

Memorandum of Understanding For the Coordination in Astroparticle Physics in Europe (ApPEC)

FINAL DRAFT Version 24/05/2012

- 1st draft by Maurice Bourquin and Janet Seed
- 2nd draft with corrections after ApPEC SC meeting, 9 January 2012
- 3rd draft with corrections by Spain and France(CNRS)
- 4th draft with corrections by INFN
- 5th draft with corrections by Germany
- 6th draft with corrections after the ASPERA GB, 22 february 2012
- 7th draft with corrections after the WG of APPEC (Masiero, Seed, Bourquin, Donath, Katsanevas)
- 8th draft with corrections of APPEC SC meeting, 11 April 2012
- 9th draft with corrections from CEA and DESY
- 10th draft with corrections from ASPERA GB, 24 May 2012

By and Between

The Centre National de la Recherche scientifique, a Public Scientific and Technological Establishment, having its registered office at 3 rue Michel-Ange 75794 Paris cedex 16, represented by Professor Jacques MARTINO, Director of the Institut National de Physique Nucléaire et de Physique des Particules, hereinafter referred to as **CNRS/IN2P3**

The.....

The.....

Hereinafter collectively referred to as “Partners” and individually as “Partner”

Introduction

CONSIDERING THAT:

- (a) The Astroparticle Physics European Consortium¹ (ApPEC), emanates from the Astroparticle Physics European Coordination committee founded in 2001 and operating under the same acronym until this MoU enters into force. It is the outcome of a decade of preparatory work by a consortium of representatives from Ministries and agencies and of the intense preparatory work provided by the EU funded ERANETs ASPERA and ASPERA-2 (2006-2012) that paved the way through a series of funding mechanism studies, common roadmap elaborations, common calls for R&D proposals, and common outreach and communication endeavours.
- (b) Astroparticle physics is the study of particles and radiation from outer space, and of rare, cosmologically-significant elementary particle reactions. The scales of distance examined range from the realm of elementary particles to the outer reaches of the observable Universe, placing the field at the intersection of cosmology, astrophysics, particle physics and nuclear physics. Astroparticle physics currently comprises the following six domains: dark matter, dark energy, high-energy cosmic messengers, gravitational waves, proton decay, and the properties of neutrinos.
- (c) The Astroparticle Physics European Coordination has achieved its initial goals since it has been able to raise the profile of Astroparticle Physics in Europe as witnessed by the increasing number of national funding agencies that have joined since 2001.
- (d) Astroparticle Physics has entered the phase of implementation of large scale infrastructures demanding therefore the upgrade of the coordination scheme to a Consortium structure, whose strategic and implementation goals are described in Article 1 of this Memorandum of Understanding.

The Parties have agreed as follows:

¹ By consortium it is meant the collaboration of the Partners in view of specific goals rather than the term used in certain national legal systems to depict a legal structure.

Article 1: Purpose and objectives

The purpose of this Memorandum of Understanding (hereinafter the “MoU”) is to affirm the establishment of the Astroparticle Physics European Consortium, hereinafter called “ApPEC”. The present MoU replaces the former existing MoU for the Astroparticle Physics European Coordination (also called ApPEC) and provides the framework for the consortium including its objectives, as well as the rights and obligations of the Partners.

The strategic and implementation objectives of ApPEC are the following:

Strategic objectives

- Provide a discussion forum for the coordination of European Astroparticle Physics;
- Develop and update long term strategies (e.g. Roadmap for European Astroparticle Physics);
- Participate in the European scientific strategy with organizations such as the European Strategy Session of CERN Council and ESFRI;
- Develop closer relationships with organizations involved in Astroparticle Physics research such as CERN, ESA and ESO;
- Express collective views on Astroparticle Physics in international fora.

Implementation objectives

- Facilitate and enhance the coordination between existing or developing national activities;
- Develop a common action plan for large Astroparticle Physics infrastructures based on the Roadmap for European Astroparticle Physics;
- Facilitate the convergence of future large scale projects/facilities;
- Provide organisational advice for the implementation of future large scale projects/facilities, for instance initiate and/or accompany the creation of resource review boards for international collaborative projects where the national funding agencies are involved;
- Initiate and guide activities funded by the European Commission (ERA-NET, IA, Prep-Phase);
- Launch common actions including common calls funded by a virtual common pot.

