

# (Draft) Minutes of SWWT meeting # 20

**Date and time:** 17 November 2006, 14:00-16:30

**Location:** Royal Library of Belgium, Brussels

## Agenda:

1. Welcome
2. Agree agenda
3. Brief review of SWWT actions
4. Discuss matters arising during ESWW3, e.g.
  - News and key issues from the SWWT topical groups
  - SW discussions with EU
5. Discuss proposed SWWT resolutions
6. Date and place of next meeting
7. AOB

## 1 Welcome and agenda

MH welcomed everyone to the meeting. He noted that this was a short meeting - and that attendance was limited, due to many people having to leave before or during the meeting to catch trains and planes. He proposed a short agenda that focused on some key issues. This was agreed.

## 2 Brief review of SWWT actions

In view of the limited time this focused on those open actions which would most benefit from a short timely discussion. These were reviewed as follows:

- M17/13** Examine the possibility of associating European outreach SW activities with SEC outreach activities  
Open. Barbara Poppe has not been replaced as SEC outreach coordinator. Bill Murtagh is most appropriate contact at SEC.
- M18/3** Define as soon as possible a date for a SDA community meeting (D. Heynderickx and M. Menvielle).  
Closed. Superseded by M20/1 – see below.
- M18/11** Take advantage of IHY to start new long term monitoring such as the monitoring of solar radio flux, signature of CMEs, shocks, SEP, ... from a network of multi-frequency radio telescopes (SW radioscientists, January 2006 European IHY meeting)  
Open.
- M19/1** AG and MH to revise terms of reference and circulate to members.  
Closed. Circulated ahead of SWWT #20.
- M19/2** MH to include launchers in the TG for spacecraft and aircraft environments and seek suitable members.  
Open
- M19/5** TBD to explore how to set European user group for dissemination of ST data from SWARM.  
Open
- M19/6** MH to report on 30 June meeting at EU.  
Closed - oral report at SWWT #20.

It was agreed to close action M18/3 and create a new action focused on future of the SDAs. The topic of the meeting would incorporate the upcoming verification and validation activities in the context of the SWENET power maintenance phase.

*AI M20/1 MH and AG to contact PB and email SDAs to assess who would be interested in a next phase joint technical meeting of SDA community.*

### **3 Updated SWWT Terms of Reference**

MH presented the updated terms of reference that had been circulated shortly before ESWW3 (see his presentation as attachment 1). It was agreed to keep SWWT as an ESA body but open to non-member states. The main open issue is to specify the membership of the steering board. It was agreed to ask the existing SWWT Executive Group (provisionally acting as an embryonic steering board) to consider this when it meets in the new year. It may be easier to formalise the SB through the ESA process and not the entire SWWT group.

*AI M20/2. MH and AG to raise SB membership at next meeting of Executive Group.*

The other changes to the Terms of Reference were minor editorial issues (deletion of “private” before “company”).

### **4 Matters arising during ESWW3**

#### **4.1 News and key issues from the SWWT topical groups**

##### **4.1.1 Ionospheric Effects**

Jan Lastovicka reported on behalf of Lili Cander, who had to attend the parallel session on DIAS (see attachment 2 for his presentation). The key issues arising from the group’s meeting during ESWW3 are:

- Strong interest to participate in space weather infrastructure proposals to ESFRI and FP7, e.g. ground-based ionospheric measurements, especially the ionosonde network, but also GPS and riometers.
- Plans for joint analysis of ionospheric effect of the November 2003 events over European sector (coordinator – Boška, supported by Cander). The results could appear on SWENET and will be submitted in paper form to a refereed journal.

In the discussion on the report it was agreed that discussion on the cost benefit analysis report should be continued via email, as in other topical groups.

##### **4.1.2 Education, Outreach and Emerging Markets**

Norma Crosby gave a short oral report on the group’s activities, e.g. the organisation of outreach sessions at recent meetings of EGU and Europlanet. She noted that these European events often attracted more interest from the US space community than from the European. She asked that people provide her with brief notes on their outreach activities so that ideas and, where appropriate, supporting material could be exchanged for mutual benefit.

