DRD1 3rd Collaboration Meeting Closeout

Anna, Beatrice, Eraldo, Leszek, Maxim, Piotr

https://indico.cern.ch/event/1442324/

Common Projects

Test Beam

School

Work Packages

Working Groups

Highlights from the CB Meeting on Dec. 12, 2024

- ✓ *The 1st DRD1 School has been reported to the Collaboration Board (CB) and recognized as an important example of a large community collaborating and sharing knowledge and experience.*

- ✓ *The endorsement procedure for Work Packages has been agreed upon, ensuring that Work Packages and WP Projects that are ready to start can do it.*

- ✓ *Rules for the Common Project have been approved, enabling the launch of the first call, which will open soon with a submission deadline at the end of May.*

- ✓ *The provisional budget for the use of the Common Fund for DRD1 activities and the yearly fee of 3kCHF has been approved.*

- ✓ *The CB has been informed about the status of the Memorandum of Understanding (MoU). The DRD1 Management and CERN are working on drafting the complete MoU (Core and Annexes), which will be distributed for final review by Institutes and Funding Agencies.*

- ✓ *Supratik Mukhopadhyay has been endorsed as a WG4 convener — a well-deserved recognition*

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- ✓ *Open Call for a Collaboration Board Meeting outside CERN in 2025 will be announced soon, with a proposal submission deadline of February 10.*

- ✓ *Call for DRD1 Awards is imminent with a deadline of June 2025*

Social Dinner - Restaurant Bois Joly, Crozet (Dec. 12)

Album for DRD1 social dinner photos: https://photos.app.goo.gl/rGtLES1qHMEWx9eG7

DRD1 Common Projects

Based on RD51 Experience and Legacy:

Transversal collaborations among groups from different countries, experiments, physics areas of interest encouraged and supported by DRD1:

- ✓ **Clustering of groups**
- ✓ **Seeding long-term initiatives**
- ✓ **Supporting basic research and blue-sky activities that may have difficulties to be funded as such**

Research Areas:

- ***Blue-sky and Generic R&D:*** High-risk/hig… research with potential impacts that may … research into new areas that may not show … but could lead to significant advancements in the future.
- ***Detector Physics R&D:*** Projects focused on measurements and simulations relevant to improving the current understanding of detector physics, with the potential to introduce new concepts, improve or consolidate existing solutions, and develop innovative ideas.
- ***Novel Applications:*** Research focused on the development of gaseous detectors for novel applications.
- ***Technology R&D:*** Projects aimed at developing novel techniques, enhancing existing technologies, improving characterization methods, and creating dedicated tools of common interest within the community.
- ***Industry Technology Transfer:*** Initiatives to enhance the transfer of gaseous detector technology to industry.

First call for Common Projects is imminent with a deadline of May 2025

RD51 Common Project list

Year	Title	Contact person
2011	A low mass microbulk with real XY strips structure	Theo Geralis
	MPGDs technology laboratory for training, development, fabrication, applications and innovation	Rafael Gutierrez
	Thin and high-pitch laser-etched mesh manufacturing and bulking	Paul Colas
	Development of innovative resistive GEM alpha detectors for earthquakes	Guy Paic
	Large-area THGEM detector evaluation with SRS electronics	Amos Breskin
2012	R&D on large area GEMs for the ALICE TPC upgrade	Chilo Garabatos Cuadrado
	High resolution UV scanner for MPGD applications	Dezso Varga
2014	Measurement and calculation of ion mobility of some gas mixtures of interest	Chilo Garabatos
	Fast Timing for High-Rate Environments: A Micromegas Solution	Sebastian White
	Development of a novel Micro Pattern Gaseous Detector for Cosmic Ray Muon Tomography	Paolo Iengo
2016	Sampling Calorimetry with Resistive Anode MPGDs (SCREAM)	Maximilien Chedeville
	New Scintillating gases and structures for next-generation scintillation-based gaseous detector	Diego Gonzalez Diaz
2017	Development of modular multilayer GEM units	Alexander Milov
2018	Modular &… …ose Ultra Low Mass GEM Based Beam Monitors	Gabriele Croci
	…future resistive MPGDs	
	…bility and ion diffusion for Negative Io…	
	…uest for Spark-Less-Avalanche-Micro…	
	…icromegas with integrated electronics	
	…esistive materials and resistive-MPGD concepts & technologie…	
2020	Optical readout studies for negative ion TPCs	
	Large area high-granularity segmented mesh microbulk forfutu…	
2021	Comprehensive studies of the glass, ceramic- and kapton-THGE…	
	Development for Resistive MPGD Calorimeter with timing mea…	
2022	Study of MPGD performance in liquefied noble gases	

