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

PLENARY ECFA

106th meeting

Videoconference – 13 July 2020

Draft Minutes

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LIST OF PARTICIPANTS

| | | |
|-------------------|-------------------|----------------|
| Chair: | J. D'Hondt | Belgium |
| Secretary: | C. Lacasta Llacer | Spain |
| Attendees: | H. Abramowicz | Israel |
| | P. Adžić | Serbia |
| | T. Akesson | Sweden |
| | P. Allport | United Kingdom |
| | P. Azzi | Italy |
| | U. Bassler | CERN |
| | F. Bedeschi | Italy |
| | S. Bentvelsen | Netherlands |
| | G. Bernardi | France |
| | F. Blanc | Switzerland |
| | A. Blondel | France |
| | D. Boumediene | France |
| | S. Bousson | France |
| | A. Bragadireanu | Romania |
| | P. Burrows | United Kingdom |
| | P. Campana | INFN |
| | A. Cardini | Italy |
| | S. Çetin | Turkey |
| | B. Clerbaux | Belgium |
| | C. Collard | France |
| | P. Conde Muíño | Portugal |
| | F. Constantin | Romania |
| | D. Contardo | France |
| | M. Dam | Denmark |
| | T. Davidek | Czech Republic |
| | S. De Curtis | Italy |
| | N. De Groot | Netherlands |
| | E. Elsen | CERN |
| | S. Falciano | Italy |
| | A. Ferrari | Sweden |
| | R. Forty | CERN |
| | B. Foster | United Kingdom |
| | E. Gallo | Germany |

| | |
|-------------------------|----------------|
| G. Ganis | CERN |
| E. Garutti | Germany |
| T. Gehrman | EPS-HEPP Chair |
| F. Gianotti | CERN |
| M. González-García | Spain |
| G. Hamel de Monchenault | France |
| R. Harlander | Germany |
| C. Helsens | CERN |
| U. Husemann | Germany |
| P. Iaydjiev | Bulgaria |
| A. Irles | Spain |
| P. Janot | CERN |
| M. Jeitler | Austria |
| A. Kaczmarska | Poland |
| Y.-K. Kim | USA |
| M. Klein | United Kingdom |
| A. Knecht | Switzerland |
| M. Krammer | CERN |
| E. Laenen | Netherlands |
| T. Lappi | Finland |
| K. Lassila-Perini | Finland |
| T. Lesiak | Poland |
| P. Levai | Hungary |
| M. Lewitowicz | NuPECC Chair |
| L. Lista | Italy |
| F. Maas | Germany |
| M. Mangano | CERN |
| V. Manzari | Italy |
| L. Masetti | Germany |
| M. McCullough | CERN |
| M. Merk | Netherlands |
| C. Meroni | Italy |
| D. Milstead | Sweden |
| J. Mnich | DESY |
| E. Nappi | Italy |
| A. Nisati | Italy |
| V. Okorokov | JINR |
| N. Pastrone | Italy |

| | |
|----------------------|----------------|
| M. Queitsch-Maitland | CERN |
| A. Read | Norway |
| E. Reynolds | United Kingdom |
| A. Sailer | CERN |
| A. Schmidt | Germany |
| R. Schoefbeck | Austria |
| C. Schwanda | Austria |
| P. Schwendimann | Switzerland |
| S. Sekmen | South Korea |
| M. Selvaggi | CERN |
| B. Spaan | Germany |
| P. Sphicas | CERN/NKUA |
| A. Stocchi | France |
| P. Strizenec | Slovakia |
| S. Sultansoy | Turkey |
| M. Taševský | Czech Republic |
| L. Vacavant | France |
| C. Vallée | France |
| N. Van Remortel | Belgium |
| G. Veres | Hungary |
| M. Weber | Austria |
| S. Williams | United Kingdom |
| W. Wislicki | Poland |
| A. Zarnecki | Poland |
| M. Zeyrek | Turkey |

The meeting, held by videoconference, was called to order at 1.30 p.m. on Monday, 13 July 2020.

1. OPENING

(Item 1 of the Agenda)

The CHAIR welcomed the members and, in particular, the invited guests, namely Professor Allport of the University of Birmingham and a delegation from the group of early-career researchers whom PECFA had invited to take part in a debate on the European Strategy for Particle Physics during its meeting in November 2019.

