ECFA

European Committee for Future Accelerators

Report from ECFA

Jorgen D'Hondt (*Jorgen.DHondt@cern.ch*)

CERN SPC meeting, September 22nd, 2020, *remote*

ECFA schedule since Sept 2019 (adapted due to COVID-19)

Due to the COVID pandemic the country visits planned for 2020 have been postponed, i.e. Serbia, France, Ukraine, Denmark. Nevertheless, via remote meetings, Restricted ECFA was proactive in preparing initiatives in response to the updated ESPP. During these meetings, we gave priority to those topics that will enhance the readiness of ECFA to help our research community when we emerge from the COVID pandemic.

- RECFA visit to Cyprus, 25-26 Oct 2019
- RECFA and the 105th Plenary ECFA meeting at CERN, 14-15 Nov 2019
- RECFA meeting, 17 April — REMOTE
- RECFA meeting, 15 May — REMOTE
- RECFA and the 106th Plenary ECFA meeting, 13 July – REMOTE
- RECFA meeting, 9 October – REMOTE ← NEXT MEETING
- RECFA and the 107th Plenary ECFA meeting, 19-20 November – REMOTE

Open Plenary ECFA session

"Advanced Accelerator Technologies"

CERN – Council Chamber, 14 November 2019 https://indico.cern.ch/event/847002/overview

1) Towards colliders using plasma wakefields (2 hours)
2) Towards a muon collider (2 hours)
3) Towards using accelerator HTS magnets in HEP colliders (2 hours)
4) Presentation on the Energy Recovery Linear technology for future colliders

Webcasted and webrecorded:
http://cdsweb.cern.ch/search?ln=en&p=105th+Plenary+ECFA+meeting+-+CERN&jrec=1&f=490__a

In the ECFA Newsletter #4:
http://cds.cern.ch/record/2705211/files/English.pdf

Open Plenary ECFA session

Strong interest from community (full Council Chamber)

229 registered participants + remote participation

(note: pre-COVID era)

This report

1. The role of ECFA in the context of the Strategy
2. ECFA Organisational topics
3. Appendix: News from ICFA (mainly on the ILC in Japan)

This report

1. **The role of ECFA in the context of the Strategy**
2. ECFA Organisational topics
3. Appendix: News from ICFA (mainly on the ILC in Japan)

The role of ECFA in the context of the Strategy

- **Detector, Experiment and Physics studies towards a Higgs Factory**

  (aligned with the ECFA initiative to map the potential of Higgs physics at future colliders)
- **Organize the development of a Detector R&D Roadmap**

  (additional to the ECFA Detector R&D Panel)
- **Synergy efforts with astroparticle and nuclear physics**

  (aligned with our JENAS initiatives, Joint APPEC-ECFA-NuPECC Seminar)
- **Societal efforts on recognition, diversity and career aspects**

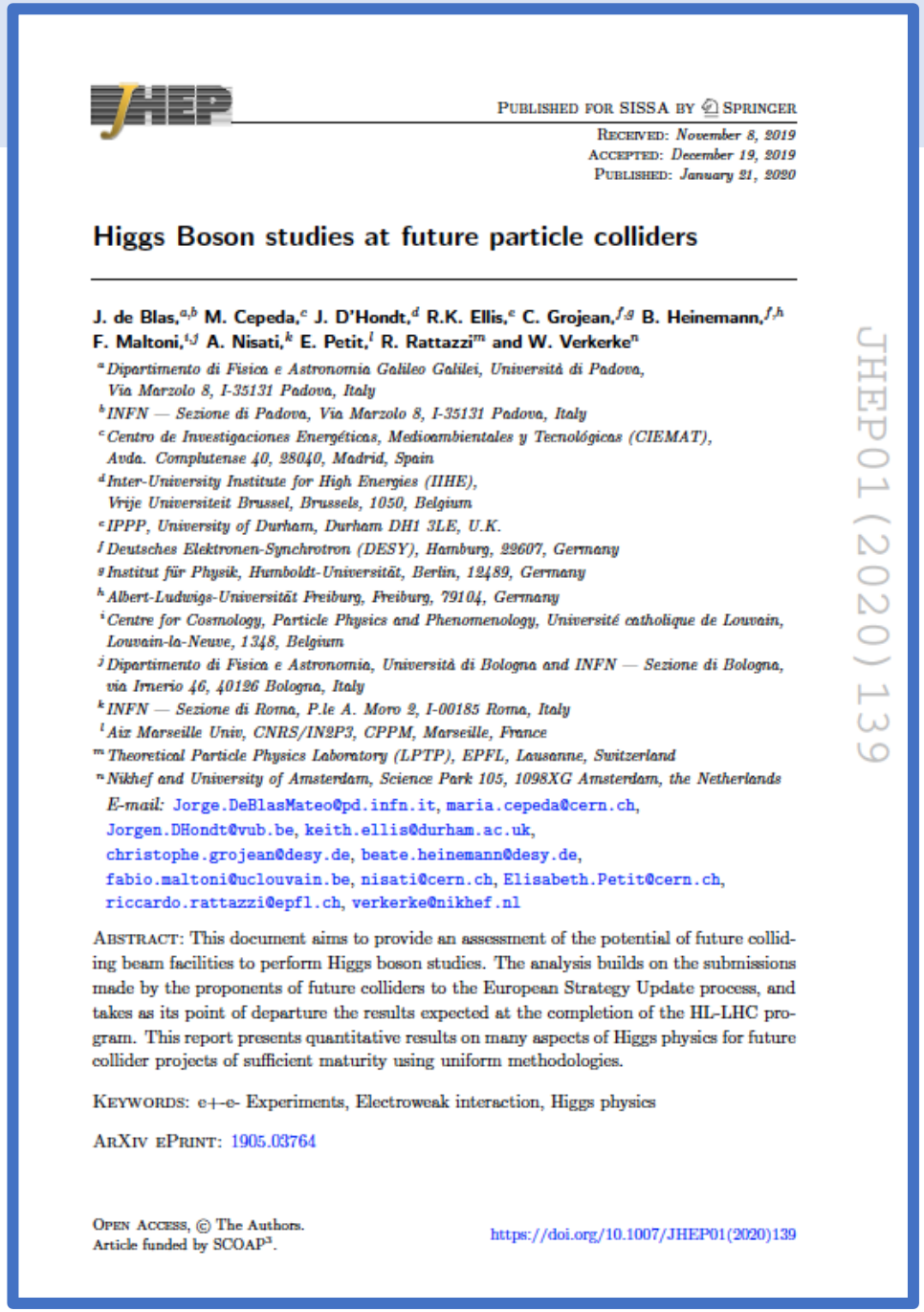
  (aligned with our working groups on the topic and the ECFA initiative to organize a Strategy debate among early-career researchers)

