

# The European Strategy for the Particle Physics – the update process



## Content:

- The Strategy Definition in 2006 – brief overview
- The Strategy – brief overview
- The forthcoming update of the Strategy in 2012

# The European Strategy - first phase



- **2006:** The CERN Council, in a special meeting held the 14th of July in Lisbon, agreed on the European strategy for particle physics. The process was started one year before and the two main components were an open meeting in Orsay (community wide) early 2006 and a meeting of the European Strategy Group in Zeuthen in May 2006. See: <http://council-strategygroup.web.cern.ch/council-strategygroup/>
- **2008:** Council appointed a Strategy Secretariat with four members to prepare the European Sessions of Council and follow up the Strategy in a continuous manner – since then (Sept 2008) there has been regular European Strategy Sessions of Council prepared by the Strategy Secretariat
- Rules for implementation of how to recognize and follow up projects as part of the European Strategy for Particle Physics was approved by the Council in December 2008 (CERN-Council-S/030) – the focus is on large projects in the initial phase, i.e. future projects

# European Strategy Sessions of Councils



- **2009-10:** Four European Strategy Session meetings (March, June, September 2009 and March 2010) with the corresponding SPC discussions during these Council weeks. Additionally the Open Council Sessions in June and December also cover the Strategy Session activities. The goal has been to build up a overview of ongoing and planned activities for each Scientific activity area in the European Strategy, and slowly to prepare for next strategy update:
  - In addition corresponding SPC discussion - some of the issues are discussed in the SPC before the Council meetings.
  - The Strategy Secretariat has meet regularly from summer 2008, and several of the topics discussed in the Strategy Sessions of Council have also been discussed in ECFA and/or Director' s Meetings.
- **Strategy Secretariat:**
  - Four regular members: the **Scientific Secretary**, elected by the Council at the European Strategy Session to lead the secretariat, the **SPC Chair**, the **ECFA Chair**, the **representative of the European Laboratory Directors' meeting** elected by the latter to attend the European Strategy Sessions.
  - In addition, the **CERN Director-General** is closely associated with the Strategy Secretariat' s work.

# European Strategy Sessions of Council – continued



- The Strategy Sessions of Council agendas are at:  
<http://indico.cern.ch/categoryDisplay.py?categId=1697> (papers normally available (open) after the meeting)
- Typical “standing/standard” items:
  - Presidents report, Scientific Secretaries Report, Possibility for members states to bring up issues.
  - FALC and ICFA reports if applicable.
  - ECFA report every September (note that ECFA also reports in Open Council in December).
  - Reports of the CERN communication and the CERN Technology Transfer Networks – yearly.
  - News from and relations with the ESFRI process (when appropriate)
- Special presence:
  - European Commission (from September 2009).
  - ApPEC\* representatives (from September 2008).
  - Three observes: Israel, Russia and Turkey.

\*Astroparticle Physics European Coordination



# The European Strategy

	Strategy Point	Comments
General issues	Council will update the Strategy	
Scientific activities	LHC completion and SLHC R&D Accelerator R&D Linear Collider Neutrino Physics Links to Astroparticle Physics Flavour Physics Links to Nuclear Physics Theory	
Organisational issues	Strategy follow up and set up strategy secretariat Engagement with other regions EU relationship Non member states relation to Strategy definition	Strategy update 2012 news  Specific agenda point
Complementary Issues	Communication Network Technology Network and Transfer Industry Relation	Report Report



# Scientific Issues

- **LHC, Accelerator R&D and Linear Collider.**
- The LHC machine is now operating at 3.5+3.5 TeV and increasing luminosity, and clear plans are made for future operation, including a High Luminosity period 2020-30.
- Detector R&D is urgent as the detector changes, in 2020 in particular, are significant.
- The FP7 SLHC-PP project supports the first upgrade phase, a Design Study is in progress for the High Luminosity changes.
- R&D for high field magnets is on-going, possibly opening the door to an LHC energy upgrade later on,
  
- The FP7 EUCARD and TIARA projects are key activities in the accelerator R&D area, and for next year a new Integrating Activity project after EUCARD will need to be submitted, and TIARA will start up. We aim to discuss joint programming with the EC in the area of accelerator R&D, as outlined in the TIARA proposal, relevant for next framework programme.
  
- The [CLIC/CTF3](#) collaboration aims for a Conceptual Design Report (CDR) in 2011 and [Common activities](#) have been taken up with ILC. The [ILC](#) TDR is being prepared for 2012.
- The Council Paper on [Global Projects](#) addresses European Participation in global projects.
- The [ILC-HiGrade Preparatory Phase](#) project is addressing the industrialization of high-gradient RF-cavities, and worked to develop a Governance Model for a future linear collider.
- It is important to develop further, as part of the Strategy update, the possibility of a linear collider at and hosted by CERN.
  
- The [AIDA](#) FP7 Integrating Activity project focusing on R&D infrastructures has started-up (covering also LHC detector upgrades, neutrino detector work and some SuperB detector work).