2023/2/14

Annex 9 Other Work Entities

The Collaboration establish the following collaborative activities between members of the collaboration:

- Common Projects
- Common Investments

9.1 Common Project

The DRD1 Common Projects cover areas of common interest to the DRD1 community, such as:

- Technology R&D projects aimed at developing novel techniques, improving existing technologies, characterization methods, and dedicated tools.
- Development and optimization of gaseous detectors for novel applications.
- Enhancement of technology transfer of gaseous detectors to industry.

The rules governing Common Projects and the support from the Collaboration Common Fund are approved by the Collaboration Board.
The DRD1 Management Board, in consultation with the Scientific Coordination Board, will establish these rules, which will be approved by the Collaboration Board (CB). The Scientific Coordination Board (SCB) members, along with a few selected experts, will evaluate submitted proposals, make decisions about project acceptance, and inform the CB.
The rules of the Common Projects that the Collaboration Board must approve will include:

- The frequency of the call for applications.
- The duration of a Common Project.
- The minimum number of regular members of the DRD1 collaboration required as participating institutes in the Common Project.
- The maximum number of projects per year.
- The maximum annual contribution from the Common Fund per Common Project.
- The maximum annual contribution from the Common Fund per Institute.
- The percentage of the total project cost that must be provided by the participating institutes to complement the DRD1 Common Fund contribution.

9.2 Common Investment

Independently from the DRD1 Common Fund, Parties to the DRD1 Collaboration may agree amongst themselves to share costs for common projects or investments, such as purchase of equipment, material, submission of wafer production or other procurements. The Collaboration shall be informed about such agreements.

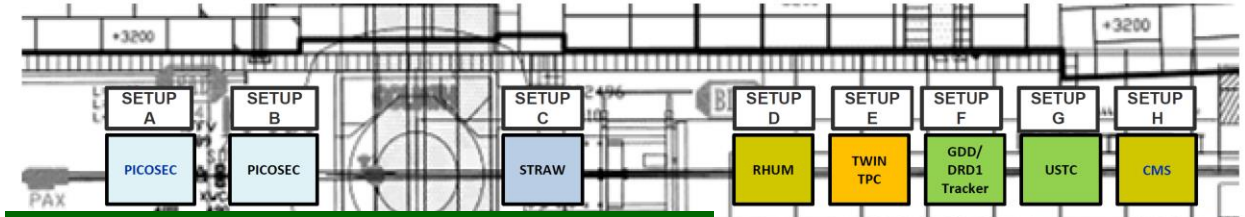
DRAFT

- ✓ ***Rules for Common Projects are being defined and were approved by the SCB and CB in Dec. 2024*** (they can be added to Annex 9)
- ✓ Aim for ***make first call for Common Projects in 2025***

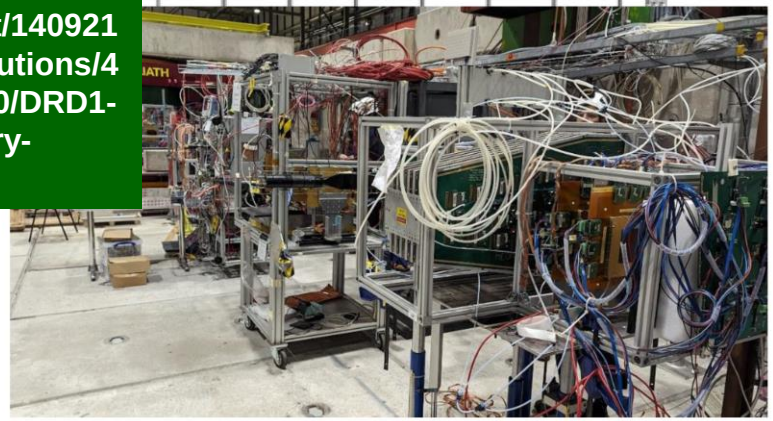
WG7: Common Test Facilities

- *Common Laboratory: GDD (CERN, EP-DT-DD)*
- *Common DRD1 Test Beam campaigns at EHN1/SPS Semi-permanent installation (H4):*
  - *Wed. 10/04/2024 – Wed. 24/04/2024, 8 setups*
  - *Wed. 26/06/2024 – Wed. 10/07/2024, 8 setups*
  - *Wed. 18/09/2024 – Wed. 02/10/2024, 5 setups*