1

Higgs@FutureColliders report

- an assessment of the potential of future colliding beam facilities to perform Higgs boson studies
- the analysis builds on the submissions made by the proponents of future colliders to the European Strategy Update process, and takes as its point of departure the results expected at the completion of the HL-LHC program
- https://arxiv.org/abs/1905.03764

"Higgs Boson studies at future particle colliders", JHEP01 (2020) 139



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Higgs Boson studies at future particle colliders

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ABSTRACT: This document aims to provide an assessment of the potential of future colliding beam facilities to perform Higgs boson studies. The analysis builds on the submissions made by the proponents of future colliders to the European Strategy Update process, and takes as its point of departure the results expected at the completion of the HL-LHC program. This report presents quantitative results on many aspects of Higgs physics for future collider projects of sufficient maturity using uniform methodologies.

KEYWORDS: e+-e- Experiments, Electroweak interaction, Higgs physics

ARXIV EPRINT: 1905.03764

https://doi.org/10.1007/JHEP01(2020)139

JHEP01(2020)139

1 Physics, Experiment & Detector studies towards a Higgs Factory

Support for and Acknowledgement of a series of PED@HF workshops

PED@HF – Physics, Experiments and Detector studies at Higgs Factories

ECFA acknowledges the need for the experimental and theoretical communities involved in Physics studies, Experiment designs and Detector technologies at future Higgs Factories to gather. ECFA supports a series of workshops with the aim to share challenges and expertise, to explore synergies in their efforts and to respond coherently to this priority in the European strategy for particle physics.

Such *Aix-les-Bains-type* workshops would focus on PED studies for a Higgs Factory which would match a previous ECFA initiative mapping the potential of Higgs studies at future colliders. Setting up an International Advisory Committee (IAC) would be the next step, involving some RECFA members and European leaders of the most relevant colliders (e.g. CLIC, FCC, ILC, CEPC, LHeC, muon collider) with a mandate to setup a Program Committee (PC) that would develop an agenda in consultation with the IAC, and embracing the global nature of these projects.

2

Organize the development of a Detector R&D Roadmap

To guide the Detector R&D process in Europe, defining an inclusive Detector R&D Roadmap would be a major step and a strong ambition for the community at large, both considering focused and transformational R&D and considering emerging technologies also in adjacent fields

The updated European Strategy for Particle Physics calls upon ECFA
to organize the development of a Detector R&D Roadmap

Organize the development of a Detector R&D Roadmap

"Coordination of R&D activities is critical to maximise the scientific outcomes of these activities and to make the most efficient use of resources; as such, there is a clear need to strengthen existing R&D collaborative structures, and to create new ones, to address future experimental challenges of the field beyond the HL-LHC. ***Organised by ECFA, a roadmap should be developed by the community to balance the detector R&D efforts in Europe****, taking into account progress with emerging technologies in adjacent fields. The roadmap should identify and describe a* ***diversified detector R&D portfolio that has the largest potential to enhance the performance of the particle physics programme in the near and long term****. This community roadmap could, for example, identify the grand challenges that will guide the R&D process on the medium- and long-term timescales, and define technology nodes broad enough to be used as the basis for creating R&D platforms.* ***This will allow concerted and efficient actions on the international scale addressing the technological challenges of future experiments while fostering an environment that stimulates innovation and collaboration with industry****."*

Extract from the 2020 Strategy update

Organization to structure the consultation with the community

RECFA
regular reports & final document

Plenary ECFA
final document for community endorsement (aim by Summer 2021)

Publication

Detector R&D Roadmap Panel

assist ECFA to develop & organise the process and to deliver the document

Coordinators: Phil Allport (chair), Silvia Dalla Torre, Manfred Krammer, Felix Sefkow, Ian Shipsey
assist ECFA to identify technologies & conveners
Ex-officio: ECFA chair, LDG chair
Scientific Secretary: Susanne Kuehn

Advisory Panel with other disciplines
e.g. APPEC, NuPECC, LEAPS, LENS, F4E, Medical Devices, Space, …

example Task Forces at this stage

TF#1	TF#2	TF#3	TF#4	TF#5	TF#6	TF#7	TF#8	TF#9	…
Gaseous Detectors	Liquid Detectors	Solid State Detectors	Photon Detectors & PID	Quantum & Emerging Technologies	Calorimetry	Electronics & On-detector Processing	Integration	Training	
conveners	*conveners*	*conveners*	*conveners*	*conveners*	*conveners*	*conveners*	*conveners*	*conveners*	

Consultation with the particle physics community & other disciplines with technology overlap

Organization to structure the consultation with the community

RECFA
regular reports & final document

Plenary ECFA
final document for community en[illegible]
(aim by S[illegible]

CALL TO NOMINATE CONVENERS WAS ANNOUNCED IN ECFA
DEADLINE 4 SEPT

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Consultation with the particle physics community & other disciplines with technology overlap

3

Synergy efforts with astroparticle and nuclear physics

http://nupecc.org/jenaa/

*"There are **many synergies between particle physics and other fields of research**. Clear examples are nuclear and astroparticle physics, which address common fundamental questions and use common tools."*

*"**Links between accelerator-based particle physics and closely related fields such as astroparticle physics and nuclear physics should be strengthened through the exchange of expertise and technology in areas of common interest and mutual benefit**. To further explore and enhance the synergies, a periodic joint seminar organised by APPEC, ECFA and NuPECC was recently established. For example, on the diverse topic of dark matter addressed with complementary experimental approaches, communication and results-sharing across communities is essential. "*

