SWWT Steering Board meeting

Monday, 23 November 2015, 10:00 to 12:30

Room Permeke, Kursaal, Ostend, Belgium

Present: Stefaan Poedts (SP), Mauro Messerotti (MM), Suzanne McKenna-Lawlor (SML), Alexi Glover 9AG), Juha-Pekka Luntama (JPL), Werner Schmutz (WS), Werner Verschueren (WV), Larissa Trichtchenko (LT), Lars Eliason (LE)

Excused: Mike Hapgood, Ronald Van der Linden, Guenther Reitz, Nicole Vilmer, Henrik Lundstedt, Anna Belahaki, Susanne Vennerstrom, Sean Bruinsma, Alain Hilgers, Pierre Rochus

Agenda

1. Welcome and Introduction (Stefaan Poedts)
2. The SSA Programme and SWE Segment status + view towards Period 3 (Jussi)
3. SSA SWE service network overview and development within Period 2 (Alexi)
4. Reports on national activities and perspectives (all members)
5. H2020: COMPET-5 call and other SWE related calls (Stefaan and Alexi)
6. Report on the outcomes of the June WMO congress (Nicole or Ronald)
7. SB membership renewal 2016 and potential proposal for further adoption as SSA technical advisory group.
8. Action Item Review (S. Poedts)
9. Any other business

Minutes

Welcome and Introduction (Stefaan Poedts)

SP welcomes everybody who was able to make it and apologizes for the early timing of the meeting which resulted in low participation as some people are traveling on Monday morning (and Friday afternoon).

The SSA Programme and SWE Segment status + view towards Period 3 (Jussi)

We are in SSA Period 2 at the moment. Period 3 to be decided in MC in 2016. SSA System 2016 contains 5 SWE Expert Service Centres, incl. the new Heliospheric Weather ESC. Software in the SWE data centre is maintained by external contract. SSCC now has over 40 products installed and running and involves 34 teams spread over whole Europe.

SSA Period 3 will involve developments in several of these service systems. The federated approach will be continued. All teams doing SWE in Europe will be (further) involved but it is not clear yet who will do the actual operational services in the end. ESA is not planning to set up an ESA data processing facility, and will do only level 1 data processing in the data centre(s). ESA plans to have a significant programme of key algorithm development (cf. User requirements for accuracy and timeliness) and foresees the establishment of new ESCs. SSCC would evolve and would involve new functions and become a centre for the provision of tailored services, monitoring and maintenance tasks, alerts and warnings for severe SWE conditions. Also a transition towards operational services with ESC support is foreseen for the SSCC.

The SWE data centre hosts the SWE tools and applications and the SWE service portal. Foreseen enhancements in P#: complementing thematic data centres in Member States (federated data archive), data processing of SSA sensor systems, enhancements for transition towards operational system. THE SSA portal will also be enhanced in P3: enhanced data visualization and analysis tools, advanced user authorization, enhanced tailoring and customization. Sensor systems will continue to use data from existing sources (ground based and space borne). Activities in p3: enhancements of ground based measurements networks, SLAs with data provisions, Proba-2 mission extension, operation of the first hosted payload missions (NGRM, SOSMAG) and enhancement of the SWE space segment (hosted payload missions, first dedicated SSA SWE mission). Key measurements include the L1 mission and maybe a new element: a L5 mission (Solar monitoring and in-site data away from the Sun-Earth line (ASEL mission). List of payload instruments includes: solar corona modeling, heliospheric imaging, solar disc magnetic field, EUV imaging, in-situ measurements (SW, magnetic field, charged particles, hot plasma). Mission phases in P3: A.B1, B2, Readiness for C/D. It is crucial that the USA does a L1 mission, only then ESA can focus on an L5 mission.

Ongoing technology developments include prototyping new instrument technologies where the focus is on operational instruments for SWE observations, looking for flight opportunities for instruments and development of GS technologies for advanced data processing (VSWMC part 2 is about to start, start foreseen before X-mas) .

Accurate SWE forecasting is a key challenge and SWE segments activities also support scientific developments. See also slides JPL (Annex 1-**missing**).

SSA SWE service network overview and development within Period 2 (Alexi)

AG gave some more detail on the SWE network developments. The mains aims include to continue to operate and develop the SWE services at the SWE Coordination Centre, to further develop the concept of Expert Service Centres and evolve them towards SWE services, to expand the range of products available through the ESCs via the SWE portal, to strengthen the links with the user communities (= key task of the SSCC), establish new ESC focusing on Heliospheric Weather, and further develop the SWE Data Centre infrastructure to provide improved product access and additional data browsing capabilities supporting users and developers.