- *Good collaboration with GIF++ colleagues (M.Jaekel, P. Martinengo, G. Pezzullo)*

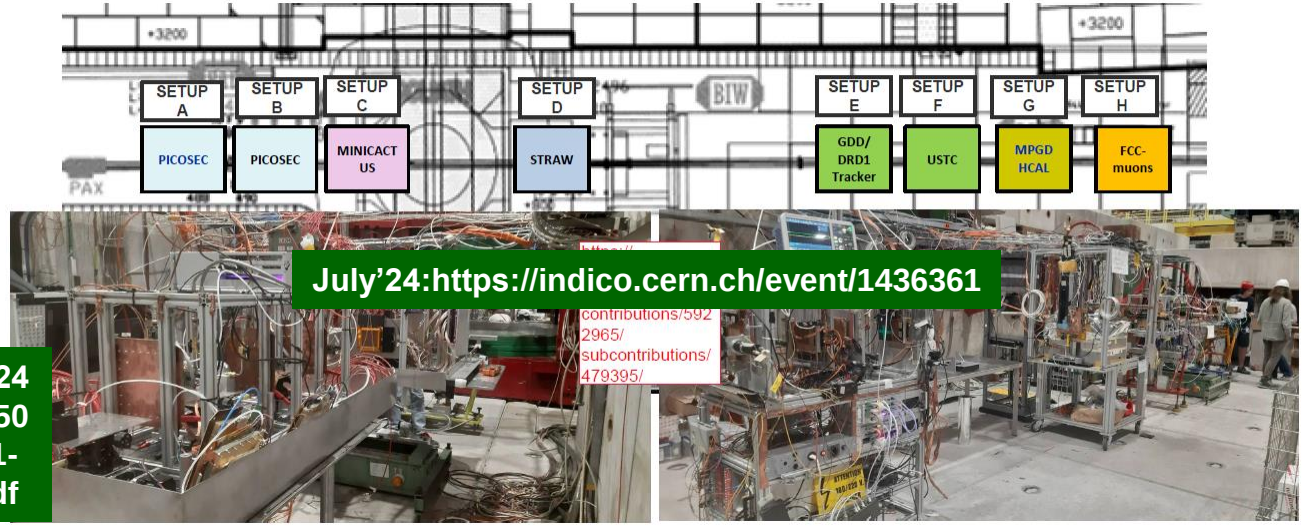


April'24:https://indico.cern.ch/event/1409215/contributions/5922965/subcontributions/479395/attachments/2843563/4973590/DRD1-April24-TestBeam-H4-Summary-Updated%20(2).pdf

