

2nd APPEC General Assembly

April 5th, 2013

INFN, Rome, Italy.

Present: Iliana Brancus, Thomas Berghöfer (General Secretary), Gabriel Chardin, Philippe Chomaz, Božena Czerny, Fernando Ferroni, Stavros Katsanevas (Chairman), Job de Kleuver, Frank Linde, Mirjana Maksić, Antonio Masiero, Teresa Montaruli, Janet Seed, Christian Stegmann, Livius Trache, Jose Angel Villar, Domenico della Volpe, Ino Agrafioti, Arnaud Marsollier, Sandra Hesping, Stefano Ragazzi, Roberta Antonini

Excuses from: Catherine De Clercq, Luke Drury

Observers: Manfred Krammer, Vilmos Németh,

Invited: Federico Ferrini, Daniel Berge, Maarten de Jong, Smaragda Spyrou,

1 ADOPTION OF THE AGENDA

The agenda was adopted.

2 APPROVAL OF MINUTES OF THE FIRST GA

The minutes have been approved.

3 CHAIRMAN'S REPORT

The Chairman reported on the reception of the APPEC contribution to the update of the European Strategy for Particle Physics. Furthermore he announced that the EU "Assessment report on possible topics for future activities for integrating and opening existing national research infrastructures" came out in February and contains 2 astroparticle physics topics (among the 12 topics on Physical science): underground labs and gravitational wave antennas. This is promising for their future funding as Integrated Activities programs (the equivalent of I3s of FP7). He also reported that both the chairman and the general secretary were invited by the EU to participate in the EU Joint Programming Conference held in February in Dublin, as a sign of appreciation for the APPEC activities of coordination with global partners (the chairman was the rapporteur of the session on global coordination). Finally, an appointment has been fixed between APPEC (I.A, T.B, S.K, A.M and JMS) and the Research Infrastructures unit in Brussels on the 10th of June.

4 ACCESSION OF NEW PARTNERS

The GS reported that the process of accession of both Spain (represented by LSC) and Switzerland SNF, discussed during the previous GA has been finalised.

The Karlsruhe Institute of Technology (KIT) applied to the APPEC to become an APPEC Participating Institution. KIT is a member of the Helmholtz Association of German Research Centers; it is the coordinating center of the *Helmholtz Program Astroparticle Physics* and of the *Helmholtz Alliance for Astroparticle Physics (HAP)*. KIT hosts the *Karlsruhe School of Elementary Particle and Astroparticle Physics: Science and Technology (KSETA)*, which has been approved within the German Excellence Initiative. HAP comprises a large part of the German astroparticle physics community and has numerous links to international partners.

KIT applied stating the following commitments on a best-effort basis and in a non-legally binding manner:

- Networking: KIT supports the exchange of personnel and ideas via HAP and the KIT Centre of Elementary Particle and Astroparticle Physics (KCETA);
- Public outreach and dissemination: KIT performs cooperative work on APPEC webpages and the Newsletter;
- Research Training: KIT will make the experiences gained within KSETA accessible to all interested institutions that belong to APPEC. Doctoral researchers of the APPEC Participating Institutions will be admitted to KSETA training courses subject to availability. Furthermore, KIT shall support the International School of Astroparticle Physics (ISAPP) with funding to be mutually agreed upon by KIT and ISAPP; the amount will be provided by HAP until 2016 and by KCETA thereafter.

The GA discussed what is the most appropriate level for the organisation to sign the accession letter: KIT as a highly autonomous centre or as a representative of the Helmholtz Association. The GA wished to abide by the principles set out in the MOU, where partners had to be responsible for policy and strategic oversight, or be funding organisations. In discussion with the current German partner in APPEC, it was agreed that it would be appropriate to have German representation from both the Ministry and the Helmholtz Association.

Action: It was decided that the most appropriate level of accession is that KIT signs as a representative of the Helmholtz Association and thus the GA asked for the letter to be rewritten to better reflect this. It entrusted the general secretary and the chairman to communicate with KIT and help with the reformulation.

5 DISCUSSION OF SAC MANDATE AND NOMINATION OF SAC MEMBERS

The Chairman presented the SAC rules of procedure that had been prepared by the JS. The following parts in this document were extensively discussed.

