

## Lighthouse research infrastructures, selected 27 Jan 2025

Listed in alphabetical order by name of research infrastructure.

### **Biocenter Finland (BF)**

*University of Helsinki, University of Eastern Finland, University of Oulu, Tampere University, University of Turku, Åbo Akademi University*

Biocenter Finland (BF, [www.biocenter.fi](http://www.biocenter.fi)) is a Finnish nationwide life science research infrastructure owned by six Finnish universities. BF coordinates 17 technology platforms to cover key technologies that are used to study the most pressing global challenges from loss of biodiversity to pandemics and other severe healthcare challenges. BF provides open access services to 17,000 academic, healthcare and industry researchers across Finland and abroad. Rapid technological and digital advancements have revolutionised life sciences research, creating an increasing need for state-of-the-art research infrastructures. BF is widely considered an example in coordination and strategic use of financial and human resources within a scientific discipline.

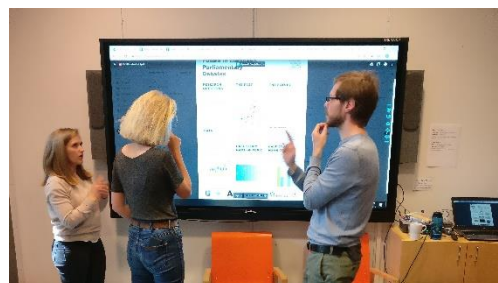


Biocenter Finland laboratory. Photo: Biocenter Finland.

### **Common Language Resources and Technology Infrastructure (FIN-CLARIAH)**

*University of Helsinki, CSC - IT Center for Science Ltd, Tampere University, University of Jyväskylä, University of Turku, University of Eastern Finland, Aalto University, University of Oulu*

FIN-CLARIAH is a research infrastructure for the social sciences and humanities (SSH) comprising two components: FIN-CLARIN and DARIAH-FI. FIN-CLARIAH seeks to upgrade the SSH infrastructural support using large language models (LLM) and AI by 1) enabling the processing of spoken minority-language data, 2) providing tools for a broad range of SSH research processing unstructured text, 3) facilitating studies of audio-visual culture by processing metadata, and 4) supporting transformer technology adaptation by SSH researchers.



Pondering a research process in the FIN-CLARIAH research infrastructure consortium. Photo: Stefan Hechl.



## **Euro-Biolmaging Finland: Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences (EB-Fi)**

*Åbo Akademi University, University of Helsinki, University of Eastern Finland, Tampere University, Aalto University, University of Turku, Helsinki University Hospital, Kuopio University Hospital, University of Oulu, Turku University Hospital*

Euro-Biolmaging-Finland (EB-Fi) is a research infrastructure consisting of Finland's leading, internationally renowned centres in biological and biomedical imaging. EB-Fi covers the most sought-after imaging technologies, ranging from the molecular level to entire humans, and including AI-based analysis methods. EB-Fi offers open-access imaging services to academic and business users worldwide, as part of the pan-European Euro-Biolmaging organisation. EB-Fi has been on Finland's national roadmap for research infrastructures since 2014. Imaging is one of the most important methods in biological and medical research and essential in combatting, for example, cancer, diabetes and infectious diseases. EB-Fi's imaging technologies and services have been central to numerous scientific and technological breakthroughs, as well as to advances in diagnostics and clinical practices. The EB-Fi research infrastructure has significant societal impact.



Biological and medical imaging in Euro-Biolmaging Finland. Image: Joanna Pylvänäinen.

## **Integrated Atmospheric and Earth System Science Research Infrastructure (INAR RI)**

*University of Helsinki, University of Eastern Finland, University of Turku, CSC - IT Centre for Science Ltd, Finnish Meteorological Institute, Finnish Environment Institute, Natural Resources Institute Finland, University of Oulu, Tampere University, University of Jyväskylä*

INAR RI is an umbrella infrastructure that coordinates Finland's participation in four European infrastructures within environmental research: ICOS, ACTRIS, eLTER and AnaEE. INAR RI consists of 30 stations, exploratory platforms and a data infrastructure. INAR RI integrates multidisciplinary comprehensive environmental measurements, and its services include open access to long-term observation data, access to research facilities, and instrument development. INAR RI continues to develop its world-leading measurement stations, produces services easily applicable in society and further integrates the expertise of its research community, providing a strong and unique competence cluster for new knowledge and innovations. The research facilitated by INAR RI will have a positive effect on climate resilience, protection from environmental hazards, and human health.



Pallas Research Station. Photo: Juha Hatakka.



### **Otaniemi Micro- and Nanotechnology Research Infrastructure (OtaNano)**

*Aalto University, VTT Technical Research Centre of Finland Ltd*

OtaNano ([www.otanano.fi](http://www.otanano.fi)) is Finland's national research and development centre for micro, nano and quantum technology. It serves as a state-of-the-art working environment for internationally recognised research fields such as quantum technology, nanoelectronics, micro-and nanophotonics, and new materials. Its facilities include Micronova's cleanrooms for nanoprocessing, the Low Temperature Laboratory for low-temperature measurements and the Nanomicroscopy Center for atomic-resolution study of materials. The OtaNano facilities are utilised by more than 700 users from a total of 120 academic research teams and 40 companies. The research infrastructure enables both international scientific excellence and the scaling up of business based on new innovations for its researchers and start-ups.



Parts of the OtaNano research infrastructure. Photo: Mikko Raskinen.

### **Research Infrastructure for Future Wireless Communication Networks (FUWIRI)**

*University of Oulu, Tampere University, VTT Technical Research Centre of Finland Ltd, Aalto University*

The FUWIRI research infrastructure contributes to the development and maintenance of the research environment for the 6G Finnish Flagship. In this environment, a jointly orchestrated 5G/6G test network will support the development and testing of new research-based technology components. The test environment will be expanded nationally and internationally, and its development and use is planned to continue until the 2040s.



Equipment of the FUWIRI network. Photo: Jonne Renvall.