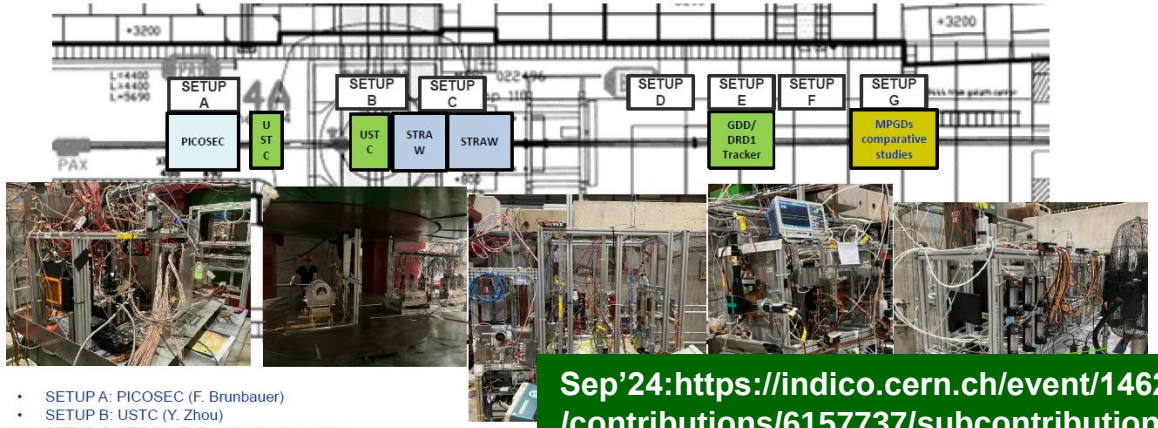


- SETUP A, B: PICOSEC (F. Brunbauer, M. Lisowska)
- SETUP C: STRAW (T. Enik, K. Kuznetsova)
- SETUP D: RHUM (M. Iodice, G. Sekhniaidze)
- SETUP E: TWIN TPC (F. Garcia Fuentes)
- SETUP F: GDD/RD51 Tracker (K. Floethner)
- SETUP G: USTC (Y. Zhou)
- SETUP H: CMS ME0 (A. Pellecchia, P. Everaerts)

Different gaseous detector technologies CMOS MAPS (MiniCactus)



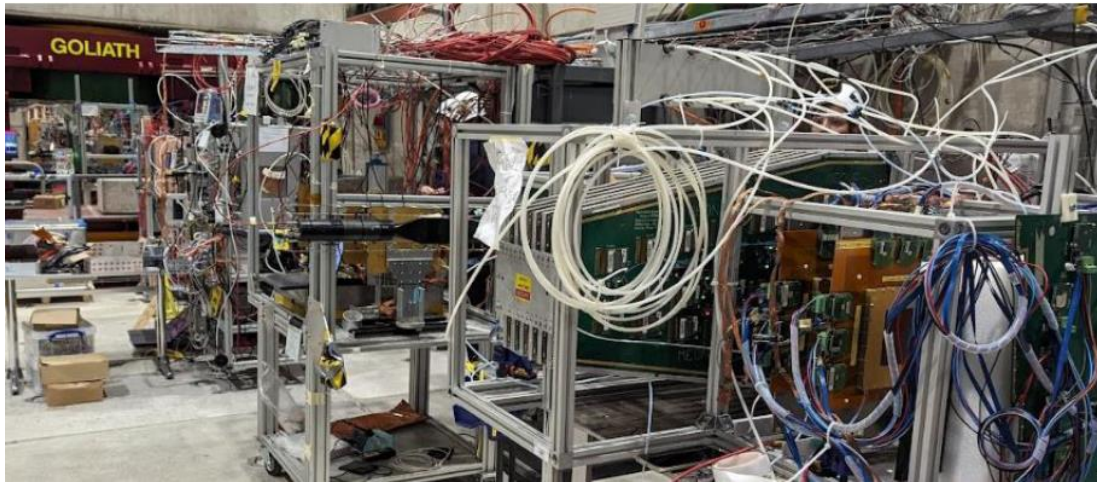
July'24:https://indico.cern.ch/event/1436361

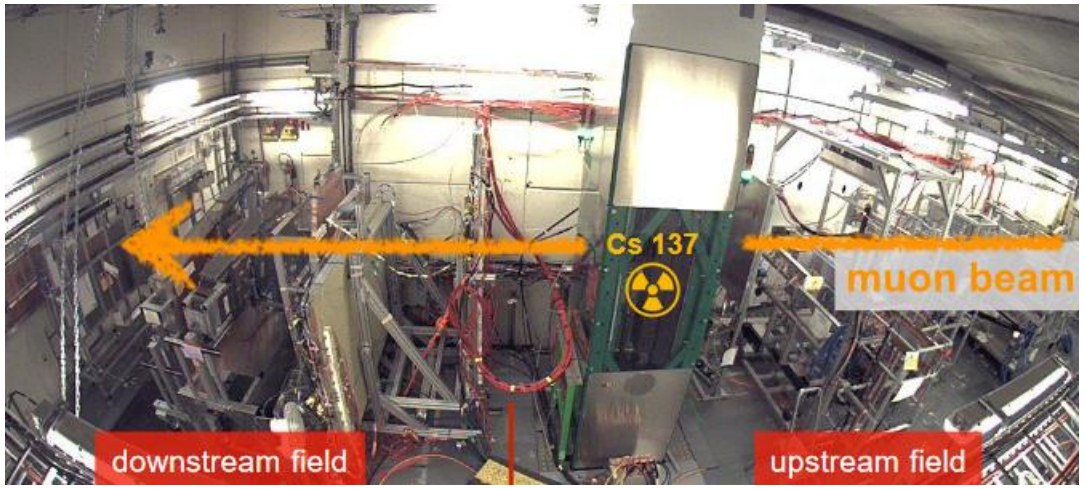


- SETUP A: PICOSEC (F. Brunbauer)
- SETUP B: USTC (Y. Zhou)
- SETUP C: STRAW (T. Enik, K. Kuznetsova)
- ~~SETUP D: Cylindrical TPC - DUT not ready~~ -> plans to come next year
- SETUP E: GDD/RD51 Tracker (L. Scharenberg, K. Floethner)
- ~~SETUP F: Saclay - Did not manage to come~~ -> plans to come next year
- SETUP G: MPGD comp. Studies (Darina Zavazieva)