- Whether the Chairman of the SAC can represent APPEC in scientific advisory bodies of other organisations, such as CERN.
- Whether the SAC should act as an Evaluation Panel for the Common Calls. Some members of the GA thought that the members of the SAC would be selected for their ability to carry out long-term foresight, so they should not be distracted by common call evaluations, while others thought that extra ad-hoc evaluation panels added complication in the process.

Informed by the discussion above the tasks of SAC were reformulated as follows:

The SAC should

- establish and update every 5 years the roadmap of European Astroparticle Physics that examines the medium- and long-term plan of the infrastructures necessary for the advancement of the field. Furthermore, it may be asked to update the Roadmap in response to developments in the field. In the context of the Roadmap procedure, it should
 - take a critical look on budget and calendar claims concerning the large projects;
 - identify the major milestones and decision turning points with respect to the maturity of technologies and/or expected scientific results;
 - address issues of critical R&D and issues of procurement;
- advise on the themes of the future common calls and is responsible for the evaluation and monitoring of the common calls, under the guidance of the GA members representing the countries participating in the call;
- may be asked by the GA to participate in scientific advisory bodies of other European or global organisations.

Action: The document containing the SAC rules of procedure, including the above reformulation will be circulated to the members of the GA. The final version of the document will be agreed upon at the GA phone conference that will take place to discuss the SAC membership.

The GA then discussed the SAC membership. Even though some of the GA members had sent member nominations, the GA decided that the nominations received so far were not allowing for a final selection. It was thought that if the rules for nominating the SAC membership could be clarified, then the procedure for determining the final SAC membership would be facilitated. These rules were defined as:

- Members should not be in the management of research infrastructures.
- Members should not represent their country.
- Participating institutions can nominate people from other countries, in Europe and abroad.

Action: A committee will be formed that will be composed by the Chairman, the Vice-Chairperson and the General Secretary with the aim to contact before the end of April each APPEC Participating Institution in order to get their proposals. This information will be compiled into a new list - with the CVs of each person nominated – that will be circulated to the GA members in May. A phone conference will take place in June in order to finalize the SAC membership.

6 RELATIONS WITH CERN, ESO, ESA, JINR

The history of relationships between CERN and APPEC encoded in the Appendix II of the WG3 ESG document was discussed. The members of the GA agreed that an update of these relationships, taking into account developments, as well as opportunities of common actions e.g. in neutrino physics is needed.

F.Ferroni mentioned the recent common interest issue of the long baseline beam experiments where both CERN and APPEC should collaborate for an optimal solution.

Action: An APPEC delegation should meet with CERN management before the next GA in order to discuss and re-define this list of connections. The same delegation should program equivalent discussions with ESO, ESA and JINR.

7 APPEC REPRESENTATION IN DIFFERENT BODIES: APIF, ECFA

The chairman informed that APIF has invited an APPEC representative to participate in its meetings. Manfred Krammer, representing ECFA, said that it is also important for ECFA to have a representative of APPEC.

Decision: It was decided that by default it should be the Chairman of APPEC that should represent APPEC in APIF and ECFA.

8 NOMINATION OF VICE CHAIRPERSON(S)

The Vice-Chairperson nominated informally at the same time as the General Secretary and the Chairman was Janet Seed, but the procedure had not been formalised.

Decision: Janet Seed was unanimously elected as the Vice-Chairperson.

9 REPORT OF THE GENERAL SECRETARY

Rules of procedure of the JS. The GS had been asked to write a text describing the general procedures and operation of the JS, which he presented to the GA and they were approved.

Common Fund. The model document of the financial agreement for the contributions of the Common Fund has been written and some countries have already sent the signed agreement to the GS. These agreements form the basis of the invoices that will be sent to the Participating Institutions. The aim is to collect all the contributions to the common fund by the end of June. The expenses incurred so far have been the costs of the webserver for the ASPERA and APPEC websites, and the JS/GA meeting costs.

Intranet and document repository. One of the main tasks of the DESY functional centre is to find the best possible solution for the safeguarding of APPEC and ASPERA documents, with easy access for all JS and GA members. The GS presented a cloud-based system that will be located on a DESY server (<https://ptweb.desy.de/owncloud>), which was very well received by the GA. The GS will organise access for all JS and GA contact list members, but it was agreed that there will be only one password/username for all.

