

# **DRD1 Spokesperson Election**

**Eraldo Oliveri**

**December 8, 2023**

# Outline

**Convey my point of view on DRD1 2024-2025....**

# From the statement...

## **Encourage Participation and acknowledge contributions**

We must foster a culture of active involvement where all collaborators feel encouraged to contribute to our shared goals. Recognition for these contributions is crucial, both within our collaboration and across our respective institutes.

# Encourage Participation and acknowledge contributions

## I.7 DRD1 Implementation Team

### I.7.1 Roles covered during the DRD1 Implementation Phase

In this section, the roles covered during the formation of the collaboration are listed.

#### Task Force Conveners

Anna Colaleo, Leszek Ropelewski;

**Implementation Team** Florian Brunbauer , Silvia Dalla Torre , Klaus Dehmelt , Ingo Deppner , Esther Ferrer Ribas , Roberto Guida , Giuseppe Iaselli , Jochen Kaminski , Barbara Liberti , Beatrice Mandelli , Eraldo Oliveri , Marco Panareo , Francesco Renga , Hans Taureg , Fulvio Tassarotto , Maxim Titov , Joao Veloso , Peter Wintz

#### Proposal Review Team

Amos Breskin, Paul Colas, Jianbei Liu, Supratik Mukhopadhyay, Atsuhiko Ochi, Emilio Radicioni

#### Working Groups Conveners

WG1: P. Colas, I. Deppner, L. Moleri, F. Resnati, M. Tygat, P. Wintz

WG2: G. Aielli, , D. Gonzalez Diaz, R. Farinelli, F. Garcia, P. Gasik, F. Grancagnolo, G. Pugliese

WG3: K. Dehmelt, B. A. Gonzalez, B. Mandelli, G. Morello, D. Piccolo, F. Renga, S. Roth, A. Pastore

WG4: M. Abbrescia, M. Borysova, P. Fonte, O. Sahin, R. Veenhof, P. Verwilligen

WG5: R. Cardarelli, M. Gouzevitch, J. Kaminski, M. Lupberger, H. Muller

WG6: G. Charles, R. De Oliveira, A. Delbart, G. Iaselli, F. Jeanneau, I. Laktineh

WG7: A. Ferretti, R. Guida, G. Iaselli, E. Oliveri, Y. Tsipolitis

WG8: E. Baracchini, F. Brunbauer, M. Iodice, B. Liberti, A Paoloni

#### Work Package Coordinators

Overall Coordination: P. Gasik

WP1: G. Aielli, R. Farinelli, M. Iodice, A. Ochi, G. Pugliese

WP2: N. De Filippis, F. Grancagnolo

WP3: P. Wintz

WP4: D. Gonzalez Diaz, E. Ferrer Ribas, F. I. Garcia Fuentes, P. Gasik, J. Kaminski

WP5: I. Laktineh

WP6: F. Brunbauer, S. S. Dasgupta, P. Gasik, F. Tassarotto

WP7: F. Brunbauer, I. Deppner, D. G. Diaz, I. Laktineh

WP8: D. G. Diaz, E. Ferrer Ribas, F. I. G. Fuentes, P. Gasik, J. Kaminski

WP9: J. Bortfeldt, G. Croci, D. Varga

#### Liasons Persons

DRD2: D. G. Diaz

DRD4: F. Tassarotto

DRD5: F. Brunbauer

DRD6: I. Laktineh

DRD7: M. Bregant, S. Martoiu

US-CPAD: M. Titov, S. E. Vahsen

US-FCC/ILC: M. Hohlmann, G. Iakovidis, B. Zhou

A core team of colleagues is required to support the management and organization of the collaboration activities...

**Strong personal support to the colleagues that worked already for the implementation**

**Open to everyone that wants to join and contribute**

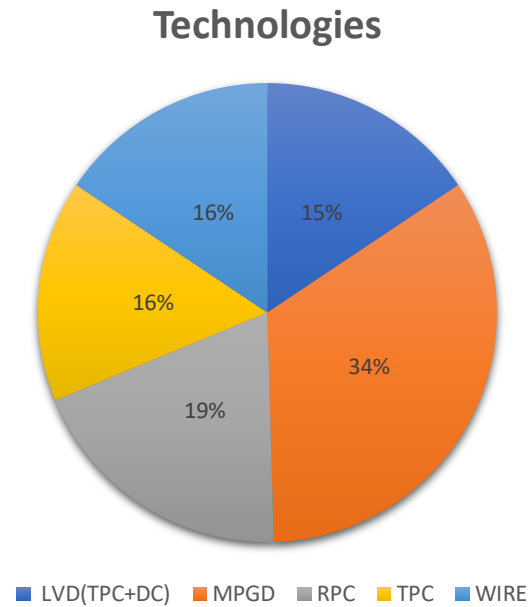
**No obligation or blame of course if someone prefers to leave or reduce the number of duties because not able to do it properly**

# From the statement...

## **Grant a proper representation for all communities and groups**

The organization of our collaboration should reflect and inclusively represent of the diversity in our research community. It should be capable of providing tailored support that addresses the unique requirements from different research lines, technologies competencies, and levels of expertise within the different groups, promoting synergies when possible.

