

FRAMEWORK COLLABORATION AGREEMENT
REFERENCE KN2261
(THE "AGREEMENT")

BETWEEN: ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE ("EPFL"), having its registered address at Batiment CE 3316 Station 1, 1015 Lausanne, Switzerland, duly represented by Philippe Gillet, Vice-President for Academic Affairs and President ad interim, and Benoît Deveaud, Dean of Research,

AND: THE EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH ("CERN"), an Intergovernmental Organization having its seat at Geneva, Switzerland, duly represented by Steve Myers, Director for Accelerators and Technology,

Hereinafter "Party" and collectively "Parties".

CONSIDERING

That CERN, an Intergovernmental Organization, is a leading global laboratory in particle physics, providing for collaboration of a pure scientific and fundamental character, with participation by scientific institutes from all over the world;

That training is an integral part of CERN's mission and that, accordingly, the Organization has a range of well-developed student and trainee programmes;

That EPFL occupies a prominent place among the educational institutions in the world in the domains of science and engineering;

That the Parties are natural partners for joint research and development work in areas of common interest, and have a longstanding tradition of collaboration between them, including but not limited to EPFL's participation in the experiments at CERN, scientific publishing, joint funding of researchers (including, as the case may be, of researchers performing work at other parties) and the participation of EPFL students in the CERN student and graduate training programmes;

The mutual benefit that the Parties would derive from enhanced collaboration between them,

AGREE AS FOLLOWS:

Article 1
Purpose

- 1.1 This Agreement establishes the framework for collaboration between the Parties in areas of mutual interest, in such forms and through such means as the Parties shall agree. The implementation of this Agreement shall be subject to the availability of resources at the Parties. The Parties shall use the results of their collaboration for non-military purposes only.

- 1.2 Annex 1 specifies possible areas of mutual interest, including areas that are the subject of ongoing collaborations at the date of signature of this Agreement. Except as may be agreed otherwise by the Parties or as may result from changes to applicable rules, any such ongoing collaborations shall remain subject to the provisions of the original agreement on the matter.

Article 2 **Project(s)**

- 2.1 Each Party's contribution to a specific collaboration ("Project"), including the required resources, the duration of the activities and any deliverables, milestones, acceptance procedures and the management (including contact persons) of the Project shall be set out in an Addendum to this Agreement signed by duly authorized representatives of the Parties. Except as specified otherwise in an Addendum, the Project shall be subject to the provisions of this Agreement, it being understood however that participation in experiments at CERN shall be subject to the provisions of the relevant Memorandum of Understanding, and participation in the CERN student and graduate training programmes subject to applicable rules, without any need to conclude an Addendum. In case the terms of this Agreement are in conflict with the terms of an Addendum to this Agreement, the terms of the Addendum shall prevail.
- 2.2 Notwithstanding the foregoing, it is agreed with respect to participation of EPFL students in CERN's doctoral student programme, whether ongoing at or subsequent to the date of this Agreement, that if, exceptionally, a student is unable to complete his/her PhD within the statutory three-year period stipulated in the applicable CERN conditions, he/she may be granted the status of Co-operation Associate or, where he/she becomes a Member of an EPFL Visiting Research Team, the status of User, until the end of the PhD duration according to the EPFL rules, so as to permit the student to complete his/her PhD. Except as agreed otherwise by the Parties, this additional period shall not exceed one year, and its grant by CERN is subject to the student's subsistence being provided for. For the avoidance of doubt, this Agreement does not modify EPFL rules regarding doctoral students.
- 2.3 Except as the Parties agree otherwise, each Party shall bear the cost of its participation in the collaboration and the Project(s).

No overheads shall be charged for the performance of services by one Party to the other Party, whether such services are provided in the context of a Project or outside of a Project.

Article 3
Experts

- 3.1 Each Party shall ensure the selection of experts with the necessary skills and competence to execute each Project on its behalf, and shall ensure that its experts comply with the rules of conduct and safety in force at the host Party.
- 3.2 Where CERN acts as a host Party in the execution of a Project, the EPFL experts may be appointed as associated members of the personnel pursuant to the CERN Staff Rules and Regulations from which it follows that, for the entire duration of the association of the EPFL experts with CERN (i) the EPFL experts shall have a legal link with EPFL (e.g. employment contract), (ii) EPFL shall be responsible for their social insurance, (iii) the EPFL experts shall maintain medical insurance cover adequate in Switzerland and France for themselves and accompanying family members, which shall include cover for occupational illness and accidents for the EPFL experts, and (iv) the EPFL experts shall have adequate financial resources to support themselves and accompanying family members. EPFL shall hold CERN free and harmless from liability in connection with the subject matter of this Article.
- 3.3 Except as may be agreed otherwise, where it is EPFL that acts as a host Party in the execution of a Project, the obligations set out in Article 3.2 shall apply mutatis mutandis to CERN for any participating experts employed by CERN.

