing under the Task. According to the presentation, although soil provides the basis of the most important physical, biological and chemical processes of our planet, soil data sets remain very patchy and inconsistent and the need to set up a global dataset is even more important and needed by the scientific community. Furthermore, according to M. Grundy, soils seem peripheral in the new WP of GEO as, probably they should consider as a system instead of a simple dataset (see IN-03). The STC accepted the progress of the task and, particularly, appreciated the way used to communicate the task results through peer-reviewed papers on international journals.

S. Minchin suggested to foster the use of satellite data in the Task; both optical and RADAR data should be considered for this scope.

#### Recommendations

- The STC hopes FAO will become more engaged in the Task activities.

### **6) STC roadmap (J. Hoffmann)**

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6.1 The STC accepted the new updated roadmap.

6.2 GEO Science and Science report and the 2012-2015 WP.

J. Hoffmann reported that ESA (Mike Rust) will not be present at the WP Symposium in Geneva. For this reason, the STC has to capture in a concept paper the main relevant recommendations from the Science and GEO report and distribute it before the WP Symposium for comments and suggestions.

- **Action STC16.04: R. Lefevre and H.P. Plag to distill in a document the main relevant recommendations derived from the ESA's Science and GEO report and to circulate it among STC before the WP Symposium (04/05/2011).**

6.3 Develop a process that enables GEO to play a role in developing continuity priorities.

K. Fontaine reported that this action is not in ST.09.01, since the task was supposed to collect from the Task leads what are the continuity requirements (indicators).



S. Marsh reported that in the EGIDA project there is a specific activity that has sorted inputs from various people.

J. Hoffmann concluded that the activity will be accomplished through EGIDA including some outputs from the strategic gap analysis.

6.4 Responding to ST needs and priorities. Propose a process for communicating scientific priorities in EO.  
J. Hoffmann proposed to discuss this action during the ST.09.01 presentation.

#### 6.5 GEOSS Citation standards

H.P. Plag presented the document he prepared for a proposal on GEOSS Citation standard. The document reports a lot of technical details and should be considered as a first draft to open the discussion between the GEO main Organizations. There are several issues that remain open such as reproducibility and quality control that are not considered in the current version of the document. The document proposes IPY data citation standard as interim solution to implement a first version of the GEOSS citation standard.

H.P. Plag reported that no single citation existing is able to solve the issues posed by GEOSS.

R. Sayre reported that USGS publishes the data only after the data have been published in peer-reviewed papers. In this case the citation refers to the publication.

S.I. Khalsa reported that NASA also always reference the paper because the data must be validated prior its dissemination but there was also a citation of the dataset per se.

- *Action STC16.05: the STC to take Citation Standard forward and share the process with the broader Committees and the Executive Committee.*
- *Action STC16.06: the STC Co-Chairs to prepare a proposal for ADC to implement the citation standards within the GCI.*

#### **7) Presentation on Sensor Web (I. Simonis)**

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The STC thanked I. Simonis for the informative presentation.

#### **8) Report on Task ST-09-01 (K. Fontaine)**

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K. Fontaine reported that the EC co-lead went vacant and has been assigned to an EGIDA representative (S. Marsh). Furthermore, ESA withdrew as task co-lead.

No final decision on private sector has been taken by the task since an endorsement from the GEO Executive Committee is needed for this.

K. Fontaine reported that a Task teleconference has been scheduled for April, 26 whose goal is to get a final schedule of all objectives assigned, including the EGIDA objectives.

Another point to be discussed during the teleconference will be the status of the Forum and how to combine it with EGIDA.

Furthermore, the task is looking very forward to receive data from the SBA reviews along with guidance on the private sector issue.

S. Marsh suggested making available the data relevant to SBA reviews through the task web-site as it was done for the Disasters review.

#### **9) Report on Task ST-09-02 (H.P. Plag)**

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H.P. Plag reported that the list of major scientific research enterprises is substantially stalled because the lack of resources. EGIDA has started an initial list and now the need is to sort out a consistent list in line with the Task objective.

The GEO label is being discussed within the GEO Community. One major issue is the coordination of this activity, since there are 2 concurrent EC funded projects (EGIDA, GEOVIQUA) that are addressing labeling.



J. Hoffmann reminded that STC did a proposal at the Joint Committees meeting in May, 2010. The decision was that STC made a proposal on GEO Label to be presented to the Plenary.