Extracts from the 2020 Strategy update

3

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Extracts from the 2020 Strategy update

CALL FOR VENUES FOR THE JENAS 2021 EVENT
DEADLINE 21 SEPT

Expressions-of-Interest (EoI) from JENAS

http://nupecc.org/jenaa/

Following JENAS 2019 and a call for EoIs in the communities, in total 5 themes have been selected to be strengthen through further synergies between APPEC, ECFA and NuPECC:

- **Machine-Learning Optimized Design of Experiments – MODE** (T. Dorigo et al.)
- **Initiative for Dark Matter in Europe and beyond: towards facilitating communication and result sharing in the Dark Matter community (iDMEu)** (G. Lanfranchi et al.)
- **Gravitational Wave Probes of Fundamental Physics** (T. Galatyuk, P. Pani et al.)
- **Nuclear Physics at the LHC** (L. Fabbietti, A. Kalweit et al.)
- **Storage Rings for the Search of Charged-Particle EDMs** (C. Carli, P. Lenisa, J. Pretz for the JEDI and CPEDM collaborations)

In general, these themes have been noted in the updated Strategy for particle physics. In dialogue with the proponents, we will explore how the three committees can strengthen them.

4

Societal efforts on recognition, diversity and career aspects

http://nupecc.org/jenaa/

"Particle physics, with its fundamental questions and technological innovations, attracts bright young minds. Their education and training are crucial for the needs of the field and of society at large. For early-career researchers to thrive, the particle physics community should place strong emphasis on their supervision and training. ***Additional measures should be taken in large collaborations to increase the recognition of individuals developing and maintaining experiments, computing and software.*** *The particle physics community* ***commits to placing the principles of equality, diversity and inclusion at the heart of all its activities****."*

Extract from the 2020 Strategy update

Recognition of individuals in large collaborations

http://nupecc.org/jenaa/

*"It is important that **recognition for individuals in large collaborations be improved, following the guidelines of the corresponding ECFA study group**. In particular, journals dedicated to technologies and theoretical and experimental methods should be supported."*

Extract from the 2020 Strategy update

Working group on recognition together with APPEC and NuPECC
(ECFA contacts: Marcel Merk (co-chair), Bogna Kubik, Djamel Boumediene)

Key objective is to create a platform for large collaborations to exchange best practices among them and across disciplines.

Diversity in our scientific collaborations

http://nupecc.org/jenaa/

*"For particle physicists, **the principles of equality, diversity and inclusion should be clearly and recognisably present in all of the field's activities**. Training appropriate to this end should be available at CERN and other institutes, and best practices shared among them."*

Extract from the 2020 Strategy update

Working group on diversity together with APPEC and NuPECC
(ECFA contact: Patricia Conde Muíño, Nadia Pastrone)

A "Diversity Charter" is presented to large collaborations to embrace diversity in all its actions and to monitor the key aspects of diversity in their collaboration.
Direct link: http://nupecc.org/jenaa/docs/Diversity_Charter_of_APPEC__ECFA__NuPECC-8.pdf
Several collaborations replied already very enthusiastically and positive.

Report from Early-Career Researchers debate on Strategy

(https://inspirehep.net/literature/1779145)

- Group of 180 researchers mandated to discuss beyond the appearance of the Briefing Book
- Nominated from ECFA countries aiming for a reasonably balanced demography
- Debated on the strategy topic on 14 Nov 2019, preview of report circulated to ECFA and ESG
- They conducted a survey among them with ~118 out of 180 participants

- Observations presented in Bad Honnef (see for example next slide)

Towards an ECFA Early-Career Researchers (ECR) Panel

From the ECR report: "*Overwhelming consensus was reached on the idea to **establish a permanent ECR committee as part of ECFA**. Such a committee would be able to give a mandate to a few individuals representing the ECRs in various bodies.*"

"*Many of the topics mentioned above have been discussed amongst early-career researchers, and it is **recommended they form a panel, under the auspices of ECFA**, in which these subjects can be discussed and monitored.* "

Extract from the 2020 Strategy update

Mandate for the ECFA ECR Panel

- The objective of the ECFA Early-Career Researchers (ECR) Panel is for its members to discuss all aspects that contribute in a broad sense to the future of the research field of particle physics. In its advisory role to ECFA, the panel reports to ECFA on a regular basis. An annual report of the ECFA ECR Panel is added as a standing item to the agenda of Plenary ECFA meetings.
- Members are, in general, PhD students and postdocs, either with a non-permanent contract or with up to 8 years after obtaining the PhD. Up to three members can be nominated by each ECFA country and each major laboratory represented in ECFA for a mandate of 2 years, extendable with another 2 years. In general, the delegation from each ECFA country should have at least one PhD student and at least one postdoc. Nominations are to be endorsed by Plenary ECFA. Members are nominated by and assigned to the quota of the country they are hired at the moment they become member of the panel.
- Members act as individuals, but should be able to represent the views of early-career researchers in particle physics in the country from which they were nominated.
- From among the ECFA ECR Panel members, a delegation of up to five members is assigned by the panel as observers to Plenary ECFA meetings, and one member is assigned by the panel as observer to Restricted ECFA meetings.
- The ECFA ECR Panel would normally hold two plenary (tele-)meetings per year among its members.
- The activities of the ECFA ECR Panel are organised by a smaller group selected by the panel itself from among its members. To achieve their aims, the ECFA ECR Panel can proceed among others with regular meetings, topical working groups and studies related to the early-career researchers community in particle physics in ECFA countries.
- The ECFA ECR Panel can invite observers to its meetings, for example to seek adequate diversity among the participants to conduct its business.

