



4th APPEC General Assembly

June 18th, 2014

CERN

DRAFT Minutes

Present: Bozena Czerny, Teresa Montaruli, Iliana Brancus, Janet Seed, Christian Stegmann, Johannes Blümer, Thomas Berghöfer (General Secretary), Philippe Chomaz, Gabriel Chardin, Claus Madsen, Fernando Ferroni, Antonio Masiero (SAC Chairman), Stavros Katsanevas (Chairman), Francisco Del Aguila, Lars Bergstrom, Job de Kleuver, Frank Linde, Ino Agrafioti (Secretariat), Favart Laurent.

Invited: John Womersley, Andre Rubbia

Observers: Sandra Hesping, Matthew Krzystyniak

1 Adoption of the Agenda

The agenda was adopted.

2 Approval of minutes of the third GA and Phone Conference

The minutes of 3rd GA meeting and the Phone Conference of the January 8th were approved.

3 Accession of new partners

The General Secretary (GS) reported on the status of accession of new members.

- Portugal: The GS has had exchanges with Mario Pimenta regarding Portugal's accession. Due to a government-level decision that forbids sending money abroad, Portugal is unable to contribute the participation fee to the common fund, but they have offered to make an in-kind contribution. Because the fee is an expression of a sign of strong interest by an organization to become an APPEC member, it was decided that it will not be possible for the time being to accept in kind-contributions. It was agreed that Portugal could apply to be an Observer.
- Greece: The General Secretary for Research and Technology, Christos Vassilakos, has received the letter from the community requesting to be part of APPEC and charged the Greek CERN committee to discuss how Greece should proceed.
- Austria: The non-membership of Austria has been also discussed with the Austrian representative to the ECFA panel and the president of ECFA, who is also Austrian. It was decided to continue the efforts for this country, while seeking the help of these ECFA members.
- Estonia, Czech Republic: The general secretary has exchanged e-mails with enthusiastic scientists from these two countries, but without contact to the agencies so far. Efforts will continue.

4 Chairman's Report

The Chairman was invited to participate in the second face-to-face meeting of the P5 that took place 2-4 of December 2013 at SLAC, where he presented the "Astroparticle Physics Planning in Europe".

The Chairman reported on a discussion he had with Philippe Froissard, Deputy Head of Unit: Research Infrastructures at the European Commission. The chairman suggested that given the global nature of Astroparticle Physics Research Infrastructures, it would be really useful if APPEC could receive EU funding to create a global network of the agencies in the field. The Deputy Head of Unit appreciated the idea and said that "global ERANET" type of instrument could be funded in the context of WP2016-2017. The agencies partners of APPEC are encouraged to also discuss this possibility with their national contact points.

4.1 Report from the SAC, discussion on the roadmap

The SAC Chairman, Antonio Masiero, presented the SAC draft resource-aware roadmap to the GA (see report attached to these minutes). The numbers in the table for CTA were estimations by the SAC since the CTA

collaboration did not provide the SAC with estimations. J. Blummer suggested the renaming of the Double Beta Decay section of the report to Neutrino Mass, in order to include KATRIN. The GA decided that the most useful strategy for the SAC roadmap would be if the SAC makes recommendations on “what funding/experiments are needed to reach a breakthrough in each field”. The GA agreed that the aim behind such a roadmap is to achieve coherence in the funding strategy and in choosing the next steps in each field.

The GA Chairman then presented the table with the yearly funding available by each of the APPEC agencies in the past. Many agencies expressed their difficulty in calculating such funding, due to the multiple sources of funding in their country. In general however, the comparison of the two tables was rather positive, since the yearly estimated agency funding was not much below the funding needed as according to the SAC table. The GA agreed that the exercise of comparison of costs of future projects and available funds could not go into higher detail or precision than the one already obtained, and that in general the message was this of a certain realism of current projections with respect to the budgets available. It was also agreed that the importance of running costs will increase in the future.