A total of 34 teams are involved in the ESCs and approximately 140 products are expected by the end of 2016. The ESCs will also review the roadmaps. Thematic workshops will be organized in the spring of 2016 at ESOC to identify the key assets/expertise/development requirements. See also slides AG (Annex 2- **missing**).

Reports on national activities and perspectives (all members)

LT reported that in Canada recently got a totally new government (as of the beginning of November). The Canadian Space Agency has a new President for almost a year and the situation is more stable. The plans for operational satellite on HEO orbit (so-called PCW mission) are still existing, also currently with the Department of National Defense. Environment Canada (under the new name Environment Canada and Climate Change) is still participating in the planning of the mission (for met payload), as well as CSA (for space weather payload), while Natural Resources Canada has dropped its participation about a year ago. Canadian Space Weather Forecast Centre (of Natural Resources Canada) is continuing its operations without much new to say.

SML reported that in Ireland is preparing for a first spacecraft and Space Weather might be the main theme. The mission would be for at least 2 years maybe 3, Low-Earth Orbid (650 km), and will test some technologies in space (magnetometer, high energy particle detector,…). Phase A will start in the beginning of 2016. It will be 50 kg with 20 kg payload included. There is a call for

instrument proposals. Unfortunately Ireland is not member of SSA so this is not a SWE payload opportunity at first sight. But it needs to be investigated.

MM mentioned that in Italy there is the Space Weather Italian Community starting up activities since October 2014. There is also an initiative to develop micro-satellites, located in the science park in Trieste.

LE reported that in Sweden the space activities where assessed. The Swedish will continue space weather activities for the next 5 years. On the 4th of November there was a radar failure which is being investigated. It could be related to a SWE event. There was no SEP event but a strong radio burst on the Sun, stronger than the radar system, just before sunset and the radars where pointed to it. There were also some geomagnetic effects that same day. To be continued.

H2020: COMPET-5 call and other SWE related calls (Stefaan and Alexi)

- H2020 contains Competitiveness of European Space Sector: Technology and Science (COMPET calls):
    - H2020 – COMPET – 2016: Scientific Instrumentation
    - H2020 – COMPET – 2017: Space Weather
- European Fund for Strategic Investments, COSME, Horizon 2020 (see Annex3)

Report on the outcomes of the June WMO congress WMO CG-17 (Mauro)

Due to absence of NV and RVdL, MM gave a short presentation on this subject. The congress took place in May and June and discussed the need to deliver SWE products and services to the society and in particular in support to global air navigation. It resulted in Resolution 38: four-year plan for space weather, which invites the space agencies to maintain or implement the capability to observe space weather phenomena from space, incl. observations at Lagrangian points. The plan itself addresses observation, data exchange, development of services, training and education. It aims to provide a framework for coordinated SWE activities.

As concerns specifically the support to global aviation, it is anticipated that the SWE would rely on e.g. two world SWE centers supported by a number of RWCs which all have to be coordinated. An action is planned in 2016 to analyze the functions required from such centres, their recommended numbers, and their required competencies, in order to help ICAO to designate such centres. WMO suggest that SWE services use the same data services and standards as meteorology when relevant. They focus on operational services, not on development of such services.

See also Annex 4 (slides MM).

SB membership renewal 2016 and potential proposal for further adoption as SSA technical advisory group.

SP commented that SB membership should be renewed as not all SB members seem to be motivated to attend the SB meetings. AN invitation will be sent to confirm commitment of SB members.

The SWWT may become a technical SSA advisory group. The relation between the URG and the SWWT is somehow artificial. There is certainly an overlap. URG met only a few times and SWWT met more regularly. For ESA the SWWT is more valuable. The URG nomination is through the delegates. The SWWT SB should consist of active members who participate in the discussions.

The leaders of the TWGs should automatically become member of the SB.

AI SB 2015-2/1: SP and AG to review the ToR to include the TWG leaders to the SB

AI SB 2015-2/2: SP to send email to the SB asking for commitment for next few years.

SB meeting should be after the Plenary SWWT meeting to discuss the issues raised there. And the Plenary SWWT meeting should be on Wednesday afternoon like in the previous ESWWs.

Action Item Review (S. Poedts)

AI SB 2014-2/1 was an action on SP to take up the SWWT roadmap. This action is still going on.

The other action AI SB 2014-2/2 had to do with a call for input to Minna Palmroth for input on the priorities to be set in the COSPAR roadmap. This action is closed.

Any other business

none

The meeting closed at 12:23.