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CALL FOR MEMBERS WAS ANNOUNCED WITHIN ECFA
DEADLINE 16 NOV

The role of ECFA in the context of the Strategy

- **Detector, Experiment and Physics studies towards a Higgs Factory**

  (endorsement to initiate the process towards a series of workshops)
- **Organize the development of a Detector R&D Roadmap**

  (endorsement to get organized with a view to launch the process later this year)
- **Synergy efforts with astroparticle and nuclear physics**

  (take note of the call for venues for the next JENAS event in 2021)
- **Societal efforts on recognition, diversity and career aspects**

  (endorsement to create an ECFA Early-Career Researcher panel)

This report

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2. **ECFA Organisational topics**
3. Appendix: News from ICFA (mainly on the ILC in Japan)

ECFA Organisational topics

- **Major laboratories represented in ECFA**
- **ECFA Newsletter**
- **ECFA Chair election (2021-2023)**

1

Major laboratories represented in ECFA

Extract from the ECFA Terms of Reference
(ECFA/81/52/Rev.5, 16 November 2017)

6.2 RESTRICTED ECFA

Restricted ECFA is composed of one member per participating 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. The CERN Director responsible for research is invited, and representatives of national or international laboratories or organizations which are of importance for ECFA's activities can also be invited.

Major laboratories represented in ECFA

The slot for the three laboratories (CERN, DESY, Frascati) appeared in 2009. Before that time only CERN and DESY were represented in RECFA. Probably because there were running particle physics experiments in these labs at that time.

These laboratories report during regular RECFA and Plenary ECFA meetings.

Surely today there might be additional major laboratories to consider for ECFA.

ECFA opted to revisit the list.

Major laboratories represented in ECFA

Concrete proposal for benchmarks to be used as gauges in our deliberations:

- Hosted by (at least) one of the ECFA countries;
- The European research community collaborates in particle physics experiments at accelerators, or accelerator structures, which are operational today at the laboratory, or are being constructed;
- Leading accelerator R&D towards colliders for particle physics is present today at the laboratory, or the infrastructure is being constructed;
- An extensive and demonstrated European user community at the laboratory such that the *lab-to-community* communication, provided by ECFA, is essential for the well functioning of the laboratory (*lab-to-lab* communication remains a purview of the Laboratories Director Group).

Plenary ECFA is to endorse these benchmarks and accordingly a call for proposals would follow to be submitted to the ECFA Chair and Scientific Secretary aiming for a first RECFA discussion in October.

Major laboratories represented in ECFA

Concrete proposal for benchmarks to be used as gauges in

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CALL FOR PROPOSALS WAS ANNOUNCED IN ECFA
DEADLINE 21 SEPT

Plenary ECFA is to endorse these benchmarks and accordingly a call for proposals would follow to be submitted to the ECFA Chair and Scientific Secretary aiming for a first RECFA discussion in October.

2

The ECFA Newsletters

ECFA Newsletters #1 - #2 - #3 - #4 - #5

available on the ECFA website:

https://ecfa.web.cern.ch

The e-group remains available for anybody with a CERN account (or at least a CERN lightweight account) can register.

One can do so under "Members" via the following link

https://e-groups.cern.ch/e-groups/Egroup.do?egroupId=10319139&AI

3

ECFA chair election (2021-2023)

- The organisation of the election of the next ECFA chair is mandated to an election committee within RECFA
- The election will take place on 9 Oct during the RECFA meeting, and the result will be presented for endorsement to Plenary ECFA on 19 Nov

Thank you for your attention

1. The role of ECFA in the context of the Strategy
2. ECFA Organisational topics
3. Appendix: News from ICFA (mainly on the ILC in Japan)

Additional slides

This report

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3. **Appendix: News from ICFA (mainly on the ILC in Japan)**

Report from ICFA meeting at SLAC (20-22 Febr 2020)

International Committee for Future Accelerators (http://icfa.fnal.gov)

Report from ICFA meeting at SLAC (20-22 Febr 2020)

Current members:

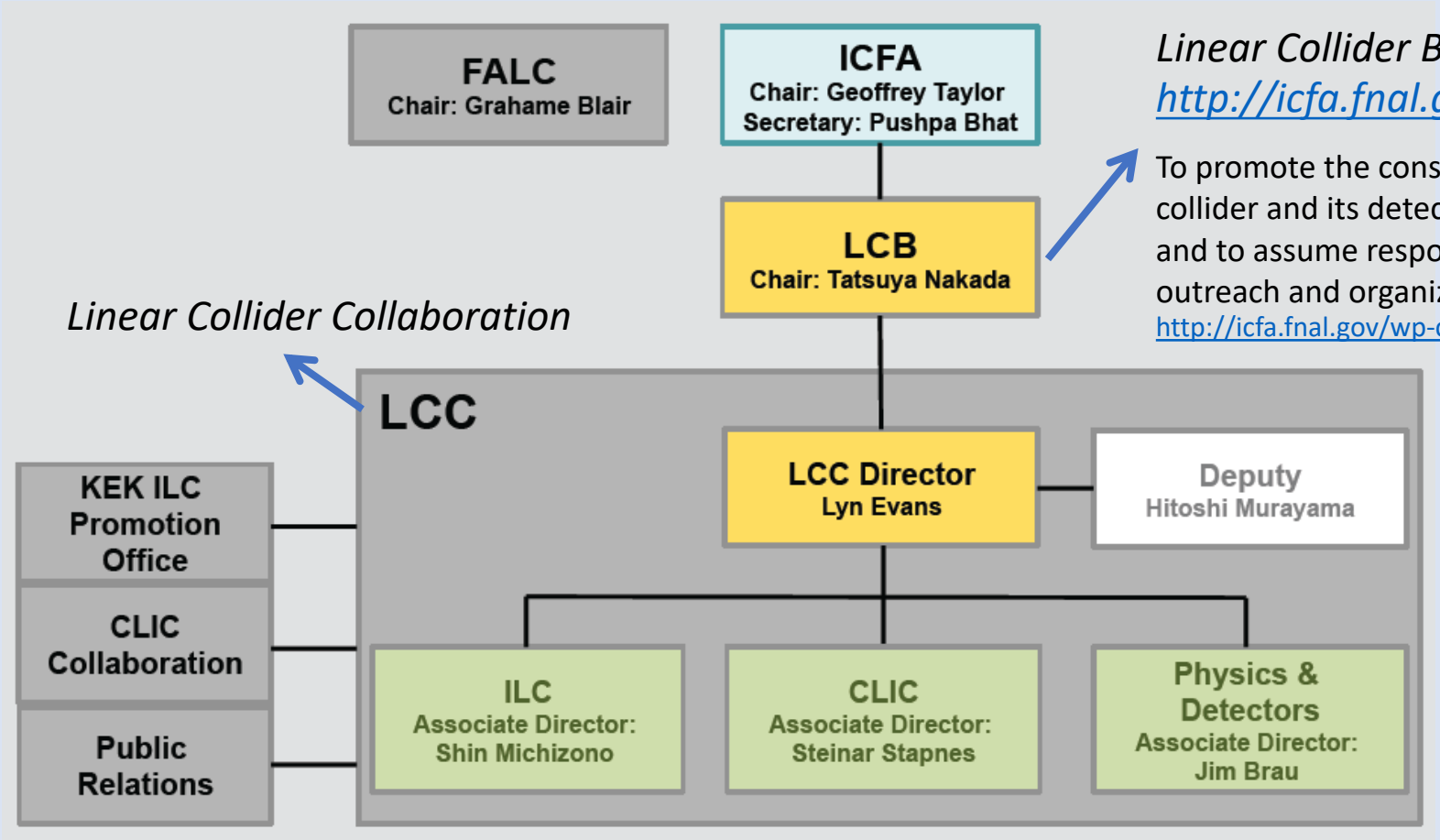
- G. Taylor (Chair, Australia), P. Bhat (Secretary, USA)
- J. D'Hondt, F. Gianotti, J. Mnich (CERN Member States)
- N. Lockyer, Z. Huang, J. Incandela (USA)
- I. Koop, V. Petrov (Russia)
- Y. Wang (China)
- T. Mori, M. Yamauchi (Japan)
- M. Roney (Canada)
- E. Álvarez, V. Matveev, P.A. Naik (Other Countries)
- H. Schellman, Chair of the IUPAP Commission on Particles and Fields (ex officio)