The MoU is not legally binding, but the Partners recognize that the success of the ApPEC depends on adhering to its provisions. The Partners agree that the consortium has no legal capacity.

Article 2: Partnership

2.1 The participating institutions of the present MoU constitute the Partners of ApPEC. The signatories of the MoU are duly authorized representatives² of these institutions.

2.2 Ministries, funding agencies responsible for policy and/or providing funding in Astroparticle physics research at the national or international level, or their designated institution with legal status, are eligible for Partnership.

2.3 The rules for Partner admission, resignation/withdrawal or acquirement of observer status are presented in article 8.

Article 3: Internal Organization

The organisational structure of ApPEC consists of the following three (3) bodies:

- the General Assembly (GA) , the strategic, decision-making and supervisory body as detailed in article 4 below,
- the Joint Secretariat (JS), the executive body chaired by the General Secretary as detailed in article 5 below,
- the Scientific Advisory Committee (SAC), the advisory body as detailed in article 6 below.

Article 4: The General Assembly

4.1 The General Assembly is the strategic, decision-making and supervisory body of ApPEC.

4.2 Each Partner of ApPEC may appoint one (1) representative to the General Assembly (hereafter “Partner of the GA”). The representative will normally be the director of its major astroparticle physics Institute/Agency or a manager of a major national astroparticle physics program/funding agency. The Partner reserves the right to change its representative to the General Assembly at any time.

The Chair of the Scientific Advisory Committee and the General Secretary shall be invited to attend the meetings of the General Assembly without voting rights.

The legal entities having acquired the observer status according to article 8 of the MoU shall attend the meeting of the General Assembly without voting rights.

² The representatives signing on behalf of the Participating Institution are not necessarily the same with the representative of the Participating Institution to the General Assembly defined in article 4.2.

4.3 The General Assembly will elect a Chair among the Partners of the GA (hereafter “Chair of ApPEC”) to serve for two years. Re-election will be possible, but not consecutively. The General Assembly may elect two Deputy Chairs among the Partners of the GA to serve on the same terms as the Chair. The Chair will be “supra partes” and will not have a right to vote.

4.4 The General Assembly shall be convened by its Chair at least twice a year.

4.5 The General Assembly may invite international organizations and other appropriate non-Partner organizations with which ApPEC shares common objectives and which have not acquired the observer status according to article 8, to attend the meetings with an advisory role.

4.6 Responsibilities of the General Assembly

The General Assembly shall determine the general policy and the procedures of ApPEC and in particular:

- a. approve the annual work plan and progress report submitted by the General Secretary;
- b. review Annexes to this MOU at least every two (2) years, in order to ensure the eventual re-allocation of functions and/or host countries and adapt the Annexes to the evolution of ApPEC;
- c. approve the spending of the ApPEC General Budget (as defined in article 7 below) of the previous financial year;
- d. approve the General Budget estimates for the Basic and Additional Activities, as defined in article 7 below;
- e. in case of modification of the in cash annual participation fee, approve unanimously the amounts to be provided according to article 7.2;
- f. deliberate on procedural matters and in particular the internal procedures of the Secretariat (see article 5) and the Scientific Advisory Committee (see article 6);
- g. appoint the General Secretary;
- h. appoint the members of the Scientific Advisory Committee and its chairperson;
- i. appoint observers representing ApPEC in international fora or organisations ;
- j. approve the accession of new ApPEC Partners (according to article 9).

4.7 The Chair of ApPEC shall send the proposed agenda to each Partner of the GA at the latest fourteen (14) calendar days before a GA meeting. Any agenda item requiring a decision by the Partners of the GA must be identified as such on the agenda. During a

meeting the Partners of the GA present or represented may agree to add a new item to the original agenda.

The General Assembly shall not deliberate and decide validly unless at least half of the countries are present or represented (quorum). There will be only one vote per country. In case the quorum is not reached a new quorate meeting shall be organized within sixty (60) calendar days at the latest.

The chairperson should strive towards a unanimous decision in all cases.

In cases where a unanimous decision cannot be reached, decisions shall be taken by a majority of two-thirds (2/3) of the votes cast. There will be only one vote per country. Decisions concerning the General Budget (items 4.6.c and 4.6.d above) require a majority of two-thirds (2/3) of the votes cast but also that the countries that voted in favour, contribute more than two-thirds (2/3) of the ApPEC resources (i.e. participation fees).