# Just two examples....



**Groups not involved in Work Packages or not doing ECFA Roadmap Strategic R&D**

# From the statement...



## **Start our collaboration activities without delay**

following the hard work and dedication invested in finalizing our proposal, it's essential to promptly initiate collaborative efforts. The community deserve a prompt start to be able to appreciate the potential support that can arise from our collaboration. Despite the formal agreements may require time to be finalized, the DRD1 Collaboration and the collaborative efforts, profiting from the existing framework built within RD51, should promptly start, without unnecessary delays.

- **Working Groups** should form, plan their modus operandi and activities to cover the set of objectives that we were considering relevant to our studies and that we listed in our extended proposal.
- The process to initiate **Common Projects** to support initiatives of groups in the community that are proposing blue sky and generic R&D or studies that are relevant for the community, should be agreed, to make this opportunity accessible to the community once common funds will be available.
- **Work Packages** that have been introduced with the aim of giving the opportunity to our group to access new and strategic resources and to try to establish more stable and long-term funding should move to the next step. Groups involved in WP, with the help of coordinators, should prepare their internal scientific peer-review and the resource backing by the involved funding agencies. If we aim to increase the available resources, the workload will be large, and we should start now and understand how to make it efficiently and effectively. The advantages if the mechanism will work can be important.

# Start our collaboration activities without delay

**Community  
faster than  
formalities**

## Geant4 GIF++ simulation code

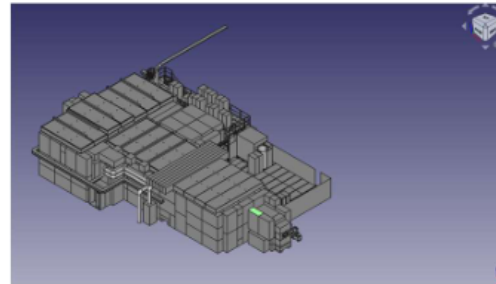
Source: Pfeiffer Dorothea Software developed in GEANT4-10.0 to simulate GIF++ radiation background [ref]

➤ Software upgrade in the framework of the new DRD1 «collaboration».

➤ Main steps:

1. Transition from GEANT4-10.0 to GEANT4-11.0
2. Description of the new bunker geometry

[ref] <https://gif-irrad.web.cern.ch/documents/1-s2.0-S0168900217306113-main.pdf>



Nicola Ferrara, GIF++ Radiation Field Modelling, RD51 CM Dec.4-8 2023, CERN  
<https://indico.cern.ch/event/1327482/contributions/5692588>



# Working Group Contacts/Conveners

## Working group 1

**Technological Aspects and Developments of New Detector Structures,  
Common Characterization and Physics Issues**

**Contacts:** P. Colas, F. Resnati, P. Wintz, I. Deppner, M. Tygat, L. Moleri

## Working group 2

**Applications**

**Contacts:** F. Garcia, P. Gasik, F. Grancagnolo, D. Gonzalez Diaz, G. Aielli, G. Pugliese, R. Farinelli

## Working group 3

**Gas and material studies**

**Contacts:** B. Mandelli, G. Morello, F. Renga, K. Dehmelt, S. Roth, D. Piccolo, A. Pastore, B. A. Gonzalez

## Working group 4

**Detector physics, simulations, and software tools**

**Contacts:** O. Sahin, P. Verwilligen, R. Veenhof, P. Fonte, M. Abbrescia, M. Borysova

## Working group 5

**Electronics for gaseous detectors**

**Contacts:** H. Muller, J. Kaminski, M. Gouzevitch, R. Cardarelli

## Working group 6

**Detector production**

**Contacts:** R. De Oliveira, F. Jeanneau, A. Delbart, G. Iaselli, I. Laktineh, G. Charles

## Working group 7

**Common test facilities**

**Contacts:** Y. Tsipolitis, E. Oliveri, R. Guida, G. Iaselli, A. Ferretti

## Working group 8

**Knowledge Transfer, Training, Career Promotion**

**Contacts:** F. Brunbauer, M. Iodice, E. Baracchini, B. Liberti, A Paoloni

# Working Groups

LVD (TPC+DC)	<b>WG1</b>	Garfield++	<b>WG4</b>
MPGD		Simulation of Large Charges and Space Charge	
RPC		Simulation of Detectors with Resistive Elements	
TPC		Modelling and Simulation of Eco-friendly Mixtures	
WIRE		Optimization of Simulations (time, hw/sw resources)	
Trackers/Hodoscope	<b>WG2</b>	Specific Proceses (e.g. Electroluminescence)	<b>WG5</b>
[DRIFT] Inner and Cenral Tracking with Particle ID Identification		Front-End Electronics for Gaseous Detectors	
[STRAW] Inner and Cenral Tracking with Particle ID Identification		Modernised Readout Systems (DAQ): high performances	
[TPC] Inner and Cenral Tracking with Particle ID Identification		Modernised Readout Systems (DAQ); FE Integration	
Calorimetry		Modernised Readout Systems (DAQ): portability	
Photon Detector (PID)	<b>WG3</b>	Instrumentation ( e.g. HV,LV, monitoring )	<b>WG6</b>
Timing Detectors (PID & Trigger)		Common Production Facilities and Equipments	
TPC as reaction and decay chambers		QA/QC	
Medical Application		Collaboration with Industrial Partner	
Neutron Science		Gaseous Detector FORUM (know-how)	
Muography	<b>WG7</b>	Detector Laboratories Network	<b>WG8</b>
Space Applicatios		Test Beam Common Facilities	
Oher (Dosimetry, Beam Monitoring, Cultural Heritage, Homeland Security,...)		Irradiation Common Facilities	
Measurement of Gas Properties		Specialized laboratories (outgassing/ageing, gas analysers, photocathodes)	
Studies on Eco-friendly Mixtures		Common instrumentation and software	
Ageing and Outgassing studies	<b>WG8</b>	Knowledge Exchange and Facilitating Scientific Collaborations	
Gas systems		Training and Dissemination Initiatives	
Resistive Materials		Career Promotion	
Photocathodes		Outreach and Education	
Precision Mechanics			