2. ADOPTION OF THE DRAFT AGENDA

(Item 2 of the Agenda)

The CHAIR noted that the mid-term report from Sweden (Item 12) had been postponed due to the unavailability of the speaker and that Item 8 would consist of a brief oral report on activities at the Frascati Laboratory, without the usual slides.

The Agenda¹ was adopted.

3. APPROVAL OF THE DRAFT MINUTES OF THE 105TH MEETING OF PLENARY ECFA HELD AT CERN ON 15 NOVEMBER 2019

(Item 3 of the Agenda) (ECFA/RC/19/488/Draft)

The Minutes of the 105th meeting of Plenary ECFA (ECFA/RC/19/488) were approved.

4. REPORT FROM THE CHAIR

(Item 4 of the Agenda)

The CHAIR presented² a report covering the schedule for PECFA and RECFA meetings in the second half of 2020, which had been revised to take into account the travel restrictions put in place in response to the COVID-19 pandemic; an overview of the key aspects of the updated European Strategy for Particle Physics (ESPP) and ECFA's role in implementing them, notably including spearheading the process for developing a detector R&D roadmap; the expressions of interest submitted following the first Joint ECFA-

¹ See Indico: <https://indico.cern.ch/event/933318/>

² See Indico: <https://indico.cern.ch/event/933318/contributions/3921762/attachments/2073093/3480691/PECFA-from-chair-13July2020.pdf>

NuPECC-ApPEC Seminar (JENAS) in 2019; the mandate of the proposed ECFA Early-Career Researchers (ECR) Panel; and the ECFA Newsletters, available on the Committee's website. He noted that RECFA had decided to revisit the list of major laboratories represented in ECFA and that, if PECFA endorsed the list of criteria for consideration, a call for proposals would be launched in the near future. He then presented the schedule for ECFA meetings in 2021, which might be revised as the COVID-19 situation developed, and the list of outgoing and incoming members of Plenary ECFA and representatives on Restricted ECFA.

In the context of ECFA's role in implementing aspects of the European Strategy, the Committee took note of the call for venues for the 2021 JENAS event and unanimously endorsed:

- the idea of a series of workshops on detector, experiment and physics studies for a future Higgs factory;
- the first organisational steps towards drafting the Detector R&D roadmap;
- the creation of an ECFA ECR panel.

The Committee also unanimously endorsed:

- the criteria to be fulfilled by any laboratory wishing to be represented in ECFA and the announcement of a call for proposals;
- the schedule for ECFA meetings in 2021;
- the appointment of the following new/renewed members of PECFA:
 - V. Brigljevic and I. Puljak of Croatia
 - E. Gallo, F. Mass and A. Schmidt of Germany, replacing E. Garutti, S. Hansmann-Menzemer and G. Raffelt;
 - C. Salgado of Spain, replacing T. Rodrigo;
 - A. Ferrari of Sweden, replacing B. Lund-Jensen;
 - A. Çakir and A. Karasu Uysal of Turkey, replacing S. Sultansoy and S. Ali Çetin;
- the appointment of the following new RECFA country representatives, who would also be PECFA members:
 - M. Planinić of Croatia;

- E. Gross of Israel (renewed);
- C. Meroni of Italy, replacing A. Zoccoli;
- P. Conde Muño of Portugal, replacing R. Marques.

The Committee took note that F. Bossi would replace P. Campana as the representative of the Frascati Laboratory in both PECFA and RECFA as of the next meeting, and that the United Kingdom was revisiting its procedures for nominating ECFA members and would submit a proposal to increase their number from four to six at the November meeting.

The CHAIR, reminding the Committee that his term of office would end on 31 December 2020, said that an election timeline and procedure had been drawn up by a committee of RECFA members and approved by RECFA at its meeting that morning. A number of nominations had already been received and a list of candidates who had agreed to stand for election would be published on 17 August.

The Committee took note of the timeline and procedure for electing its new Chair.

Finally, the CHAIR informed the Committee, with regret, that Professor Rodrigo, who had been an ECFA member since 2019, had passed away on 20 April 2020.

The Committee observed a minute of silence in honour of Professor Teresa Rodrigo.