Any Partner unable to attend a General Assembly meeting may appoint a proxy who must also be a Partner of ApPEC. A Partner cannot represent more than one proxy.

The General Secretary shall produce written minutes of each meeting which shall be the formal record of all decisions taken. He/She shall send the draft minutes to all Partners of the GA within twenty (20) calendar days of the meeting. The minutes shall be considered as accepted if, within thirty (30) calendar days from sending, no Partner of the GA has objected in writing to the chairperson with respect to the accuracy of the draft of the minutes.

Article 5: The Joint Secretariat and the General Secretary

5.1 The joint Secretariat is the ApPEC executive body. Its main functions are distributed over a limited number of 'functional centres' hosted in different Partners. Annex 1 lists the functional centres and their corresponding activities.

5.2 Each functional centre will have its own leader and its staff shall comply with the general or special rules or regulations of the Partner hosting the centre.

One of the functional centres shall be in charge of keeping the documentation, the archive of files and the records of the ApPEC General Budget (as defined in article 7 below).

5.3 The General Secretary shall be responsible vis-à-vis the General Assembly for the efficient management of ApPEC, its finances and for ensuring the execution of the decisions of the General Assembly. The preparation and organisation of the meetings of the General Assembly is also among his/her duties. His/her mandate will last for two years, renewable once.

5.4 The core of the Joint Secretariat consists of the General Secretary and the heads of the functional centres. The Joint Secretariat will liaise with the Partners and solicit their participation.

5.5 The Joint Secretariat will be coordinated by the General Secretary. The work of the Joint Secretariat is defined in an annual work plan to be presented to the General Assembly by the General Secretary and approved by the General Assembly (see article 4.6.a). The annual work plan and progress report shall be structured in work packages and tasks.

The operation of the Joint Secretariat shall be set under the rules of procedure of ApPEC as approved by the General Assembly.

Article 6: The Scientific Advisory Committee and other Committees

6.1 Scientific Advisory Committee

The General Assembly shall establish a Scientific Advisory Committee (SAC):

- (a) to examine and report on issues of strategic scientific importance within their fields of competence;
- (b) to propose programs or projects for adoption as activities of ApPEC; and
- (c) to organize activities or carry out other tasks entrusted to them by the General Assembly.

The General Assembly shall nominate the chairperson of the SAC among its members for a mandate of two (2) years, renewable once.

The chairperson shall convene the SAC at least once a year and shall report to the General Assembly.

The operation of Scientific Advisory Committee shall be set under the rules of procedure of ApPEC as approved by the General Assembly.

The members serve 'ad personam'.

6.2 Other committees

The General Assembly may establish any other advisory committee, if considered necessary.

Article 7: Financial Issues

7.1 The general budget of ApPEC (hereafter referred to as “the General Budget”) shall be composed of the contributions of the Partners. These will be of two types: cash contributions to the common fund and contributions in kind.

7.2 The common fund shall be composed of the participation fees of the Partners. Each Partner shall provide an annual participation fee in cash. The annual participation fees are fixed at the time of the signature of this MoU to be of five (5) thousand Euros for Partners from countries having a large Astroparticle Physics program and of two (2) thousand Euros from the other countries. These amounts may be modified by unanimous decision of the General Assembly. According to the census these countries are the following:

- France,
- Germany,
- Italy,
- Netherlands,
- Spain,
- Switzerland,
- UK

The annual participation fees and any other cash contributions will compose the ‘Common Fund’, which shall be used to cover the support of meetings and material expenses for outreach and dissemination. The Common Fund is part of the General Budget.

The location of the Common Fund will be decided by the General Assembly.

The ApPEC functional centres may draw funds from this account after approval by the General Secretary.

7.3 In-kind contributions can also be made by the Partners. Any in-kind contributions must be agreed upon by the General Assembly, upon proposal of the General Secretary. These in-kind contributions, once approved, also form part of the General Budget.

The funding of the functional centres is not part of the General Budget but is submitted annually to the GA for information.

7.4 There shall be two categories of activities:

(a) a “Basic Activity” is an activity financed via the General Budget and to which all Partners contribute. Additional external contributions are possible and will be highly appreciated.