		LVD (TPC+DC)	MPGD	RPC	TPC	WIRE	Trackers/Hodos	[DRIFT] Inner an	[STRAW] Inner a	[TPC] Inner and
1	ANU	*	*							
2	U Melbourne		*		*					
3	UCLouvain			*						
4	VUB and UGent		*	*			*			
5	Rio-CBPF			*						
6	IFUSP	*	*			*		*	*	*
7	UERJ			*			*			

**A very useful picture of the community**

**A place where to look for the conveners**

# Disclaimers

- **You should read what follows as a list of examples and not as a frozen proposal**
- **What I will highlight is surely personally biased, but it is based on the ideas and proposals collected by the implementation team**

# Technological Aspects and Developments of New Detector Structures, Common Characterization and Physics Issues [WG1] & Applications [WG2]

- **Collaboration Meetings**
- **Topical Workshops**

Strongly based on the RD51 experience

- **DRD1 Kick-Off Meeting**
- **Summer**
- **Winter**

I would not use the kick-off meeting just for management issues.

I would ask WG1&2 contacts in the implementation team to prepare sessions with relevant scientific contribution.

WG2 should cover WPs, of course not exclusively

CERN is simple for people to come but it is very important to go in the community,  
In RD51 one of the meeting per year was normally outside CERN

# Gas and Material Studies [WG3]

Reference	Description	Common Objective
D3.1.1	Gas properties: drift velocity, diffusion for e- and ions, gain measurements, light emission, attachment, etc.	Common gas properties database
D3.2.1	Characterisation of new eco-friendly gases: gas properties, cross-section, etc.	New data for the integration in Magboltz and Garfield++ (collaboration with WG4)
D3.3.1	Longevity and ageing studies for different technologies	Report for a common approach
D3.3.2	Characterisation of material for the construction of detectors: material properties, compatibility, outgassing, etc.	Common construction material database
D3.4.1	Development of gas recirculation and recuperation systems	New design and knowledge transfer
D3.5.1	Resistive material: characterisation of different materials	Common resistive material database and procedures
D3.6.1	Mechanics: compression, rigidity, machining precision, etc.	Common approach for the different technologies

Table 13: WG3 - Common Objectives

**Discussion already started...  
The Aachen Gas Database, Stefan Roth, Nick Thamm & Alessandra Pastore**

# Modelling and Simulations [WG4]

Reference	Description	Common Objective
D4.1.1	Garfield++ Modernization: Review Core Code (Multi-Thread, Heterogeneous Arch)	Core Code
D4.1.2	Garfield++ Modernization: Add Community Tools (Automatic Builds etc)	Software Tools
D4.1.3	Garfield++ Modernization: Review & Accelerate neBEM Code	New Release
D4.2.1	Garfield++ Framework Improvement: Recommended Set of Ion Mobilities	New Release
D4.2.2	Garfield++ Framework Improvement: Long-Term Solution for Magboltz	New Release
D4.2.3	Garfield++ Framework Improvement: Displays, Documentation, Examples	New Release

Table 14: WG4 - Common Objectives (4.1-4.2)

Reference	Description	Common Objective
D4.3a.1	Simulation of Large Charges and Space-Charge: Implement Space-Charge	Software
D4.3a.2	Simulation of Large Charges and Space-Charge: Implement Field-Update with neBEM	Software
D4.3a.3	Simulation of Large Charges and Space-Charge: Implement Clustering for Large Avalanches	Software
D4.3b.1	Simulation of Discharges: Use Code D4.3a to Simulate Different Geometries	Software, Validation
D4.4a.1	Simulation of Signals in Detectors with Resistive Elements: t-Dependent W-Fields with neBEM	Software
D4.4b.1	Simulation of Rate Capability in Detectors with Resistive Elements: Equivalent Circuits with neBEM	Software
D4.4b.2	Rate Capability Simulation in Detectors with Resistive Elements: Framework for Large-Size Detectors	Software
D4.4c.1	Dark Counting Rate and Ageing	Software
D4.5.1	Simulation of Large Gas Volumes (TPC)	Software
D4.6.1	Modelling and Simulation of Eco Gases	Software
D4.7.1	Measurements and Extraction of Penning Effect	Software
D4.8.1	Parameterized – Fast – Simulation	Software
D4.9.1	Simulation of Electroluminescence	Software
D4.10.1	Simulation of Negative Ions	Software
D4.11.1	Measurement of Ionization Quenching Factors for Low-Energy Nuclei	Software