The recent acceptance of the SWEETS proposal for funding under FP6 as a Specific Support Action in the context of European Science Week 2007 was noted. This will be primarily an educational project involving several SWWT members and led by the University of Greifswald.

In discussion Mike Hapgood noted that a theme emerging from this and other recent meetings was the need for outreach towards the engineering community. This would help to build a European user community that is engaged with space weather. One concrete example may be the spacecraft engineering training course run by ESA. It was agreed that the ESA representatives would investigate what space weather material is currently incorporated into this course and whether this could be elaborated and/or updated.

*AI M20/3. ESA representatives to contact Steve Gabriel re. the Spacecraft Engineering training course run at ESA as a form of space weather outreach.*

### **4.1.3 Ground Effects (GIC, prospecting, tourism)**

Alan Thompson presented the report as new spokesperson of this group. He thanked his predecessor, Risto Pirjola, for his work in setting up and running the group. The key issues arising from the group's meeting during ESWW3 are:

- Plans to update the group's web site, which is managed by Magnus Wik at IRF Lund (see <http://www.lund.irf.se/HeliosHome/groundeffectstg.html>).
- A proposal to add a good description of ground effects to Wikipedia as an extension to its present space weather entry ([http://en.wikipedia.org/wiki/Space\\_weather](http://en.wikipedia.org/wiki/Space_weather)).

The cost benefit analysis report was raised in subsequent discussion. Comments on the CBA report from the ground effects community are strongly encouraged, indeed are important, because of the high benefit identified in this area. It will be very valuable if the community can provide evidence to support the CBA report.

### **4.1.4 Spacecraft, Launcher & Aircraft Environments**

Eamonn Daly reported on behalf of Alain Hilgers, who could not be in Brussels on the Friday. Key issues arising are:

- The change of name to include launcher as well as spacecraft and aircraft environments.
- The change of spokesperson to Angelica Sicard-Piet (ONERA) with Keith Ryden (QinetiQ) and Eamonn Daly (ESA) acting as deputies.
- There is continuing growth of SDAs in this area. In particular, it is hoped that an SDA will be established to provide space weather support for Ariane 5 launches.
- The group is making efforts to establish access to new datasets relevant to its work: the space environment package on METOP and radiation belt data from Giove.
- The group provided several comments on the proposed SWWT resolutions (see below).
- The group noted that launchers may also require space weather support to address upper atmospheric effects and that the topical group related to this should be re-activated.

## **4.2 SW discussions with the EU**

Mike Hapgood reported on two meetings with staff from the Commission (see attachment 1):

- a. A small group visited Brussels on 30 June and met with staff from the Space Policy Unit. The discussion focused on the FP7 space theme as that was under the responsibility of the policy unit. It was noted that other FP7 issues (security theme, research infrastructures) are dealt with elsewhere. The key message from the meeting was that, in order to progress space weather under the space theme, it is important to address the question of how space weather affects agreed EU space objectives (in particular GMES, which will dominate the budget).
- b. A splinter meeting with a representative from the research infrastructures area of the Research DG had been held on the afternoon before SWWT (16 Nov). This involved a number of ESWW3 attendees and was very stimulating. The SWWT was encouraged to develop ideas on

space weather infrastructures, to submit a project outline to ESFRI and to propose for FP7 infrastructure calls. A space weather proposal to ESFRI (European Strategy Forum for Research Infrastructures) would be very valuable in raising awareness. The FP7 infrastructure programme will include calls for bottom-up proposals; such proposals will need to include elements of infrastructure, of research to develop that infrastructure and of trans-national access. This could be very suitable for space weather. The first call would be in 2008, so there is adequate time to build a proposal if we start now.

Mike Hapgood also noted that there had been a further short splinter meeting about FP7 on the evening of 16 November. This had been moderately well attended but some people had missed it because of the plenary session overrunning. The main outcome was a plan to organise a full-day brainstorming meeting early in the New Year under the joint auspices of SWWT and COST 724. Mike Hapgood took an action to publicise the proposed meeting, via the SWWT mailing list – in particular to inform people who missed the FP7 splinter.

