



# Euro-BioImaging ERIC



## European Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences

### Website

<https://www.eurobioimaging.eu>

### Headquarters

EURO-BIOIMAGING  
ERIC  
Tykistökatu 6A  
20520 Turku Finland

### Legal Status

Established (ERIC,  
AISBL, GmbH, Others)

### Type

distributed

### Access

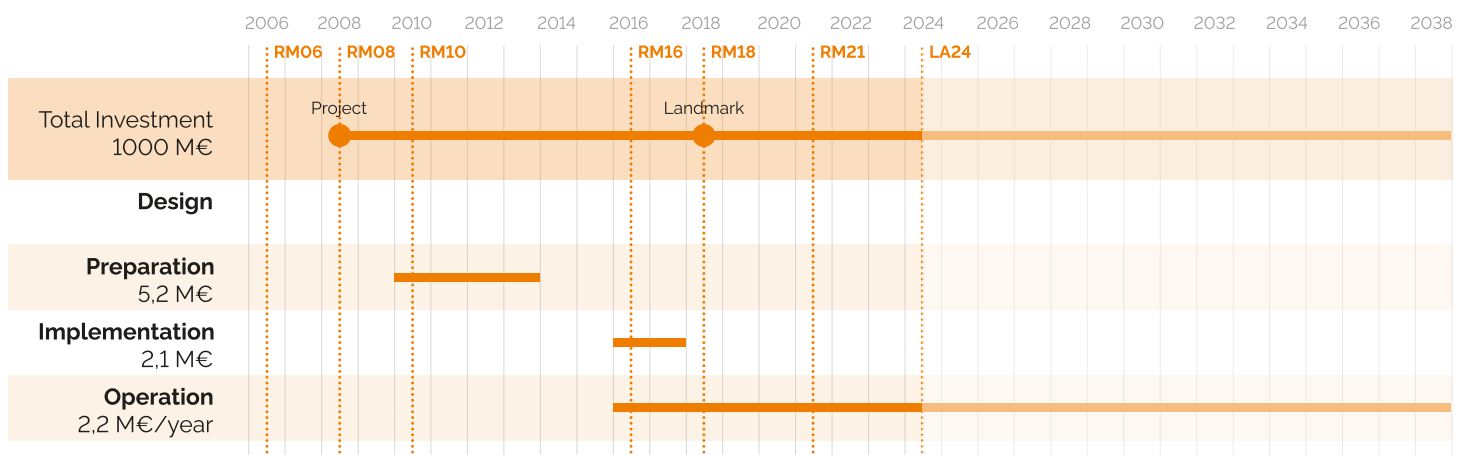
physical,  
remote,  
virtual

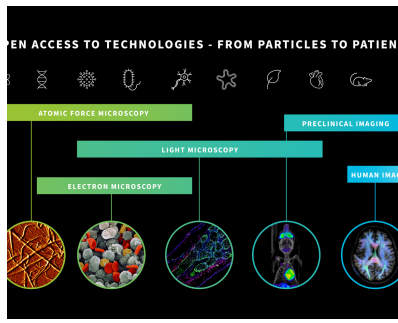
## DESCRIPTION

Euro-BioImaging ERIC, the Gateway to European biological and biomedical imaging, is a European Research Infrastructure offering open access to state-of-the-art imaging platforms, training, and image data services. Through Euro-BioImaging, researchers from the life sciences and beyond receive help planning their imaging projects, access to cutting-edge instruments, assistance in implementing advanced imaging applications, and advice on which imaging technology would best be suited for a particular purpose and research project. The services also include the sharing of expertise related to special methods and techniques, ample training opportunities for both users and service providers, and data analysis and data management services. The Euro-BioImaging mission is to provide: Open access to all scientists across country borders to top-notch biological and biomedical imaging facilities offering their technologies and services. Open access to advanced training and support to ensure correct and productive use of the technologies to maximise the output of the research projects; guidance is available for all aspects of the imaging

pipeline, from study design to image data acquisition, analysis, FAIRification and management. Open access to data services and open resources for handling, archiving, and analysing large amounts of digital imaging data. Euro-BioImaging ERIC is a joint effort of 19 ERIC members, 18 member countries and the European Molecular Biology Laboratory (EMBL). Euro-BioImaging ERIC is managed by a tripartite Hub, which consists of Finland as the Statutory Seat, EMBL as the biological imaging coordinator (Bio-Hub) and the host of general data services, and Italy as the biomedical imaging coordinator (Med-Hub). Euro-BioImaging services are provided by 41 Nodes, comprising 192 renowned imaging facilities distributed across Europe. These services can be accessed by all scientists in need of imaging technologies through the Euro-BioImaging Web Portal. Specific information on each Node can be found on the Euro-BioImaging web page. The Nodes provide access to over 120 different cutting-edge biological and biomedical imaging technologies, and novel technologies are constantly being included in the Euro-BioImaging portfolio.