Table 15: WG4 - Common Objectives (4.3-4.11)

**Garfield++.. Covering the needs of majority if not all community...**

**Groups clustering or network already existing or started or to be started for specific tasks...**

# Electronics for Gaseous Detectors [WG5]

Reference	Description	Common Objective
D5.1.1	High-rate RPC electronics	Survey on low-threshold discriminators
D5.1.2	Front-end ASIC for TPCs - WP4	Description of parameters
D5.1.3	Front-end ASIC for straw chambers - WP3	Description of VMM3/3a
D5.1.4	Front-end ASIC for straw chambers - WP3	VMM3b or new ASIC design
D5.1.5	Front-end ASIC for MPGDs - WP1	Community survey on chip requirements

Table 16: WG5 - Common Objective (5.1, Front End Challenges)

Reference	Description	Common Objective
D5.3.1	MPGD HV - WP1	Stabilised voltage divider
D5.3.2	MPGD LV - WP1-8	PBX
D5.3.3	Monitoring - WP1-8	SoC investigation

Table 18: WG5 - Common Objective (5.3, Beyond Readout System)

Reference	Description	Common Objective
D5.2.1	SRSe WP1-8	eFEC
D5.2.2	SRSe WP1-8	VMM software and firmware migration
D5.2.3	SRSe - WP1-8	DAQ and reconstruction software
D5.2.4	SRSe	Testing and integration
D5.2.5	Common DAQ/SRS WP1,4	SAMPA implementation
D5.2.6	Common DAQ/SRS - WP4	Timepix3 implementation
D5.2.7	Common DAQ/SRS - RPC	RPC front-end implementation needs, potential and feasibility evaluation (report)
D5.2.8	SRS upgrades	2.5 Gbit Ethernet and L0 trigger $\beta$
D5.2.9	Portable, Connected $\mu$ SRS nodes	readout of distributed, small detectors over long distance

Table 17: WG5 - Common Objective (5.2, Modernised Readout System)

- **Work Packages (and ASICs)**
- **RD51 DAQ Upgrade**
- **DRD7 (knowledge sharing, technical support, DAQ and FE projects)**

# Production and Technology Transfer [WG6]

Reference	Description	Common Objective
D6.1.1	Production Needs: detector type and size, production volumes and quality	Report with estimation for each technology
D6.1.2	Production Capabilities: detector type and size, production volumes and production quality	Report with inventory for each technology
D6.1.3	Needs and Capability Matching (costs)	Report with required resources in terms of equipment and personnel
D6.1.4	Identify Resource Pooling strategies for the creation or the upgrade of production facilities	Resource Requests

Table 19: WG6 - Common Objectives (6.1: Development and maintenance of common production facilities and equipment)

Reference	Description	Common Objective
D6.2.1	QA/QC protocols for each technology	Report
D6.2.2	Inventory of missing but required instrumentation for QA/QC	Report

Table 20: WG6 - Common Objectives (6.2, Quality controls and large volume productions)

Reference	Description	Common Objective
D6.3.1	Technology transfer checklist	Report
D6.3.2	Technology transfer database (project, industrial partner)	Database

Table 21: WG6 - Common Objectives (6.3, Collaboration with Industrial Partners)

Reference	Description	Common Objective
D6.4.1	Establishment and support of a forum for sharing experiences, knowledge, and best practices on gaseous detectors	Online Forum

Table 22: WG6 - Common Objectives (6.4, Establishment and support of a forum for sharing experiences, knowledge, and best practices on gaseous detectors)

- **Existing Manufacturing Facilities (e.g. MPT workshop): capabilities, criticalities, identify the support that the collaboration can give**
- **Potential Future Facilities & Technology Transfer**
- **Industrial Partners**



# Collaboration Laboratories and Facilities [WG7]

Reference	Description	Common Objective
D7.1.1	Establishment of a Detector Laboratories Network	Network and Webpage
D7.1.2	Identify and define available and required characterization techniques and methods	Report
D7.1.3	Update and review laboratory handbook	Handbook

Table 23: WG7 - Common Objectives (7.1, Detector Laboratories Network)

Reference	Description	Common Objective
D7.2.1	Design and Upgrade the gas system for the test beams	Gas system
D7.2.2	Tracking and Timing Beam Telescopes with different GD technologies	Telescopes
D7.2.3	Develop a DCS for power supplies, environmental parameter monitoring	Control system
D7.2.4	Support the development of a common DAQ for Test Beam	Common Test Beam DAQ
D7.2.5	Identify test beam facilities with potential local support from DRD1 members	Database of facilities

Table 24: WG7 - Common Objectives (7.2, Common Test Beam Facilities)

Reference	Description	Common Objective
D7.3.1	Irradiation facility gas system: Identify the gas system for the irradiation test	Design of an upgraded Gas system
D7.3.2	Equip Beam Telescopes using different GD technologies	Beam Telescope
D7.3.3	Develop a DCS for power supplies, environmental parameter monitoring	Control system
D7.3.4	Support the development of a common DAQ	Common DAQ
D7.3.5	Identify irradiation facilities with potential local support from DRD1 members	Database

