

# ***ECFA Detector R&D Roadmap***

## ***- Short Introduction -***

*Plenary ECFA meeting  
CERN, 17<sup>th</sup> November 2023*

*Karl Jakobs, ECFA Chair*

**ECFA**

European Committee for Future Accelerators



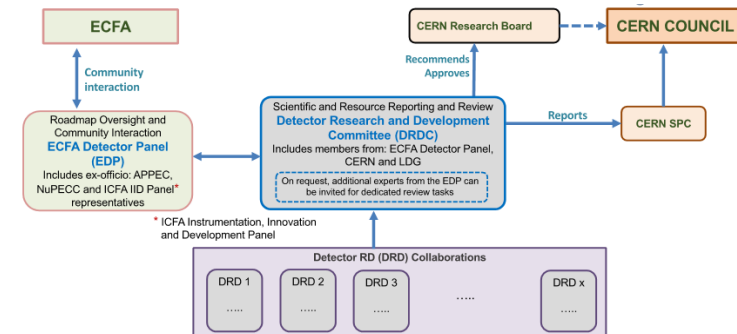
# ECFA Detector R&D Roadmap

ESPP: “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. ...”

- [ECFA Detector R&D Roadmap](#) approved by Plenary ECFA in Nov 2021
- In Dec 2021 CERN Council mandated ECFA to work out a detailed implementation plan
- Implementation plan endorsed by CERN Council in Sept. 2022

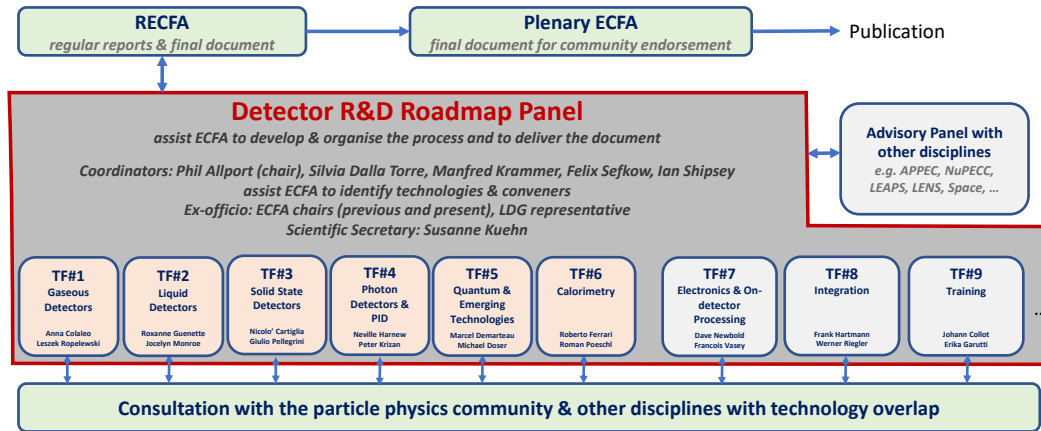
Key feature: Detector R&D (DRD) Collaborations, anchored at CERN for the various technology areas

DRD proposals have been submitted (August 2023);  
Review process ongoing by the newly formed DRDC



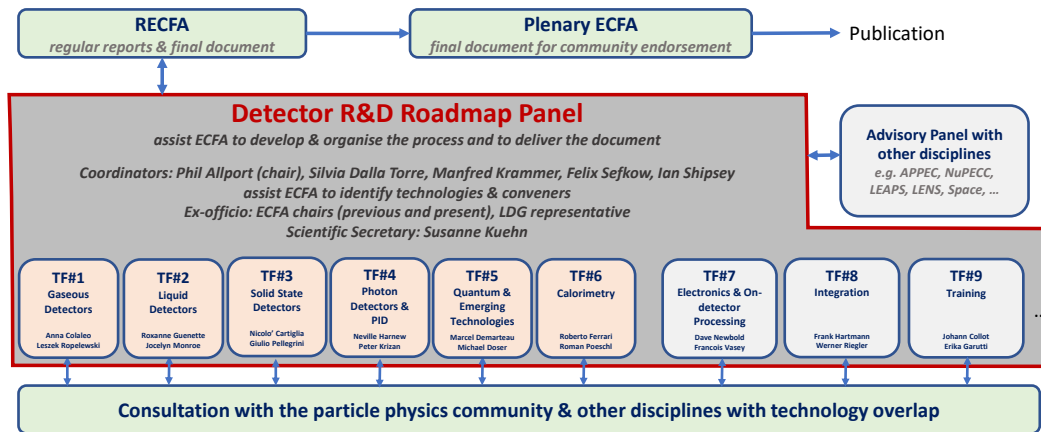
In parallel: Lab Directory Group (LDG) has developed a [Roadmap for Accelerator R&D](#)