Past and future meetings. The GS listed APPEC meetings that took place since the last GA:

- Jan. 25: meeting on ERICs, Paris
- Feb. 12: JS meeting, Barcelona
- Feb. 13: experts discussion on computing, PIC Barcelona
- Mar. 22: 2nd PACT meeting, CERN
- April 4: JS meeting, Rome

He also informed the GA of the meetings that are planned until the next GA:

- June 10 Meeting with the Research Infrastructures Unit at the European Commission
- June 19/20: JS meeting, Paris + meeting with heads of computing centres
- Oct. 7/8: ApP on the Crossroads, Paris
- Oct./Nov. 1st theory topical workshop, Madrid (see next item)
- Nov. 4/5: Horizon2020 event, Berlin
- Nov. 6: GA meeting

Web, mailing lists and newsletter. The final APPEC logo was presented to the GA. One of the issues raised by the GS was there is an urgent need for a newsletter executive editor (perhaps $\frac{1}{4}$ of an FTE). It would be great if any Participating Institution could help by providing this person. Arnaud Marsollier then presented the future website that will go "live" at the end of May. He also mentioned that at the same time as setting up the website, a newsletter system is being developed. The e-mail of the APPEC contact office is: appec@desy.de. Mailing lists of contact persons for JS and GA have been prepared.

10 REPORT ON THEORY NETWORKING (A. MASIERO)

The minutes from the 2nd PACT meeting were used to summarize the status of the theory networking. There will be an initial phase where PACT will be a virtual centre with the following tasks:

- Coordination of existing and promotion of new theoretical ApP activities
- Organising a few month long topical workshops (following the model of Santa Barbara) where theorists interact on a specific topic.

The ultimate tasks and objectives of the PACT program will be:

- Coordination with theory community
- Synergy between the experimental and theoretical communities (reference body)
- Organisation/support of EU schools, workshops, etc.
- Organisation and support of a postdoctoral programme.

The following actions are currently being carried out:

- 1) Creation of a PACT mailing list of people wishing to participate in PACT with representatives from all European countries (including those not yet in APPEC).
- 2) Signing of a Letter of Intent to be signed first by the scientists interested in taking part in the PACT activities, followed by a Memorandum of Understanding signed by the Institutions to which these scientists belong.
- 3) Carry out a mapping exercise of the theoretical ApP activities, including a list of postdoc fellowships that are available in the country on a regular basis – these should be also grouped according to ApP area not just country/institute.
- 4) Creation of a “Theory” page on the APPEC website

Decision: APPEC will write a letter of support for the PACT activities, once the above documents have been finalised and furthermore show its support by providing 3000€ for the Madrid topical workshop as well as use the means at its disposal (web, newsletter, etc) to promote the workshop to the ApP community.

11 NEWS OF THE GRAN SASSO FUNCTIONAL CENTRE (S. RAGAZZI)

The Director of the Gran Sasso National Laboratory, Stefano Ragazzi, presented briefly the activities at Gran Sasso as functional centre of APPEC.

12 INFORMATION POINT FOR ERIC'S (FEDERICO FERRINI)

Federico Ferrini gave an introduction to the ERIC (European Research Infrastructure Consortium) structure. An ERIC is a Research Infrastructure with legal personality and full legal capacity recognized in all EU Member States, whose principal task is the operation of a research infrastructure and complete management of the facility. Such a structure is appropriate only for high-profile research infrastructures with a European dimension: for new or existing research infrastructures that can be “Single sited” or “Distributed”. There are two phases in the formation of an ERIC: an informal phase and a formal one. In the informal phase, an Electronic Application is submitted to the EC, which does not necessitate an official commitment by the countries. The Commission with the help of independent experts (ESFRI roadmap) then assesses the compliance with the ERIC regulation of this Electronic Application. The EC communicates the assessment results (with any requests for modifications) by the Commission and requests the signed documents, which signal the start of the formal phase. Next, a Management Committee composed of European Member States representatives gives an opinion on the draft Commission decision. If accepted, the decision to set up the ERIC (with all the essential elements of the statutes) is published in the Official Journal of the European Union, in all official languages.