Overall the GA agreed that this was a useful exercise and reacted with great interest to the SAC report; they praised the effort made to provide an assessment on the status of the various research lines, the prospects for next generation (sometime next-to-next generation) experiments in each research area, the approximate (human and budgetary) resources needed to achieve such major steps. The GA asked the GA to pursue its work along the following lines:

i) go deeper into the analysis of the status and prospects for all the research lines considered to be coming to a proposal for next generation experiments. In assessing what might be feasible, they should take into account, as boundary conditions of the exercise, the estimate for the total budget at disposal in Europe on astroparticle physics (approximately, 700 Meuro in 10 years). The SAC should make a critical assessment of the status and prospects of the various research lines individuating and discussing for each of them the possible next generation experiment(s) - certainly taking into account the total budget in 10 yrs (with a possible range spanning a +5% - +10%), but without making a priority selection among the projects of the various lines.

ii) discuss/propose the possibility that major "convergences" that can be realized in EU on the various research lines; the example which was given was the case of DM, where experiments making use of the same or similar technique could profitably join the efforts together jumping to a G2 or G3 experiment on DM.

This new report is expected by early spring.

4.2 APPEC and ESFRI

John Womersley, the ESFRI chair, gave a general introduction to ESFRI and on what is planned in the next couple of years (see presentation attached to these minutes). Some important points that were discussed were the following:

- The new ESFRI Roadmap planned for 2015/16 (Launch: September 25th, Deadline for new project proposals: March 2015, Publication: January 2016), and it is expected that it will be updated from now on every two years.
 - o An update to the Roadmap by 2015/16 will only be credible if a substantial fraction of the existing roadmap is in implementation (or if we are willing to reprioritise).
 - o It will be more of a strategy document that analyses: the landscape of RIs in EU and internationally; gaps in the EU RI ecosystem; pan-European projects; synergies with the national/regional projects; synergies with existing RIs and strategies for optimal use, continuous upgrade, sustainability and end of life perspectives; global research infrastructure opportunities.
 - o Concerning the Astroparticle Physics “landscape” APPEC will be interviewed and its documents will be an input to the discussion.
 - o Rules for new roadmap
 - Aim: only ~25 Decision Stage Projects
 - Projects that have been on the roadmap and not implemented will automatically roll off after 10 years
 - Any project that wants to be considered again after 10 years must reapply, either in a different form or with bottlenecks resolved

- Approximately 16 projects will not yet be implemented by 15/16 so there will be **room for 8-10 new projects** on the 2016 roadmap
- Assessment of new projects will be by scientific peer review, assessment matrix, and indicators of pan-European relevance
- Entry level projects will be at a more mature level (conceptual design and feasibility done)
- Every 2-3 years audit of the project by ESFRI Implementation WG
- ESFRI priorities for INFRADEV-3 funding as approved at the Competitiveness Council of Ministers Meeting (26/5/14), include giving “*Implementation Support*” to **CTA**.
- It was clarified that the use of an ERIC is not mandatory and does not confer any special status in ESFRI or H2020. It should be used when it makes sense.

Two terms that were discussed were “implementation” and “design study”. Concerning the former the ESFRI chairman stated that a consistent definition is being prepared by the implementation ESFRI group. The issue with the latter term is that in the Horizon2020 calls, “design study” seems to refer more to infrastructures that can provide services to the users, whereas the APPEC agencies know that there is more need for Design Study for the future next generation infrastructures (e.g. Dark Matter).

5 Discussion on neutrino programme in view of the global neutrino meeting 90’

5.1 LAGUNA developments (A. Rubbia)

In order to prepare for the International Meeting for Large Neutrino Infrastructures that would take place the week after the GA meeting, Andre Rubbia (AR) was invited to report on LAGUNA-LBNO (see presentation attached to these minutes). Some of the main points raised by AR were the following:

- After several years of R&D and very detailed EC funded studies the collaboration has a clear end-to-end path solution for LBNO, a liquid argon TPC based experiment that with a 2,3km beam it will be capable to determine unambiguously ($>5\sigma$) the neutrino Mass Hierarchy and cover 80% of the CPV phase space at 3σ and 65 % at 5σ with realistic systematic error assumptions, thus satisfying the “HEPAP P5 requirement”.
- A full Conceptual Design Report will be published in August 2014, developed in collaboration with industrial partners leading to: Underground facility, construction sequence, well defined costs, deployment in Europe,...
 - o They propose a phased experiment to adjust the beam and detector mass with respect to the findings of phase n-1 to use resources in the most efficient way
 - Phase I (LBNO20): 24 kt fid. DLAr + SPS beam (750 kW, $E_p = 400$ GeV) - Guaranteed 5σ MH determination + 46 % δ CP coverage at 3σ + p-decay + Astroparticle Physics. Estimated cost (excavation + detector + infrastructure + contingency): ≈ 210 M€ +/- 10%
 - Phase II (LBNO70): 70 kt fid. DLAr + HPPS beam (2 MW, $E_p = 50$ GeV) or Protvino beam - 80% δ CP coverage at 3σ + p-decay + Astroparticle Physics
- Update on the political situation in Finland: In March 2013, the Ministry of Education has decided to reconsider the issue once new information is available. In March 2014, a written statement to the Parliament stating that “In such a new situation the definition of the policy of the ministries can be reconsidered.” Currently open discussions are taking place with the Finnish Government about LAGUNA.
- A 1:20-scale LBNO-DEMO demonstrator @ CERN has been accepted (WA105) in the Medium Term CERN financial plan. Measurements will be taken in 2017, so it will be in 2018 that they will be able to discuss the performance of the detector that has been developed.
- LBNE and LBNO hold executive-level phone meetings every two weeks.

5.2 APPEC position on neutrino

The GA praised the detailed work done for LBNO, which is a very good base for the discussion of the future neutrino experiments. The GA decided to approach the International Meeting with an attitude seeking a global coherent approach, while at the same time defending the optimal scientific choices.

6 Report of the General Secretary

The GS first reported on the status of the APPEC common fund. The financial agreements with all new partners have been signed so in 2014, the expected common fund contributions will be equal to 64k€. The next call for funds will be in September 2014.

Since the last GA meeting, four JS meetings took place: an outreach/JS meeting in December, a JS conclave in February, a JS in April and one just before this GA meeting in Geneva. In addition, a second Horizon2020-related event was organised in Paris ("APPEC gets organised for Horizon2020"), where future proposals were discussed by the community, and a Computing meeting for the finalization of the Computing White paper took place in April. Finally, the 2nd Scientific Advisory Committee meeting also took place in April, in Krakow.

During the JS conclave, a brainstorming exercise took place regarding the functioning of APPEC at the working level. It was noted that the preparation of the community for Horizon2020 received a very positive attention both from the community members but also from similar organisations from neighboring fields and organisations like ESFRI. It was also found that

- ❑ there is a need for closer links between APPEC and the large prioritized Astroparticle Physics projects, in order to help when possible with any (financial or not) difficulties faced by them.
- ❑ the launching of new common calls should be considered, possibly co-funded by the EU, to foster the development of projects and supporting new ideas.
- ❑ whereas changing the responsibilities and tasks of the Functional Centres was not considered necessary, more attention on "Industrial Relations" would be desirable.

The JS suggested that APPEC should try to increase the interest of larger international organizations, i.e. CERN, ESA, ESO, and JINR for the Astroparticle Physics programme, through intensified networking. The GA discussed this issue and concluded that such relations will be intensified when there is a need, i.e. each organization should be targeted when there is a specific subject of discussion of interest to both parties.

Finally, the GS discussed the Computing White Paper meeting. The new draft is almost complete, so it must be finished soon and be published as a glossy brochure.

7 APPEC actions for Astroparticle Physics in Horizon2020

The Chairman summarized the status of the APPEC-related Horizon2020 proposals:

- Submitted: 2 ITNs (underground labs, axions)
- Under preparation: ASTERICS Cluster (participation in three WPs - data, virtual observatory, and big data), Integrating Activities (Gravitational Waves, Underground Labs), MSCA COFUND (for theoreticians + computing).