Report from ICFA meeting at SLAC (20-22 Febr 2020)

Current panels:

- ICFA Instrumentation Innovation and Development Panel (Chair — Ian Shipsey, Oxford)
- ICFA Beam Dynamics Panel (Chair — Ingo Hofmann, GSI/TUD)
- ICFA Panel on Advanced and Novel Accelerators (Chair — Bruce Carlsten, Los Alamos)
- ICFA Standing Committee on Interregional Connectivity (Chair — Harvey Newman, Caltech)
- ICFA Study Group on Data Preservation in High Energy Physics (Chair – Cristinel Diaconu, CPPM, Marseille)
- Linear Collider Board (Chair – Tatsuya Nakada, EPFL, Lausanne)
- ICFA Panel on Sustainable Accelerators and Colliders (Chair — Mike Seidel, PSI)

Report from ICFA meeting at SLAC (20-22 Febr 2020)



Linear Collider Board
http://icfa.fnal.gov/panels/linear-collider-board/

To promote the construction of an electron-positron linear collider and its detectors as a world-wide collaborative project, and to assume responsibility for the science, technology, outreach and organization in pursuit of the linear collider project
http://icfa.fnal.gov/wp-content/uploads/LCB-Mandate-2016.pdf

Report from ICFA meeting at SLAC (20-22 Febr 2020)

Timeline of recent actions revolving around the ILC in Japan

- March 2019: the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) mentions the ILC project is to be considered by the Science Council of Japan (SCJ)
- Throughout 2019: the SCJ develops its Master Plan for Large-Scale Research Projects (all scientific disciplines)
- January 2020: in total 59 projects invited for the interview (including ILC) and among them 31 project listed as highest priority projects (not including ILC)
- MEXT to develop its resource-loaded Roadmap based on the SCJ Master Plan including all 59 projects invited for the interview (including the ILC); Roadmap expected around August 2020
- ICFA meeting: status report from MEXT by Hiroshi Masuko (Deputy Director-General, MEXT Research Promotion Bureau) and by Takeo Kawamura (Chair, Federation of Diet Members for ILC)
- Additionally: support for an ILC pre-lab expressed by the US in letters from the Deputy State Secretary and the Secretary of Energy to their Japanese equivalent, and reported at the ICFA meeting by Chris Fall (Director, DOE Office of Science)

MEXT status report (Hiroshi Masuko)

- The report, i.e. update wrt statement of March 2019, is coordinated among all ministries in Japan
- Expresses the need for collaborative agreements with international partners in order to realise the ILC, i.e. not only the announcement of interest, but a more formal agreement for cost sharing is to be established
- Mentions that in bi-lateral meetings Germany, France and the UK, France expressed to have other commitments to various international and domestic projects and do not have the financial leeway to participate in the ILC project at this moment
- Will continue to work with partners and move towards multi-lateral meetings, including for example Germany, France, US and the UK

Federation of Diet member for ILC speech (Takeo Kawamura)

- Since 2006, the Federation worked with scientists to explore the path to realise the ILC project in Japan
- The progress with scientists created an environment to move to the next level with discussions at the level of the government and politics
- At this stage seeks political leadership to further the ILC project in Japan
- Inter-ministry dialogues will be at the basis to establish the budget
- Considers the move to multilateral discussions among international partners as very important
- Mentions the Olympic Games in Japan in 2020, and the ILC project as the next major project for Japan