Sep'24:https://indico.cern.ch/event/1462524/contributions/6157737/subcontributions/508550/attachments/2939656/5164466/DRD1-September24-TestBeam-H4-SUMMARY.pdf

WG7: Test Beam and GIF++ in 2025 Facilities



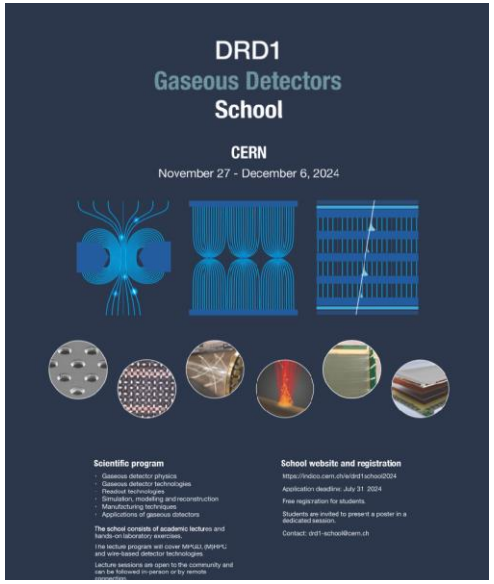


Test Beam: Spring, Summer and Fall slots

Contact: DRD1-WG7-convenors@cern.ch

WG8: DRD1 Detector School

CERN, Nov 27 - Dec 6, 2024 https://indico.cern.ch/event/1384298



2024 DRD1 Gaseous Detector School

Scientific program:
- Gas detectors physics
- Gaseous detector technologies
  - MPGDs
  - (M)RPCs
  - Wire-based detectors
- Readout technologies
  - Electronic readout
  - Optical & hybrid readout
- Simulation and modelling
- Manufacturing techniques
- Applications
  - High Energy Physics
  - Applications beyond HEP
  - Beyond fundamental research

Lab exercises:
- MPGD assembly
- (M)RPC assembly
- Wire-based detector assembly
- Drift tube characterisation
- MPGD characterisation
- (M)RPC characterisation
- Readout techniques
- Detector simulation 1
- Detector simulation 2

Follow-up of the 2023 RD51 Detector School (extended to all gas detector technologies)

Next steps

DRD1 School 2024
- Feedback survey running
- Debriefing meeting in Jan

2025
- Location under discussion
- Planning to start soon

DRD1 School 2026
- Preliminary plan to hold school at FRIB
- Positive feedback from lab management
- Define date (summer?)

Welcome to join discussions and preparations for future schools -> WG8 mailing list & meetings

Future plans:
- The DRD1 Gaseous Detector School is planned as a **regular event involving** DRD1 member institutes for hosting **future editions** of the school outside of CERN
- Additional **topical school** (e.g. simulation school) may be organised to offer in-depth training on selected topics of interest.

2024: Work Packages Endorsement

WP Endorsement procedure has been approved at the DRD1 CB on Dec. 12, 2024

If you are is ready to proceed to WP approval, please contact us !!!