In the domain of ApP, two ERICs are currently being discussed for the short-term future: the Gravitational Wave Observatories and the Underground Labs. The CTA community is also considering to create an ERIC

during phase 2 (see below), while CTA decided to start with an intermediate legal structure and eventually upgrade to ERIC when the VAT dispositions in member countries are clarified.

In the case of EGO, working groups have been formed of scientific and ministerial representatives for each country to prepare the Electronic Application. If they succeed to get the letter of intent by three countries, they will be able to finish the Electronic Application by autumn 2013.

Each of the GA members then proceeded to give the update on how ERICs are viewed by their Ministries in order to understand if there are any obstacles at the moment and if yes what are these.

- *Poland: The ministry has been considering ERIC but at the moment the big problem for them is the VAT exemption that an ERIC requires.*
- *Spain: The Ministry has shown an interest in participating in both of the ApP ERICs.*
- *Germany: The Ministry decided that it will decide to participate or not in each ERIC on project by project basis. There are different issues that will matter in each project, for example the location of the infrastructure that in some cases may be outside Europe.*
- *France: The Ministry is not in a position to give concrete response yet and the discussions are not very encouraging.*
- *Italy: The Ministry supports both of the ERICs.*
- *Netherlands: Given that two existing ERICs (in other scientific areas) are based in the Netherlands, the Ministry is already favourable toward ERIC. They are currently thinking about an ERIC for KM₃NeT but also about involvement in the other two ApP ERICs as well.*
- *UK: BIS will decide on a project by project basis. It is not a simple process. No strong position yet but the UK is participating in the discussions for the two ERICs.*
- *Romania: The Ministry is already considering the ERICs. The VAT aspect not an issue since ELI is going to be build over there soon.*
- *Switzerland: The Swiss Ministry will examine the ERICS on a case by case basis.*
- *Hungary: The Ministry has expressed interest in participating in both ERICs.*

The contribution of APPEC will be in the political phase, i.e. once the electronic application has been assessed and countries are asked to make their formal decisions on their involvement.

Decision: APPEC supports the efforts taken by the community to create ERICs and recognizes the advantages of such structures, although recognises that decisions should be taken on a case by case basis. Those communities that are preparing an ERIC should inform the members of the GA representing the countries potentially involved in the ERIC.

13 ASTROPARTICLE LHC FORUM (DAVID BERGE)

David Berge summarized the LHC-CR Workshop on behalf of the LHC-CR organization panel, i.e. the efforts towards an Astroparticle Physics Forum at CERN whose aim will be to exploit the synergies between CERN and ApP experiments. The first workshop was centred on high energy cross-section and particle shower simulations done both CERN and the UHECR observatories (e.g. Auger and TA). An example of such a synergy would be collisions of protons with atmosphere nuclei (O₂ or N₂) to calibrate the responses of UHECR facilities. A document is being prepared presenting the physics case and eventually leading to a proposal of a dedicated light ion run at the LHC. These proposals will follow of course the usual evaluation at CERN. APPEC may examine it in parallel and eventually give its support. The high-energy theme is not the only theme where synergies may be developed. The dark matter searches as well as neutrino physics can also be part of this forum. A yearly workshop on different themes on the particle-astroparticle interface could enhance the synergies and even find new ones.

Decision: It was noted that such a programme at CERN would need the strong support of the LHC experiments to release time for light ion running. The Astroparticle Forum at CERN issue should be considered by SAC, which will then advise APPEC on how is best to proceed. A report on the progress of this initiative will part of the next GA. The issue will be taken up in the forthcoming meeting of the APPEC management with the CERN director.

14 KM3NET (MAARTEN DE JONG)

Maarten de Jong presented briefly the status of the KM3Net project¹.