Table 25: WG7 - Common Objectives (7.3, Common Irradiation Facilities)

Reference	Description	Common Objective
D7.4.1	Consolidation and maintenance of the existing ATLAS-TRT outgassing test setup	Outgassing Test Setup
D7.4.2	Identify ageing study setups available in the collaboration and prepare a database	Report Webpage
D7.4.3	Database for outgassing and ageing effect of the material tested	Report Webpage
D7.4.4	Development of standardised and easy-to-use gas analysis modules	Design and construction of prototypes
D7.4.5	Network of deposition and characterization facilities for photocathodes	Network of laboratories

Table 26: WG7 - Common Objectives (7.4, Specialised Laboratories)

Reference	Description	Common Objective
D7.5.1	HW&SW Development of standardised gas mixing and distribution units for detector under test	Design and construction of prototypes
D7.5.2	Development of standardised flow-meter setups to monitor the supply and/or return flow mixture	Design and construction of prototypes
D7.5.3	Survey of existing hardware equipment at common infrastructure	Online documentation
D7.5.4	TWIKI page with module manuals and schematics	Online documentation
D7.5.5	Survey of need for common libraries	Online documentation
D7.5.3	Development of general purpose libraries for data taking	Software libraries

Table 27: WG7 - Common Objectives (7.5, Instrumentation and software sharing)

Reference	Description	Common Objective
D7.6.1	Test Facilities Database	Database

Table 28: WG7 - Common Objectives (7.6, Testing Facilities Database)

**Detector Laboratory Network**

**RD51/DRD1 Test Beam @ SPS (E. Oliveri, Y. Tsipolitis)**

**DRD1 GIF++  
Beam/Irradiation Request**

**Specialized Lab and link with WG3: Outgassing, Ageing, photocathodes,...**

**Common HW/SW**

# Knowledge Transfer, Training, Career [WG8]

Reference	Description	Common Objective
D8.1.1	Organisation of topical workshops	Event
D8.1.2	Creation of repository for DRD1 notes	Online repository

Table 29: WG8 - Common Objectives (8.1, Knowledge exchange and facilitating scientific collaboration)

Reference	Description	Common Objective
D8.2.1	Organisation of gaseous detectors school	Event
D8.2.2	Identification of technical training interests and opportunities	List of possible activities
D8.2.3	Organisation of technical training course	Training event
D8.2.4	Creation of expert database	Web resource

Table 30: WG8 - Common Objectives (8.2, Training and dissemination initiatives)

Reference	Description	Common Objective
D8.3.1	Create job opportunities listing	Web resource
D8.3.2	Initiate DRD1 award for young researchers	Event
D8.3.3	Promote young researcher participation in collaboration activities	Participation in events

Table 31: WG8 - Common Objectives (8.3, Career promotion)

Reference	Description	Common Objective
D8.4.1	Identify outreach activities and promote participation	Report on webpage
D8.4.2	Identify existing education setups and resources	Report on webpage
D8.4.3	Provide resources for educational setup	Description, technical plans, documentation

Table 32: WG8 - Common Objectives (8.4, Outreach and education)

**Forum (share by many WGs)**

**Job Opportunities**

**Internal Notes...**

**RD51 → DRD1 Detector School**

<https://indico.cern.ch/event/1239595/>

# Common Project

## I.2.1.2 COMMON PROJECTS

Common Projects (CPs) will support "Blue-Sky", generic R&D, and projects that are crucial for the community. These projects promote collaborative efforts involving a minimum number of participating institutes. CPs will be approved and reviewed by the DRD1 management and supported by DRD1 Common Funds, along with matching resources from participating institutes. CPs are limited in duration and financial support. CPs proposed by early-career researchers will be promoted; they will offer an opportunity for these researchers to gain experience in starting and managing small-scale R&D projects and to gain visibility within the Collaboration. Successful Common Projects may evolve into Work Packages.

**Agree all together on the rules and open this opportunity to the community without delays**

# Work Packages

## GSR 5 – Distributed R&D Activities with Centralized Facilities

A major concern for the future of several sensor R&D areas (particularly those linked to solid-state devices, microelectronics and on-detector data handling) is that R&D costs to exploit, adapt and further develop cutting-edge technologies are rising much faster than the rate of inflation. Although addressing the niche specifications of particle physics can provide an important vehicle for product development, the field remains by commercial standards a low volume market making it expensive. **Increasingly, costs can only be met through a significant pooling of resources, particularly given the growing complexity and degree of specialisation required of those involved in the device design and the need to negotiate as a larger-scale organisation.** GSR 5 proposes a solution to achieving the required critical mass **through a network of national hubs** which, while improving focus and cost-effectiveness, would still allow a vibrant research base in individual smaller institutes and university departments

## GSR 6 – Establish long-term strategic funding programs

Linked to rising R&D costs, the need for a critical mass and the decadal timescales for strategic R&D investments needed for the ESPP programmes, there is an urgent need to augment the short-term funding mechanisms, suited for exploratory stages of the R&D cycle, with **funding mechanisms better suited to long-term programmes** as outlined in GSR 6. The scale of the technical challenges, the long planning horizons and the need to build serious relationships with industrial partners make sustained strategic investment a must, particularly if matching resources are to be leverage