J. Hoffmann proposed to continue working on the original proposal based on the draft that H.P. Plag prepared avoiding the preparation of new parallel proposals.

S. Minchin pointed out that the paper prepared for GEO Label was substantially driven by political concerns.

S. Minchin and S. Marsh suggested to explore some other ways or processes to define a GEO label, perhaps the work conducted through GEOVIQUA and EGIDA could be beneficial.

H.P. Plag argued that the proposal would not be available for the 2011 Plenary.

S. Minchin proposed having a discussion paper on GEO label prior the Joint Committees meeting in September, 2011.

- **Action STC16.07: the STC to prepare a discussion paper prior to the Joint Committees meeting before taken outside this action.**
- **Action STC16.08: J. Hoffmann to contact one EC officer to discuss the connections between the work done so far for GEO Label through ST.09.02 and the EC projects EGIDA and GEOVIQUA.**

H.P. Plag reported that activities on outreach are stalled. EGIDA could help on this.

S. Minchin raised the need to have a catalogue of GEO presentations and slides available for outreach activities. The GEO Secretariat will go through this request.

H.P. Plag reported on the activities to promote a transition from research to operational through GEO.

J. Hoffmann recalled that the Task has not to be considered as a project, rather it is a shell and the best the STC could do is to identify a path to get there, not to propose how to reach the process.

The activity relevant on the list of scientific conferences is ongoing. Request to STC to submit information on main conferences wasn't successful.

#### **9) Update on EGIDA Project (S. Marsh)**

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S. Marsh presented the activities ongoing through the Work packages of EGIDA.

EGIDA together with ST.09.02 has drafted a GEOSS data citation standard.

The GEO label developed through EGIDA will contribute to a European perspective on the necessary certification on EO products.

As per the master plan for scientific sessions, EGIDA has initiated a QUEST initiative.

EGIDA will host a national use cases workshop to be held in Rome the 18 and 19 of April, 2011. The outcomes of the workshop will be brought in GEO. The workshop will also help in designing the EGIDA methodology.

#### **10) Update: GEOSS Gap Analysis Strategy (S. Minchin)**

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S. Minchin clarified that the gap analysis has to be considered as a task or evaluation team and seems very different from the M/E methodology which is mostly interested in the strategic assessment.

R. Dargaville expressed the willingness of the Carbon CoP to have a representative engaged in the Gap Analysis process.

#### **11) GEO Task EC-09-01a (Global Ecosystem Mapping) (R. Sayre)**

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R. Sayre presented the main activities and outcomes from the Task, whose goal is to map standardized terrestrial ecosystems of the planet. The maps relevant to South America, US, Africa, and Europe have been eventually produced through the task. The maps are unstandardized in spatial resolution.

H.P. Plag proposed to use the maps as compelling examples for task ST.09.02.

#### **12) Draft Task Management Board Discussion**

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S. Minchin motivated the discussion on the two options for creation of Task management boards options outlined in V0 of the GEO 2012-2015 Work Plan by making the following observations:



1. Disband current Committees and form new boards. Membership of boards (under both models) limited to Task leads plus Secretariat and Chair/coordinator.
2. Does this model allow the smaller science and technology organisations or members in GEO to have a voice? Should they have a forum or pathway to engage beyond the annual Plenary (the Committees have been the way to do this in the past)?
3. Is there sufficient focus in the new Work Plan and its management arrangements on Science and Technology?
4. Traditionally boards are somewhat independent: is there a conflict if everyone (almost) in a board is a Task lead? Where does independent review occur?
5. Will this lead to greater coordination and effort on the part of the Task teams?

H.-P. Plag commented that he found both management options set a negative tone in that it makes board membership exclusive, thereby eliminating the cross-cutting approach to GEO. For example, under the proposed management structures, Communities of Practice would be cut out of the process since they do not have a voice at Plenary and thus rely on Committees to provide input. Similarly, scientific communities would no longer find a way to connect into the GEO process with only governments and Pos are represented in Plenary, and task leads in management. R. Lefevre noted that the proposed management structures would eliminate a lot of voluntary work since greater commitments would be required. It could well be the case that individuals agree to lead a task, but asking them to take the additional step of active management might be beyond the scope of feasibility.