*AI M20/4 MH to publicise FP7 brainstorming meeting*

## 5 SWWT resolutions

Mike Hapgood reported that the previous SWWT meeting had agreed that SWWT should develop and adopt formal resolutions as one of the methods by which it could influence decision-makers with respect to the development of space weather activities. MH presented four resolutions for consideration by the meeting:

1	<i>To maintain awareness of space weather conditions, and to progress the science underpinning our understanding of space weather, it is essential to carry out long-term monitoring of the space environment, using an appropriate mix of space-based and ground-based sensors. This dependence on long-term monitoring is characteristic of the environmental sciences. The Space Weather Working Team therefore recommends that European funding agencies should consider space weather and its underpinning science as part of the environmental sciences.</i>
	This resolution provoked much discussion and it was agreed to defer consideration until the next SWWT meeting – to allow time to refine the resolution ahead of that meeting and promote wider discussion. Key issues to consider are: a. the link with the underpinning science: e.g. should solar physics and solar-terrestrial physics be explicitly mentioned in the resolution? how will this approach impact on solar physics and STP in the various national and international funding domains across Europe? b. who are the targets of the resolution? Should it be all relevant European and national funding agencies? c. Include the term “situational awareness”
2	<i>National space weather programmes are now developing in several countries - especially in Germany, Belgium, Italy and France. The Space Weather Working Team welcomes these developments and recommends that ESA, through its R&amp;D or other actions, supports European coordination of these national activities, e.g. by ensuring maintenance of coordination tools such as SWENET.</i>
	This resolution was approved subject to the removal of the example at the end, i.e. finish with “national activities”.
3	<i>A key factor controlling most space weather phenomena is the state of the solar wind, including its embedded magnetic field, that impacts the Earth's magnetosphere. Upstream monitoring of the solar wind and magnetic field (e.g. at the L1 Lagrangian point) is critical for many space weather services and also for studies of the underpinning science. The Space Weather Working Team therefore recommends that the relevant agencies (NOAA, ESA, etc....) consider a follow-</i>

	<i>up to the current provision based on the aging NASA Advanced Composition Explorer spacecraft and the associated data infrastructure established by NOAA.</i>
	This resolution was approved subject to (a) changing the list of relevant agencies to “ESA, EUMETSAT, NOAA, national agencies, etc”, and (b) changing “consider a follow-up” to “implement a follow-up”.
4	<i>Space weather is potentially of wide interest outside the expert community. For example, it is important to raise and maintain awareness of space weather effects among the engineers and managers responsible for the many systems affected by space weather. Experience suggests that effective awareness requires repeated training at intervals of no more than two years. Space Weather Working Team therefore recommends that more effort be put in education and outreach based on space weather activities.</i>
	<p>This resolution also provoked lively discussion and was deferred until the next SWWT meeting. Key issues to consider are:</p> <ol style="list-style-type: none"> <li>Splitting this into two separate resolutions: one targeted on technical training for engineers and managers whose tasks are impacted by space weather, and the other targeted on education (i.e. at university and school levels).</li> <li>Who should be the target of the resolution? This would be facilitated by the split above.</li> </ol> <p>In addition the following editorial comments were made:</p> <ol style="list-style-type: none"> <li>Remove the first sentence and “For example” as these are superfluous.</li> <li>Change “Experience suggests” to “Experience shows”</li> <li>Change “based on space weather activities” to “related to space weather phenomena”.</li> </ol>

It was agreed that it would also be desirable to develop resolutions on development of virtual observatories for space weather (as recommended by the spacecraft, launcher and aircraft environments topical group) and on the future of SWENET. These should be drafted ahead of the next SWWT meeting for consideration at that meeting. Eamonn Daly agreed to draft a resolution on virtual observatories. The SWENET resolution should take account of forthcoming discussions on the space weather cost benefit analysis produced by SEA.

*AI M20/5 ED to draft resolution on virtual observatories*

*AI M20/6. MH to draft resolution on SWENET following next SWWT Executive Group meeting*

## **6 Date of next meeting**

It was agreed that the next meeting should be a standalone event and take place in early/mid May 2007 so that its outcome can feed into the infrastructure discussions planned at the European IHY general assembly in Torino on June 18-22.

*AI M20/7 MH to decide and announce date and place of next meeting.*

## **7 AOB**

None

V2, 04 December 2006