

# IFIC DRD Day

## Introduction

Ximo Poveda (IFIC, CSIC-UV)  
9 March 2026



MINISTERIO  
DE CIENCIA, INNOVACIÓN  
Y UNIVERSIDADES



**CSIC**

CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS



VNIVERSITAT  
DE VALÈNCIA

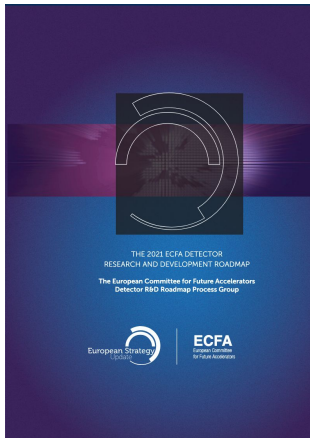


INSTITUT DE  
FÍSICA  
CORPUSCULAR



EXCELENCIA  
SEVERO  
OCHOA

# What are the DRDs?



- In short: **DRD (Detector R&D) collaborations at CERN**, aiming to develop innovative detectors for future collider facilities and beyond.
- Originating from the [2020 update of the European Strategy for Particle Physics](#):

***Detector R&D programmes and associated infrastructures should be supported at CERN, national institutes, laboratories and universities. Synergies between the needs of different scientific fields and industry should be identified and exploited to boost efficiency in the development process and increase opportunities for more technology transfer benefiting society at large. Collaborative platforms and consortia must be adequately supported to provide coherence in these R&D activities. The community should define a global detector R&D roadmap that should be used to support proposals at the European and national levels.***

- European Committee for Future Accelerators (ECFA) **R&D Roadmap (2021)**:
  - [Full document](#) (200+ pages) + [Synopsis](#) (8 pages)

**“Strong planning and appropriate investments in Research and Development (R&D) in relevant technologies are essential for the full potential, in terms of novel capabilities and discoveries, to be realised.”**

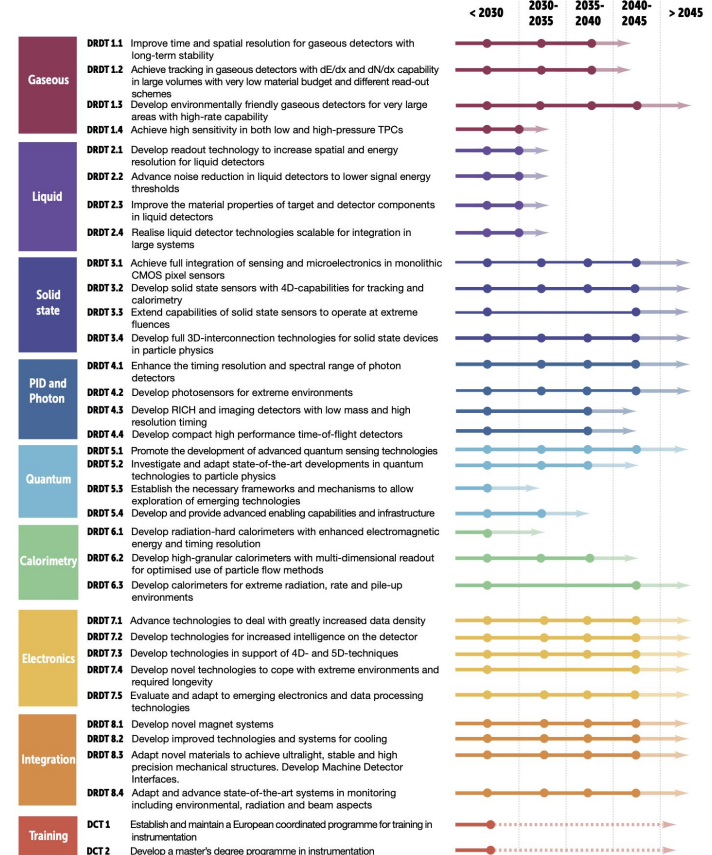
# How were the DRDs created?

- The ECFA R&D Roadmap contains:
  - 10 General Strategic Recommendations (GSR)
  - 9 Technology domains with Task Forces
  - The most urgent R&D topics in each domain identified as Detector R&D Themes (DRDTs)

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  
 GSR 9 - Industrial partnerships  
 GSR 10 - Open Science

- CERN to host the DRD collaborations → **DRD Committee (DRDC)** (similar to LHCC or SPSC)
  - Reviews DRD proposals, sends recommendations to CERN Research Board
  - Regular status reports and progress reviews of the DRD collaborations

## DETECTOR RESEARCH AND DEVELOPMENT THEMES (DRDTs) & DETECTOR COMMUNITY THEMES (DCTs)



# How many DRD Collaborations are there?

- Taken from [these slides by T. Bergauer](#) (June 2025):

Eight DRD collaborations have been approved for an initial period of 3 years (extendable) with different histories and “maturity”:

- Based on previous R&D collaborations:
  - **DRD1: Gaseous detectors** (based on RD51): *161 institutes, 700++ people*
  - **DRD3: Semiconductor Detectors** (previously RD42, RD50): *145 institutions / 700++ people*
  - **DRD6: Calorimetry** (CALICE, other proto-experiment collabs.): *135 institutes*
- Completely new: (community building, building trust, and finding benefit of being “CERN hosted”)
  - **DRD2: Liquid Detectors:** *86 institutes, 205 members*
  - **DRD4: Photodetectors & PID:** *74 institutes*
  - **DRD5: Quantum Sensors and emerging technologies:** *112 involved groups*
- Transversal activities: no service provider, but with genuine R&D interest (TF9 → ECFA Training Panel)
  - **DRD7: Electronics:** *67 Institutes*
  - **DRD8: Mechanics & Integration:** *38 institutes*

# What is IFIC doing inside the DRDs?

- Short answer: a whole lot!
- Longer answer:
  - Many experimental IFIC groups are working on instrumentation
  - Some of these contributions are focused on short/medium-term goals
    - HL-LHC upgrades: developed, approved and being implemented within ATLAS/LHCb
  - Instrumentation efforts on a longer timescale (FCC & other projects) for the next generation of detectors ~~will happen~~ are happening within the DRD collaborations
- More details? Sure, plenty will be given in the contributions in this meeting
  - One presentation per DRD, quite often describing the work of several groups/projects at IFIC

<b>09:40</b> → 09:55	<b>DRD1: Gaseous Detectors</b> Speaker: Kirill Salamatın (IFIC)	<b>10:40</b> → 10:55	<b>DRD Calo (aka DRD6)</b> Speaker: Adrian Irles (IFIC, CSIC-UV)
<b>10:00</b> → 10:15	<b>DRD2: Liquid Detectors</b> Speaker: Justo Martın-Albo (IFIC)	<b>11:00</b> → 11:15	<b>DRD7: Electronics and On-Detector Processing</b> Speaker: Luca Fiorini (IFIC / U. Valencia - CSIC)
<b>10:20</b> → 10:35	<b>DRD3: Solid State Detectors</b> Speakers: Carlos Marinas (IFIC), Salvador Martı Garcia (IFIC-Valencia (UV-CSIC))	<b>11:20</b> → 11:25	<b>DRD8: Mechanics &amp; Cooling of Future Vertex and Tracking Systems (upload-only)</b> Speaker: Marcel Vos (IFIC Valencia)