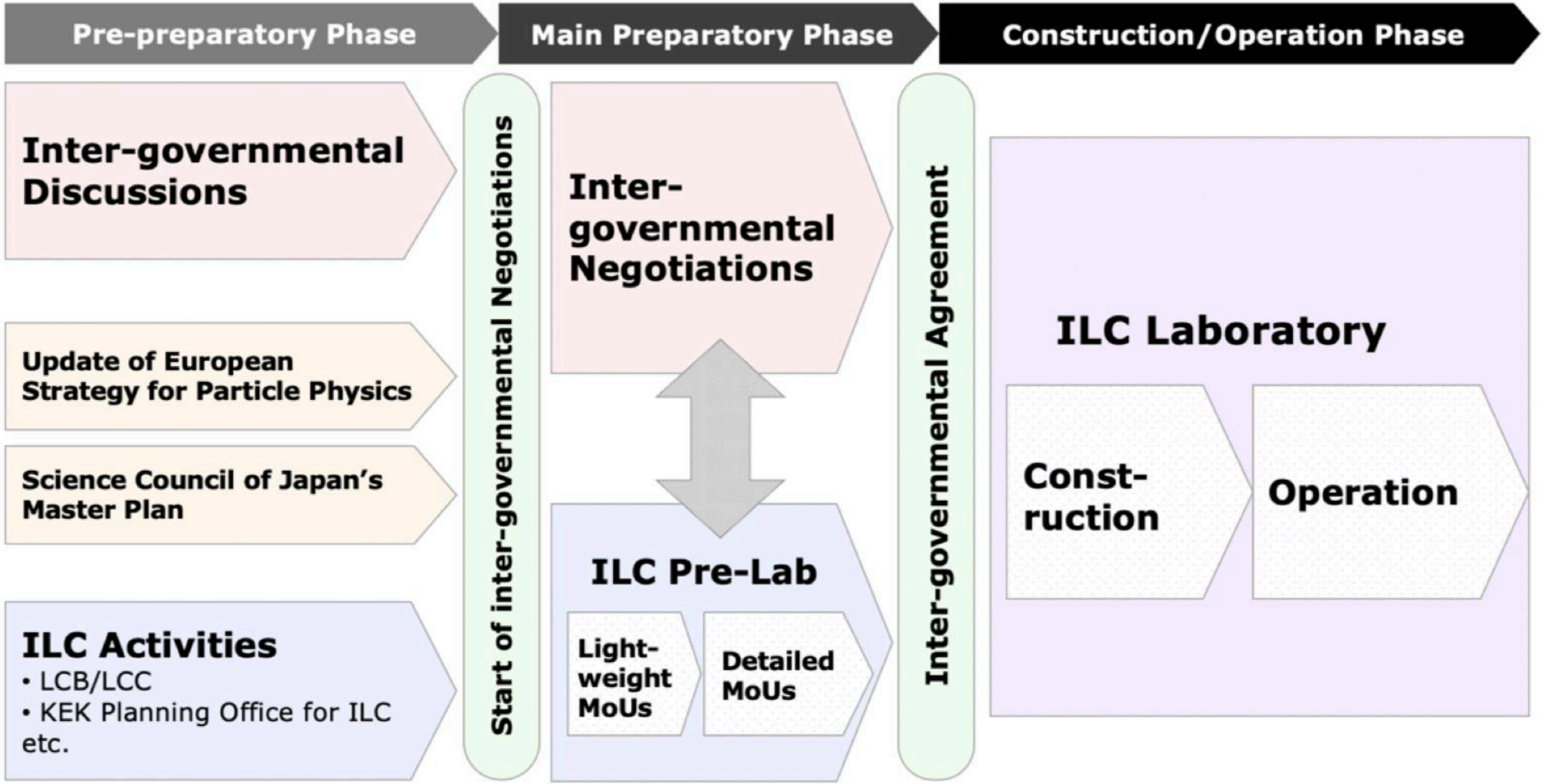
Report from International Working Group on the ILC Project

(initiated by KEK Director-General in May 2019 to study the international aspects)

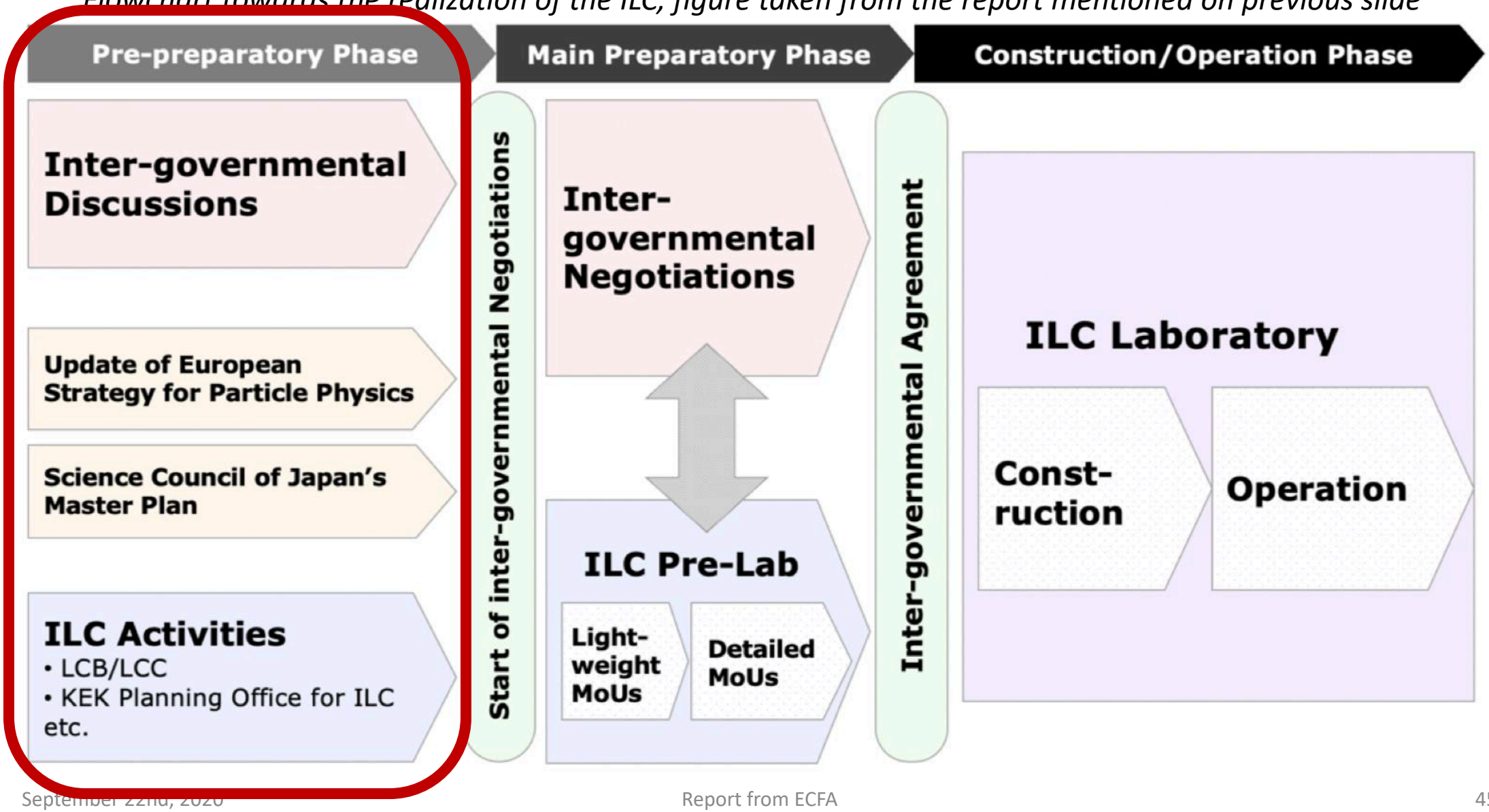
https://www2.kek.jp/ilc/en/docs/Recommendations_on_ILC_Project_Implementation.pdf