8 Report of the vice-chair on APIF

Janet Seed reported on the latest APIF meeting that took place in May 2014 in Paris. The role of Stefan Michalowski from OECD (who has now retired) was taken for this meeting by Frederic Sgard.

He reported on the following:

- A new report on the socioeconomic impact of CERN about to be published. <http://www.oecd.org/sti/sci-tech/CERN-case-studies.pdf>.
- New GSF report under preparation that will discuss legal forms and structures that can be adapted to international structures.
- The GSF mandate ends at end of 2014, but its evaluation is nearly ready. The GSF is in its 10th year of flat cash.

The 'theme' of the most recent meeting was Open Access and Open Data, and included presentations by Guilia Marsan (OECD, on OECD project on Open Science whose final report is due at end of 2014 and it has found that even if there is consensus towards open access, but the consensus is smaller regarding open data), Jim Whitmore (NSF, on US policies and policies of LSST/LIGO/ICECUBE), Janet Seed (STFC, on UK policy on Open Access), Manel Martinez (IFAE, on CTA data policy), Antonio Masiero (INFN, on Auger data policy), Hans-Juergen Donath (BMBF, on KM3NET data policy).

Members of APIF gave updates on developments in their countries and the status of the following experiments was also updated: SCOAP3, Euclid, WFIRST, BICEP2. The role of APPIC (Working group 10 of IUPAP) was

discussed and how it should interact with APIF. It had previously been agreed that APIF would seek scientific advice from APPIC on a case-by-case basis. Whereas APIF can suggest APPIC members, so far it has chosen not to do so.

The next meeting will take place in November 2014 (possibly will include a visit to LIGO). In the meantime, efforts will be put to broaden the attendance, since the current APIF membership is heavily biased towards Europe. Agenda items will include interface with APPIC, SCOAP3 and the implications of the P5.

9 Report on Common Call evaluation

Ino Agrafioti, as the Common Call Secretariat, prepared a presentation with the first monitoring report of the ASPERA Common Call projects (presentation attached to the minutes). The final reports of the 1st common call projects (CTA, EURECA and Darwin) and the mid-term reports of the 2nd common call projects (AugetNext, SILENT and ISOTTA) were evaluated by the members of the SAC and discussed during the 2nd SAC meeting in April.

Overall, it was found that:

- the common calls contributed significantly to the various fields by bringing communities together that would not have worked together otherwise (example DARWIN) .
- since the collaborations had not addressed the questions of the ASPERA template correctly, the reports were difficult to evaluate by the SAC
- timely financing is very important for success of the projects and should be ensured by the APPEC agencies.

It was concluded that the template for reporting has been modified to emphasize that

- o financial information must also be reported
- o the text
 - a) should NOT exceed the page limits
 - b) should refer specifically to what was done with the ASPERA funding

In the interest of future common calls, it was considered important to identify and showcase the benefits of the common calls and their added value to the scientific fields, rather than just a general status of the projects.

In conclusion, the GA largely appreciated the effort of "refereeing" by the SAC members of the call projects; in particular, the GA recognized that it was not the kind of "gentle and diplomatic" refereeing exercise, but the weak points of the experiment reports were diligently spotted and suggestions for improvement were made.

10 Outreach

While the procedure to hire Dr Eleni Chatzichristou by the National Technical University of Athens (NTUA) is advancing, since there is urgent need for an outreach officer, Eleni will start on the 1st of July 2014, working 75% of her time as the APPEC outreach officer.

11 Preparation of Chairperson and General Secretary elections at next GA

The Search Committee for the next Chairperson and the General Secretary will be composed of Stavros Katsanevas, Fernando Ferroni and Bozena Czerny. Agencies should send their suggestions by the 31st of July 2014 to the three members of the committee.

12 Date of next meeting

The next APPEC GA meeting will be in November in Italy, next to an Italian presidency high-level policy event.