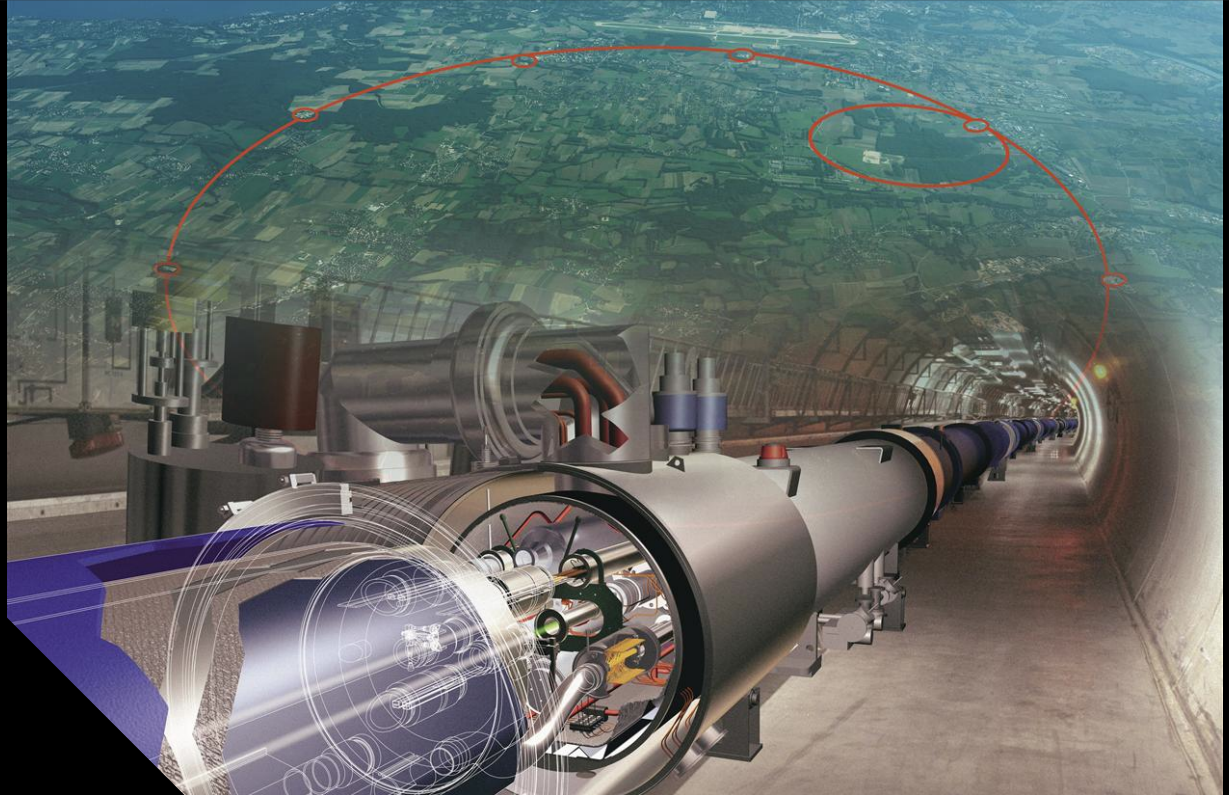


# The European Particle Physics Strategy

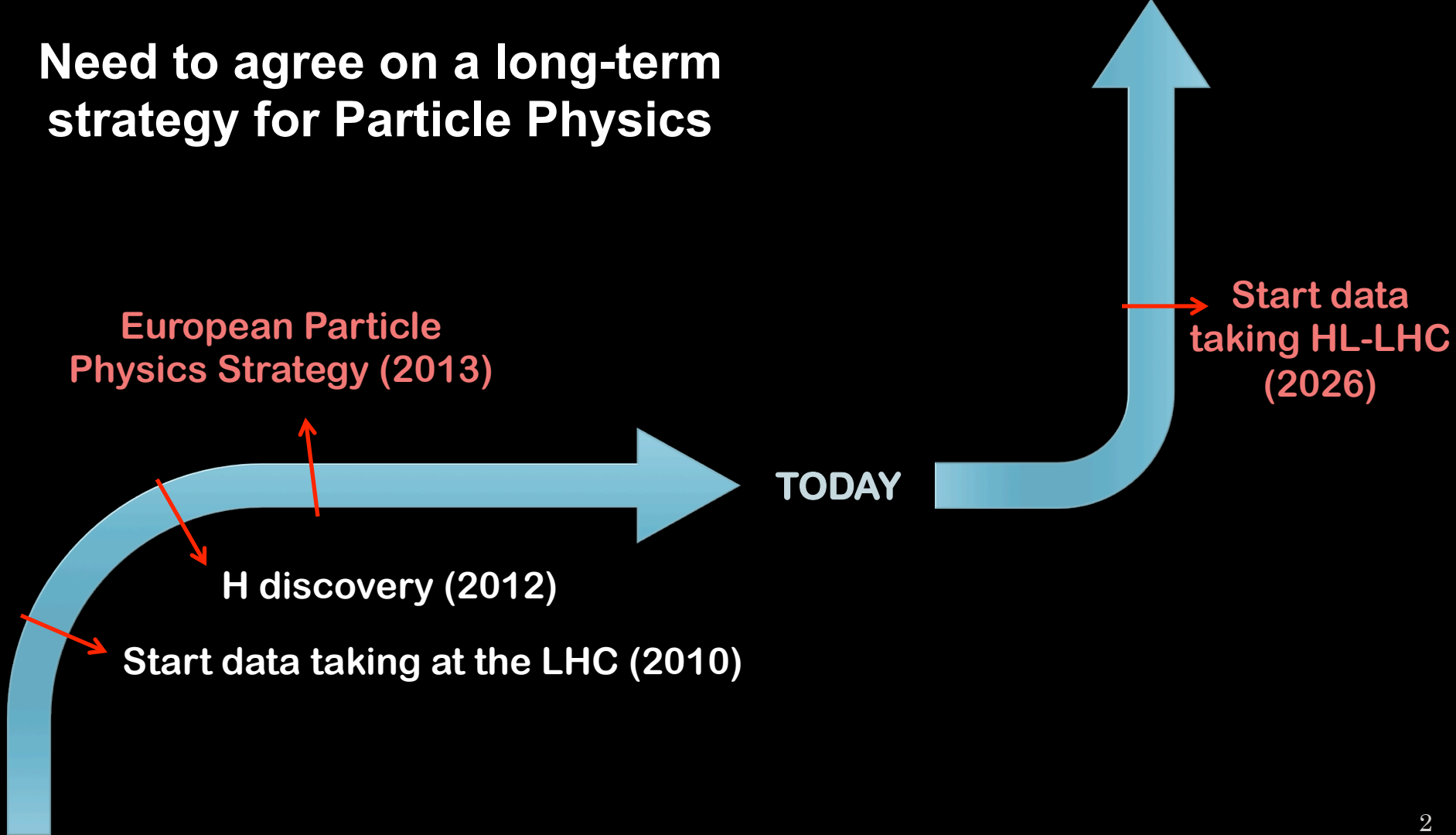
*Jorgen D'Hondt*  
Vrije Universiteit Brussel  
ECFA chairperson  
(<https://ecfa.web.cern.ch>)

