

17th SWWT MEETING

26 APRIL 2005

AGENDA

1. Welcome
2. Adoption of the agenda
3. Action reviews from previous meetings
4. Review of the outcome of the Brussels meeting (F. Lefeuvre)
5. EU tools to be investigated: ERA-NET, Specific Support Actions (P. Gille, M. Hapgood)
6. Contributions to eGY, IPY and IHY (sciences: M. Candidi, SW services A. Glover)
7. Reflections at ESA (A. Hilgers)
8. Status report on COST 724 (J. Liliensten) particularly for WG4 (F. Jansen, M. Candidi)
9. MuSTAnG (F. Jansen), ARR M Gausa
10. Activities of Topical teams (spokepersons)
11. ESWW-II status (J. Liliensten)
12. Cosmic vision paper (M. Menvielle)
13. Next SWWT
14. AOB

1. Welcome

A presentation of the Austria Academy of Sciences building was made by Bruno Besser.

2. Adoption of the agenda

A new point (point 9) was introduced in the original agenda

3. Action reviews from previous meetings

M16/1 To introduce SW topics in documents to be sent by Member states to prepare FP7 (All)

Action to be continued when the work programmes will be issued.

M16/2 To organise a meeting with officers from the European Space policy unit and GMES officers (P. Gille, F. Lefeuvre)

Action closed 3rd March 2005, see point 4 for meeting report.

M16/3 To organize with E-STAR a meeting on SW & long term phenomena (F. Lefeuvre, M. Candidi, J. Liliensten)

A section on that topic could be envisaged to take place during the 2^d European Space Weather week. This would introduce discussions for next SWWT meeting (Action M17.1, F. Lefeuvre, M. Candidi, J. Liliensten)

M16/4 To provide on request a Pilot Project briefing package (A. Hilgers)

A Glover confirmed that a briefing package on the pilot project could be provided on request.

M16/5 To send to the SWWT members information on potential Metop data use calls (A. Hilgers)

Information on the call was sent. However, it had been already closed and contained no item on the exploitation of the Space environment Monitor (SEM) data.

M16/6 To contact national meteorological services in order : (i) to introduce the idea of the inclusion of SW as a meteo service, (ii) to present relevant results from the pilot projects, (iii) to identify studies which could allow meteorological services to have a better view of the role of SW in EUMETSAT service limitations (J. Waterman, M. Hapgood, K. Kauristie, P. Gille, etc.)

Possible relationships with EUMETSAT were discussed. It was pointed out that in general space weather effects on EUMETSAT spacecraft is more of the responsibility of ESA than EUMETSAT. In a general way, EUMETSAT must be viewed as a data provider.

A. Hilgers presented a possible approach for raising space weather interest at EUMETSAT. It was mentioned that two space weather related instruments will fly onboard the upcoming Metop spacecraft (SEM and GRAS). However, as yet, no European ground segment for SEM data exploitation is planned and GRAS will be used only for atmosphere profiling (not ionosphere). J Lilensten reported that COST members will contact their national delegates with a view to gaining access to this data.

M Hapgood enquired as to the scope of Eumetsat's need for space weather input in order to make corrections to increase accuracy of the data. N. Jakowski mentioned the need for ionospheric correction for high altitude temperature profiles.

J.Y. Prado, pointed out that continuity of measurements via EUMETSAT would be very useful for long term actions.

A. Hilgers suggested to investigate the possibility of submitting a proposal for a EUMETSAT Satellite Application Facility (SAF; see <http://www.eumetsat.int/en/area4/saf/internet/>). The primary role of the SAFs is to develop and to deliver services and products aimed at enhancing the value and use of data for applications which are a common need of EUMETSAT Member States and Cooperating States). This point will be investigated by the coordinating Committee members (Action M17/2, see Action M/16/8 for list of Members).