In reply to a question from JANOT (CERN), the CHAIR confirmed that the Detector R&D roadmap would include R&D for all the facilities mentioned in the Strategy, including an electroweak factory.

In reply to KLEIN (University of Liverpool), who asked how ECFA would monitor accelerator developments in the context of the Strategy, the CHAIR, recalling the Committee's mandate to monitor and discuss future colliders, said that the ECFA Chair would be a member of the panel convened by the Laboratory Directors Group to establish an accelerator R&D roadmap, and the panels responsible for the two roadmaps would report to each other regularly. It would also be beneficial for ECFA to continue to hold dedicated sessions on topics relating to future colliders, including plasma acceleration, muon colliders, deep inelastic scattering programmes, Higgs physics, electroweak physics and B physics.

In reply to a question from FERRARI (Uppsala University), the CHAIR said that the ECR Panel would comprise some 90 members, with three nominations possible from each of the countries and major laboratories represented in ECFA.

In reply to KIM (University of Chicago), who asked whether it was envisaged to invite observers from other regions to participate in the ECR Panel to provide different perspectives on aspects such as diversity and inclusion, the CHAIR said that, as the ECRs themselves would need to be consulted on such a decision, it would be wise to create the Panel first and then consider adapting its terms of reference to include such a possibility in due course.

The Committee took note of the Chair's report and of the additional information provided during the discussion.

5. INITIAL VIEWS ON THE IMPLEMENTATION OF THE EUROPEAN STRATEGY
(Item 5 of the Agenda)

GIANOTTI (CERN), noting that the CERN Director-General was mandated to execute the Council's decisions and was thus responsible for implementing the European Strategy for Particle Physics (ESPP), presented³ her initial views on the future implementation of the Strategy. The 2020 ESPP was visionary and ambitious, but also realistic and prudent, and laid the foundations for a bright future for particle physics at CERN, in Europe and worldwide. Its implementation would involve collaboration with partners from all regions and require the hard work, dedication and enthusiasm of the particle physics community as a whole.

In reply to AKESSON (Lund University), who asked whether European Commission (EC) funding would be sought for the development of high-temperature superconductor (HTS) technologies for the FCC, GIANOTTI said that, at present, CERN received EC funding through grants for specific projects under Horizon2020, and that such funding would continue under the future Horizon Europe programme. The EC funding cited as a possibility on slide 9, if awarded, would be more substantial and would resemble that granted to ITER and ESA, the only two facilities to be funded directly by the EC at present. Several of the innovations required for the FCC project, such as novel tunnel-boring technologies and superconducting high-field magnets, were likely to be attractive to the EC.

In reply to questions on the future of CLIC from FERRARI (Uppsala University), GIANOTTI said that, as outlined in the 2020 ESPP, until the feasibility of the FCC project had been studied and a conclusion on its future reached, other collider options and technologies would continue to be pursued in parallel. In order to ensure that CLIC would still be a viable option if the FCC were deemed unfeasible by the time of the next Strategy update, the ESPP recommended that work continue on key CLIC accelerator technologies, including

³ See Indico:

<https://indico.cern.ch/event/933318/contributions/3921763/attachments/2073118/3480897/ECFA-ESPP-Jul-2020.pdf>

high-gradient accelerating structures, and CERN's draft Medium-Term Plan for 2021-2025 therefore allocated resources to those activities. In addition, the CLEAR facility, which tested accelerator components for CLIC among other projects, would continue to operate.

Referring to the remark on slide 6 that Europe would go directly to the FCC-hh if CepC in China were approved before the completion of the FCC feasibility study, JANOT (CERN) observed that the FCC study had already concluded that the optimum implementation sequence, both financially and technically, would be an ee followed by an hh collider, and that repeating the same study for the 2026 ESPP update would likely produce the same result.

GIANOTTI, confirming that the study would not be repeated, said that, if CepC were approved in 2021-2022, for instance, it would likely be impossible to find the 5 BCHF required to fund the FCC-ee, as the two machines would be identical. Although the CepC project proposal cited lower luminosity than the FCC-ee in order to keep the costs down and thus increase the project's chances of being approved by the Chinese government, the baseline cost was likely to be increased following approval.

