

# DRD1 WP9 status and plans

(D. Varga for the WP9 Leaders)

- “The aim .. is to fully exploit the achievements in other WP-s and to transfer knowledge and technologies to areas Beyond HEP”

Sub-tasks:

- **Muography**: development of gaseous detectors for field measurements
- **Medical applications**: photon and ion beam therapy precision monitoring
- **Neutron science**: high performance detectors mitigating the He-3 crisis and sustain high intensities
- **WP9 seems ready to go for early Endorsement**

EBG MedAustron GmbH

Vrije Universiteit Brussel (\*)

UCLouvain, Université catholique de Louvain (\*)

Sofia University St. Kliment Ohridski (\*)

Laboratoire Souterrain à Bas Bruit Avignon Université (\*)

Institute of research into the fundamental laws of the Universe, CEA, Université Paris-Saclay (\*)

Physikalisches Institut, University of Bonn

Helmholtzzentrum für Schwerionenforschung GSI GmbH

Institut of Experimental Physics, Hamburg University

Ludwig-Maximilians-University of Munich (\*)

HUN-REN Wigner Research Centre for Physics (\*)

National Institute of Science Education and Research, Bhubaneswar (\*)

University of Milano – Bicocca & INFN Milano Bicocca (\*)

AGH University of Science and Technology in Krakow

Laboratório de Instrumentação e Física Experimental de Partículas (\*)

European Spallation Source ERIC (\*)

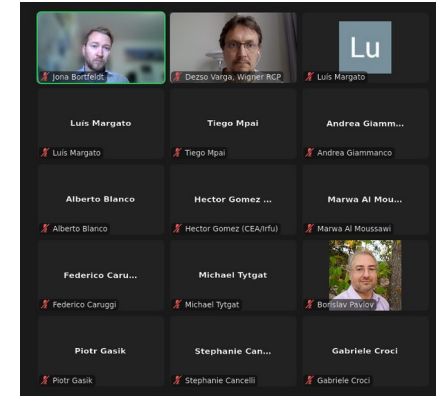
Istinye Üniversitesi

Johannesburg University (\*)

Fondazione Bruno Kessler (new!! DRD1 membership tbc)

Nanjing University of Aeronautics and Astronautics (new! DRD1 membership tbc)

# List of institutes (participation at Kick-off, 30/05/2024)



# “Official” Milestones (12M and 24M)

- M1.1, M1.2: Muography: Evaluation and Demonstration of relevant technologies T1 – T6
- M1.2, M2.2: Medical applications: Evaluation (assessment, simulations) and Demonstration of prototypes (T7 – T9)
- M1.3, M2.3: Neutron science: Evaluation and relevant studies, then Characterization of prototypes

# “Official” integrated Deliverables

- This integration of Deliverables (reduction of number of Deliverables for a less complicated evaluation process) was requested by DRD1 Management, as well as the DRDC.
- **D1:** Performance evaluation of cosmic imaging detectors and operation in extreme conditions. **Summary report on prototypes**
- **D2:** Performance evaluation of detectors for medical applications. Detector technologies in (pre)clinical environments
- **D3:** Performance evaluation of gaseous neutron detectors. Characterization of **prototypes** for efficiency, background, resolution, rate...

(Note that reports will be the output, but on physically existing prototypes, not only simulations, concepts or small demonstrators)

# Synergies with WG-s

- **WG1:** MWPC-s and RPC-s construction. WP9 offers know-how on operating in rough conditions, and needs input on latest construction technologies
- **WG6:** Production, industrialization (commercial tech-transfer). In WP9, commercial interest is towards third parties outside HEP, which makes production cost-sensitive. WP9 offers industrial quality assurance methodologies, and needs latest industrial solutions
- **WG3:** WP9 needs input related to gas systems, particularly for RPC-s, and generic materials.
- **WG5:** specialized electronics (e.g. very low power, cost efficiency)
- **WG7:** Benchmarking and common facilities, standardized testing procedures