M16/7 To find supplementary members of national defence organizations to constitute a scientific committee in charge of the organization of a dedicated meeting or of a dedicated session in existing meeting (E. Amata, M. Balikhin, P. Cannon, S. Clucas, C. Dyer, N. Jakowski, F. jansen, P. Gille, A. Glover, A. Hilgers, F. Lefeuvre)

F. Lefeuvre explained the difficulties the SWWT has with that action. Presently, there is only one member of a national defence organisation who confirmed his participation. He his from Germany. After having demonstrated an interest in this group, a French representative declined to participate stating that the French army does not consider space weather to be an important issue. Actions like the presentation of a a Space Weather paper to a military space conference (the 1st International Conference - Military Space - Questions in Europe) must continue to try to have supplementary contacts. However, it seems mandatory to re-examine the problem at the European level. As the SWWT attendants were informed during the 9th March 2005 meeting with Commission representatives in Brussels (see point 4 for the complete meeting review), a

Space and Security Panel of Experts (SPACESEC) was convened by the EC with participation of EU member states, European Commission Directorate General and Services, ESA, national space agencies, Eumetsat, EU Satellite Centre, Eurocontrol, GMES advisory council, etc. In the report which was issued in March 2005, Space Weather is in the list of the needs for a sufficiently independent European Space Surveillance system (see Appendix A). Contacts with the panel of experts on space and security will be taken (M17/3, F. Lefeuvre, P. Gille).

M16/8 to set up an informal committee including the chairs of entities involved in scientific and/or operational SW activities (A. Glover, A. Hilgers, F. Lefeuvre)

The Committee is named the Coordinating Committee. Presently, its members are : A. Glover, A. Hilgers (ESTEC), F. Lefeuvre, R. Pirjola, W. Riedler (SWWT board), L. Cander, J. Liliensten (COST actions), Anna Belahaki (DIAS), M. Candidi (action on IHY) For the 9 March 2005 Brussels meeting P. Gille (EU contacts) and M. Hapgood (ground based instruments) joined the Committee.

M16/9 To examine at ESA the interest of a SW expertise for debris and Near Earth Objects (A. Glover, A. Hilgers)

A Glover/A Hilgers will continue to investigate the possible interest for space debris, of space weather expertise.(Action M17/4, A. Glover, A. Hilgers).

M16/10 To submit a proposal of SW briefing package to the members of the informal committee and to interested SWWT members (F. Lefeuvre)

The development of a space weather briefing package was discussed. It was agreed that the definition of space weather would be provided by F Lefeuvre and a summary of European activities by A Belehaki. A draft will be circulated by the end of May (M17/5, F. Lefeuvre, A. Belehaki). M. Candidi suggested to submit it to a journalist to make sure that the text will be understandable by a non-scientist (M17/6, M. Candidi). It is envisaged that the leaflet will be ready by the Summer.

The question of membership was raised. It was pointed out that many SWWT members would like to be able to access the list of other members. Also, the difficulty of maintaining the distribution list was highlighted. It was agreed that F. Lefeuvre and A Glover would investigate ways to make membership information available to the community (M17/6, A. Glover, F. Lefeuvre).

M16/11 To update the ESA Space Weather Website and to make links to SWWT Topical Group web pages (A. Glover)

Action closed . Topical group pages can be reached via the following link:

http://www.esa-spaceweather.net/spweather/esa_initiatives/swwt/index.html

M16/12 To make suggestions for a SW programme or event during the 50th Anniversary year of the IGY and to send them to M. Candidi, A. Hilgers, F. Lefeuvre

No suggestions received.

M16/13 To select a SW proposal in support of the IGY 50th Anniversary Year (M. Candidi, A. Hilgers, F. Lefeuve)

See point 6

M16/14 To get an ESTEC support for the COST 724 WG4 (M. Candidi, F. Jansen, A. Hilgers, F. Lefeuve)

See A. Hilgers' report on ESA perspectives (presentation material).

4. Review of the outcome of the meeting held between EC Space Policy and Space Applications Units and SWWT representatives on 9th March 2005 (F. Lefeuve)

F. Lefeuve gave a review of the meeting that took place in Brussels between SWWT members and Alan Cooper (EC-Space Policy Unit) and Alain Podaire (Space Application unit). He emphasized on the priority list of actions which was agreed:

- continuation of existing services and infrastructure (SWENET)
- extension of SWENET to include new services and data
- replacement of critical (spatial and ground-based) SW sources

and on suggestions made to support these actions.