J. Hoffmann took a different perspective by noting that Task Leads are often more closely linked to resource providers and it would thus make sense to have them involved in management. S. Marsh felt that there was some degree of ambiguity since the management proposals – as presented in the draft Work Plan – did not provide enough detail to make an informed opinion. For example, is there an implication that the Task Coordinators would be resourced by Members and/or POs in GEO? If so, this needs to be spelled out, as well as other implications that may not be readily apparent. T. Haigh cautioned that there is a big difference in going from “committee” to “management board,” with the latter being more top-down in approach. Without the more open forum that a committee presents, there is a risk of losing the cross-cutting dimension such that activities may develop in parallel. T. Newby (speaking on behalf of I. Saloojee) raised again the question of what mechanism was envisaged to resource the management boards. Additionally, he remarked that, among other things, GEO provides a networking resource through the Committees, an important function. This facet of GEO is separate from management, and would therefore largely disappear with the dissolution of the Committees. S. Marsh concurred that the networking aspect is also important and was an added value of GEO: we must be careful to preserve it.

K. Fontaine warned that there were deeper issues at stake in terms of GEO governance: by implication, the proposed management boards would change the structure of the way in which GEO operates by severely reducing the volunteer component and limiting input from Members and POs who cannot provide more than intellectual contributions. She noted that the number 1 response regarding the attractiveness of GEO from a user survey (conducted under the supervision of Max Craglia [JRC] with over 80 responses), were its openness and networking aspects. However, under option 1 of the management boards, the cross-cutting dimension of GEO will have disappeared, which would necessitate the addition of a deliverable to each Task with a focus on fostering cross-cutting activities. H.-P. Plag further commented that GEO would be turned into a corporate structure with the new management boards, rendering it un-democratic. Further, what would be the interest or incentive of smaller stakeholders such as small island states to join GEO? This type of exclusive management would not be conducive to the volunteer spirit of GEO.

D. Cripe reminded the group that the GEOSS Monitoring and Evaluation Midterm Assessment had singled out the apparent lack of coherent management structures in the current Tasks as inhibiting GEOSS implementation, and the new management boards were an attempt to respond to this criticism. K. Fontaine agreed that the new structures were intended to focus on achieving targets, and creating visibility for Tasks.



However, in light of the negative ramifications discussed, she suggested a better approach would be to revise all Committee Terms of Reference and enable them to take on a greater management role, rather than seek a “one-size-fits-all” solution. This would allow flexibility in Task management since some Tasks lend themselves more easily to management than others. D. Cripe responded by noting that GEO had already tried the Committee management approach with previous Work Plans and - by most accounts - that had not proven successful. Moreover, 2015 is fast approaching and rewriting the ToRs of all Committees might be a lengthy process, further delaying GEOSS implementation. What would be different this time around, going back to the Committee-driven management approach?

J. Hoffmann disagreed with the majority of views expressed during the discussion. He did not find that the proposed management structures would lead to a loss of networking and the end of GEO. The networking activities would still carry on through the active work of the Communities of Practice. Rather, he views this is an attempt to better manage the Work Plan in response to the criticisms that have been voiced, and presents strategic approach to what GEOSS should be.

S. Minchin observed that there are other ways to improve Task management, such as a hybrid model in which Committees would be maintained for networking purposes and cross-cutting issues, while a Work Plan Committee could be created to handle Task management. S. Marsh observed it was thanks to the Committees that deficiencies in Task management had been uncovered, and it would be ironic to find the Committees themselves dissolved as a consequence. K. Fontaine reiterated her view that a more rigid management structure imposed on a best efforts, voluntary enterprise will result in decreasing involvement.

S. Marsh concluded the discussion by noting concerns of varying degrees of seriousness had been raised by the majority of the Committee, but that there were strong dissenting views as well. Moreover, ambiguities in the proposed management structures which made it difficult to fully grasp the ramifications of dissolving the Committees in favor of the management boards. Therefore, the STC will not provide a consensus view at this point. Rather, this discussion will be circulated to all Committees prior to the GEO Work Plan Symposium as the STC position, with an attempt to forge a post-Symposium consensus view on behalf of the STC for submission to the Secretariat prior to the Technical Review deadline of 26 May 2011.

**Action STC16.09 :** Secretariat to draft STC discussion on **GEO 2012-2015 Work Plan Management** and circulate by **20 April** to STC members for comment; STC members to provide remarks back to Secretariat by **27 April**.

**Action STC16.10:** STC members to provide thoughts/comments/concerns on **GEO 2012-2015 Work Plan Content** to S. Minchin by **27 April**.

