

# SWWT Plenary meeting 34 report

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*Wednesday, 20 November 2013, 13:30 to 15:30???*

*ESWW10, Antwerp, Belgium*

Prepared by Stefaan Poedts

*This SWWT Plenary Meeting was attended by xx people.*

## **Agenda**

1. *Welcome and Introduction (Stefaan Poedts)*
2. *Review of the recent JRC workshop on space weather and the power grid (Emmelie Andersson & Alan Thomson)*
3. *SSA Period 2 Status and Space Weather Priorities (Alexi & Jussi)*
4. *ESA R&D activities from the technology directorate (E. Daly)*
5. *Review of Horizon 2020 work program for Space (Mr Chatard-Moulin ) – Cancelled at 12:14*
6. *Role of the SWWT in SSA Period 2 (Stefaan Poedts)*
7. *Short SWWT Topical Working Groups reports (TWP leaders):*
  - *Drivers of Space Weather - Solar Magnetic Topology (H. Lundstedt)*
  - *Drivers of Space Weather - Solar Storms (N. Vilmer)*
  - *Ground Effects (M. Wik)*
  - *Atmospheric Effects (S. Bruinsma)*
  - *Ionospheric Effects (M. Angling)*
  - *Spacecraft, Launcher and Aircraft Environments (S. McKenna-Lawlor)*
  - *Education, Outreach and Emerging Markets (N. Crosby)*
  - *Space Weather Forecast (L. Trichtchenko)*
8. *UK Met office's plans for a National Forecast Centre in Exeter (Mike or Alan Thomson?)*
9. *Action Item Review (S. Poedts)*
10. *Any other business*

## Minutes

### **Welcome and Introduction (S. Poedts)**

Stefaan Poedts (SP) welcomed everybody to the SWWT Plenary meeting and presented the agenda.

### **Review of the recent JRC workshop on space weather and the power grid (Emmelie Andersson & Alan Thompson?)**

See also Appendix A (slides Emmelie).

### **SSA Period 2 Status and Space Weather Priorities (Juha-Pekka Luntama)**

Juha-Pekka Luntama discussed the SWE Space Segment objectives in SSA Period 2 as well as the Expert Service Centre (ESC) evolution. He also touched upon concepts for enhanced SWE activity, the SWE Service Development activities and some more SWE technology developments. His presentation ended with questions regarding the priorities for activities in 2014-2016, regarding the user domains, the space segment, ground based observation systems and the role of ESA in supporting the developments of empirical, semi-empirical and physics based models.

*See the slides in Appendix B*

### **ESA R&D activities from the technology directorate (E. Daly)**

E. Daly summarized the R&D activities from the technological directorate. The technical R&D supports the SSA program. It manages the early development phase of different payloads and projects, both hardware and software, including the Phase A/B studies regarding SSA. Hence, it involves both projects funded through GSTP (which is an optional program) and through TRP (Technological Research Program, a mandatory program). The list of current projects under development includes those in the list on the last slide of Jussi (see Appendix B). Other hardware projects Eamonn mentioned included the Next Generation Radiation Monitor, a 3D Electron Spectrometer, and a Magnetometer (via GSTP). Software project, on the other hand, include the Virtual Space Weather Modelling Centre, Radiation Belts Monitoring improvement, Spenvis 5 (next generation), Solar Flare prediction software, and Helioviewer.

### **Review of Horizon 2020 work program for Space (Mr Chatard-Moulin)**

Alas, this contribution was cancelled just before the meeting.

## **Role of the SWWT in SSA Period 2 (Stefaan Poedts)**

SP had a meeting with Nicolas Bobrinsky (Director of the SSA Program) on November 7 in Darmstadt (ESOC). SP clarified the composition of the SWWT and the role the SWWT played so far in advising ESA on SWE issues. Nicolas Bobrinsky then explained how the SSA is structured and how they operate, including the 'Program Declaration' which is updated at every SPC meeting, and the 'Implementation Rules'. Then the future role of the SWWT was discussed. The advisory structure of SSA is evolving with the set-up of a new compact 'Advisory Group (AG)'. This AG will contain only 9 people, SPC delegates or persons assigned by them. There will be 5 SWE expert members, and 2 NEO and 2 SST experts so that the three sub-divisions of SST are all represented. The SWWT chair may be included as ex-officio member, but this is not sure yet.

The SWWT will be involved in the Architectural Design review (via the SSA-URG) in the 2<sup>nd</sup> quarter of 2014.

It was decided to have a bilateral meeting between the SSA Program Management/Director and the SWWT Chair every year in November ('less than a month before the ESWW') at the SSCC in Brussels. During this meeting important issues regarding the 'Procurement plan' and the 'Work plan' of the SSA Program Declaration (which are adjusted every year) will be discussed.

The ESA-EU relation was also briefly discussed. This seems to be a sensitive subject which will be the main subject on the next Ministerial Council in 2014 (one of the three subjects, next to the ISS and launchers).