In reply to ADŽIĆ (University of Belgrade), GIANOTTI said that, although the Japanese government's thinking on whether to host the ILC had not advanced, preparations for the project nonetheless continued. Following the end of the Linear Collider Board's (LCB) mandate in June 2020, ICFA had recommended that an international development team be set up to facilitate the transition into the preparatory phase, with a view to establishing a "pre-lab" if Japan expressed the intention to host the ILC. The development team's mandate had recently been drafted, approved by the LCB and submitted to the ICFA Chair.

The CHAIR added that the next ICFA meeting would be held at the beginning of August during the ICHEP 2020 conference.

The Committee took note of the presentation by Gianotti and of the additional information provided during the discussion.

6. REPORT FROM CERN
(Item 6 of the Agenda)

GIANOTTI (CERN) presented⁴ a report on recent activities at CERN, covering the Organization's response to the COVID-19 pandemic and the gradual, flexible and safe plan in

⁴ See Indico:

<https://indico.cern.ch/event/933318/contributions/3921765/attachments/2073120/3480739/CERN-report-ECFA-Jul2020.pdf>

place for the restart of activities on site; the progress made and the impact of the crisis on the LS2 activities and civil engineering work for the HL-LHC; the recent shift in the schedule for LS2 and Run 3 and the status of the Organization's geographical enlargement.

The Committee took note of the presentation by Gianotti.

7. REPORT FROM DESY

(Item 7 of the Agenda)

MNICH (DESY) presented⁵ news from DESY, covering the reduced operation during the COVID-19 pandemic and the restart of its accelerators, the status of the European XFEL and PETRA IV facilities and the KALDERA plasma acceleration project, the recent Helmholtz evaluation for funding in the period 2021-2027, plans for the future Wolfgang Pauli Centre, and the progress made towards the ALPS II and BabyIAXO experiments.

In reply to a question from VALLÉE (CPPM), MNICH said that, due to the COVID-19 crisis, the 2021 EPS-HEP conference would not go ahead in Hamburg as planned, but the EPS HEPP Board had yet to decide whether the event should be held online or postponed; a final decision was expected to be announced in August.

The Committee took note of the presentation by Mnich and of the additional information provided during the discussion.

8. REPORT FROM FRASCATI

(Item 8 of the Agenda)

CAMPANA reported on recent activities at the Frascati Laboratory, which had shut down in March due to the COVID-19 crisis, with less than 10% of its personnel remaining on site to keep the critical infrastructure running. The restart had begun slowly in mid-May and some 50% of staff and users were now on site daily; provided that the global health situation did not deteriorate further, the hope was to resume normal operation by September. Due to the necessary access restrictions, the preparation of the DAΦNE facility for the SIDDHARTA experiment had been postponed until the autumn and work had instead begun on restarting the Beam Test Facility, which required a smaller workforce, in order to provide beams for PADME, a dark matter fixed-target experiment that would take data until October, with a short shutdown in the first week of August. The SPARC_LAB facility had also restarted in

⁵ See Indico:

<https://indico.cern.ch/event/933318/contributions/3921766/attachments/2073127/3480751/ECFA-DESY-20200713.pdf>

early July, picking up where it had left off at the end of February, and would run until the end of 2021, when a six-month shutdown to refurbish the accelerator complex would begin. In parallel, work had continued on the EuPRAXIA application to the ESFRI Roadmap and the collaboration agreement had been completed and signed by some 40 European laboratories. The work under way at Frascati on the ATLAS New Small Wheel upgrade had resumed as soon as possible after the restart and was expected to be complete by the end of September. Finally, noting that his mandate as Director of the Frascati Laboratory would finish at the end of July, he thanked the ECFA Chair and members for five years of fruitful collaboration and expressed his hope that his successor would enjoy a similarly positive experience in the role.

On behalf of ECFA, the CHAIR thanked Professor Campana for his contributions to the work of ECFA throughout his mandate. It had been a pleasure to work with him and his leadership had put the Frascati Laboratory in a strong position for the future. He looked forward to welcoming the incoming Director, Professor F. Bossi, to ECFA in due course.

The Committee took note of the presentation by Campana.