**Action STC16.11:** Secretariat to compile Work Plan Content and Management drafts into STC Position paper for distribution to all Committees by **28 April**.

**Action STC16.12:** S. Minchin to organize STC gathering to discuss position paper on the eve (Tuesday, 3 May) of the Work Plan Symposium. (STC members who have indicated attendance at Symposium: S. Minchin, S. Marsh, S.-J. Kalsa, K. Fontaine, H.-P. Plag, T. Kutser, T. Newby.)



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14<sup>th</sup> – 15<sup>th</sup> April 2011**

**Annex 1: Agenda**

Thursday, 14th April 2011		
Time	(Chair: )	Supporting Document
09:00 – 09:30	<b>Arrival and Registration</b>	
	<b>1. Introduction</b>	
	Welcome by the host (CSIRO)	
	Welcoming remarks (Co-Chairs and GEO Secretariat)	
09:30 – 10:00	Round table of introductions	
	Approval of 15 <sup>th</sup> STC Meeting Record	15 <sup>th</sup> STC meeting record
	Adoption of the Agenda	16 <sup>th</sup> STC meeting Agenda
10:00 – 10:30	<b>2. Status of actions</b> ( <i>GEO Secretariat</i> )	STC Action Item List
10:30 – 11:00	<b>Break</b>	
	<b>3. Task reports</b>	ST-09-01 task sheet
	<b>Report on Task ST-09-01</b> ( <i>K. Fontaine</i> )	Proposed actions for STC
	<b>Task ST-09-02</b> ( <i>H.P. Plag</i> )	ST-09-02 task sheet
11:00 – 12:30	<ul style="list-style-type: none"> <li>• <i>Task Report</i></li> <li>• <i>GEOSS Citation Standard</i> (request for action from STC)</li> </ul>	Proposed actions for STC
	<b>Update on EGIDA Project</b> ( <i>S. Nativi</i> )	GEOSS Citation Standard
		EGIDA progress report
12:30– 13:30	<b>Lunch</b>	
	<b>(Chair: )</b>	
13:30 – 14:30	<b>4. Keynote Speech: Pathways to effective, global soil information</b> - <i>Mike Grundy, CSIRO</i>	
14:30 – 16:00	<b>5. SBA Theme Review Session: Agriculture</b>	
	AG-07-03(a,b,c): Global Agricultural Monitoring: Presenter: Inbal Becker-Reshef	AG-07-03(a,b,c) task sheets



16:00 – 16:30	<b>Break</b>	
16:30 – 18:00	<b>5. SBA Theme Review Session: Agriculture</b> (cont) AG-06-02: Data utilization in fisheries and aquaculture (Presenter TBA) DA-09-03e Global Soil Data ( <i>Mike Grundy</i> )	AG-06-02 task sheet DA-09-03e task sheet
18:00	<b>Adjourn</b>	

Friday, 15th April 2011

<b>Time</b>	<b>(Chair: )</b>	<b>Supporting Document</b>
09:00 – 10:00	<b>6. STC Roadmap</b> ( <i>J. Hoffmann</i> )	<i>STC Roadmap Implementation Status Report</i> <i>STC Roadmap Annex 1</i>
10:00 – 10:30	<b>7. Sensor Web Developments</b> ( <i>Ingo Simonis</i> )	
10:30 – 11:00	<b>Break</b>	
11:00 – 13:00	<b>8. STC Input to 2012-2015 Work plan</b>	<i>Work Plan V0</i>
13:00 – 14:30	<b>Lunch</b>	
	<b>(Chair: )</b>	
14:30 – 16:30	<b>9. Reports</b> <b>Update: GEOSS Gap Analysis Strategy</b> ( <i>S.Minchin</i> ) <b>COSPAR Data Quality Study</b> ( <i>Dave Halpern</i> ) <b>GEO Task EC-09-01a (Global Ecosystem Mapping)</b> ( <i>Roger Sayre</i> )	<i>GEOSS Gap Analysis Strategy</i> <i>EC-09-01a task sheet</i>
16:30 – 17:00	<b>Break</b>	
17:00 – 17:15	<b>10. AOB</b>	
17:15 – 17:45	<b>11. Meeting Conclusions</b>	
17:45	<b>Meeting Close</b>	

**Annex 2: Participant List****Participants in 16th meeting of the GEO Science and Technology Committee  
14-15 April 2011, Sydney, Australia**

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