Article 4
Conduct and safety

- 4.1 The experts shall comply with the rules of conduct and safety in force at the host Party.
- 4.2 Any equipment or other item contributed by a Party to the collaboration shall conform to the safety rules in force at the host Party where it will be installed and operated.

Article 5
Intellectual Property

- 5.1 Information disclosed under this Agreement by one Party to the other Party shall not create any proprietary right in respect of such information for the receiving Party.
- 5.2 Title in intellectual property developed solely by a Party in the execution of a Project shall be vested in that Party, who shall grant the other Party a free, non-exclusive license for the use of such intellectual property for the execution of its contribution under this Agreement, and, whether by itself or through its academic and scientific partners or its contractors, of its scientific programme.

- 5.3 If title in intellectual property is jointly vested in the Parties (i.e. where the intellectual property is generated by both Parties), they shall agree on the making available to third parties of such intellectual property, provided that in any event, they shall grant each other a free, non-exclusive license for the use of such intellectual property for the execution of their contribution under this Agreement, and, whether by themselves or through their academic and scientific partners or its contractors, of their scientific programmes. In the event that such joint intellectual property consist of an invention, the Parties shall jointly decide whether to file any patent application and if they so decide, they shall enter into an appropriate agreement to establish their respective rights and obligations under such patent application. It is agreed that the Parties may wish to release any jointly developed software under an open-source license.
- 5.4 The providing Party provides no warranty in respect of intellectual property made available by it under this Agreement, and the receiving Party shall be solely liable for any damages arising from its use (including, as the case may be, by its academic and scientific partners or its contractors) of such intellectual property.
- 5.5 Neither right of use nor license of any kind is granted under this Agreement to either Party on the other Party's intellectual property obtained before, after and/or outside of any Project executed under this Agreement, unless expressly agreed upon in writing in a duly executed separate license agreement.

Article 6 Publications

- 6.1 Without prejudice to the provisions of Article 5, the Parties shall strive to jointly publish the results of the collaboration as Open Access publications.
- 6.2 In so far as the Parties do not jointly publish the results of their collaboration, publications by one Party involving results developed by the other Party shall be subject to the latter's prior written approval, which shall not be withheld unreasonably. For the avoidance of doubt, prior notice of any planned publication shall be given to the other Party at least thirty (30) calendar days before the publication. A Party may within one month ask in writing the removal from the proposed publication of any confidential information owned by the other Party and/or the postponement of the publication for up to three months if legitimate interests so justify. If the publishing Party does not receive any objection within that one month period, the publication shall be permitted.
- 6.3 Publications shall acknowledge the collaboration between the Parties including, whenever appropriate, the experts having taken part in the development of the results covered by the publication.

Article 7 Confidentiality

The Parties agree to execute the Projects in a spirit of openness. However, where, exceptionally, confidentiality is required, the following provisions shall apply:

7.1 Each Party shall treat as confidential any information provided to it by the other Party provided that such information has been clearly labeled as confidential by the disclosing Party or, if disclosed orally, has been confirmed in writing as being confidential within ten (10) days from its disclosure. Except as agreed otherwise in writing, this confidentiality obligation shall continue for a period of five (5) years from the date of disclosure of the information.

7.2 The receiving Party shall:

- not use confidential information for any other purpose than for the execution of this Agreement;
- not disclose it to any third party without prior written permission of the disclosing Party.

7.3 No confidentiality obligation shall apply to information which:

- (i) the receiving Party demonstrates was in the public domain prior to its communication by the disclosing Party;
- (ii) became part of the public domain after such communication but not through any fault of the receiving Party;
- (iii) was already in possession of the receiving Party at the time of signature of this Agreement;
- (iv) has been lawfully received by the receiving Party from a third party without any confidentiality obligation; or
- (v) has been developed by the receiving Party independently and outside the scope of this Agreement.

Article 8 Liability

8.1 Except as provided in Articles 3.2, 3.3, , 9.2 and in this Article, each Party shall bear its own loss and damage in connection with this Agreement.

8.2 Subject to Article 8.3, the responsible Party shall indemnify the other Party for its loss and damage resulting from gross negligence or willful misconduct by the responsible Party, or a violation by the responsible Party of the rules of conduct and safety in force at the host Party.

- 8.3 Notwithstanding the foregoing, the Parties shall in no event be liable to each other for any consequential loss or damage, such as loss of income or of availability of data or installations.

Article 9

Entry into force, duration and termination

- 9.1 This Agreement shall enter into force on the date of signature by the last Party to sign. It shall remain in force for the duration of the collaboration, unless terminated by joint agreement, or by one Party giving at least twelve (12) months prior written notification to the other Party. Except as otherwise agreed by the Parties, termination of this Agreement shall be without prejudice to the completion of outstanding Projects set out in Addenda to this Agreement.
- 9.2 In case of a substantial breach by a Party of its obligations under an Addendum to this Agreement, the other Party may terminate that Addendum in whole or in part if no corrective action satisfactory to the other Party is taken within six (6) months of the issue of a letter of notice by the other Party to the breaching Party. The breaching Party shall reimburse the other Party for all direct costs wholly and necessarily incurred by it as a result of the termination, in an amount that shall not exceed the remaining amount payable by the breaching Party to the other Party as of the date of termination of the Addendum.
- 9.3 Articles 3.2, 3.3, 5, 7, 8 and 10 of this Agreement shall survive its termination, howsoever caused.