- Including thoughts on cost sharing
- ILC pre-preparatory phase: currently the project is in a pre-preparatory phase
- ILC preparatory phase: A positive signal by the Japanese government expressing its intent to host the ILC as part of the critical decision process will trigger the project transition into the main preparatory phase, which is expected to complete in about four years. The key activities in the main preparatory phase will be the technical preparations for ILC construction and the inter-governmental negotiations expected to culminate in an inter-governmental agreement, signaling the official launch of the ILC project.
- ILC construction phase: the above agreement will trigger the transition of the Pre-Lab structure into a full ILC Laboratory, which will mark the start of the construction phase of the ILC project

Flowchart towards the realization of the ILC, figure taken from the report mentioned on previous slide



Flowchart towards the realization of the ILC, figure taken from the report mentioned on previous slide



ICFA Statement on the ILC project – SLAC 22 February 2020

https://icfa.fnal.gov/wp-content/uploads/ICFA_Statement_22Feb2020.pdf

ICFA was encouraged by the reports from Mr. H. Masuko, Deputy-Director General, MEXT Research Promotion Bureau and Hon. T. Kawamura, Chairperson of the Federation of Diet Members for the ILC, at the ICFA meeting held at the SLAC National Accelerator Laboratory, Stanford, USA, on the 20th February 2020.

Based on these reports:

- ICFA reconfirms the international consensus for a Higgs factory and wishes to see the timely construction of the ILC in Japan.
- ICFA acknowledges and welcomes the inter-governmental discussion between Japan, the United States and European nations, to advance international collaborative activities for the ILC.
- ICFA notes the need for a preparatory phase ahead of the establishment of the ILC laboratory and the construction of the ILC in Japan.
- **ICFA advocates establishment of an international development team to facilitate transition into the preparatory phase.**
  - The development team should be hosted by KEK, with leadership chosen with the help of ICFA.
  - The team would **develop a plan for the preparatory phase** for the construction of the ILC, including technical, organizational and governance issues. It also would be tasked with understanding the activities and resources required in the preparatory phase. The process of developing the plan **should involve the interested laboratories and community**.
  - ICFA anticipates that these development activities could be **completed in approximately one year**, at which point it would be possible to launch the preparatory phase for the ILC, provided Japan expresses intent to do so together with international partners.
- In view of progress towards realisation of the ILC in Japan, ICFA encourages the interested members of the high energy physics community, laboratories, and nations, to support and participate in these preparations aimed at the successful establishment of the ILC.

ICFA Statement on the ILC project – SLAC 22 February 2020

https://icfa.fnal.gov/wp-content/uploads/ICFA_Statement_22Feb2020.pdf

ICFA instructed the LCB to propose by May 2020 the mandate, the activities and the composition of the development team which is to replace the LCB structure, i.e. the mandate of the LCB itself ends in June 2020. The new focus will be on the ILC project.

- ICFA reconfirms the international consensus for a Higgs factory and wishes to see the timely construction of the ILC in Japan.
- ICFA acknowledges and welcomes the inter-governmental discussion between Japan, the United States and European nations, to advance international collaborative activities for the ILC.
- ICFA notes the need for a preparatory phase ahead of the establishment of the ILC laboratory and the construction of the ILC in Japan.
- **ICFA advocates establishment of an international development team to facilitate transition into the preparatory phase.**
  - The development team should be hosted by KEK, with leadership chosen with the help of ICFA.
  - The team would **develop a plan for the preparatory phase** for the construction of the ILC, including technical, organizational and governance issues. It also would be tasked with understanding the activities and resources required in the preparatory phase. The process of developing the plan **should involve the interested laboratories and community**.
  - ICFA anticipates that these development activities could be **completed in approximately one year**, at which point it would be possible to launch the preparatory phase for the ILC, provided Japan expresses intent to do so together with international partners.
- In view of progress towards realisation of the ILC in Japan, ICFA encourages the interested members of the high energy physics community, laboratories, and nations, to support and participate in these preparations aimed at the successful establishment of the ILC.

ICFA Statement on the ILC project – 2 August 2020 (remote)

https://icfa.fnal.gov/wp-content/uploads/ICFA_IDT_Structure.pdf

ICFA approved the formation of the International Linear Collider International Development Team (ILC-IDT) with a mandate to make preparations for the ILC Pre-Lab in Japan, which is the next step in the ILC project. The Team has commenced its work and is expected to complete its mandate by the end of 2021.

- The EB and WG1 will carry out the key tasks of developing the function and organisational structure for the Pre-Lab (2022-2025).
- Prepare the work and deliverables of the ILC Pre-laboratory and workout a scenario for contributions with national and regional partners through MoUs.
- Understand what is needed to get the Pre-lab started (constraints and opportunities).
- Start of Pre-lab does not require full approval of the entire project.