# Work Packages

## Work Package Coordinators

Overall Coordination: P. Gasik

WP1: G. Aielli, R. Farinelli, M. Iodice, A. Ochi, G. Pugliese

WP2: N. De Filippis, F. Grancagnolo

WP3: P. Wintz

WP4: D. Gonzalez Diaz, E. Ferrer Ribas, F. I. Garcia Fuentes, P. Gasik, J. Kaminski

WP5: I. Laktineh

WP6: F. Brunbauer, S. S. Dasgupta, P. Gasik, F. Tessarotto

WP7: F. Brunbauer, I. Deppner, D. G. Diaz, I. Laktineh

WP8: D. G. Diaz, E. Ferrer Ribas, F. I. G. Fuentes, P. Gasik, J. Kaminski

WP9: J. Bortfeldt, G. Croci, D. Varga



# Information sharing and memory keeping

# Sharing Information (web page)

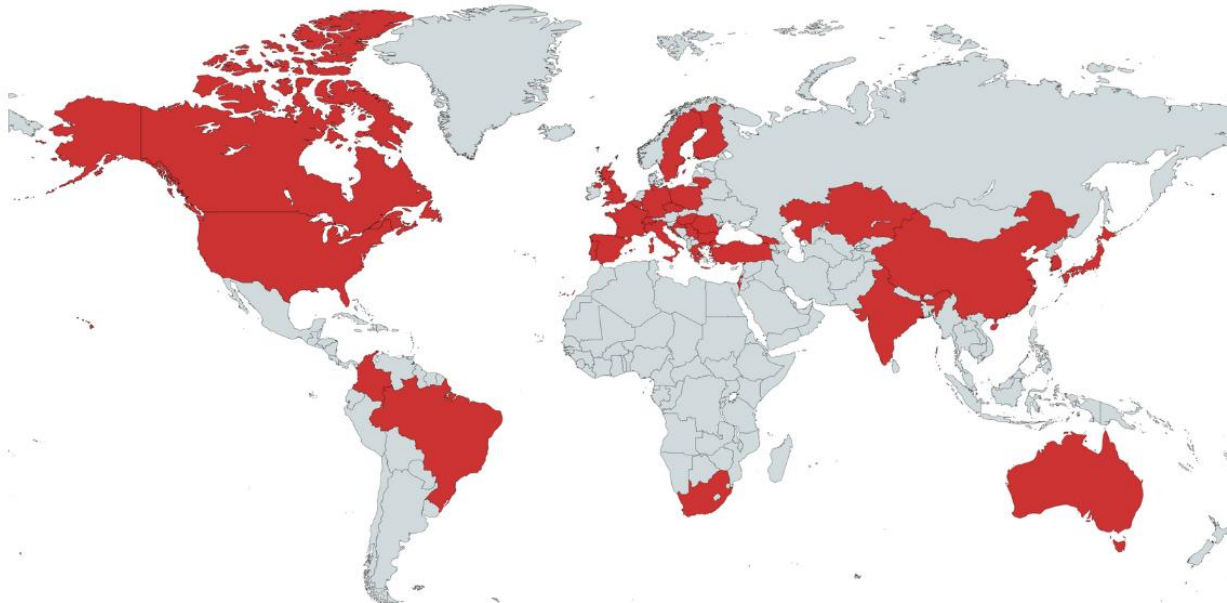
DRD1

[HOME](#) - [ACTIVITIES](#) - [MEETINGS](#) - [DOCUMENTS](#) - [LINKS](#) - [INTERNAL](#)

## DRD1 R&D Collaboration

### Development of Gaseous Detectors Technologies

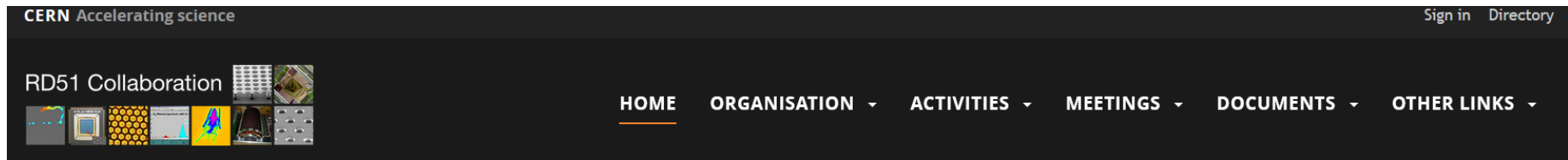
👤 DRD1 Extended R&D Proposal ([link](#))



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

Important to reach the full community informing about what we are doing....