*be.hep , June 2018*  
*Gent, Belgium*



HIGH-ENERGY PHYSICS  
RESEARCH CENTRE

# Need to agree on a long-term strategy for Particle Physics



# The European Particle Physics Strategy 2013

With the highest priority

- ① Europe's top priority should be the exploitation of the full potential of the LHC, including the high-luminosity upgrade of the machine and detectors with a view to collecting ten times more data than in the initial design, by around 2030. This upgrade programme will also provide further exciting opportunities for the study of flavour physics and the quark-gluon plasma.
- ② CERN should undertake design studies for accelerator projects in a global context, with emphasis on proton-proton and electron-positron high-energy frontier machines. These design studies should be coupled to a vigorous accelerator R&D programme, including high-field magnets and high-gradient accelerating structures, in collaboration with national institutes, laboratories and universities worldwide.
- ③ Europe looks forward to a [ILC] proposal from Japan to discuss a possible participation.
- ④ CERN should develop a neutrino programme to pave the way for a substantial European role in future long-baseline experiments. Europe should explore the possibility of major participation in leading long-baseline neutrino projects in the US and Japan.

# The European Particle Physics community is ready to initiate its Strategy Update

European Particle Physics Strategy (2013)

European Particle Physics Strategy (2020)

Future

Start data taking HL-LHC (2026)

TODAY

- Deliver by May 2020 an update of the European Particle Physics Strategy in a global context
- This strategy or vision will thereafter be a roadmap for funding agencies and laboratories to define concrete research programmes

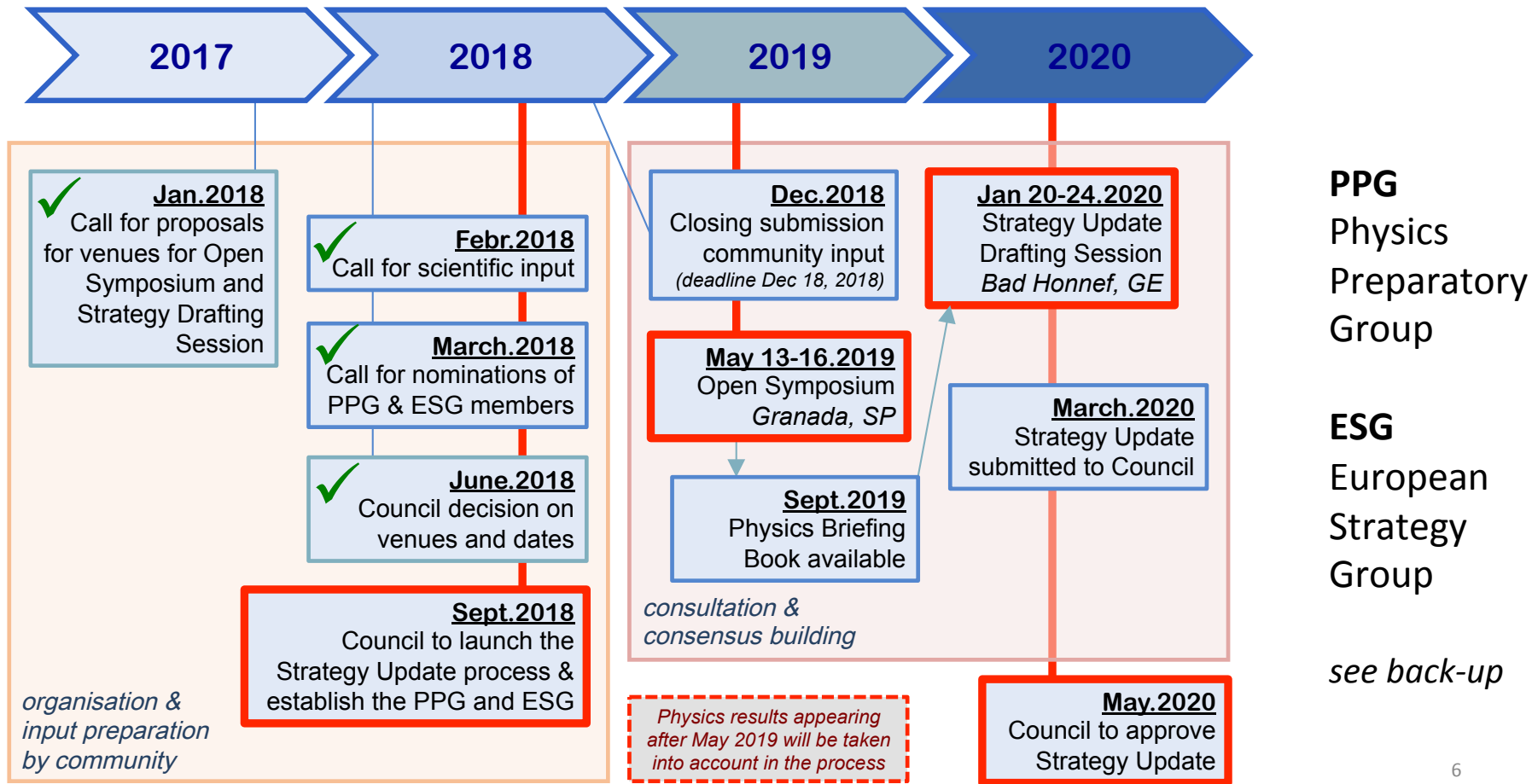
# CERN Council approved the Strategy Secretariat