(b) an “Additional Activity” is an activity financed by a subset of Partners and/or third parties.

7.5 The General Secretary presents the annual financial plan and the financial report for the General Budget to the General Assembly.

7.6 For particular activities, ApPEC may deem it desirable to have the involvement of other public bodies, trusts and associations. Such organizations are also able to make contributions to the activity.

The functional centre being in charge of managing and administering the General Budget shall develop an accounting system that monitors cash and in-kind contributions in the General Budget in a fair manner.

Article 8: ApPEC Partners and observers

8.1 Any legal entity wishing to be a Partner of ApPEC (under the conditions of article 2 above), shall submit a formal application to the Chair of ApPEC who shall inform all Partners of such an application before presenting the proposal to the General Assembly.

An entity shall be considered as a Partner upon signature of the accession document (Annex 4) by its authorized representative and the General Secretary. Such an accession shall have effect from the date identified in the accession document.

8.2 Legal entities (under the conditions of article 2 above) from countries within or outside Europe, as well as international organisations, may obtain observer status upon approval of the General Assembly.

This status gives the right to a non-voting observer seat in the General Assembly. Observer status will be established by means of an exchange of letters between the General Secretary and the interested legal entity. Observer status may be withdrawn by either side in writing at any time.

8.3 Participation in ApPEC may be terminated if the General Assembly decides that a Partner no longer fulfils the criteria for participation, and/or fails to meet its obligations towards ApPEC, and/or acts contrary to the aims, objectives or values of ApPEC.

8.4 A Partner may withdraw from ApPEC at the end of the financial year immediately following that in which it gives written notice of withdrawal.

Article 9: Confidentiality

The Partners agree that the open exchange of information shall honour the following principles:

(a) The Partners shall treat any information, agreed or noted by the Partners to be confidential, for the duration of this agreement, strictly confidential.

(b) The Partners shall take all appropriate steps to safeguard the confidential information.

Article 10: Annexes and modifications of the MoU

10.1 This MoU may be modified at any time upon written consent of the Partners.

10.2 The Annexes of the MoU form an integral part of it.

10.3 The Annexes can be modified by the General Assembly in accordance with article 4.

Article 11: Termination of ApPEC

The duration of this MoU is five (5) years after its entry into force. It will then be extended automatically for further five (5) years, unless a termination decision is taken. ApPEC may be terminated at any time by a decision taken at a special meeting of the General Assembly by a two-thirds majority of the votes cast and a quorum of at least two-thirds (2/3) of the Partners.

In case of termination, the General Assembly will decide how the remaining funds will be distributed.

Article 12: Entry into force and duration

The present MoU shall enter into force on the date of its signature by at least the Partners hosting the functional centres.

Article 13: Resolution of Disputes

Any dispute between ApPEC and its Partners or between the Partners shall be brought to the attention of the General Secretary and the Chair of ApPEC for amicable settlement.

The MoU shall be signed in as many original copies as the Partners.

Signature pages:

Annex 1: Operation of the Secretariat

The ApPEC executive functions will be distributed in three (3) functional centres hosted in 3 different countries. The structure of the consortium will be evaluated after three (3) years. These centres have the following names:

1. **International Contact, Computing and Industrial Relations**
2. **Networking, Theory and Education centre**
3. **Strategic Actions, Interdisciplinarity and Outreach**

The functions of each centre were clustered according to two main criteria: how closely related are the tasks and how intensive is the required effort in personnel for their completion. The functions clustered in each centre are described below. They will be subject to review by the General Assembly every two years, in order to ensure the eventual re-allocation of functions and/or host country.

In case agencies not belonging to the host countries contribute to the activities of a specific centre by providing personnel and/or budget, there will be separate agreements between these agencies and the host Partner responsible for the centre.