Article 10

Governing law and dispute resolution

- 10.1 The terms of this Agreement shall be interpreted in accordance with their true meaning and effect and as a consequence of CERN's status as an Intergovernmental Organization, independently of national and local law. Provided that if and insofar as this Agreement does not expressly stipulate, or any of its terms is ambiguous or unclear, then in those circumstances only and not in respect of this Agreement as a whole, reference shall be made to Swiss substantive law, taking into account that CERN's seat is at Geneva and that EPFL is established at Lausanne.
- 10.2 The Parties shall settle any difference concerning this Agreement amicably. Where this is not possible, the Parties shall resort to arbitration in accordance with the WIPO Expedited Arbitration Rules. The place of arbitration shall be Lausanne. Notwithstanding reference of the dispute to arbitration, the Parties shall continue to perform their obligations under this Agreement.

**Article 11
Coordination**

The Parties shall each nominate a (single) overall coordinator, who together shall coordinate the execution of this Agreement, including the identification of new projects and per-project leaders/supervisors. Their names and contact details are set out in Annex 2.

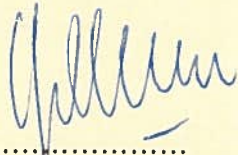
**Article 12
Amendments**

Any amendment to this Agreement shall be made in writing and signed by the authorized representatives of the Parties.

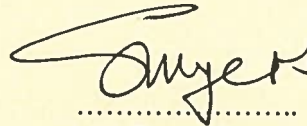
Notwithstanding the foregoing, amendments and additions to Annex 1, "Possible areas of mutual interest", may be made in writing and signed by the coordinators as per Article 11 of this Agreement.

**for the Ecole Polytechnique Fédérale
de Lausanne (EPFL)**

**for the European Organization
for Nuclear Research (CERN)**



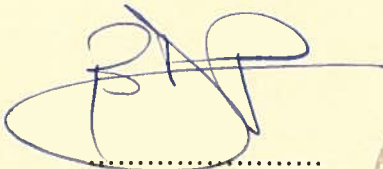
.....
by Philippe Gillet
President ad interim
Vice-President for Academic Affairs



.....
by Steve Myers
Director for Accelerators and Technology

Date:

Date ^{19th} Nov., 2013



.....
by Benoît Deveaud
Dean of Research



10 DEC. 2013
Date:.....

Annex 1 Possible areas of mutual interest

PHYSICS

Accelerator physics

Including, inter alia, LHC upgrade studies, CLIC studies, studies towards projects beyond the LHC era, simulation of energy deposition and hadronic showers with FLUKA, development of physics and numerical models for crystal channeling, general accelerator physics (optics, single particle dynamics, impedance, collective effects, beam-beam) and the CERN Accelerator School.

Beam Instrumentation

Including, inter alia, electronic development for beam instrumentation, plasma physics and thermodynamics, instrumentation and detector development.

Accelerator controls

Including, inter alia, electronic design and development for equipment controls, accelerator controls software developments, both low-level (hardware drivers, front end computing) and high-level controls (graphical applications and servers).

Radio frequency

Including, inter alia, high-gradient acceleration in normal-conducting RF structures, plasma physics approach to understanding breakdown phenomena, research on superconducting RF cavities and technology (including crab cavities and SC cavities for energy recovery applications).

ENGINEERING

Development of rad tolerant position sensors, development of smart (sensor-less) mechatronic systems, numerical simulations for studies on the CERN Electrical Distribution Network, the study of the load sharing in various configuration of the network, power electronics, including topologies, control, hard and soft commutation, energy storage, etc.

RELATED TO THE ABOVE

Fabrication of micro-structured liquid scintillators + micro-structured silicon devices for HEP applications, fabrication of micro-structured thermal management devices, studies and tests on two-phase flows in micro-channels.

STUDY AND TRAINING

The possible areas of mutual interest mentioned above are also represented through the CERN student and graduate training programmes, which include the Summer Student Programme, the Technical Student Programme, the Doctoral Student Programme, the Administrative Student Programme and the Fellowship Programme and Graduate Engineering Training Scheme.

Annex 2: Coordination

EPFL's Coordinator shall be:

Dr. Olivier Schneider

Full Professor and Director of the Doctoral Program in Physics

Tél. +41216930507

olivier.schneider@epfl.ch

EPFL SB IPEP LPHE2

BSP 623 (Cubotron UNIL)

Rte de la Sorge

CH-1015 Lausanne

CERN's Coordinator shall be :

Dr. Paul Collier

Head of Beams Department

Tél + 41227675513

Paul.Collier@cern.ch

CERN

Beams Department

CH-1211 Geneva 23