Council appointment, September 2017:

- H. Abramowicz (Chairperson)
- J. D'Hondt (ECFA Chairperson, *ECFA: European Committee for Future Accelerators*)
- K. Ellis (SPC Chairperson, *SPC: Science Policy Committee @ CERN*)
- L. Rivkin (European LDG Chairperson, *LDG: Lab Directors Group*)
  
- Contact: [EPPSU-Strategy-Secretariat@cern.ch](mailto:EPPSU-Strategy-Secretariat@cern.ch)

Responsible for the organisation  
of the process.

# European Particle Physics Strategy Update



## General considerations by the Strategy Secretariat:

- The Strategy Update process follows a bottom-up approach
- To facilitate the bottom-up approach an Open Call for input reaching out to all members of the particle physics community is issued; including research groups, research networks or collaborations, laboratories, universities, (inter)national institutions and/or organisations.
- The aim is to gather all relevant input, e.g. on scientific projects, position papers, national roadmaps, etc.

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**Deadline: December 18<sup>th</sup>, 2018**

**Pragmatically, general guidelines are provided to facilitate both the collection of the input and its use by the PPG and the ESG; i.e. be brief, comprehensive and self-contained.**



Belgium is involved in several particle physics (and other) experiments, and has a path and ambition for future research

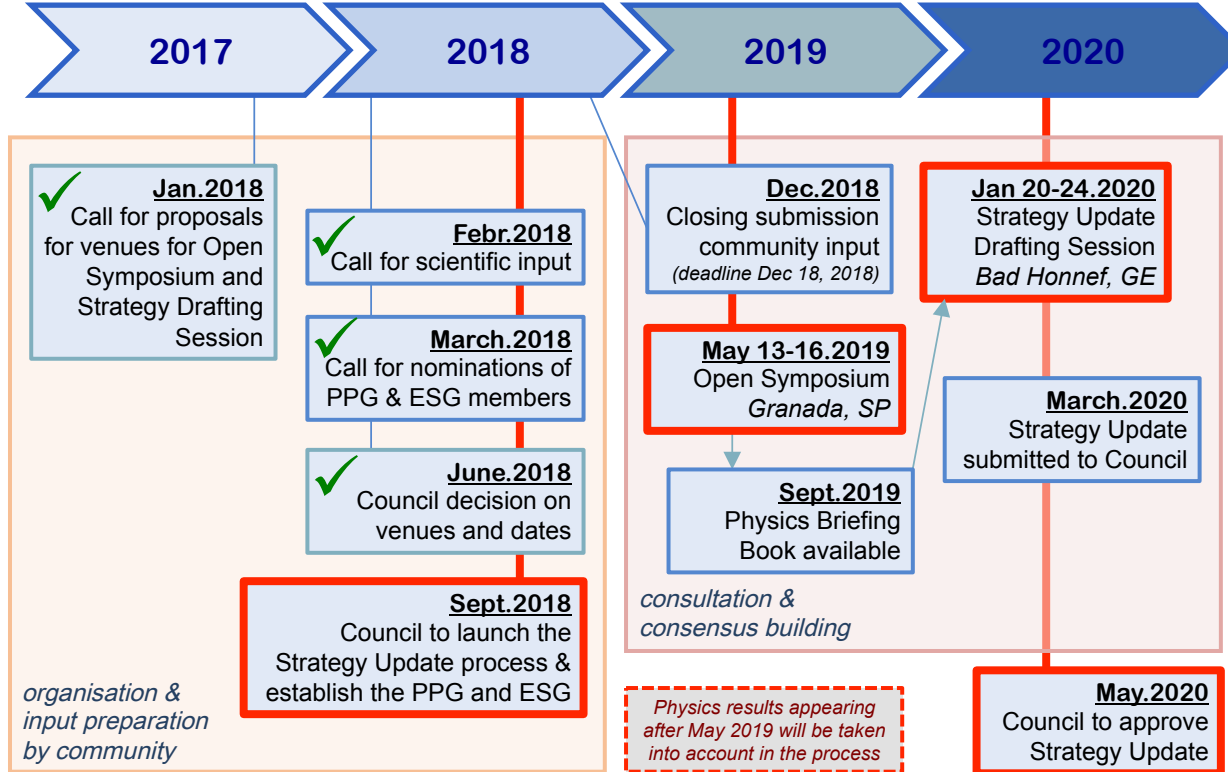
There is an opportunity to make this known in the context of the European process of the Strategy Update

The idea is to verify how to organize a Belgian community meeting on the topic, probably in the period Sept-Oct-Nov

# Thank you for your attention



## European Particle Physics Strategy Update



Physics Preparatory Group (PPG) composition, adopted by Council, December 2013:

- The Strategy Secretary (acting as Chairperson),
- four members appointed by the Council on the recommendation of the SPC,
- four members appointed by the Council on the recommendation of ECFA,
- the SPC Chairperson,
- the ECFA Chairperson,
- the Chairperson of the European Laboratory Directors' meeting,
