

## EURO-LABS: Europe's Super Community of Subatomic Researchers

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# EURO-LABS: Europe’s Super Community of Subatomic Researchers

European-Laboratories for Accelerator Based Sciences (EURO-LABS) is a four-year project funded in the Horizon Europe program of the European Commission for Research infrastructure services to support health research, accelerate green and digital transformation, and advance frontier knowledge.

Nuclear and high-energy physics explore at different scales of what the universe is composed and how it functions. Breakthroughs in accelerator and detector technologies combined with innovative experiments represent the key to new discoveries. High-energy physics, while preparing for the High Luminosity - Large Hadron Collider

(HL-LHC), is pursuing the design of the next generation particle accelerators and detectors, balancing the present and the future. Newly available beams of nuclei far from stability and intense stable beams have opened new avenues, ranging from the production of new elements to the exploration of nuclear properties at extremes of temperature, angular momentum, and isospin. It is of vital importance to simultaneously optimize the use of existing and new research infrastructures (RI) to conduct curiosity-driven research addressing fundamental questions and technological challenges, and also advance projects with broad societal impact. EURO-LABS brings to-

gether, for the first time in Europe, the three communities engaged in nuclear physics and accelerator/detector technology for high-energy physics, pioneering a super community of subatomic researchers.

The project provides efficient and unified access to the resources available at a large fraction of European laboratories and provides a diverse community of international users a very wide panel to choose the best and most relevant state-of-the-art RI or a network of RI and enhance Europe’s potential for successfully facing future challenges. EURO-LABS is a network of 33 research and academic institutions from 18 countries

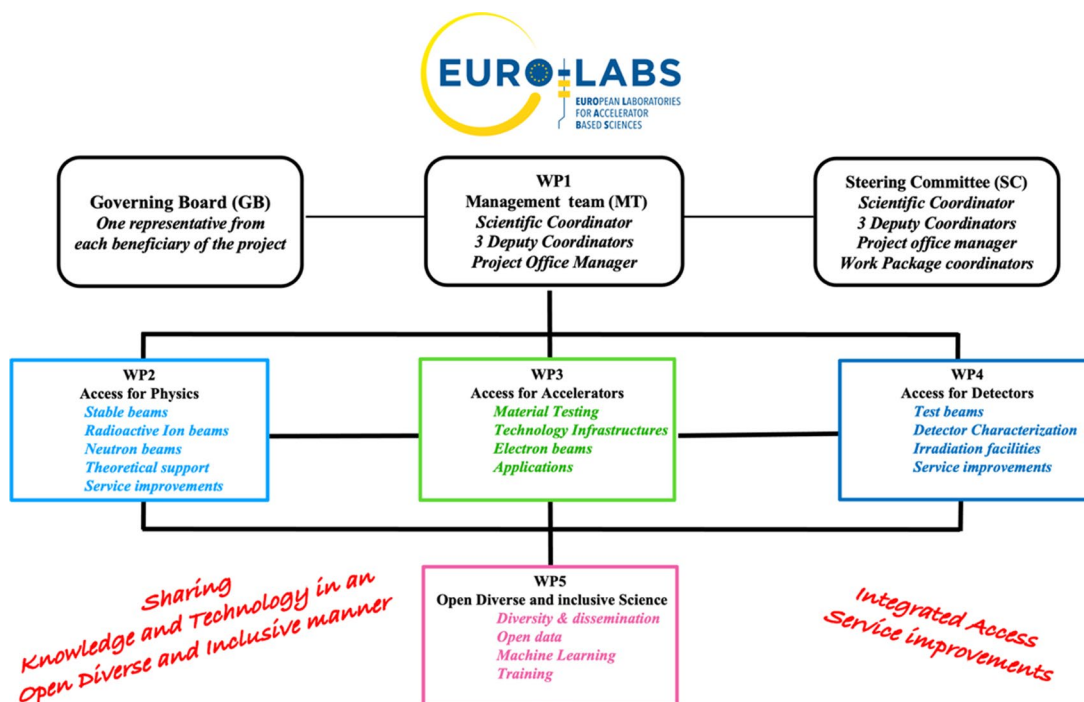


Figure 1. Scheme of the EURO-LABS structure.

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**Figure 2.** Participants of the Kick Off Meeting of EURO-LABS.

(25 beneficiaries and 8 associated partners) from European and non-European Union countries, involving 47 RI (including 3 RI with virtual access) in its three pillars of nuclear physics, accelerators, and detectors. Within this large network, EURO-LABS will ensure diversity and actively support researchers from different nationalities, genders, ages, grades, and variety of professional expertise. The project will allow a synergic implementation of best practices through an active and open data management plan following the FAIR principle, and activities relating to targeted service improvements at these RI. Joint training activities are foreseen to develop the skills of the next generation of researchers to optimally use the RI services for scientific and technological discoveries. EURO-LABS will create synergies and collaborations between the RI of the nuclear and high-energy communities. With its many partners, EURO-LABS forms a large network of laboratories and institutes ranging from modest sized test infrastructures to large-scale European Strategy Forum on Research Infrastructures (ES-PR) facilities such as Système de Production d'Ions Radioactifs en Ligne de 2e generation (SPIRAL2). The integration process within the consortium is favored by a suitable harmonization of the access procedures, including for interdisciplinary research, and by transverse activities aimed at improving the quality and breadth of the technical services provided by the current infrastructures, such as beam

quality, remote access, and optimization procedures based on machine learning. Further, EURO-LABS aims at strengthening and facilitating complementary international collaborations, which can pave the path toward a global integration of RI. The structure of the project is shown in Figure 1.

EURO-LABS started in September 2022 and will run until August 2026. At the Kick Off Meeting EURO-LABS, held in Bologna from 3–5 October (see Figure 2), presentations offered a detailed overview of the research infrastructures and facilities providing beams at energies from MeV to GeV. The meeting gave a panoramic view of the strengths and synergies of this super community and allowed the teams to discover each other and explore avenues for future collaborations (<https://agenda.infn.it/event/32088/>).

On the last day of the meeting, the consortium's Governing Board, chaired by Edda Gschwendtner (European Council for Nuclear Research [CERN]), met for the first time. The governing board endorsed the choice of Navin Alahari (Grand Accélérateur National d'Ions Lourds, France) as EURO-LABS scientific coordinator, Paolo Giacomelli (Italian Institute for Nuclear Physics [INFN]-Bologna, Italy) as project coordinator, Maria Colonna (INFN-Laboratori Nazionali del Sud (LNS), Italy), Ilias Efthymiopoulos (CERN), and Marko Mikuz (University of Ljubljana, Slovenia) as deputy scientific coordinators and Maria J. G. Borge (Spanish National Research Council (CSIC), Spain) and Adam Maj (Institute of Nuclear

Physics (IFJ), Poland) as work-package leaders.

The first semester of the project saw the start of the transnational access activities and the completion of the several planned milestones and deliverables, including the delivery of the EURO-LABS Data Management Plan. The Second Annual Meeting (SAM)-EURO-LABS will be held in Krakow from the 9–11 October 2023, hosted by IFJ Polish Academy of Sciences (PAN). Through the analysis of the activities carried out during the first year, strategies and goals for the coming second year of the project will be further defined. Focus will also be given toward practices to further improve the cross-fertilization and avenues for future collaborations among the three communities. During SAM-EURO-LABS, the first annual report of EURO-LABS will be finalized

EURO-LABS website: <https://web.infn.it/EURO-LABS/>



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