Latest time		-5 week 23.01.2025		-3 week 06.02.2025	-2 week 13.02.2025	-1 week 20.02.2025	CB Date 27.02.2025
SCIENTIFIC ENDORSEMENT	**Requirement**	• Updated Annex 7 with all tables • WP Executive Summary		• Updated WP Executive Summary • Referee report • Annex 7	• All documents and presentations ready • Summary of WP-FA acknowledgements • 1h Dedicated SCB/MB Meeting for the WP Scientific Review		• Scientific endorsement • Financial endorsement • Recommendations to CB
	Action	• All documents sent to Work Packages Coordinator, Resource Coordinator and the WP Internal Referee • Referee report is prepared within 2 week time period. • The Referee works together with WPLs to “improve” the **WP Executive Summary**.		• Documents sent to SCB and MB by WPs Coordinator	**1) Open session (30’)** - WPL or WPPL present with all WP members present. Open to all collaboration. **2) Closed sessi** [illegible]		
				[illegible] shall be [illegible]municated before the dedicated SCB meeting	• Scientific endorsement (Final referee report and SCB minutes)		Final WP Endorsement
RESOURCES ENDORSEMENT	**Requirement**	• Updated Annex 7 with all tables		• 75% of acknowledgements expected (otherwise, needs to be discussed in the SCB endorsement)		• Scientific approval • 30’ Dedicated RCB/MB Meeting 30’ per WP project	
	Action	• The annex is distributed to relevant WP-FA and requests for acknowledgement in 2 weeks		• Summary of WP-FA acknowledgements of existing Resources are sent to SCB, RCB and MB		**1) Closed session (30’)** - WPL presents a summary of SCB approval,resource tables and a list of acknowledgements (100% expected)	
	Outcome					• Financial endorsement	

2024: (Selected) WG Highlights

Each of the 8 Working Groups is guided by 3-5 conveners from different gas detector technologies: new challenge for the community

- Execution the work program defined by the MB and approved by CB
- Coordination activities related to novel technologies and consolidating existing ones
- Facilitating the exchange of ideas and fostering synergies between institutes
- Identifying, guiding, and supporting strategic detector R&D directions
- Serving as knowledge and technology hubs for d… detector technologies

Some planned WG activities can now progress more effectively with anticipated common fund fee being payed by several (former RD51) institutes

		Members
WG1	Technologies	~80
WG2	Applications	~70
WG3	Gas and Material studies	~80
WG4	Detector physics, simulations and software tools	~190
WG5	Electronics for gaseous detectors	~60
WG6	Detector production	~50
WG7	Common test facilities	~110
WG8	Training and dissemination	~110

WG3: Gas and Material Studies

- Kick-off meeting to introduce the members
  - 13 contributions and ~35 participants
  - All technologies represented

WG4: Detector physics, simulations and software tools

- Several “working group” and “brainstorming” meetings
  - Reflections towards a general framework for the realistic simulation of gaseous detectors
  - Tutorial on pu… …duced signal in …

…tronics

- Ongoing discussions on future SRS Activities
- Topical workshop on electronics (Jun. 2024)

WG7: Common Test Facilities

- Organisation of several test-beam in Prevessin
  - Large participation and use of common infrastructure (for example beam telescope)

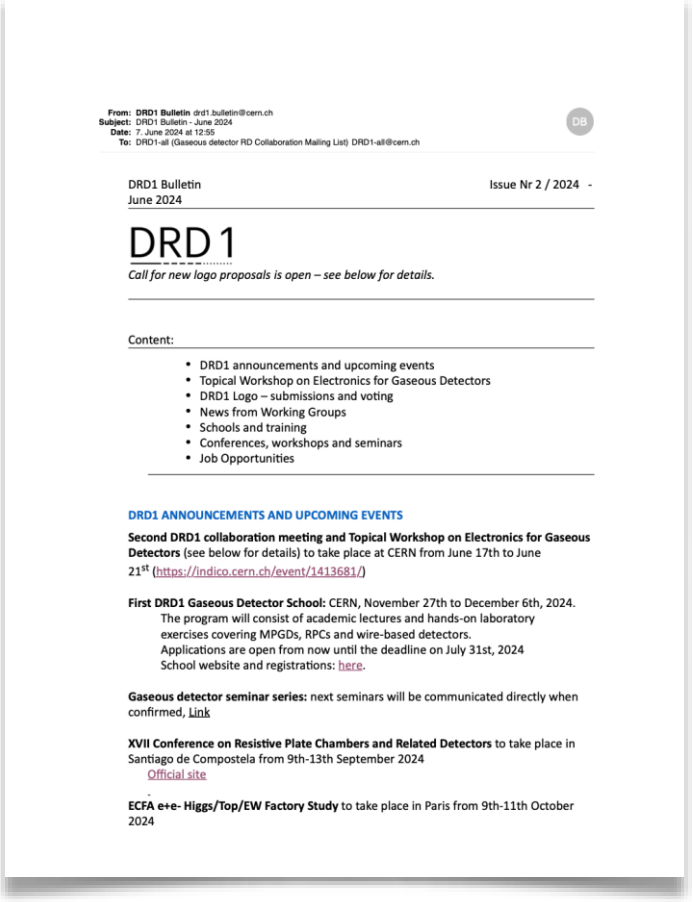
WG8: Training and Dissemination

- Preparation of the first DRD1 gaseous detectors school
  - Large programme covering all gaseous detector technologies https://indico.cern.ch/event/1384298/

WG8: DRD1 Communication Resources

DRD1 Bulletin

Regular newsletter containing announcements, upcoming events, communications from WGs, job opportunities, etc.