Description of the activities in the 3 functional centres³

1. International Contact, Computing and Industrial Relations

This centre will include four (4) functions:

- a) **Contact point.** This centre serves as a contact point for international relations of ApPEC and will organise the efforts for extension of network to other institutions in European Union countries or European Union associated countries.
- b) **Computing model.** The treatment of large amounts of experimental data requires European coordination, as has been demonstrated by CERN and also by the Virtual Observatories. A common policy has to be defined concerning future technology possibilities and data management models (e.g. Grid and Cloud). Coordination of research and development in this area with industry involvement is therefore essential. Within the ASPERA-2 project a series of workshops (Lyon, Barcelona, Hannover) on the computing model for Astroparticle Physics have been organized as a result of which a white paper has been prepared that will serve as a guide for this centre.
- c) **Industrial coordination.** Given that the number, size and needs of the Astroparticle Physics infrastructures will be continuously developing, exchanges and collaborations should be enhanced between the Astroparticle Physics community and Small and Medium Enterprises (SMEs), as has been done up to now through the ASPERA

³ The actions related to the different functions of the three centres presented here are only indicative and subject to the approval of the General Assembly.

Technology Forums. All stakeholders (funding agencies, Astroparticle Physics community, SMEs) have emphasized the importance of the continuation of such efforts. This centre will a) map the existing large projects and industrial Partners and coordinate their interaction, b) assist the projects in their procurement policy, c) facilitate industrial development in the home countries of all Partners to match astroparticle project needs, d) incite industrial developments in the home countries of all Partners in areas where the know-how is dominantly non-European, e) develop a policy of access to Astroparticle Physics Research Infrastructure for industry, f) encourage Innovation by concentrating on two or three key R&D projects of clearly pan-European interest. Examples of actions are: the organisation of an annual meeting of Technology Transfer Officers of ApPEC Partners. Organisation of a yearly workshop in the format of those organized in the context of the ASPERA projects (photodetection, mirrors, lasers, cryogenics); the organisation of a smaller meeting with of a group of industry representatives to inform on progress and needs of large projects.; the maintenance of a website specific for industrial relations; special efforts to develop links with industry in smaller European countries; the establishment of links with similar European efforts (e.g. CERN's HEPTEch).

- d) **Accounting and documentation.** The centre will keep track of Partners' contributions both in cash and in kind, in order to report to the ApPEC General Assembly. Furthermore, the centre will be in charge of keeping all papers (e.g. contracts, agreements, etc.).

The centre will need to organize one or two larger meetings during the year and a few smaller meetings. Two to three FTEs will be necessary to undertake these tasks.

2. Networking, Theory and Education

This centre will include three (3) functions:

- a) **Networking actions.** Given the multitude of institutions involved in Astroparticle Physics and the European dimension of all major Astroparticle Physics projects, the linking of and networking amongst existing institutions (as was done in the past with European Underground laboratories) is essential for the adoption of a collaborative approach concerning management, funding and administration of upcoming Astroparticle Physics research, while at the same time optimizing resources. Examples of action are: the undertaking of steps towards coordinated actions of Underground Laboratories, based on the existing MoU or similar actions for the cosmic-ray observatories (photons, neutrinos, charged cosmic rays). The coordination can extend to common technology, procurement (e.g. photodetection) and data access issues where a multi-messenger approach is needed.

- b) **Theory.** Theoretical research is an integral part of Astroparticle Physics and is indispensable when experimental data have to be interpreted in the context of models. Similarly to experimental activities, theoretical studies will strongly benefit from strengthened and more coordinated support. The centre could explore common funding solutions, exchange programs, etc. They will be funded by separate agreements on a variable geometry basis. Transversal issues on theory (e.g. dark matter detection, multi-messenger studies etc) could be treated in specialised workshops of the type of Santa Barbara conferences.
- c) **Graduate Schools.** The ASPERA projects have provided a clear picture of the Astroparticle Physics graduate school landscape in Europe. It is thus now possible to move towards a more unified approach, which eventually could have the form of a single supported structure.

The centre will need to organize one or two larger meetings per year and a few smaller meetings. Two FTEs will be necessary to undertake these tasks.

