

ECFA

European Committee for Future Accelerators



Report from ECFA

The role of ECFA in the context of the Strategy

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EPS-HEPP Board meeting, September 25th, 2020, *remote*

Key elements of the updated European Strategy

Two key documents made public:

(main website <http://europeanstrategyupdate.web.cern.ch/welcome>)

1. a document including all recommendation:

<https://home.cern/sites/home.web.cern.ch/files/2020-06/2020%20Update%20European%20Strategy.pdf>

2. a deliberation document elaborating on the recommendations in a context:

<https://home.cern/sites/home.web.cern.ch/files/2020-06/2020%20Deliberation%20Document%20European%20Strategy.pdf>

Key (research facility) aspects of the updated European Strategy

- The full exploitation of the (HL-)LHC potential
- Continuous support for the long-baseline neutrino projects in the US and Japan
- Support for research programmes beyond colliders where they have high impact
- Globally, a Higgs Factory is the highest priority collider beyond the HL-LHC
- Investigate the feasibility of a 100 TeV hadron collider at CERN
- Strengthen the R&D for accelerators, and develop roadmaps for both accelerator and detector R&D in Europe to achieve the above
- Adjust our organisation in order to achieve the above, including societal aspects

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

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

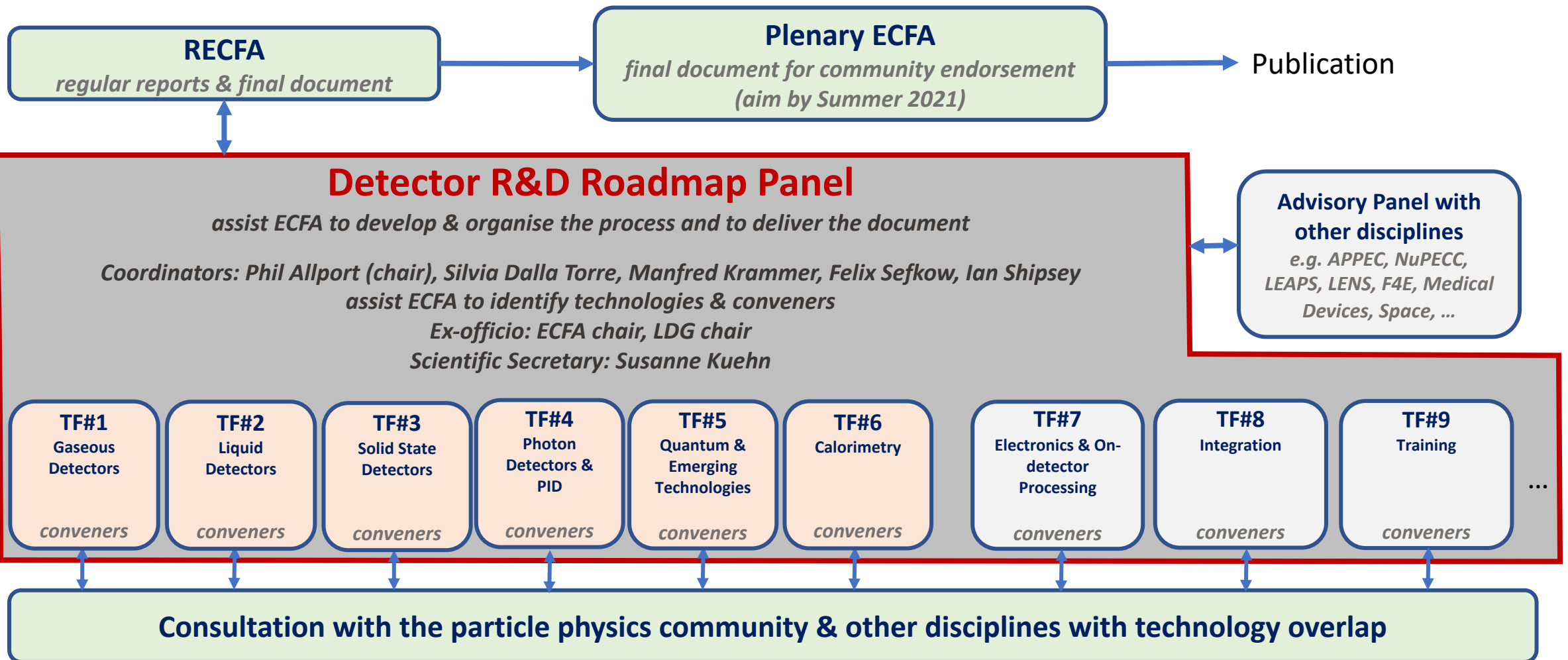
Organize the development of a Detector R&D Roadmap