From: **DRD1 Bulletin** drd1.bulletin@cern.ch
Subject: DRD1 Bulletin - June 2024
Date: 7. June 2024 at 12:55
To: DRD1-all (Gaseous detector RD Collaboration Mailing List) DRD1-all@cern.ch

DRD1 Bulletin — Issue Nr 2 / 2024 -
June 2024

DRD1

Call for new logo proposals is open – see below for details.

Content:

- DRD1 announcements and upcoming events
- Topical Workshop on Electronics for Gaseous Detectors
- DRD1 Logo – submissions and voting
- News from Working Groups
- Schools and training
- Conferences, workshops and seminars
- Job Opportunities

DRD1 ANNOUNCEMENTS AND UPCOMING EVENTS

Second DRD1 collaboration meeting and Topical Workshop on Electronics for Gaseous Detectors (see below for details) to take place at CERN from June 17th to June 21st (https://indico.cern.ch/event/1413681/)

First DRD1 Gaseous Detector School: CERN, November 27th to December 6th, 2024.
The program will consist of academic lectures and hands-on laboratory exercises covering MPGDs, RPCs and wire-based detectors.
Applications are open from now until the deadline on July 31st, 2024
School website and registrations: here.

Gaseous detector seminar series: next seminars will be communicated directly when confirmed, Link

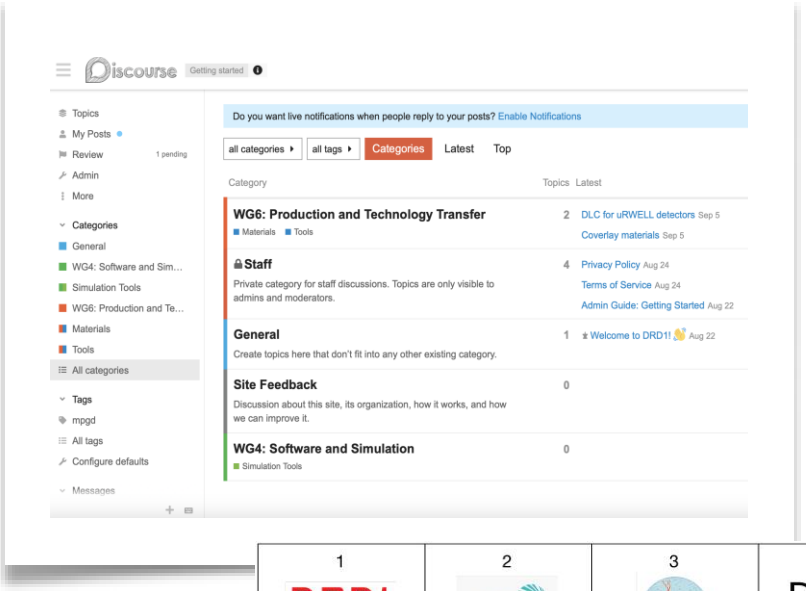
XVII Conference on Resistive Plate Chambers and Related Detectors to take place in Santiago de Compostela from 9th-13th September 2024
Official site

ECFA e+e- Higgs/Top/EW Factory Study to take place in Paris from 9th-11th October 2024

DRD1 Forum

https://drd1-forum.web.cern.ch

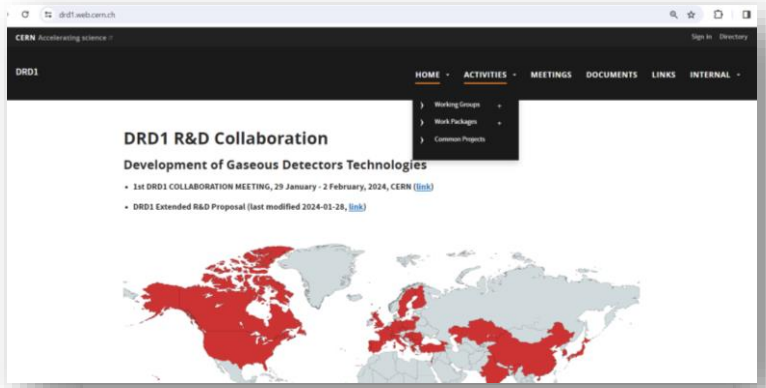
Exchange about common questions, used by multiple WGs e.g. for test beam preparation, simulation activities.