## **Short SWWT Topical Working Groups reports (TWP leaders):**

### ***Drivers of Space Weather - Solar Magnetic Topology (H. Lundstedt)***

Henrik was not present...?

### ***Drivers of Space Weather - Solar Storms (N. Vilmer)***

See Appendix C (slides Nicole Vilmer).

### ***Ground Effects (M. Wik)***

See Appendix D (slides Magnus Wik).

### ***Atmospheric Effects (S. Bruinsma)***

*(Sean Bruinsma was not present due to a flight delay)*

### ***Ionospheric Effects (M. Angling)***

See Appendix E (slides Matthew Angling).

## ***Spacecraft, Launcher and Aircraft Environments (S. McKenna-Lawlor)***

*S. McKenna-Lawlor in her capacity of Spokesperson/Chair of the Topical Group Spacecraft, Aircraft and Launcher Environments (TG-SALE), introduced the Executive Members of the Topical Group which has as its Co. Chairs Dr. G. Reitz from DLR and Dr. F. di Marco from ESA. She then presented the Group's Mission Statement and proceeded to describe ongoing SALE activities.*

*A study concerning "Energetic Particle Radiation Problems Attending Human Space Flight" in which certain of the group members are engaged, has produced a number of recommendations regarding mitigation of the deleterious health effects which can be incurred by human crews beyond Low Earth Orbit (in BLEO) due to energetic particle impingement. These recommendations will be presented at the Heads of Space Agencies Summit in Washington (January, 2014).*

*The establishment of a human presence in BLEO will take place stepwise, with missions to the Moon, the Asteroids and to Mars foreseen. SMcKL pointed out that this progression, which will be undertaken in a global context, will call upon the particular skills residing in Europe's Space Weather Community to model energetic particle populations in the interplanetary environment and predict the arrival of hazardous particle radiation at distant spacecraft.*

*She then provided an overview of the program of talks which would be presented at the Splinter Meeting of the Topical Group on the next day. This program would include presentations on: the energetic particle radiation hazard en route to and at Mars (SMcKL, STIL); a talk on calculating the radiation exposure attending large solar particle events (D. Matthiae, DLR); an account of space weather impacts on aviation (M. Meier, DLR) and an account of radiation measurements made by the RAD instrument aboard the Mars Science Laboratory during its cruise phase to Mars and within Gale Crater (G. Reitz, DLR).*

## ***Education, Outreach and Emerging Markets (N. Crosby)***

*The SWWT Topical Working Group (TWG) "Education, Outreach and Emerging Markets (EOEM)" concerns education (formal and informal) and public outreach activities. Efforts on both national level as well as international are covered. The EOEM TWG is also an umbrella for potential future space weather markets that are not "mature enough" to have a TWG of their own in the context of a European space weather program.*

*NC mentioned that the EOEM TWG splinter meeting at ESWW10 would be held on Thursday, 21 Nov. 2013. This year's EOEM splinter meeting will look back on some of the highlights from the last five-ten years. Examples of education and outreach activities will include several that were connected with the International Heliophysical Year 2007. NC highlighted that during the last five years the EOEM TWG has grown exponentially indicating that the space weather community is performing more and more education and outreach activities as well as promoting them. In regard to emerging markets, several can be highlighted: aurora tourism, space tourism, insurance companies, as well as astrobiology that is more related to "space climate". Furthermore, the possibility that space weather can be connected to human health on Earth (e.g. during geomagnetic disturbances) is getting more and more visibility.*

The EOEM TWG splinter meeting will also discuss its future as NC feels that it is time that this TWG is restructured. NC said that she would be stepping down as spokesperson and therefore a new spokesperson(s) is(are) to be found as a function of the restructuring of this TWG into two sub-groups (1. Education and Outreach, 2. Emerging Markets) or two separate TWGs.

### **Space Weather Forecast (L. Trichtchenko)**

*Input needed from Larissa Trichtchenko...*

### **UK Met office's plans for a National Forecast Centre in Exeter (Mike or Alan Thomson)**

*Input needed (a few lines will do) from Mike...*

### **Action Item Review (S. Poedts)**

There were only three actions after the Previous Plenary meeting (PM33, June 2013):

Action number	Description	status
AI M33/1	Draw up a list of national contact points within civil contingency agencies.	<b>ON-GOING</b>
AI M33/2	Draft white paper, describing the potential impact of Space Weather on civil infrastructure.	<b>ON-GOING</b>
AI M33/3	AG – Investigate means to support SN-1 database hosting as a community service.	<b>ON-GOING</b>

AI M33/1: This action on SP is still on-going.

AI M33/2: This action on SP is still on-going. Larissa offered assistance and SP will take this up.

AI M33/3: This action on AG is still on-going. Juha-Pekka Luntama clarified that it will be finished soon, within the next few weeks.

### **Any other business**

Dave Pitchford asked to get the list of SWWT members who are involved in satellite business to bring them together and extend the list. However, Mike Hapgood clarified that the list cannot be made public due to privacy issues. Dave will send the email to the complete SWWT member list then...

The meeting ended at 15:25.