- in the short term, submit an ERA-NET proposal (see point 6 below) and, in parallel, investigate the possibility of considering a SW programme as an Infrastructure programme,
- in the long term, have in view the Trans European Networks (TENS)

Another option is the FP7 which includes space sciences, but SWWT members were informed that the fact that the word "Space Weather" appears in sub-section 6.5.6 (Space surveillance systems) of the white paper does not guarantee that a SW proposal may be accepted. It was agreed with the EC representatives to arrange another meeting at a later date in Brussels in order to discuss the final issue of the FP7 Work Programme and to re-examine other EC supports like the Infrastructure programme and the TENS (M17/8, F. Lefeuve & Coordinating Committee to arrange)

J. Liliensten reported that COST delegates have been contacting their EU delegates in order to ensure the inclusion of space weather in FP7. This has met with some success, including in some new-Member State countries.

5. EU tools to be investigated : ERA-NET, Specific Supporting Actions

M Hapgood gave a review of the ERA-NET Instrument and its possible interest for a space weather action. See associated presentation material for details.

An overview of the funding structure for scientific research and policy making in the UK was given. The parliamentary Office of Science and Technology (OST) are the research managers in UK. ERA-NET is well received by this body.

It was also pointed out that natural hazards are presently on the UK agenda.

The BNSC is a coordination body rather than a space agency.

M Candidi mentioned an existing ERA-NET called EuroPolar. The UK funding council NERC is a partner here. This project was approved early this year.

M Candidi also stressed that the bodies participating in an ERA -NET must be funding agencies. However, the project may be represented by anybody within that agency. Any ERA -NET proposal must be under the name of one person who coordinates the proposal.

P Gille gave a review of the opportunities available under currently open and relevant calls of FP6. It was pointed out that approximately 6.5MEuro remains available under the Space/GMES budget.

It was pointed out that any SSA action would be urgent, as this call is due to close in early July.

F. Lefevre recalled that the suggestion of an ERA-NET proposal was made during the 9th March 2005 Brussels meeting particularly to secure the funding of the ground based networks. He proposed to add modelling activities. An initial suggestion was to investigate the possibilities of coordinating global MHD simulations on a European scale and other modelling activities, but this was not discussed further. It was agreed to start work as soon as possible on an ERA -NET proposal. The initial team would include F Lefevre, M Candidi, M Hapgood and R Pirjola (M17/9, F. Lefevre, M. Candidi, M. Hapgood, R. Pirjola).. A meeting will be arranged beginning of June, but work will begin by email beforehand. J Liliensten asked that a COST member participate in the project definition. This could be J Watermann for example, but would need to be confirmed.

It was agreed that F Lefevre will send an email to all SWWT members presenting the ERA -NET concept and asking them to identify whether there is an existing national programme ongoing suitable for coordination into an ERA-NET (M17/10, F. Lefevre).

M Hapgood stressed that he is unable to guarantee UK support at this time.

N Jakowski stated that DLR may be able to provide support.

S Poedts and D Berghmans stated that several activities are ongoing in Belgium and that support was being investigated.

R. Pirjola stated FMI's interest to participate to an ERA -NET activity.

6. contribution to eGY, IPY and IHY (M. Candidi, A. Glover)

M Candidi posed the question of whether the SWWT wants to appear as an entity in the international year (I*Y) activities. These activities will give visibility that may eventually lead to funding, but no direct funding.

It was pointed out that a European IHY meeting would take place later in the week during the EGU meeting.

A. Glover discussed the IHY objectives and some possible applications activities that the SWWT could consider as a contribution to the IHY activity. Of particular interest are actions which could be conducted with ISES and SEC.

It was pointed out that additional funding would be required for this type of activity. One possible source would be the currently open FP6/Space call where the possibility exists to apply for an SSA.

