

ECFA/08/254
Original : English
28 November 2008

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

EIGHTY-THIRD PLENARY ECFA MEETING

DESY Hamburg - 18 July 2008

MINUTES

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LIST OF PARTICIPANTS

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Secretary:	P. Hansen	Denmark
Members:	R. Aleksan	France
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	R. Aymar	CERN
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	B. Foster	UK
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	J. Kalinowski	Poland
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	B. Leuchenko	Russian Federation
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	M. Calvetti	INFN
	F. Ceradini	Italy
	V. Cerny	Slovak Republic
	C. de Clercq	Belgium
	G.F. Giudice	CERN
	S. de Jong	Netherlands
	A. de Roeck	CERN
	K. Desch	Germany
	S. Gascon-Shotkin	France
	M.J. Herrero	Spain
	D. Horvath	Hungary
	Y. Karyotakis	France
	N. Konstantinidis	UK
	M. Krammer	Austria
	D. Linglin	France
	L. Mandelli	Italy
	T. Mannel	Germany
	N. McCubbin	UK
	T. Peitzmann	Netherlands
	L. Poggioli	France
	A. Sissakian	Russian Federation
	P. Strolin	Italy
	Z. Trocsanyi	Hungary

The meeting was called to order at 9.00 a.m.

The CHAIRMAN welcomed the new members of Plenary ECFA, Dr J-C. Brient, France, replacing Dr Y. Sirois as from 1 February 2008, and Professor C. De Los Heros, Sweden, as from 1 August 2008.

Apologies had been received from ECFA members B. Åsman (Sweden), M. Calvetti (INFN), F. Ceradini (Italy), V. Cerny (Slovak Republic) C. De Clercq (Belgium), S. De Jong (Netherlands), A. De Roeck (CERN), K. Desch (Germany), S. Gascon-Shotkin (France), M.J. Herrero (Spain), D. Horvath (Hungary), Y. Karyotakis (France), N. Konstantinidis (United Kingdom), M. Krammer (Austria), D. Linglin (France), L. Mandelli (Italy), T. Mannel (Germany), N. McCubbin (United Kingdom), T. Peitzmann (Netherlands), L. Poggioli (France), A. Sissakian (Russian Federation), P. Strolin (Italy), Z. Trocsanyi (Hungary), and from T. Åkesson, President of the CERN Council.

1. APPROVAL OF THE DRAFT AGENDA

(Item 1 of the Agenda) (ECFA/08/253/Rev.)

The Draft Agenda (ECFA/08/253/Rev.) was adopted.

2. APPROVAL OF THE DRAFT MINUTES OF THE EIGHTY-SECOND PLENARY ECFA MEETING

(Item 2 of the Agenda) (ECFA/07/252/Draft)

The Draft Minutes of the eighty-second meeting (ECFA/07/252/Draft) were approved.

3. APPOINTMENT OF NEW MEMBERS OF ECFA

(Item 3 of the Agenda)

On the CHAIRMAN's proposal, Plenary ECFA unanimously approved the appointment of:

- Dr J.-C. Brient, as new member of Plenary ECFA from France, as from 1 February 2008, and
- Professor C. De Los Heros, as new member of Plenary ECFA from Sweden, as from 1 August 2008.

4. CHAIRMAN'S REPORT

(Item 4 of the Agenda)

The CHAIRMAN presented his report¹ on ECFA matters since the 82nd Plenary session at CERN in November 2007, focussing in particular on the visits to Portugal and Sweden by Restricted ECFA, the CERN Council weeks in December 2007, and in March and June 2008, the recent meetings of ICFA and the ILCSC, the status of applications for funding via the EU's Seventh Framework Programme (FP7), ECFA-sponsored activities and sundry administrative matters, including the scheduling of the July 2009 Plenary ECFA session during the EPS conference in Krakow, and the upcoming appointment of a new Chairman of the European Particle Physics Outreach Group (EPPOG), which would need to be ratified by Plenary ECFA at its meeting at CERN in November 2008.

On behalf of Restricted and Plenary ECFA he wished to congratulate everyone involved in both the EUCARD and the DEVDET proposals for projects to be funded through FP7 for the efforts invested, which would significantly advance the cause of high-energy particle physics in Europe, whatever the final outcome of the individual applications.

LINDNER added that the EUROv beta-beam project, which was ultimately aimed at the construction of a high-intensity neutrino oscillation facility in Europe, had been granted funding of 4 M€ within FP7 in 2007.