3. Strategic actions, Interdisciplinarity and Outreach

This centre will include four (4) functions:

- a) **Roadmapping.** The remarkable progress that has been observed in the field of Astroparticle Physics over the last decade is expected to continue. Thus, a yearly meeting of the Scientific Advisory Committee (SAC) to examine the progress of the roadmap and issue a short recommendation text to the General Assembly and a more detailed update of the Astroparticle Physics roadmap, once every three years is one of the essential tasks of the future common structure. The SAC will also evaluate the developing links with related disciplines (particle physics, cosmology, astrophysics or even geosciences). Furthermore the centre will help the SAC in the process of providing elements for the assessment of the readiness of different projects and the individuation of common standards for the deliverables as well as critical reviews and decision points at different stages of the projects. The centre will be in charge of the following: Organisation of a yearly meeting of the SAC, plus any specialised meeting when required. Assistance of large projects for the implementation of pan-European project management and quality assurance procedures. In addition, the centre will put together yearly updated information on the state of Astroparticle Physics projects in Europe (with respect to legal frameworks, procedures for scientific, technical and financial review, links with funding agencies etc). Such reports are necessary for preparing and ensuring the construction of the next generation European infrastructures and will be of value to all stakeholders, including project coordinators, SMEs and funding agencies. The coordination could be extended to the establishment of common software tools for project management.

- b) **Common calls.** In the framework of ASPERA, coordination at the level of funding has also been initiated through common calls for the support of R&D programs aiming at the development of technologies and techniques required for Astroparticle Physics future projects. This centre will ensure the logistics of these calls.
- c) **Interdisciplinary links.** The interdisciplinary potential of Astroparticle Physics Infrastructures for geosciences, environmental studies, biodiversity and industrial applications has been documented within ASPERA, and has been promoted through two workshops. The centre will be responsible for continuing the contacts, bring closer these very diverse communities, identify the cultural barriers (e.g. ways of publication and access), help organise the access of non-Astroparticle Physics scientists or industry to Astroparticle Physics Research Infrastructure services. The centre will organise expert meetings on specific areas of synergy or the proposal submission to relevant European programs.
- d) **Web portal and outreach.** Communication and outreach is a key element for a successful establishment of a European coordinating body. In this centre there will be an outreach officer who shall link and coordinate with the Partners to develop contents and keep up-to-date the communication tools and channels (Newsletter, Website, (Social) media...), provide support to the network for outreach & communication issues, stimulate and contribute to the communication of the current and forthcoming projects, support educational projects. Online and offline dissemination material and existing channels to decision-makers, politicians, journalists, scientists and the general public will be used to communicate and promote ApPEC, Astroparticle Physics infrastructures and projects. A main tool in this task will be the use of the ASPERA website (www.aspera-eu.org) as well as the ASPERA communication website (www.astroparticle.org) that need to be continuously updated in order to maintain interest. Outreach and dissemination material expenses shall be covered by the General Budget.

The centre will need to organize one or two larger meetings during the year and a few smaller meetings. Two to three FTEs will be necessary to undertake these tasks.

Annex 2: Partners hosting the functional centres

1. The International contact and industrial relations centre will be hosted by PT-DESY in Hamburg, Germany.
2. The Networking, theory and education centre will be hosted by INFN at the Laboratorio Nazionale Gran Sasso in Aquila, Italy.
3. The Strategic actions and interdisciplinarity centre will be hosted by CNRS and CEA at the Astroparticle Physics and Cosmology (APC) laboratory in Paris, France.

Furthermore there is expressed interest and eventual participation, conditioned by future availability of funds and personnel, from

- MINECO (Spain) for the Website and outreach activities
- NIKHEF (Netherlands) for roadmapping, interdisciplinary studies and graduate school activities
- STFC (UK) for the common call and project management/oversight activities
- CERN for part of the outreach officer's salary

These contributions will be treated by separate agreements between the Partners hosting the relevant centres and the contributing entity.

Annex 3: Accession document

ACCESSION

of a new legal entity to ApPEC and the MoU “*For the Coordination in Astroparticle Physics in Europe*”, version [..., YYYY-MM-DD]

[OFFICIAL NAME OF THE NEW PARTNER]

hereby consents to become a Partner to the MoU identified above and accepts all the rights and obligations of a Partner starting [date].

The GENERAL SECRETARY hereby certifies that the General Assembly has accepted in the meeting held on [date] the accession of [the name of new Partner] to the ApPEC MoU starting [date].

[description of the contribution of the new Partner to ApPEC]

This Accession document has been done in 2 original copies to be duly signed by the undersigned authorised representatives.

[Date and Place]

[INSERT NAME OF THE NEW PARTNER]

Signature(s)

Name(s)

Title(s)

[Date and Place]

GENERAL SECRETARY

Signature(s)

Name(s)

Title(s)