# Memory Keeping (web page, RD51 experience)



[ICFA Instrumentation Awards 2023 awarded to Fabio Sauli and Ioannis Giomataris](#)

## RD51 collaboration

### Development of Micro-Pattern Gas Detectors Technologies

The proposed R&D collaboration, RD51, aims at facilitating the development of advanced gas-avalanche detector technologies and associated electronic-readout systems, for applications in basic and applied research. **The main objective of the R&D programme is to advance technological development and application of Micropattern Gas Detectors.**

The invention of Micro-Pattern Gas Detectors (MPGD), in particular the Gas Electron Multiplier (GEM), the Micro-Mesh Gaseous



› Meetings



› Job Opportunities

<https://rd51-public.web.cern.ch/>

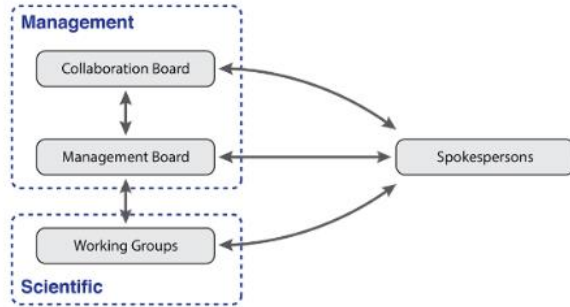
Important to “save” what we are doing....



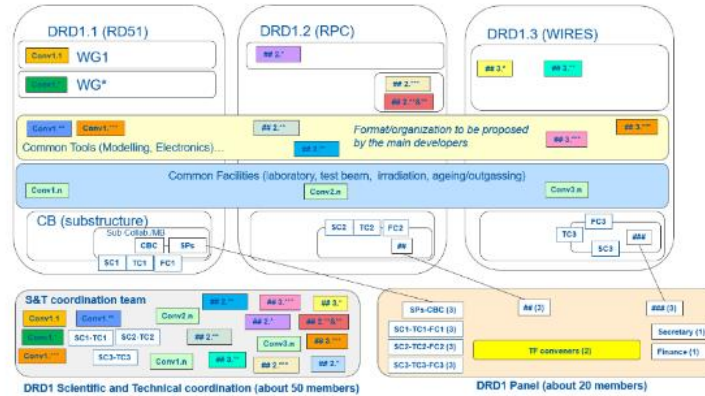
# Collaboration structure... some thoughts

# Structure of the DRD1 Collaboration (March 2023)

No technology related granularity



Preserving some technology related granularity (in which format to be discussed)



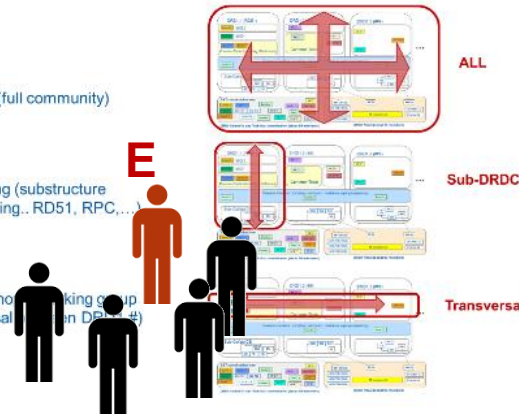
Legend



RD51 – Micropattern Gas Detectors										
	WG1 New Structures and Technologies	WG2 Detector Physics and Performance	WG3 Training and Dissemination	WG4 Modelling of Physics Processes & Software Tools	WG5 Electronics for MPGDs	WG6 Production and Industrialization	WG7 Common Test Facilities			
Objectives	Design optimization of new geometries and techniques	Common test standards	Characterization and understanding of physical phenomena in MPGD	Organisation of dissemination and training events for the MPGD community	Development of common software and documentation for MPGD simulations	Readout electronics optimization and integration with MPGD detectors	Development of cost-effective technologies and industrialization	Sharing of common infrastructure for detector characterization		
Tasks	Large Area MPGDs	Common Test Standards	Discharge Protection	Ageing & Radiation Processes	Topical Workshops (E-Sign)	Algorithms	FE electronics requirements definition	General Purpose Pixel Chip	Common Production Facility	Testbeam Facility
	Design Optimization New Geometries Fabrication	Ageing & Radiation Processes	Development of Rad-Hard Detectors	Development of Portable Detectors	Development of Portable Detectors	Development of Portable Detectors	Development of Portable Detectors	Development of Portable Detectors	Development of Portable Detectors	Development of Portable Detectors

## Meetings

- (I) DRD1 Meeting (full community)
- (II) DRD1.# meeting (substructure collaboration meeting.. RD51, RPC,...)
- (III) Topical Workshop (working group meeting (transversal in DRD1.#))



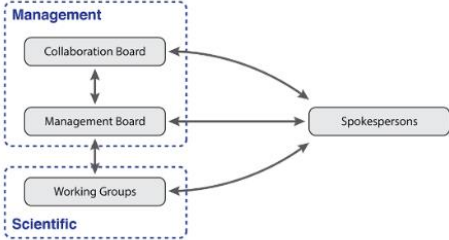
- Advantageous for already-coordinated groups like RD51 to maintain their existing operational methods
- Less coordinated or uncoordinated groups to have the time and freedom to determine their optimal organizational structure without imposition

<https://indico.cern.ch/event/1245751/contributions/5286572/attachments/2603572/4496166/DRD1-Organization.pdf>