AYMAR, strongly endorsing the Chairman's congratulations to the EUCARD and the DEVDET communities, said that such collaborations were very important for future collaboration in Europe in the field of particle physics, as they served as templates for how the institutes in the CERN Member States should be pooling their resources and working together. The European particle physics community should not rely solely on European Union funding for its activities, and he sincerely hoped that those projects

¹ Available at <http://indico.cern.ch/conferenceDisplay.py?confId=37384>

which had not been granted framework-programme funding would be pursued nonetheless. ECFA and the new Scientific Secretariat for the European Strategy Sessions of the CERN Council would play a key role in promoting such continuity.

Responding to a question from SCHIETINGER about whether the design studies currently in progress were part of a coherent overall strategy, the CHAIRMAN pointed out that following the process which had begun in Zeuthen in May 2006 and culminated in Lisbon the same year, the Member States of CERN had formulated an overall European Strategy for Particle Physics, which was now in the process of being implemented not only at CERN and DESY but in all the particle physics laboratories and institutes throughout Europe. The R&D projects and design studies mentioned were definitely in line with that strategy. While the LHC project was certainly the main focus of the community's efforts at the moment in Europe, the Strategy would be updated over the coming years and it was important for all ideas for future lines of R&D to be fed into that process.

The Committee took note of the Chairman's report.

5. REPORT ON CERN MATTERS

(Item 5 of the Agenda) (R.Aymar)

AYMAR presented his report², focussing on the status of commissioning of the LHC machine, experiments and computing grid, and on the Laboratory's overall scientific strategy for the coming years, as set out in CERN's latest Medium-Term Plan, drawn up in accordance with the new governance mechanism introduced by the CERN Council.

On the machine side, all eight sectors had been or were in the process of being cooled down to 1.9 K and the commissioning process was in full swing, aimed at injection of first beam in August and an initial physics run until the end of 2008 at an energy of 10 TeV in the centre of mass. A number of magnets from one of the dipole manufacturers had unexpectedly quenched at a low field, probably due to creep in the epoxy resin used to assemble the conductors. Complete retraining of all those magnets would be very time-consuming and the decision had thus been taken to accept them for the low-energy run in 2008 and use the winter shutdown to undertake all the necessary

² Available at <http://indico.cern.ch/conferenceDisplay.py?confId=37384>

retraining using a wide range of currents. Last but not least, he was pleased to report that the inner triplets had been successfully tested at their full field value, which was a considerable relief to the LHC Project Management.

On the experiments side, all four main detectors were rapidly approaching the stage at which they would be ready for beam. LHCb and ALICE were both expected to be ready by the end of July. The remaining work for ATLAS, including repairs of the ECT-A leak, re-commissioning of the SCT cooling system, bake-out of the central part of the beam pipe, and final integrated magnet testing, and for CMS, including re-commissioning of the ID cooling, installation of the pixel detector and one ECAL end-cap, and magnet tests, indicated a completion date somewhat beyond the end of July.

He then described the main lines of CERN strategy for the coming years, namely:

- to complete the LHC machine and experiments for optimal operation at design energy and luminosity over the years 2008-2010;
- to start renovation of the entire injection complex to ensure reliability of LHC operation and prepare for a luminosity upgrade to $10^{35} \text{cm}^{-2} \text{s}^{-1}$;
- to prepare for the upgrades of the ATLAS and CMS detectors around 2016;
- to decide around 2011 on the construction of PS2 and LPSPL, as part of the SLHC programme dedicated to the LHC luminosity upgrade after 2017;
- to pursue actively the qualification of the CLIC acceleration scheme and contribute to the GDE on the ILC design for systems common to both colliders;
- to conclude around 2011, according to LHC results, on the competition between CLIC and ILC;
- to decide on a significant budget increase after 2010 for consolidation to refurbish CERN infrastructure, including the facilities dedicated to non-LHC physics.

In conclusion, he underlined that, due to the need to repay the LHC bank loans, the funds devoted to projects, R&D and consolidation in the years 2008-2011 only amounted

to some 11% of CERN's resources. Indeed, those initiatives were only possible due to the generous move from Member States to increase the Budget by 6% during the years in question. Only once the LHC loans had been repaid, after 2011, would the resources allocated to non-recurrent activities (projects, R&D) return to a reasonable proportion of the annual budget.

In reply to WATKINS, who wished to know when the earliest heavy-ion collisions could be attempted, AMYAR said that heavy-ion running was scheduled for the second half of 2009, prior to the winter shutdown.