It was pointed out that there may be other open calls with relevance in e.g. IST or basic science related areas. It was agreed that P Gille would investigate other SSA possibilities (M17/11, P. Gille).

In the meantime, A Glover and F Lefevre will circulate a summary of A. Glover's presentation to the SWWT and solicit expressions of SWWT members interest to participate in an IHY related applications activity (M17/12, A. Glover, F. Lefevre).

J Lilensten mentioned that a summer school is currently being organised by COST 724 together with CAWSES. This is likely to take place next year.

7. Reflections at ESA (A. Hilgers)

A Hilgers gave a review of the status of the space weather pilot project and the perspective for possible next steps in space weather applications within ESA (see associated presentation material for details).

8. Status report on COST-724 (J. Lilensten) particularly for WG4 (F. Jansen)

J. Lilensten announced that, in collaboration with SWWT, the COST WGs are producing catalogues of data bases, modelling codes and web sites relevant for SW in Europe.

F Jansen reviewed the status of COST724 WG4.

9. MuSTAnG (F. Jansen), ARR M. Causa

F. Jansen presented the status of the MuSTAnG Greifswald muon space weather telescope and gave an overview of his company 1A.

M Ganse gave a short overview of the possible need for space weather services at Andoya Rocket Range, Norway (see presentation material).

10. Activities of Topical teams (Spokepersons)

It was pointed out that A. Blusson is no longer working in the field of space weather and, as such, is no longer the spokesperson for the Atmospheric Effects topical group. Interested persons are invited to contact F. Lefevre.

Reviews were given on the progress of the following topical groups:

- a. Education, Outreach and Emerging Markets (N. Crosby)
- b. Ground Effects Topical Group (R. Pirjola)
- c. Spacecraft and Aircraft Effects (A. Hilgers)

See the relevant appendices (presentation material) for more detail.

N. Crosby emphasized on the interest to have a space weather web site included in an existing EGU web site with an educational focus. F. Lefevre suggested to investigate the possibility of associating European SW outreach activities to NOAA/SEC outreach activities which, due to the new status of SEC as part of the US National Weather Service, will developed in the future (M17/13, F. Lefevre).

11 SWW-II status (J. Liliensten)

The date of the next European Space Weather week was announced to be 14 -18th November 2005. This will take place at ESTEC, The Netherlands.

12 Cosmic vision paper (M. Menvielle)

It was mentioned that a poster was presented on behalf of the SWWT during the ESLAB Cosmic Vision meeting, held at ESTEC. The objective was to point out the interest of decadal measurements for sciences as well as for SW services and to suggest that future scientific missions contribute to these decadal measurements. A paper will be written and submitted to the proceedings.

13 Next SWWT meeting

It was agreed that the next full meeting of the SWWT will take place during the ESWW at ESTEC in November 2005.

14 AOB

F. Lefevre recalled that his mandate as a SWWT chairman is soon ending and that a new election is needed in 2006 (M17/14).

APPENDIX A

Review of the outcome of the 9 March 2005 Brussels meeting (F. Lefevre)

Participants

- Alan Cooper (EC space policy unit), Alain Podaire (EC space application unit)
- Anna Belahaki , Paul Gille, Alexi Glover, Mike Hapgood, Alain Hilgers, François Lefevre, Risto Pirjola

Context

- Space and security activities have been transferred from DG research to DG -Enterprise
- Work for the elaboration of FP7 is ongoing. A synthesis of all DGs input shall be reviewed on 6-7 April . It will have to be endorsed by the Space Council (next meeting 6 -7 June)

Elements of a European SW programme

- They were questions on the requirement for continuity and timescales for the available data
- It was pointed out that ground based networks do not have their funding secured
- A. Podaire asked whether the EC ERA-NET instrument to elaborate coordinated programmes

and strategy has been considered. Funding through ERA-NET also cover consultation activities.

SW services

It was pointed out that :

- a coordinated network of activities , together with data access and service provision infrastructure (SWENET) is being prototyped by ESA.
- International collaboration is made via ISES for services and via ILWS for sciences

About data acquisition and data distribution to SW services, a parallel was drawn with GMES. Gravimetry and magnetometry communities require monitoring over decadal time scales. Contacts with these communities are suggested. An international approach is needed.