# Scientific Activities

- **Neutrino, Astroparticle and Flavour physics.**
- The [EUROν FP7 project](#), which is a Design Study for a High Intensity Neutrino Oscillation Facility in Europe, studies options a future neutrino facility and is hence central for future planning.
- The International Design Study (IDS-NF) for a Neutrino Factory, including studies at test facilities such as MICE in the UK, has a very significant European participation.
- The [ECFA-CERN Neutrino Strategy Workshop](#) at CERN in October 2009, and the report of the [SPC Neutrino panel](#) were other important events of the last year.
- A new important element is the initiative to establish an [ECFA committee to receive and review the intermediate design reports](#) for possible future neutrino facilities as developed in the EUROν and IDS-NF frameworks.
- A common workplan has been prepared with ApPEC. The main elements of this workplan were presented to Council and the ApPEC and the document has now been sent to both.
- The main areas of contact and the combined work are well defined.
- Two flavour factories aiming for very high luminosities are currently being planned, SuperB in Italy and SuperKEKB in Japan. The [SuperB project](#) was presented to the Council in Sept. 2009 and the Council will follow its development in the TDR phase. The [SuperKEKB project](#) in Japan has received important initial funding and European physicists have central responsibilities in the detector upgrade.
- It is important to follow the flavour factories in the next period, and also to make sure precision experiments are properly considered in the Strategy update.



# Scientific Activities

- **Nuclear physics/Fixed target and Theory.**
- NuPECC has developed a [Long Range Plan \(LRP2010\)](#) for the area of European Nuclear physics. The plan were presented and discussed at the ECFA meeting at CERN at the end of November 2010.
- [The Diversity Workshop at CERN in May 2009](#) was the forum for many presentations and ideas about future projects at CERN, including also neutrino projects and precision experiments.
- While the Theory Strategy point itself is very general, the Strategy discussion document mentions several specific areas, i.e. promoting interactions between theory and experiments, the importance of CERN's visitor programme, support of lattice field theory and role/use of EU networks. It is possible to identify positive developments in these areas during the period covered by the present Strategy. However, no systematic assessment has been made.





# The European Strategy

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General issues	Council will update the Strategy	
Scientific activities	LHC and SLHC R&D, Accelerator R&D, Linear Collider, Neutrino Physics, Links to Astroparticle Physics, Flavour Physics, Links to Nuclear Physics, Theory	Workplan with ApPEC
Organisational issues	<p>Strategy follow up and set up strategy secretariat</p> <p>Engagement with other regions</p> <p>EU relationship</p> <p>Non member states relation to Strategy definition</p>	<p>Strategy update 2012</p> <p>Enlargement Working Group: Opening of CERN, Global Project Paper. Reports from FALC in Council.</p> <p>CERN-EC annual meeting</p> <p>Define in REMIT for 2012 update</p>
Complementary Issues	<p>Communication Network</p> <p>Technology Network and Transfer</p> <p>Industry Relation</p>	<p>Report of Comm. Netw.</p> <p>Report of Tech. Transf. Netw,</p> <p>Systematic studies of “problematic” contracts during LHC construction</p>

# Main points from Strategy Status Review in 2010



## Strategy Update:

- Prepare the remit for the 2012 Strategy update and appointments to the Preparation and Strategy Groups.
- Define the international participation in the 2012 Strategy update.
- Initiate the Strategy update process.

## Scientific:

- Continue to keep focus on physics results from the LHC and in the neutrino sector as guidance in preparation of the Strategy update.
- Consider how the CLIC programme and other investments for future projects can be maintained given the foreseen reductions in the CERN MTP.

## Information and coordination:

- Consider the coordination of national programmes and the Strategy update.
- Continue to develop contacts with the EC and the ESFRI process to make sure that the 2012 update process is taken fully into account.

## Issues related to the Strategy points:

- The Strategy Secretariat and associated bodies to address the points that are least developed, namely contacts with NuPECC and the points concerning Theory and Industry Relations.
- Increase Strategy-related activities in Directors' meetings and continue the important activities in ECFA relating to the Strategy implementation and follow-up.
- Address detailed points as outlined in chapters 2-5 above, including following up the workplans with the EC and ApPEC.



# Timeline for Strategy Update

- **The process involving the ESG/Prep.Group/Council – to get started:**
  - Start in March 2011 Council week with outline of the process:
    - Composition of Strategy Group and Prep. Group (followed up in June Council)
    - Names of the preparatory group requested
    - Remit approved (with some comments)
  - June 2011: Revised composition document and Name list for the Prep. Group
  - Important discussions now ahead; concerning the working mode of ESG/Prep. Group towards the European Community/International Community (implementation plan)
    - Sept 2011 Council: “Implementation plans” to be discussed
  
- **Kick off and process over the winter:**
  - 23th July 2011 EPS/ECFA : “Kick off” meeting, review status, some main questions, discussion
  - From some time in 2011: Be prepared for and encourage/collect input from community, international interactions and consultancy, topical seminar or other events, prepare Briefing Books or equivalent – to be concluded for the “Zeuthen like” meeting in 2012 (see below).
  - October 2011 (3-6.10): ICFA seminar at CERN, “global” perspective on roadmap(s)
  
- **Towards the conclusion in 2012:**
  - An “Orsay like” meeting ~mid 2012 (~2-4 days) – possibly after the summer conferences
  - A “Zeuthen like” meeting ~later 2012 (~a full week)
  
- Approval in ~September-December 2012 Council session in Brussels, arranged with the help of the EC



# Strategy Update bodies

## REVISED COMPOSITION OF THE EUROPEAN STRATEGY GROUP AND OF THE PREPARATORY GROUP FOR THE UPDATE OF THE EUROPEAN STRATEGY FOR PARTICLE PHYSICS 2011-2012.