- one representative appointed by CERN,
- two representatives from Asia appointed by the respective regional representatives in ICFA,
- two representatives from the Americas appointed by the respective regional representatives in ICFA.

Responsible to organise the Open Symposium and to deliver to the European Strategy Group (ESG) a Physics Briefing book.

European Strategy Group (ESG) composition, adopted by Council, December 2013:

- the Strategy Secretary (acting as Chairperson),
- one representative appointed by each CERN Member State,
- one representative for each of the Laboratories participating in the major European Laboratory Directors' meeting, including its Chairperson,
- the CERN Director-General,
- the SPC Chairperson,
- the ECFA Chairperson.

Responsible to deliver a draft  
Strategy Update to Council.

Invited:

- the President of the CERN Council,
- one representative from each of the Associate Member States,
- one representative from each Observer State,
- one representative from the European Commission,
- the Chairpersons of ApPEC, FALC, ESFRI and NuPECC,
- the members of the Physics Preparatory Group.

# Open call to all members of the particle physics community

Extract from the Open call circulated within the community

The [CERN Council](#) has set itself the objective of updating the European Strategy for Particle Physics by May 2020. To achieve this, it has established a Strategy Secretariat to which it has assigned the task of organising the update process.

The Strategy update process will include two major events: an “Open Symposium” and a “Strategy Drafting Session”.

At the Open Symposium, to be held in the second half of May 2019, the community will be invited to debate the scientific input into the Strategy update, which will take the form of a “Briefing Book”. This will be prepared over the summer of 2019 by a Physics Preparatory Group (PPG) and submitted to the European Strategy Group (ESG) for consideration before and during its Strategy Drafting Session to be held in the second half of January 2020.

