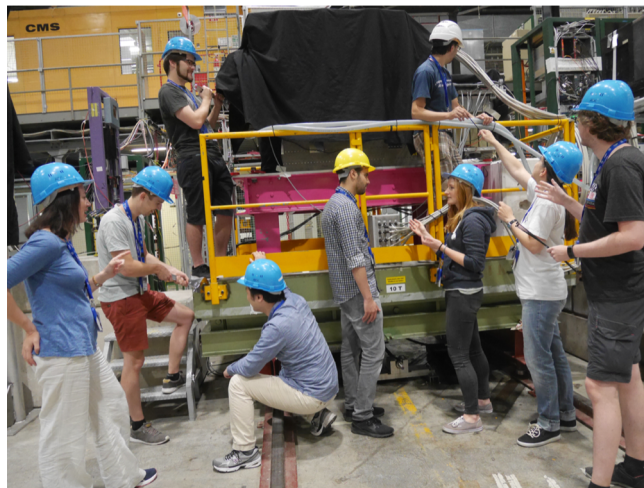


ECFA detector panel: mandate and recent activities



EP R&D day <https://indico.cern.ch/event/842794/>

Lucie Linssen, October 24th 2019

Link to the panel: <https://ecfa-dp.desy.de/>

Mandate of the panel: <https://cds.cern.ch/record/2211641>

*From the mandate => **primarily a reviewing role:***

- **It receives R&D proposals on request** by research communities, laboratories, institutions, individual authors and bodies such as science funding agencies.
- **It appoints experts charged to evaluate them** and make recommendations.
- **It is primarily concerned with large projects**, related to accelerator and non-accelerator experiments in the fields of particle and astroparticle physics, involving several institutions and requiring significant resources.
- The ECFA Detector Panel is aimed at providing advice on detector development efforts **for projects in their preliminary and preparatory phases**.
- It is in particular intended for the review of **projects that do not undergo an existing review process elsewhere**.

Also from the mandate:

- **It helps to create coherence of global detector R&D efforts by encouraging synergies between different activities** and advising funding agencies on request.
- The Panel has only a reviewing and advisory role. **It does not assume any coordination of the R&D programs**, nor does it take part in any science policy decisions.

Members:

Phil Allport (Birmingham, chair), Doris Eckstein (DESY, scient. secr.), Ariella Cattai (CERN, ex-officio ICFA), Ian Shipsey (Oxford, ex-official ICFA), Federica Petricca (MPI, astroparticle), Silvia Dalla Torre (Trieste), Laurent Serin (LAL), Arno Straessner (Dresden), Lucie Linssen (CERN)

1st review, ...and next reviews?

The ECFA-DP panel was initially created in 2011

- Performed ~4 reviews (2012-2014), mostly Linear Collider R&D projects (CALICE, FCAL, LCTPC, ILC vertex R&D)

Panel re-installed with the new members and an updated mandate in 2016

- First request for a review came from CALICE
- Reviewed in November 2018
- 2-day review, a dedicated reviewing team was nominated (ECFA-DP members + 2 experts)
- https://ecfa-dp.desy.de/sites2009/site_ecfa-dp/content/e279752/e282500/CALICEReport2018_final.pdf



We invite other R&D groups for review by ECFA detector panel !!

Expecting other R&D groups to be interested

E.g. collaborative projects linked to EP R&D ?



ECFA-DP input to ESPPU

As a rather unique/central entity within Europe, the panel felt it would be useful to provide input to the ESPP Update on behalf of the European detector community.

To this aim:

- Launched a survey across the European detector community, Summer 2018
- Analysed the data
- Produced a [full survey report](#)
- Drafted [10-page input to the ESPPU](#)
 - Summary extracted from the survey
 - List of findings
 - List of recommendations
 - Some ideas for further actions

ECFA Detector Panel members participated in the [Instrumentation session in Granada](#) and in drafting the Instrumentation Chapter of the [ESPPU Briefing book](#)



ESPPU input => recommendations

Career opportunities

In the interest of the field, detector research needs to be recognised correctly as a fundamental research activity bearing a large impact on the final physics results.

Detector development needs to be fully recognised as a research field leading to a PhD degree, while mixed PhD and postdoctoral positions in physics analysis combined with detector development need to be stimulated further.

Professional career opportunities for detector development experts need to be improved, for example through the creation of advanced research grants and long-term positions.

Training opportunities

It would be profitable to enhance, already at the level of university training, the basic knowledge required for applied physics activities (e.g. electronics, mechanics, software and instrumentation).

Programmes that favour the exchange of students and young postdocs among different detector expert groups and in different institutions should be initiated and endorsed.

Technology transfer from detector development to applications in the wider society

Enhanced support (financial, manpower, technical, legal) is needed from institutions to obtain adequate effectiveness in the technology transfer from particle detector development to applications relevant to the wider society. Effective technology transfer would bring fundamental research closer to the needs of the whole of society.

Central coordination of R&D activities and coordination with other fields

Continued support is requested for detector development collaborations and consortia such as RD50, RD51, RD53, CALICE and AIDA2020, recognising enhanced productivity achieved through general networking, such as the exchange of information and methodologies, and the sharing of efforts, investments and infrastructures. Further initiatives towards similar R&D collaborations, initiated by CERN or through new European funding programmes, are recommended.

Initiatives towards enhanced exchange of information between physics fields and technology specialisations are recommended, in order to make better use of expertise available in other fields and improve on multidisciplinary approaches (e.g. solid state physics, material science, nano-technologies, microelectronics, photonics, engineering institutions, industry).



Further ideas and actions

Similar issues related to detector development were already signalled at the 2013 ESPPU Recognition, career aspects, training, funding opportunities, etc.

What can one do about it, while the issues occur over a broad landscape of institutions and decision-makers ?

=>=> ***Raising awareness and distributed actions***

Some ideas:

Instrumentation schools and instrumentation conferences:

- ⇒ Increase visibility
- ⇒ Create scholarships for attending
- ⇒ Create prizes in the field of instrumentation

Teaching material:

- ⇒ Make teaching material available centrally (e.g. on ECFA-DP web)

Stimulate the creation of R&D collaborations:

- With RD50, RD51, RD53, CALICE, AIDA2020 as good examples

Better ideas and concrete actions welcome !

Of course, the CERN EP R&D itself is an ideal action
It has high visibility, within the HEP community groups express wish to connect to it



Thank you