## TIMELINE & ESTIMATED COSTS





## POLITICAL SUPPORT

### Lead

FI

### Member

AT, BE, BG, CZ, DK, ES, FR, HU,  
IL, IT, NL, NO, PL, PT, SE, SI, UK,  
EMBL

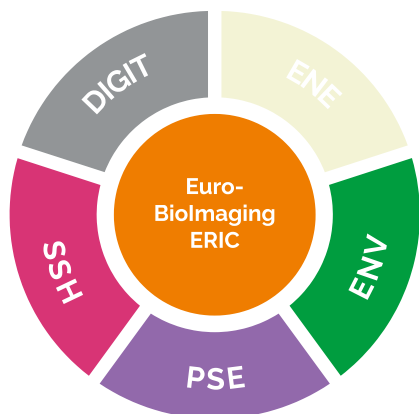


Open access to Euro-Biolmaging services enables Europe to secure its global leadership position in imaging technologies and is one of a kind in the world. It opens new fields for European research, thus fundamentally advancing the molecular understanding of health and disease. New and faster drug development based on complex imaging systems, e.g. high-throughput imaging set-ups, is enabled, leading to better diagnosis, therapy and disease prevention and therefore increasing the quality of life for patients. In addition, Euro-Biolmaging provides the essential imaging infrastructure for European scientists to develop innovative solutions for important societal and environmental challenges including infectious diseases, food security, agro-ecology, bio-economy and environmental systems in times of climate change and demographic challenges. Euro-Biolmaging services significantly contribute to the Missions and Challenge-driven research areas identified in Horizon Europe. Imaging technologies and image data services are fundamental for cancer research and accomplishing the Cancer Mission. Understanding cancer from the biology of tumour cells and the characterisation of the tumour microenvironment to the identification of new therapeutic targets and validation of molecular mechanisms of action, etc. involves imaging from super-resolution microscopy to advanced real-time and non-invasive in vivo imaging modalities. Prevention of cancer requires better understanding and early detection, where imaging is key. Merging data types such as molecular data and imaging biomarkers will improve prevention policy, also in relation to lifestyle and behaviour. Application of Artificial Intelligence in image data analysis and learning from associated metadata contributes to better prediction and prevention. Access to population imaging repositories allows the identification of tumour imaging biomarkers that may be used in screening campaigns. Non-invasive and super-sensitive detection tools are increasingly based on imaging, contributing to early detection and characterisation of the type of cancer to enable optimal treatment. Imaging is the primary tool to assess treatment efficacy. Image-guided surgery and the use of "theranostics" represent important routes to combat cancer. Drug discovery requires imaging at all levels. Innovative diagnostic molecular imaging technologies define disease characteristics which, coupled with e.g. genetic and omics data, allow defining personalized therapies. Developing new imaging technologies and hybrid approaches to improve therapy monitoring is of the utmost importance. There are many more examples where imaging technologies underpin essential research to tackle today's global problems, e.g. the effects of climate change on the emergence of infectious diseases. Imaging services are key in the study of causal climate change effects and threats, e.g. characterisation of any emergent disease vectors and pathogens including their molecular pathways, and their pathogenic effects in whole organisms and humans. In addition, imaging technologies, combined with genome sequencing, are extremely successful in furthering the understanding of marine ecosystems, enabling preservation of oceans, coastal, and inland waters. All life-sustaining processes on our planet depend on soils on which we grow food. Imaging technologies are critical to study soil microorganisms, and combined with genome sequencing, will provide insights on the actions to preserve soil functioning. In addition, imaging is essential for the study of the molecular and cellular mechanisms underlying plant resilience under stress conditions associated with a changing climate including warming and droughts. Thus, Euro-Biolmaging services make a tremendous difference in the achievement of the Horizon Europe Missions and beyond. In addition, the Global Biolmaging network, of which Euro-Biolmaging is a founding partner, strives to improve education and training opportunities for imaging scientists and facility staff worldwide and leverages its global reach to offer training courses, job shadowing programs and exchange of experience workshops. A key task of Euro-Biolmaging is to ensure the reproducibility of research and offer training in advanced imaging technologies, applications and data analysis to all scientists to facilitate excellent science, regional innovation, industrial collaboration, and quality control, as well as to support research in less privileged countries. Importantly, Euro-Biolmaging closely collaborates with industry via the Euro-Biolmaging Industry Board, allowing exchange of experience, innovation and development of existing and novel technologies, benefitting infrastructure and scientific community at large. In summary, by opening access to the complete range of cutting-edge technologies while at the same time coordinating and

To support rigorous science and high-quality publications, Euro-Biolmaging provides researchers with open access to high-end, specialised, imaging and image analysis services, as well as support for image data FAIRification and submission to open repositories. There are 41 Nodes spread across 192 sites, representing a broad and diverse infrastructure with more than 120 technologies. Each site represents a full range of different types of Research Infrastructure services, from small specialised laboratories to large, multi-functional research facilities. The biological imaging infrastructure includes a range of bioimaging equipment such as advanced microscopes, representing both the visible light spectrum and beyond, as well a range of electron microscopes, as well as other imaging modalities (photonic, mass-spec-based etc.). Medical imaging technologies include CT Scanners with SPECT-CT combinations, MRI setups, ultrasound, PET and other cutting-edge technologies. The full list of technologies and services can be found at: <https://www.eurobioimaging.eu/>

sharing the costs of deployment, Euro-Biolmaging allows its member states a much better return on investment for biological and biomedical imaging platforms. The harmonization of access to imaging technologies across Europe's infrastructures overcomes duplication of infrastructure investments and fragmentation of the European research landscape in this area. Thus, Euro-Biolmaging broadly facilitates scientific excellence in a wide spectrum of life science domains and beyond, with a strong European-wide presence and global reach.

## INTERCONNECTIONS



## COOPERATION WITH OTHER RIS

Euro-Biolmaging collaborates widely with other ESFRI RIs, including all of the ERICs (ERIC Forum), Life Science RIs, and beyond. The collaborations span joint work in various EU funded projects to collaboration in terms of bilateral agreements or signed Memoranda of Understanding.