To prepare the Open Symposium, the Strategy Secretariat hereby calls upon the particle physics community in universities, laboratories, national institutes and institutions to submit written input following the enclosed guidelines.

The deadline for input is **18 December 2018**.

Input should be submitted via a portal that will be created on the Strategy update website, which will be available from the beginning of October 2018, once the Strategy update has been formally launched by the CERN Council. The link to this website will appear on the CERN Council’s web pages - <https://council.web.cern.ch/en> - and be widely communicated through the appropriate channels.

The Strategy Secretariat  
Update of the European Strategy for Particle Physics  
[EPPSU-Strategy-Secretariat@cern.ch](mailto:EPPSU-Strategy-Secretariat@cern.ch)

## **Cover page (1 page)**

Each document submitted should carry a single cover page containing no more than the title, the contact person(s) and an abstract.

## **Comprehensive overview (maximum 10 pages)**

This core part of the document must be no more than 10 pages long (excluding the cover page) and must provide a comprehensive and self-contained overview of the proposed input.

## **Addendum**

A separate addendum is to be provided addressing the following topics (where relevant):

- interested community,
- timeline,
- construction and operational costs (if applicable),
- computing requirements.

The mandatory addendum has no strict page limit, but should be comprehensive and self-contained.

## Cover page (1 page)

Each document submitted should carry a single cover page containing no more than the title, the contact person(s) and an abstract.

## Comprehensive overview (maximum 10 pages)

This core part of the document must be no more than 10 pages long (excluding the cover page) and must provide a comprehensive and self-contained overview of the proposed input. It should address:

- scientific context,
- objectives,
- methodology,
- readiness and expected challenges.

**For the sub-structure of the 10-pages “comprehensive overview” we provide additional guidance that might be useful especially for scientific projects.**

## Addendum

A separate addendum is to be provided addressing the following topics (where relevant):

- interested community,
- timeline,
- construction and operational costs (if applicable),
- computing requirements.

The mandatory addendum has no strict page limit, but should be comprehensive and self-contained.

## **Format and deadline for submission**

The cover page and the comprehensive overview are to be submitted as a single file, the “main document”, in portable document format (pdf) by 18 December 2018. The addendum is to be submitted as a separate file by the same deadline. A dedicated submission portal will be available on the EPPSU website as of October 2018, once the Strategy update has been formally launched by the Council at its September 2018 Session. The link to the EPPSU website will appear on the CERN Council’s web pages - <https://council.web.cern.ch/en> - and be widely communicated through the appropriate channels.

## **Distribution**

Both documents submitted (main and addendum) will be passed on to the Physics Preparatory Group (PPG) and the European Strategy Group (ESG). Unless explicitly requested otherwise, they will also be made public. The option not to make either document public will be available upon submission via the dedicated portal.



# The European Particle Physics Strategy 2013

## Other scientific activities essential to the particle physics programme

- ① Europe should support a diverse, vibrant theoretical physics programme, ranging from abstract to applied topics, in close collaboration with experiments and extending to neighbouring fields such as astroparticle physics and cosmology. Such support should extend also to high-performance computing and software development.
- ② Experiments in Europe with unique reach should be supported, as well as participation in experiments in other regions of the world. Examples: quark flavour physics, dipole moments, charged-lepton flavour violation, etc.
- ③ Detector R&D programmes should be supported strongly at CERN, national institutes, laboratories and universities. Infrastructure and engineering capabilities for the R&D programme and construction of large detectors, as well as infrastructures for data analysis, data preservation and distributed data-intensive computing should be maintained and further developed.
- ④ In the coming years, CERN should seek a closer collaboration with ApPEC on detector R&D with a view to maintaining the community's capability for unique projects in this field.
- ⑤ The CERN Laboratory should maintain its capability to perform unique experiments. CERN should continue to work with NuPECC on topics of mutual interest.