# Detector R&D Roadmap Panel



- The full roadmap process (development of the **ECFA Detector R&D Roadmap** and its **implementation towards a structured R&D programme**) have been coordinated by the ECFA Detector Roadmap Panel and in particular by the Coordination group (see above)  
**Chair: Phil Allport (Birmingham)**
- Given that the work is accomplished, there is no need to organise further meetings;  
DRDs are the new units, review and monitoring process is under the umbrella of the DRDC / EDP
- If needed, the ECFA Detector Panel (EDP) will organise meetings of common interest across DRDs in the future and provide a forum for the DRD leaders to meet
- In addition, the EDP can organise work and prepare input for the next Strategy Update

# Detector R&D Roadmap Panel



Thanks to the **Coordination Group** and the **Task Force Leaders and members** for their excellent work over the past years in defining the roadmap and its implementation

Special Thanks to **Phil Allport** for his leadership throughout the entire process and for his dedication!

# ECFA Detector Panel (EDP)

The ECFA Detector Panel (EDP) is a subcommittee of ECFA, hosted at DESY

<https://ecfa-dp.desy.de/>

## Mandate:

- Direct input on DRD proposals, through the appointment of members to the DRDC;
- Assists, particularly via topic-specific expert members, in the conduct of annual DRDC reviews;
- Monitors the overall implementation of the ECFA detector roadmap follows up targets and achievements in the light of evolving specifications from experiment concept groups, as well as proto-collaborations for future facilities
- Helps plan for future updates to the Detector R&D Roadmap.

## Composition:

Co-Chairs: **Phil Allport (Birmingham)**  
**Didier Contardo (IP2I Lyon)**

Scientific Secretary: Doris Eckstein (DESY)

Gaseous Detectors:	Silvia Dalla Torre (Trieste)
Liquid Detectors:	Inés Gil Botella (CIEMAT, Madrid)
Solid State Detectors:	Doris Eckstein (DESY)
PID & Photon Detectors:	Roger Forty (CERN)
Quantum and em Tech.	Steven Hoekstra (Groningen)
Calorimetry:	Laurent Serin (IJCLab)
Electronics:	Valerio Re (Bergamo)

Ex Officio: Thomas Bergauer (DRDC)  
Karl Jakobs (ECFA Chair)  
Ian Shipsey (ICFA Detector Panel)

Observer: Aldo Ianni (APPEC, LNGS)  
Eugenio Nappi (NuPECC, Bari)

# Detector R&D Roadmap: General Strategic Recommendations

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GSR 1 - Supporting R&D facilities

GSR 2 - Engineering support for detector R&D

GSR 3 - Specific software for instrumentation

GSR 4 - International coordination and organisation of R&D activities

GSR 5 - Distributed R&D activities with centralised facilities

GSR 6 - Establish long-term strategic funding programmes

GSR 7 - Blue-sky R&D

GSR 8 - Attract, nurture, recognise and sustain the careers of R&D experts → ECFA Training Panel

GSR 9 - Industrial partnerships

GSR 10 - Open Science

**ECFA-LDG Working group** to address the remaining General Strategic Recommendations has started its work  
Chairs: Stan Bentvelsen (Nikhef) and Marko Mikuz (Ljubljana) → report in PECFA today

In addition: GSR5 needs to be addressed (DRD7 and LDG are working on a first proposal)

# “TF9” on “Training”

The conclusions of the detector R&D roadmap document (<https://cds.cern.ch/record/2784893>) explicitly stress the need to train and maintain a work force in instrumentation for particle physics, targeting, with the highest priority, graduate students and Early Career Researchers (ECR).

→ **ECFA Training Panel** has been set up;

Chairs: Erika Garutti (Univ. Hamburg), **NN** (2<sup>nd</sup> coordinator still to be found)

## Goals:

- Enhance the synergies between existing training programmes and stimulate the creation of complementary ones where relevant, in particular multidisciplinary schools or academia-industry-joined training programmes.
- Creation of a European master's degree programme in HEP instrumentation

During the roadmap process it was realised that there was a **mutual interest to also involve training in accelerators and to support cross-disciplinary activities** with this area. As a result, the recommendations state that the same panel should also coordinate the synergies between HEP instrumentation and accelerator training provision.