The SPC is invited to recommend and the Council is invited to approve the revised composition of the European Strategy Group and of the Preparatory Group as set out in section 3 of this document.

- At intervals of “at most every 5 years” the Council, in its European Strategy Session, shall update the medium and long-term European Strategy for Particle Physics (“the Strategy Update”). For this purpose, it shall set up an ad-hoc Working Group, **the European Strategy Group (“ESG”)**, just like it has done for the Strategy that was adopted in Lisbon in July 2006.
- The ESG shall be assisted in the execution of its task by a **Preparatory Group**

# European Strategy Group and Preparatory Group composition



## European Strategy Group (ESG):

- Members: One representative nominated by each of the CERN Member States, the Director-General of CERN, one representative nominated by each of the major European National Laboratories in Particle Physics(\*), and the four members of the Strategy Secretariat. The ESG will be chaired by the Scientific Secretary
- Invitees: One representative nominated by each of the Associate Member States, Observer States and Candidates for Accession, one nominated by European Commission and one by ApPEC, and finally the Chairmen of FALC, ESFRI and NuPECC. The invitees have the right to attend all open meetings of the ESG and to take the floor thus providing valuable input.

## Preparatory Group:

- Four members appointed by the Council on the recommendation of the SPC and four members appointed by the Council on the recommendation of ECFA, as well as the four members of the Strategy Secretariat. The membership of the Preparatory Group will also include one representative nominated by CERN, one representative from Asia and one from the Americas nominated by the respective regional representatives in ICFA. The Preparatory Group will be chaired by the Scientific Secretary.

(\*) CIEMAT (Madrid-Spain), DESY (Hamburg-Germany), Irfu (Saclay-France), LAL (Orsay-France), Nikhef (Amsterdam-Netherlands), LNF (Frascati-Italy), LNGS (Gran Sasso-Italy), PSI (Villigen-Switzerland), STFC-RAL (Didcot-UK).



# Preparation Group

- From the SPC:
  - Professor Roy Aleksan, France
  - Professor Peter Braun-Munzinger, Germany
  - Professor Marcella Diemoz, Italy
  - Professor David Wark, UK
- From ECFA:
  - Professor Catherine De Clercq, Belgium
  - Professor Klaus Desch, Germany
  - Professor Katri Huitu, Finland
  - Professor Aleksander Filip Zarnecki, Poland
- In addition, CERN has nominated Dr Peter Jenni.
- The four Strategy Secretariat members of the Preparatory Group will be:
  - Professor Tatsuya Nakada (Scientific Secretary)
  - Professor Philippe Chomaz (representative of the European Laboratory Directors meeting)
  - Professor Fabio Zwirner (SPC Chairman).
  - ECFA chair to be elected (replacing Nakada) this autumn.
- Regional representatives:
  - Professor Yoshitaka Kuno, Japan - representing Asia
  - Professor Patricia McBride, US - representing the Americas

# REMIT Document – main elements (approved in March)



As mentioned, the remit of the ESG is to establish a proposal for an Update of the medium and long-term European Strategy for Particle Physics, for approval by the Council. It is proposed that the proposal will take the following elements into account:

- The Update of the European Strategy for Particle Physics shall in particular aim at:
  - enhancing the visibility of existing European particle physics programmes;
  - increasing collaboration among Europe's particle physics laboratories, institutes and universities;
  - promoting a coordinated European participation in global projects and in regional projects outside Europe;
  - encouraging knowledge transfer to other disciplines, industry, and society.
- The proposal shall include a review of the implementation of the 2006 Strategy, as well as of the structures and procedures currently in place with regard to the Strategy.
- The proposal shall outline priorities following a thematic approach, with special emphasis on future large infrastructures/projects, including preparatory steps for a next project at CERN after LHC in a global context, and consider time scales and resources. It shall also consider possible future participation by CERN in experiments outside the Geneva Laboratory as part of the Strategy implementation.
- The proposal shall comprise a series of ordered and concise statements of 1-2 pages in total, followed by more detailed presentations that shall not exceed 25 pages.



# Summary

- Positive status of the 2006 Strategy Implementation
  - We are following the Strategy very well (indicating that it was well constructed and quite realistic even though we need to add a year or two to some of the foreseen schedules at that time)
  
- The 2012 Strategy Update is now starting
  - Let us make it even better this time ..