In reply to a question from ELSEN about the prospects for neutrino activities at CERN, AYMAR said that neutrinos featured prominently in various parts of the plan, firstly in the beta-beam design study in the framework of the EURISOL project, which was partially supported by the European Commission and due to be delivered in 2010. Secondly, an experiment called MERIT was being erected in the n-TOF area whose purpose would be to test future targets for a neutrino facility. Thirdly, the low-power superconducting proton linac (LPSPL), which was to be built in the framework of the LHC luminosity upgrade could, in the longer term, be upgraded to 4-5 MW and act as an injector for a neutrino factory. Last but not least, the CERN Neutrinos to Gran Sasso (CNGS) facility was now operating very satisfactorily after initial difficulties with radiation shielding at the end of 2007, and the experiments could be confident of accumulating the data they required to fulfil their research goals in the coming four years.

The Committee took note of Aymar's report.

6. REPORT ON DESY MATTERS

(Item 6 of the Agenda) (A. Wagner)

WAGNER presented his report³, covering the full range of DESY activities, namely the DORIS and FLASH facilities, refurbishment of the PETRA ring, preparations for XFEL and PETRA III, high-gradient superconducting cavity development, active participation in the ATLAS and CMS experiments at the LHC, in the Global Design Effort for the ILC and in the ICECUBE and ALPS astroparticle physics experiments, and the European Union-funded activities, ILC-HiGrad, pre-XFEL and EUCARD IA. Other

³ Available at <http://indico.cern.ch/conferenceDisplay.py?confId=37384>

important DESY issues would be covered later by the speakers under Items 8 and 9 on the present agenda, "The HGF Alliance – Physics at the Terascale" and "Building up the HERA legacy" respectively.

In summary, he wished to underline that the scientific focus of research at DESY was the understanding of the structure of matter at different length and time scales. In its three areas of key competence, DESY was a world leading institution, and its science-driven technology developments had led to major new research possibilities for photon science and particle physics, such as FLASH, XFEL and ILC. Finally, he was proud to announce that DESY would be celebrating its fiftieth anniversary on 18 December 2009, for which a number of celebratory events were being planned.

The Committee took note of Wagner's report.

7. MID-TERM REPORT FROM FINLAND

(Item 8 of the Agenda) (K. Österberg)

ÖSTERBERG presented his "mid-term report" on the status of high-energy physics in Finland since the last visit by Restricted ECFA, in 2003.⁴

In reply to the CHAIRMAN, who wished to know whether there were any special reasons why the number of physics students in Finland was significantly above the European average, ÖSTERBERG noted that physics was traditionally a popular subject in Finland, which had thus suffered less than other countries from the recent general decline in physics student numbers.

The Committee took note of Österberg's report.

The meeting was adjourned at 10.55 a.m. and resumed at 11.20 a.m.

8. THE HGF ALLIANCE "PHYSICS AT THE TERASCALE"

(Item 8 of the Agenda) (T. Behnke)

BEHNKE presented his report⁵ on the new initiative in Germany to bring under one umbrella all the groups in Germany involved in particle physics at the Terascale, namely

⁴ Available at <http://indico.cern.ch/conferenceDisplay.py?confId=37384>

at the two "Helmholtz" national research centres (DESY and Karlsruhe), at seventeen universities and at the Max-Planck Institute in Munich, with a view to improving collaboration within the German HEP community, and thus making a stronger contribution to the HEP programme worldwide.

In reply to WATKINS, who wished to know the potential uses of the Federal funds allocated to the "backbone", BEHNKE said that several measures were being envisaged, including funding for fellowships and for replacement positions when people in key positions had to move away temporarily, to CERN for instance. Some funds might also be earmarked for improving the attractiveness of positions in Germany to candidates from abroad. It should nonetheless be borne in mind that the "backbone" funding would be somewhat limited.

In response to a request from NAKADA for further information on the decision-making and organisational processes within the Alliance, BEHNKE said that two scientific coordinators, one from DESY and one from the universities, provided the overall steering, while day-to-day business was handled by a scientific manager. Otherwise, the Alliance was governed by a Management Board, comprising partners from the four main areas - physics analysis, grid computing, detector science, accelerator science - and by Project Boards for each of the "legs".

In reply to a question from DOLEZAL about the conditions for non-German physicists, BEHNKE said that the working language of the workshops was English which thus made them accessible to external participants. While the majority of participants were from Germany, the positions were certainly open to outside candidates, with vacancy notices published internationally via the CERN Courier and on the Worldwide Web.

The Committee took note of Behnke's report.