Users

The discussions concentrate on security and defence. Alan Cooper mention the March 2005 SPACE SEC report where SW is mentioned several times, particularly in sub-section 6.5.6 on « Space surveillance system ».

« The growing importance of space to every facet of life in Europe means that protection of our space asset is a fundamental need. There is a need for a sufficiently independent European space surveillance system to:

- *acquire and maintain a sufficient knowledge of the environment in space in order to safeguard the functional capabilities of any European satellite assets*
- *monitor European satellites in order to detect any damaging risk due to either aggression or collision with debris*
- *characterise any threat to these satellites*
- *observe and possibly forecast space weather¹ in order to protect own space-based assets*
- *verify the application of international treaties in outer space*
- *participate in the strategic evaluation of technological and operational capabilities of other countries organisations*
- *provide decision makers with pertinent information regarding the situation in space within the decision process of the planning/conducting of operations »*

¹ e.g. solar activities

Possible future funding sources

FP7 will be the major source of funding from the EU for the upcoming European Space Programme.

SW was identified by the participants as a possible infrastructure area. Activities providing access to infrastructure can be funded to 100%.

SW appears in the white paper under section 3.4. But the EC officers stated that the scope of the white paper was broader than what can be realistically funded.

Activities where actions are required

There was a general understanding that the priority activities are:

- continuation of existing services and infrastructure (SWENET)
- extension of SWENET to include new services and data,
- replacement of critical SW sources

Possible models for the development of services were discussed included:

- EUMETSAT model
- GMES model

Sources of EU funding to be investigated which were discussed included:

- Access to infrastructure (A. Podaire will check)
- TENS (Trans European Network budget), see GALILEO
- ERA-NET

GMES considers that ground-based systems should be funded at national level. European funding should be used for data harmonisation or for filling gaps

The EC officers suggested that SW be presented at the GMES Programme Office (GPO)

Discussions at the joint ESA-EU secretariat level require supports from either: ESA, EC or a group of EU countries.

50th anniversary of the IGY

We were encouraged to submit a proposal on this theme for a Specific Support Action (SSA), deadline in July.

The principle of another meeting, on FP7, was agreed

SUMMARY OF THE 17th meeting ACTIONS

Action M17/1 – Organize with E-STAR a meeting on SW & long term phenomena (F. Lefevre, M. Candidi, J. Liliensten, next SWWT meeting)

Action M17/2 - Investigate the possibility of submitting a proposal for a EUMETSAT SAF (Coordinating Committee).

Action M17/3 – Contact the Panel of experts on space and security (F. Lefevre, P. Gille)

Action M17/4 – Examine the interest at ESA of a SW expertise for debris and near Earth objects (A. Glover, A. Hilgers, next SWWT meeting)

Action M17/5 – Circulate draft briefing pack by end of May (F. Lefevre, A. Belahaki)

Action M17/6 – Submit the briefing pack to a journalist (M. Candidi)

Action M17/7 – investigate ways to make membership information available to the community (A. Glover, F. Lefevre)

Action M17/8 – Organise a meeting with the EC Space policy and Space Applications units to pursue discussions about possible EC supports (P. Gille, F. Lefevre)

Action M17/9 – Define the content of a SW ERA-NET project (F Lefevre, M Candidi, M Hapgood and R Pirjola, May)

Action M17/10 – Send to the SWWT members a call for participation to a SW ERANET proposal (F. Lefevre, end of April))

Action M17/11 - Review upcoming and open calls for FP6 where an IHY related space weather applications proposal could be relevant (P. Gille).

Action M17/12 - Circulate request for expression of interest in a space weather applications related IHY activity (A. Glover, F. Lefevre).

Action M17/13 – examine the possibility of associating European outreach SW activities with SEC outreach activities (N. Crosby, Coordinating Committee)

Action M17/14 – Organize new elections for the nomination of the SWWT chairman.