Science case: KM3Net has achieved improved discovery potential for Galactic sources, started a feasibility study for measurement of neutrino mass hierarchy and could provide for independent observation of a possible discovery by IceCube with improved significance within reasonable amount of time, while in parallel could perform continuous and long-term measurements in the areas of oceanography, geophysics and marine biological sciences

Organisation: KM3Net passed through an EU funded design study (2006–2009), producing a Conceptual Design Report (2008) and a Preliminary Technical Design Report (2010). It entered in parallel an EU funded preparatory phase (2008–2012) under the programmatic authority of an Administrative Standing Committee (ASC) and the scientific control of a Scientific Standing Committee (SSC). The SSC prepared an evaluation report and a list of questions to which the KM3Net collaboration presented its replies (December 2012). The KM3Net collaboration consists of 40 institutes, 185 members; it recently elected its management and drafted a MoU concerning the first phase of KM3net(2013–2017). A Resource Review Board based on the ASC as well as a Scientific & Technical Advisory Committee have to be set-up. The funds for phase-1 (40 M€) are secured (Italy 21 M€, France 8 M€, the Netherlands 8.8 M€, plus others). The second phase of KM3Net (220-250 M€, 2017–2030) is subject to further funding. In parallel to the construction the project would establish an ERIC (headquarters in the Netherlands) and also formalise bi-lateral agreements with Earth & Sea sciences. Operation costs are estimated to be around 5 M€ per year.

Technology: The optimal detector will consist with a series of 4-5 building blocks (approximately 100 lines each). The collaboration has converged to a preferred technology and is in the process of deployment tests (till December 2013). One should note also the recent (March 2013) successful deployment of a tower with alternative technology in Sicily. There is a draft of a development plan, first efforts of risk analysis, an updating effort of the planning document.

Site issue: the figures of merit of the 3 different sites (Capo Passero, Pylos, Toulon) were presented. Furthermore the collaboration presented a scenario compatible with a multisite deployment, accompanied with the following statement to the Scientific Standing Committee overseeing the Design study: "The overall conclusion is that the advantage of additional funding and human resources resulting from adopting a multisite solution significantly outweighs any financial or scientific advantage from adopting a single site solution."

Data management and access policy: all data are sent to shore, processed real-time and streamed to computer centres. It will be a remotely operated distributed network. They have adopted open access policy

¹ The series of questions sent to the representative of KM3Net as a guideline for the presentation are listed in the Appendix .

with a fixed latency to be defined. The user community would anyway be extended to the Global Neutrino Observatory participants and the Earth and Sea sciences.

The discussion that followed centred a) on whether the definitive adoption of the multisite option is indeed necessary before the agencies have a clear idea on where the funds of phase-2 will be found and b) on the issue of the funding of phase-2 itself.

Different agencies pointed out that whereas Phase-1 funding has been secured through structural funds and additional funding from some countries, Phase-2 funding is clearly not yet secured and would need further strong argumentation to pass.

During the discussion and based on this first example of discussion of a future large infrastructure, it became clear that a long term planning, from the funding point of view needs to be elaborated by the APPEC agencies. Since the representatives of CTA and LAGUNA are expected to present their plans in the next GA, it was agreed that follow-up reports will be expected by all three (KM₃Net, CTA and LAGUNA) in the GA that will take place in one year's time (the 4th GA).

Action: APPEC will discuss in Spring 2014 (4th GA) a longer term planning document, compatible with available and projected funds.

14 DISCUSSION OF H2020 OPPORTUNITIES

This item was postponed to the next GA meeting.

15 DATE OF NEXT MEETING

5-6 November 2013, Berlin, Germany.

Appendix

Guidelines for the presentation of large projects to the APPEC General Assembly

- 1) Brief presentation of the science case and in particular science drivers for the design
- 2) Presentation of the status of the design
- 3) Presentation of the key technological elements, status of their readiness, prototypes
- 4) Key technological decisions, validation date calendar, risks associated
- 5) Site issues, procedure of selection, if relevant, calendar
- 6) Procurement policy, production sites
- 7) Project management structure
- 8) Status of pre-planning documents (CDR, PDR, TDR) and associated calendar
- 9) Data management issues and access policy
- 10) Legal and administrative issues for the coordination and the hosting during operations
- 11) Estimates of the costs in investment, personnel.☐
- 12) Estimate of contingency
- 13) Estimates of operational costs per year and estimated length of operation
- 14) Relationships with the institutional partners and funding stakeholders
- 15) Strategy for convergence towards the full funding of the infrastructure
- 16) What can APPEC do to help ?