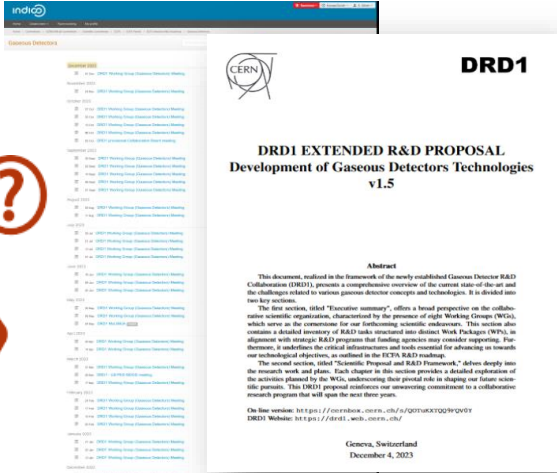
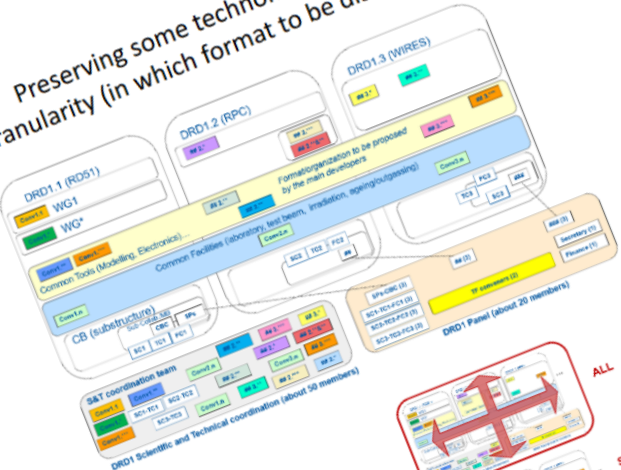
# Structure of the DRD1 Collaboration (today)

Working together for one year

No technology related granularity



Preserving some technology related granularity (in which format to be discussed)

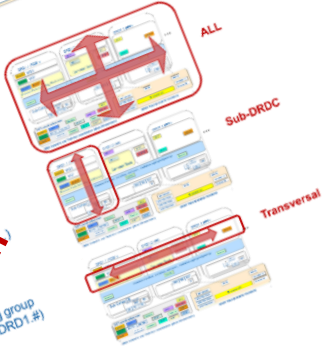


Nominations for management

RD51 – Micropattern Gas Detectors							
	WG1 New Structures and Technologies	WG2 Detector Physics and Performance	WG3 Training and Dissemination	WG4 Modelling of Physics Processes & Software Tools	WG5 Electronics for MPGDs	WG6 Production and Industrialization	WG7 Common Test Facilities
Objectives	Design optimization and development of new geometries and techniques	Common test standards	Organisation of dissemination and training events for the MPGD community	Development of common software and documentation for MPGD simulations	Readout electronics optimization and integration with MPGD detectors	Development of cost-effective technologies and industrialization	Sharing of common infrastructure for detector characterization
Tasks	Large Area MPGDs	Common Test Standards	Topical Workshops	Algorithms	FE electronics requirements definition	Common Production Facility	Beam Test Facility
	Design Optimization New Geometries Fabrication	Discharge Protection	Schools (Electronics, Simulation, ...)	Simulation Improvements	General Purpose Pixel Chip	Industrialization	Beam Test Facility
	Development of Rad-Hard Detectors	Ageing & Radiation Hardness	Academy-Industry Matching Events	Common Platform (Root, Geant4, ...)	Large Area Systems with Local Readout	Collaboration with Industry	Beam Test Facility
	Development of Rad-Hard Detectors	Charging and Rate Capability	Study of Avalanche Statistics	Simulation of MPGDs	Electronics modelling	Collaboration with Industry	Beam Test Facility



- Meetings
  - (i) DRD1 Meeting (full community)
  - (ii) DRD1.# meeting (substructure collaboration meeting - RD51, RP51, RP52, RP53)
  - (iii) Topical meeting (transversal between DRD1.#)



Spokespersons presentations: Spokesperson candidates - PRESENTATIONS

- 14:00 **Piotr Gasik - Presentation**  
Speaker: Piotr Gasik (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE))
- 14:30 **Eraldo Oliveri - Presentation**  
Speaker: Eraldo Oliveri (CERN)
- 15:00 **Maxim Titov - Presentation**  
Speaker: Maxim TITOV (CEA Saclay)

CB Chair candidate - Presentation: CB Chair candidate - PRESENTATION

- 15:30 **Anna Colaleo - Presentation**  
Speakers: Anna Colaleo (Universita e INFN, Bari (IT)), Anna Colaleo (Universita e INFN, Bari (IT))

# Last comment before summary: change of perspective

## DRDC/DRD1



A lot of things have been asked to us by DRDC in view of the submission of the proposal...

We should start thinking about something that DRDC can do for the collaboration, in view of supporting the EFCA Roadmap general recommendations...

- Support on establishing cohesive discussions with FA about long term funding...
- Support on establishing mechanism that will properly recognize and acknowledge the work that we do on having this collaboration running (conveners, coordinators,..)
- Support on identifying global and strategical strategies to offer careers-paths to your instrumentalists...

# Summary

**Encourage Participation and acknowledge contributions.**

**Grant a proper representation for all communities and groups.**

**Start our collaboration activities without delay.**



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