Additional slides

RECFA visit to Cyprus – October 2019 – extract from our letter to the Minister

(https://indico.cern.ch/event/839488/overview)

- The Committee is impressed by the **high quality** that the Cypriot particle physics community has established over the last 25 years, as illustrated by its achievements in the CMS experiment at CERN.
- The Cypriot **talent pipeline is well established** in the context of CERN, and the recently renewed tenured positions in the particle physics group offer the potential to train more students if additional resources are provided.
- The Committee recommends that the **low salary level of Cypriot scholarships** be addressed in order to attract and nurture the best students.
- **Consolidating the investment in activities revolving around experiments at CERN** should be high on the agenda for Cyprus, with a view to pursuing full Membership of the Organization. Sustaining the annual budget provided by the RIF to cover operational aspects in the CMS experiment is vital.
- **Extending the annual budget to also accommodate the local technical equipment** would be an important step towards attracting researchers and providing them with technical training, which is crucial in the field of particle physics.
- The Committee recommends that the National Board for Research and Innovation consider creating a long-term strategic research programme revolving around the development of a high-granularity calorimeter for the CMS experiment.
- The **Industrial Liaison Officer has deployed an excellent system** to seek adequate industrial return from CERN and is well prepared for full CERN Membership for Cyprus.

CALL FOR VENUES FOR THE JENAS 2021 EVENT

Following the successful first Joint APPEC-ECFA-NuPECC Seminar in Orsay (https://jenas-2019.lal.in2p3.fr), the chairs of APPEC, ECFA and NuPECC issue a call for venues for the second JENAS event to be organized in the autumn of 2021. The Joint Seminar is to inform our communities about each other's scientific, technological and organizational challenges and opportunities.

At this stage we launch an open call to receive proposals for venues for this 3-day meeting. **Proposals should be communicated to the three chairs of APPEC, ECFA & NuPECC, and reach us the latest on 21 September 2020**. Shortly after, the organising board of JENAS2019 will proceed to select the venue for JENAS2021 (https://jenas-2019.lal.in2p3.fr/organisingboard/).

A proposal should contain information about the venue, the available dates in October-November 2021, the plenary meeting room to host 300 participants, a few additional rooms with 20 to 40 seats, the initial composition of the local organizing team, options for accommodation and potential transport, and the initial estimate of the participation fee.

Expressions-of-Interest (EoI) from JENAS – in total 5

http://nupecc.org/jenaa/

In general, these topics have been noted in the updated Strategy for particle physics. What can APPEC, ECFA and NuPECC offer to strengthen the synergies for an EoI topic:

- *Supporting the **organization** of (tele-)gatherings across communities on the EoI topic (workshops, town meetings, platforms for continuous discussions, …)*
- *Make **announcements** related to the EoI topic through our channels across the three disciplines*
- *Help with the **dissemination** of the activities and potential reports of the EoI topic (reports at APPEC, ECFA and/or NuPECC meetings, articles in our newsletters, …)*
- *Link the project specific **website** on the APPEC, ECFA and/or NuPECC websites*
- *Help with **community wide calls** to seek collaborators, with calls for venues for specific events and with funding applications for the EoI topic*
- *Raise the **awareness** of the EoI topic in our scientific communities and to policy-making bodies*
- *Organize **dedicated sessions at the JENAS events** on the EoI topic*

Recognition of individuals in large collaborations

http://nupecc.org/jenaa/

Key objectives within an advisory and exploratory mandate of the working group:

- **exchange and discuss best practices** among the large collaborations across disciplines, and reflect on alternative or additional procedures on the topic of recognition
- after the initial ECFA survey and study in 2018 (PECFA meeting at CERN Nov 2018), potentially perform **a second survey** in 2020-2021 to monitor the progress on the topic
- the working group will not be an ombuds-committee for individual problems
- **report back** to APPEC, ECFA and NuPECC
- the collaborations remain themselves responsible for the actions of the working group and to implement (or not) recommendations

Recognition of individuals in large collaborations

http://nupecc.org/jenaa/

Due to COVID-19 the WG decided to postpone activities earlier this year but resumed since May when invitation letters on behalf of APPEC-ECFA-NuPECC were send to initially the following collaborations (large collaboration, with >40 authors). First meetings organized during the Summer period.

APPEC (34)

AMS, Antares, Auger, Baikal GVD, Borexino, CALET, CTA, CUORE, DAMIC, DarkSide, Darwin, DEAP, Edelweiss, ET, EUCLID, Fermi-LAT, Gerda, IceCube, Juno, Katrin, Km3NeT, Legend, LIGO, LISA, LSST, MAGIC, Pamela, SNO+, Virgo, XENON, HESS, HAWC, JEM-EUSO, LHAASO

ECFA (14)

ATLAS, Belle II, CALICE, Cast, Cloud, DUNE, CMS, Compass, Dirac, LHCb, NA61/SHINE, NA62, Solid, T2K

NuPECC (33)

A2, ACTAR/TPC, AD, AEGIS, AGATHA, ALICE, ALPHA, BM@N, CBM, CLAS, COLLAPS, CRIS, DESIR, Galileo, Ganil, Gbar, HADES, HISPEC/DESPEC, IDS, INDRA, Isolde, JEDI, MATS, Miniball, MPD, nTOF, NFS, NUSTAR, PANDA, PARIS, R3B, S3, SuperFRS

From the executive summary of the ECR report

- *The **attractiveness of our field** is at risk and dedicated actions need to be taken to save its future. When continuing on the current path, the field will likely be unable to attract the brightest minds to particle physics.*
- *While being open for future international projects, ECRs emphasize the **importance of a European collider project soon after HL-LHC**. Postponing the choice of the next collider project at CERN to the 2030s has the potential to negatively impact the future of the field.*
- *The ECRs strongly recommend future project evaluations and strategy updates to **include the social impact of their implementation**: equal recognition and career paths for the various domains, a healthy work-life-balance and the reconciliation of family and a scientific career is a must.*
- *A strong statement from CERN putting the **environment and sustainability** at the forefront of decision-making would have a significant impact.*
- *A **strong and diverse R&D program** on accelerators and detectors must be a high priority for the future.*
- ***Software and computing activities** must be recognized not only as means to do physics analyses, but as research that requires a high level of skill.*
- *In an effort towards reducing the carbon footprint associated with travel for work purposes, our community can drive the **development of new software for remote meetings***