

ORGANIZATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE
CERN EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

Action to be taken

Voting Procedure

For Recommendation	SCIENTIFIC POLICY COMMITTEE 266 th Meeting 14 and 15 June 2010	-
For Approval	RESTRICTED COUNCIL 155th Session 17 June 2010	Consensus

**Council Working Group on the
Scientific and Geographical Enlargement of CERN**

Scientific Enlargement of the CERN programme

Council is invited to approve the proposal for continued work on a potential scientific enlargement of the CERN programme as set out in section 4 of this document.

Scientific Enlargement of the CERN programme

1 - Introduction

Historically, the scientific focus of the CERN Organization has been accelerator-based research at the Geneva Laboratory. In addition, the CERN Convention makes provision for the Organization:

- to participate in accelerator-based experiments not located at the Geneva Laboratory;
- to participate in non-accelerator experiments (e.g. in astroparticle physics) located at the Geneva Laboratory or elsewhere; and
- to establish additional sites/laboratories and/or to host projects outside the Geneva Laboratory.

[The European Strategy for Particle Physics](#)¹, agreed by the Council in Lisbon in 2006, covers several fields of accelerator and non-accelerator-based experimental activities in addition to those already being conducted at CERN and, at the same time, the European particle physics community involved with astroparticle physics experiments is growing. In parallel national programmes in the Member States are increasingly combining CERN projects with astroparticle physics experiments. The principal reason for this rapprochement is that the physics goals of astroparticle physics experiments are often closely related and are complementary to the central goals of the CERN physics programme. Furthermore, the technical problems encountered by and solutions identified for astroparticle physics experiments are similar to those in accelerator-based experiments, and certain underground astroparticle physics experiments are also potential receivers of long-baseline neutrino beams produced by accelerator-based facilities.

From the strategic viewpoint, the scientific enlargement of the CERN programme through the Organization's participation in experiments outside the Geneva Laboratory is potentially important because:

- a) it would strengthen the implementation of the European Strategy for Particle Physics,
- b) it would add a significant new scientific dimension to the CERN programme, broadening the Organization's knowledge base, and
- c) it would allow CERN to develop closer ties with activities elsewhere, which is particularly important in the current climate of increasingly global partnerships for implementation of particle and astroparticle physics experiments.

For all of the reasons outlined above, the Working Group on Scientific Geographical and Enlargement has been reflecting on the possible scientific enlargement of CERN, in line with the remit agreed by the Council at its meeting on 11 December 2008 and with the European Strategy for Particle Physics agreed in Lisbon in July 2006.

¹ <http://council.web.cern.ch/council/en/EuropeanStrategy/ESParticlePhysics.html>

2 – Possible instruments of scientific enlargement

Two main possible instruments of Scientific Enlargement of CERN have been suggested and discussed by the Working Group ([Agenda point 10, Council Meeting 17th December 2009](#)²):

- a specific CERN programme designed to identify, coordinate and centralise the Organization's support to/participation in experiments not hosted at the Geneva Laboratory within the scientific fields covered by the European Strategy for Particle Physics, including non-accelerator physics projects;
- provision by CERN of the necessary legal framework for implementation of large European infrastructures for future non-accelerator projects.

3 – Considerations and comments expressed by delegations in the Council or the Working Group

Over the course of 2009 and 2010, Council delegations and members of the Working Group made a number of comments and expressed several concerns regarding the proposed timescale for and possible instruments of scientific enlargement of the CERN programme, namely:

- the danger of over-extending CERN resources and the consequent negative impact on the Organization's ability to fulfil its role and meet its obligations with respect to current and future accelerator-based projects at the Geneva Laboratory;
- scientific enlargement of the CERN programme would call for additional resources, which might prove difficult to find in the present economic and financial climate;
- the budgetary consequences and implications, including in terms of Member State participation, of all enlargement proposals should be systematically illustrated and examined;
- scientific enlargement might lead to the over-centralisation of European particle physics activities at CERN, and it is therefore important that the roles of the National Laboratories are taken in account and they must be represented in future discussions on this topic;
- in the context of the recent Memorandum of Understanding signed between CERN and the European Commission, the possible use of EU-specific legal and institutional frameworks for large European infrastructures for future non-accelerator projects also needs to be discussed;
- parts of the community involved in future ApPEC roadmap projects do not have strong natural links to CERN and the Organization must therefore take care to ensure that there is a general consensus among the partners in the projects regarding use of CERN as the vehicle for the implementation of such projects;
- the timescale for the scientific enlargement of the CERN programme should be synchronised with that of the next European Strategy Update, due to take place in the years 2011-12, by which time the pressure on the Geneva Laboratory connected with the LHC commissioning and start-up should have diminished considerably.

²<http://indico.cern.ch/conferenceDisplay.py?confId=75004>

For all the above reasons, but in particular the latter one, the Council expressed the view at its December 2009 Session that further discussion of the scientific enlargement of the CERN programme should be undertaken in the framework of the European Strategy Sessions of Council.

4 – Proposal

In light of the above, the Council decides that further development of the potential scientific enlargement of the CERN programme:

- should be continued within the framework of the European Strategy Sessions of Council within the context and according to the time-scale of the forthcoming update of the European Strategy for Particle Physics
- taking into account the various considerations expressed by delegations, in particular concerning scientific and resource implications as well as governance issues (c.f. section 3, above),
- with a remit extended to include discussion of the roles of other key partners in the implementation of the European Strategy for Particle Physics, notably the National Laboratories and the European Commission through the [Memorandum of Understanding](#)³ between CERN and the European Commission.

³ The MoU, signed 17.7.2009, and the associated work-plan for implementation are available at:
<http://indico.cern.ch/materialDisplay.py?contribId=31&materialId=0&confId=85784>