*“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



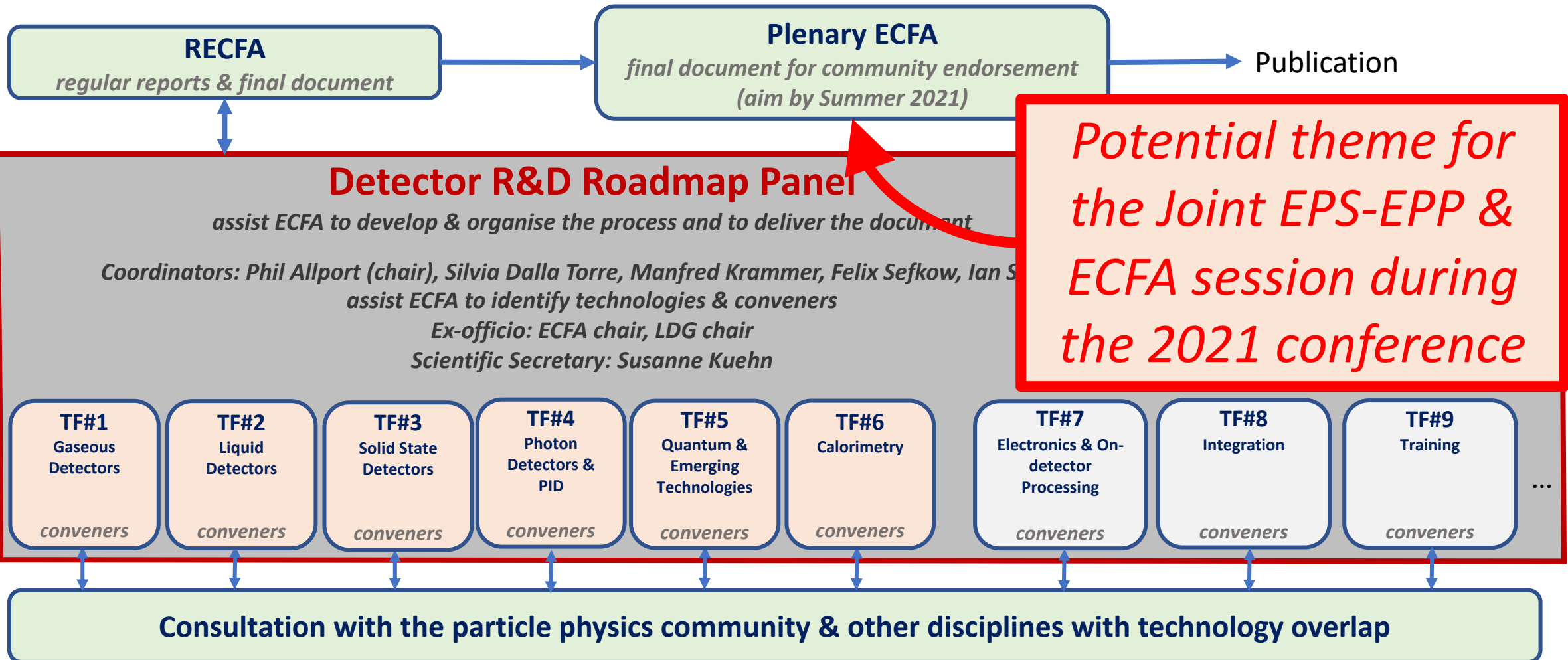
Organization to structure the consultation with the community



example Task Forces at this stage

Organization to structure the consultation with the community

2



example Task Forces at this stage

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





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 have overlapping experimental approaches. **“Links between accelerators and other fields of research, such as nuclear and astroparticle physics, have been strengthened in areas of common interest. To further explore and enhance the synergies, a seminar organised by APPEC, ECFA and NuPECC was recently held. 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

CALL FOR VENUES FOR THE JENAS 2021 EVENT
DEADLINE 21 SEPT



Towards an ECFA Early-Career Researchers (ECR) Panel

In Nov 2019 ECFA gathered a group of 180 researchers (balanced demography) to discuss topics related to the European Strategy for Particle Physics.

*“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.”*

Extract from the ECR report (<https://inspirehep.net/literature/1779145>)

*“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

4

- 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.

Mandate for the ECFA ECR Panel

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- Members are, in general, **PhD students and postdocs**, either with or without a permanent position after obtaining the PhD. Up to **three members can be nominated by the ECFA for a mandate of 2 years**, extendable with a further year. Each member should have at least one PhD student and at least one postdoc in their research group. Members are nominated by and assigned to the ECFA by the ECFA Plenary.
- Members from each ECFA country should have at least one member of the panel.
- Members should represent the views of early-career researchers in particle physics in the country.
- From among its 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**.
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- The ECFA ECR Panel can invite observers to its meetings, for example to seek adequate diversity among the participants to conduct its business.

**CALL FOR MEMBERS WAS ANNOUNCED WITHIN ECFA
DEADLINE 16 NOV**

Thank you for your attention

ECFA Newsletters #1 - #2 - #3 - #4 - #5
available on the ECFA website:
<https://ecfa.web.cern.ch>