9. BELGIUM MID-TERM REPORT

(Item 9 of the Agenda)

VAN REMORTEL (University of Antwerp) presented⁶ the mid-term report on the status of particle physics in Belgium since the last visit of Restricted ECFA in 2017, covering the research groups active in experimental and theoretical high-energy physics and the demographics of their membership, Belgian involvement in experiments at CERN and elsewhere, research funding and plans to improve Belgium's industrial return from CERN.

In reply to a question from CONDE MUÍÑO (LIP) about the decreasing number of technical personnel working in high-energy physics in Belgium, VAN REMORTEL said that the downward trend was partly due to the difficulties encountered in replacing individuals who had retired. Longer-term funding for high-level technicians was urgently needed, as the two-year contracts currently on offer were not sufficiently competitive with industry.

In reply to SULTANSOY (TOBB ETÜ), VAN REMORTEL said that the Belgian federal government had granted the MYRRHA project funding of 500 MEUR, which would cover most of its first acceleration stage and the lead cooling system of its reactor.

⁶ See Indico:

https://indico.cern.ch/event/933318/contributions/3921768/attachments/2072820/3480389/Belgium_HEP_Update_Jul2020.pdf

The CHAIR added that the MYRRHA collaboration hoped to attract international partners to contribute financially to the project, the first stage of which was expected to be completed within seven or eight years.

LEWITOWICZ (NuPECC/GANIL) added that the first phase of the MYRRHA project included one programme related to nuclear physics and another related to the production of isotopes for medical applications.

The Committee took note of the presentation by Van Remortel and of the additional information provided during the discussion.

10. BULGARIA MID-TERM REPORT

(Item 10 of the Agenda)

On the proposal of the CHAIR, due to technical difficulties, the Committee agreed to postpone the mid-term report from Bulgaria until the November 2020 PECFA meeting.

11. FINLAND MID-TERM REPORT

(Item 11 of the Agenda)

LASSILA-PERINI (HIP) presented⁷ the mid-term report on the status of particle physics in Finland since the last visit of Restricted ECFA in 2017, covering the main fields of study of Finnish researchers and their participation in experiments throughout Europe, the goals of the Finnish high-energy physics community for 2017-2021 and the progress made towards addressing the recommendations made by RECFA following its 2017 visit.

In reply to questions from VALLÉE (CPPM), LASSILA-PERINI said that, while she was not in a position to provide details of HIP's long-term strategy, which had been finalised earlier that year, she understood that it was in line with the 2020 European Strategy update, in which the Finnish high-energy physics community had actively participated. In its input to the update, Finland had supported post-LHC projects in Europe.

The Committee took note of the presentation by Lassila-Perini and of the additional information provided during the discussion.

⁷ See Indico:

https://indico.cern.ch/event/933318/contributions/3921770/attachments/2073104/3480708/RECFA_midterm_report_Finland.pdf

13. OTHER BUSINESS

(Item 13 of the Agenda)

- 2021 US Snowmass exercise

KIM (University of Chicago) presented⁸ slides on the 2021 Particle Physics Community Planning Exercise (Snowmass) in the United States, highlighting the timeline for the process, the composition of the Snowmass Steering Group and Advisory Group and the strong participation of the European particle physics community in the update.

In reply to a question from KLEIN (University of Liverpool), KIM said that, although the P5 process was funding-constrained, the Snowmass process itself was a purely scientific, aspirational discussion, so any and all input from the global community would be very welcome. The aim was to have as open and bold a discussion as possible about the future of particle physics in the United States.

- Departure of PECFA members

On behalf of ECFA, the CHAIR thanked all the outgoing PECFA members for their valuable contributions to the Committee's activities.

SULTANSOY (TOBB ETÜ), expressing his thanks to the Chair and the members on the occasion of his final meeting, expressed the view that ECFA should expand its focus in the future to cover the applications of accelerators not only in high-energy physics but also in fields such as material sciences, health and energy.

The CHAIR said that, as ECFA would be responsible for developing and monitoring the implementation of the future Detector R&D roadmap, and would also hear regular progress reports on the Accelerator R&D roadmap, its links to other fields would naturally be strengthened in the coming years.

The meeting rose at 5.25 p.m.

⁸ See Indico:

https://indico.cern.ch/event/933318/contributions/3921775/attachments/2073404/3481229/US_Study_ECFA_2020-07-13_YKK.pdf