⁵ Available at <http://indico.cern.ch/conferenceDisplay.py?confId=37384>

9. BUILDING UP THE HERA LEGACY

(Item 9 of the Agenda) (C. Vallee)

VALLEE presented his report⁶ on the HERA legacy, based primarily on the results from the H1 and ZEUS experiments on the high-energy frontier, the proton structure and QCD dynamics. In conclusion, he noted that the HERA measurements would lead to many textbook measurements that would stand for posterity in their own right, with their own intrinsic physics interest. In addition, with the focus of attention now switching to the long-anticipated start of data-taking for the LHC experiments, members of those collaborations were starting to realise that the road provided by H1 and ZEUS could pave the way for an optimum understanding of the initial state, namely the structure of the proton and its internal dynamics. It was therefore not to be ruled out that physics analysis at the LHC might require new insights into QCD that could be provided by revisiting the HERA data. Thoughts were thus starting to turn towards the idea of setting up a long-term repository of the HERA data for that purpose.

In reply to SCHIETINGER, who wished to know whether such a repository would be made public, VALLEE stressed that over the coming two to three years, the data would continue to be analysed by the members of the H1 and ZEUS collaborations. Discussion were only just beginning as to how the data might be made available once the collaborations had been disbanded, firstly to the LHC experiments, and secondly to the public.

Responding to a question from BARBER about the prospects for polarised electron-positron beams in a future LHeC project, the CHAIRMAN said that he wished to remind the Committee that a workshop on the technology and physics of a possible future LHeC machine would be held at Divonne (France) from 1-3 September 2008, and that all interested members of the community were welcome to attend.

The Committee took note of Vallee's report.

⁶ Available at <http://indico.cern.ch/conferenceDisplay.py?confId=37384>

10. STATUS REPORT OF THE ILC PROJECT

(Item 10 of the Agenda) (B. Foster)

FOSTER presented his status report⁷ on the ILC project, outlining notably how the GDE had recovered from the UK and US budget cuts announced in December 2007. Summarising the overall situation, he said that the first six months of 2008 had been quite traumatic due to the significant loss of resources, which had inevitably resulted in a substantial revision of the R&D plans and in an extension of the timetable for the production of an ILC Technical Design Report. With the recovery plans now in place, however, and the cost-reduction exercises going ahead, the project had once more gained forward momentum, with good progress being made on the new shallow-site studies and the "minimum machine" design. The next major event would be a joint workshop between the experiments and the machine in Chicago from 16-20 November 2008.

The Committee took note of Foster's report.

11. ECFA TERMS OF REFERENCE - DECISION

(Item 11 of the Agenda)

Introducing the item, the CHAIRMAN said that, given the way ECFA's role, activities and practices had evolved in recent years, particularly in the light of the new organisational structure for defining and following up the European Strategy for Particle Physics, the need had arisen to revise the Committee's terms of reference, originally drafted by CERN's founding fathers in the 1960s. The matter had been discussed at length by Restricted ECFA at its meeting the previous day and, as a result, the following draft amendments to paragraphs 2 and 7 of ECFA's terms of reference were now submitted to Plenary ECFA for approval (proposed new items in bold):

"2 - ACTIVITIES

To achieve these aims ECFA can engage in - among others - the following activities:

- (a) regular meetings of Restricted and Plenary ECFA;
- (b) ad hoc symposia and conferences sponsored or organized by ECFA;

⁷ Available at <http://indico.cern.ch/conferenceDisplay.py?confId=37384>

(c) study groups, set up by ECFA, or jointly with other organizations, for special problems;

(d) demographic studies of the high-energy physics community and resources in the ECFA countries, repeated at regular intervals.

(e) monitoring of the ongoing implementation of the European Strategy for Particle Physics in the CERN Member States under activity (d), presentation of corresponding status reports to the European Strategy Session of Council."

"7 - RESTRICTED ECFA

"Restricted ECFA is composed of one member per country, **confirmed every three years and generally** appointed for at most two three-year periods. The Director-General of CERN, **the Director of the Frascati National Laboratory** and the **Director for Particle Physics** at DESY are ex-officio members.

Restricted ECFA assists and advises the Chairman and the Secretary in the current running of ECFA, and acts as the communication channel to each participating country, its physics community and national institutes and authorities."

The Committee unanimously decided to approve the amendments to the ECFA terms of reference, as recommended by Restricted ECFA and presented by the Chairman.

The Committee further agreed that the Chairman would report the amendments to the CERN Council at its forthcoming Session in September.

12. ANY OTHER BUSINESS

(Item 12 of the Agenda)

There being no other business, the meeting rose at 1.00 p.m.

Plenary ECFA Members were given a guided tour of DESY facilities in the afternoon.

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