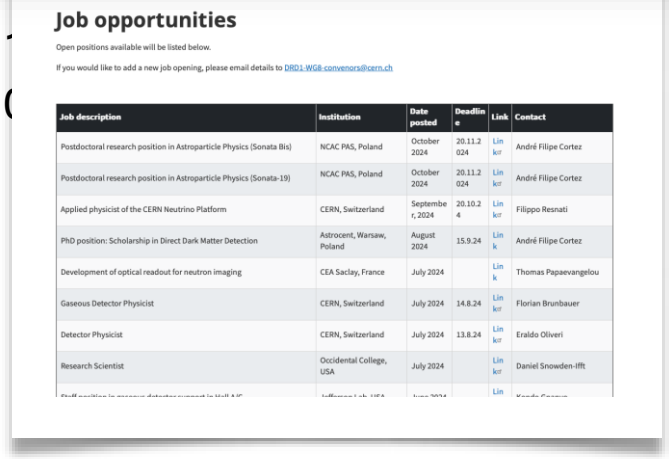


DRD1 Website

https://drd1.web.cern.ch

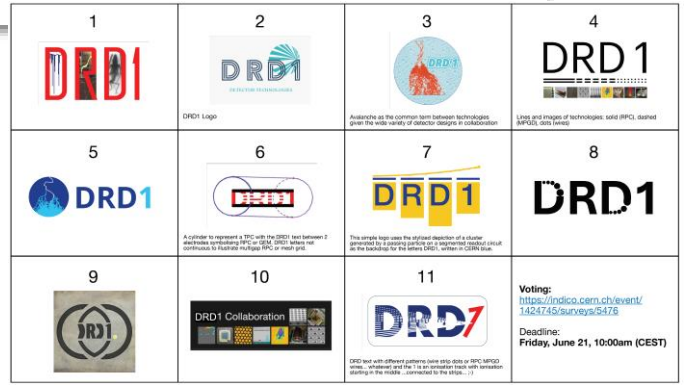
Updated lists of collaboration events, WG/WP descriptions and contacts, job opportunities in DRD1 institutes, training opportunities.





DRD1 Logo:

Eight proposal were received (one selected by vote in Jun. 2024)



DRD1 Collaboration Meetings (2024) & Related Events

Baseline: Three DRD1 Meetings per year (next year consider one of the meetings outside CERN)

1st Collaboration Meeting (CERN), Jan. 29-Feb. 2, 2024: https://indico.cern.ch/event/1360282/
2nd Collaboration Meeting (CERN), Jun. 17-21, 2024: https://indico.cern.ch/event/1413681/
3rd Collaboration Meeting (CERN), Dec. 9-13, 2024: https://indico.cern.ch/event/1442324/
4th Collaboration Meeting (CERN), Feb, 24-28, 2025

100th Anniversary of Georges Charpak's Birth (Oct. 17, 2024)

https://indico.cern.ch/event/1453371/sessions/570279/#20241017

2024 Gaseous Detector Conferences, Workshops & Schools:

- ✓ **RPC2024 Conference, Santiago, SPAIN, 9-13 September: https://indico.cern.ch/event/1354736**
- ✓ **Straw Tracker 2024 Workshop, 14-15 Oct,, University of Michigan, USA: https://sites.google.com/umich.edu/strawtracker20**
- ✓ **MPGD2024 Conference, Hefei, CHINA, 14-18 October: https://mpgd2024.aconf.org**
- ✓ **DRD1 Gaseous Detector School, CERN, Nov. 27 – Dec. 6: https://indico.cern.ch/e/drd1school2024**
- ✓ **Gaseous Detector Seminar Series: https://gitlab.in2p3.fr/gcharles/rdg/-/wikis/Accueil**

DRD1

Gaseous Detector Technologies

https://drd1.web.cern.ch/