Research Council of Finland

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Research infrastructures selected to the roadmap of national research infrastructures 2025–2028

Listed in alphabetical order by research infrastructure name.

Aalto Ice Tank
Aalto University
Aalto Ice and Wave Tank is a 40 m x 40 m water basin equipped to produce sea ice and waves in model scale. It is the largest ice basin in the world by area and the only wide basin in the world that allows experiments with both ice and waves. The tank is a significant national and international facility. The climate warming has resulted to changing ice conditions and has led to new ways of using cold sea areas. Our tank has an important role in research that accelerates green transition and mitigates risks related to marine operations on cold sea areas. In more detail, we study, for example, offshore wind turbines in ice, ice-going ships, and ice mechanics. The basin is multifunctional and can be used for open water tests also. In addition to our group in Aalto and our collaborators, the basin is used by students and industrial partners.

Accelerator Laboratory of the University of Jyväskylä
University of Jyväskylä
The Accelerator Laboratory of the University of Jyväskylä (JYFL-ACCLAB) was established in 1992 and has developed into a world-renowned multi-user facility with four accelerators providing ion, electron and photon beams for a large national and international user base. The users of JYFL-ACCLAB represent a multidisciplinary range of fields, addressing research into nuclear and atomic physics, nuclear astrophysics and fundamental interactions, radiation effects in electronics and materials, ion source development and plasma physics, nanoscience, materials characterization and thin-film research. The facility also provides a wide range of analysis, irradiation and expert consultancy services to industrial partners. JYFL-ACCLAB is a truly international user-driven research infrastructure, one of the leading ion beam facilities in Europe and is fully open to all researchers. The RADiation Effects Facility serves the European Space Agency and the European satellite and aerospace industry.

Biobanking and Biomolecular Resources Research Infrastructure of Finland (BBMRI.fi)
Finnish Biobank Cooperative, Turku University Hospital, Helsinki University Central Hospital, Finnish Red Cross, University of Eastern Finland, The Wellbeing Services County of Pirkanmaa, Wellbeing Services County of Central Finland, University of Oulu
BBMRI.fi (www.bbmri.fi) is a research infrastructure comprising all ten public and academic biobanks in Finland (later referred as Finnish Biobanks). BBMRI.fi is the Finnish National Node of the European level BBMRI-ERIC infrastructure (www.bbmri-eric.eu). Finnish Biobanks Cooperative – FINBB is coordinating, developing and serving the operative actions of all Finnish Biobanks. The vision of BBMRI-ERIC is to build and strengthen the value-added sustainable biobanking enabling clinical translational research in academia and industry and facilitating developing new treatments and creating new innovations in personalized medicine. Finnish Biobanks and the coordinator FINBB are actively participating in implementation of the BBMRI-ERIC Work Program with specific emphasis in providing Common Services for IT, Quality and Ethical and Legal Issues. The mission is to build a state-of-the-art biobank network in the world. Fingenious is the gateway to Finnish biobanks and biomedical research.

Biocenter Finland (BF)
University of Helsinki, University of Eastern Finland, University of Turku, University of Oulu, Tampere University, Åbo Akademi University
Biocenter Finland (BF, www.biocenter.fi) is a nationwide Life Science (LS) research infrastructure organization owned and operating in 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. BF is widely considered an example in coordination and strategic use of financial and human resources within a discipline. The rapid technological and digital advancements have revolutionized LS research, creating an increasing need for state-of-the-art research infrastructures. In the Roadmap call BF applies for updates on critical instrumentation and personnel resources for bioinformatic and artificial intelligence-based analysis that are vital for the international competitiveness of the life science sector.

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 Social Sciences and Humanities (SSH) comprising two components, FIN-CLARIN and DARIAH-FI. In the current project, FIN-CLARIAH seeks to significantly upgrade the SSH infrastructural support in four directions using large language models (LLM) and AI: 1) to enable the processing of spoken minority language data, 2) to provide tools for a broad range of SSH research processing unstructured text, 3) to facilitate research in audio-visual culture by

processing metadata, 4) to support transformer technology adaptation by SSH researchers.

While FIN-CLARIN continues to break new ground in supporting research based on language data, DARIAH-FI will develop infrastructure for big, heterogeneous datasets for research in the humanities and social sciences. An important additional aim of the current project is to develop a best common practice for utilizing LLMs and AI for assisting SSH researchers to speed up various stages of the research process.

Cosmology Data Center Finland (CDC-FI)
University of Helsinki, University of Oulu, Aalto University, University of Turku, CSC - It Center for Science Ltd.
Cosmology Data Center Finland (CDC-FI) facilitates Finland's participation in large international observational cosmology projects, such as the European Space Agency Euclid and LISA observatories, by providing in-kind contributions to these missions. Euclid is a wide-field space telescope that launched on 1st July 2023. Euclid will help solve the mystery of the accelerating expansion of the universe: is it caused by "dark energy", or must the law of gravity be modified? LISA will be the first gravitational wave observatory in space. Gravitational waves offer a new window into the universe: LISA will see further than has been possible with optical or radio telescopes. Data from these missions will have a huge impact on cosmology and astrophysics, forming the basis for future research. Roadmap status will give CDC-FI the resources to cope with the peak in Euclid demand at the end of its nominal mission, and the growing needs of LISA in the run-up to launch.

Euro-BioImaging 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 Central Hospital, Kuopio University Hospital, University of Oulu, Turku University Hospital
Euro-BioImaging-Finland (EB-Fi) is a research infrastructure consisting of Finland's leading, internationally renowned centers in biological and biomedical imaging. EB-Fi covers the most sought-after imaging technologies, ranging from the molecular level to entire humans, and including analysis methods based on artifical intelligence. EB-Fi offers open access imaging services to academic and business users worldwide, as part of the pan-European Euro-BioImaging organization. EB-Fi has been on the 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 advances in diagnostics and clinical practices. EB-Fi has significant societal impact.

European Infrastructure of Screening Platforms for Chemical Biology EU-OS Finland (EU-OS FI)
University of Helsinki, University of Turku, Åbo Akademi University, University of Eastern Finland
Chemical biology, the development of new small molecules with specific biological activities, is of tremendous value as the starting point for understanding biological processes and for discovering new drugs, agrochemicals and other commercially valuable bioactive agents. EU-OPENSCREEN ERIC (EU-OS, www.eu-openscreen.eu) provides open access to world class chemical biology infrastructures, technologies and expertise, with a compound collection of > 100 000 compounds and open database. As founding member, Finland has a key role in EU-OS and Finnish membership in EU-OS brings domestic scientists outstanding opportunities and access to technologies, services and resources not currently available in Finland. During 2025-2030, we focus on enhancing our RI's capabilities in providing services in technology areas which are foreseen to provide novel research possibilities and potential for scientific breakthroughs for the users of our RI at national and international level.

European Organisation for Nuclear Research (CERN)
University of Helsinki
The Large Hadron Collider (LHC) at CERN, the European Laboratory for Particle Physics, is the world's largest particle accelerator enabling new physics searches in particle collisions at record energies. To find even rarer signals, the accelerator will be upgraded to a high-luminosity LHC (HL-LHC). Finland participates in two large LHC experiments, CMS and ALICE. To cope with increased number of particle collisions, the experiments must be upgraded as well as use extra handles like timing or extended angular coverage to separate particles coming from different simultaneous collisions. The Finnish CMS upgrades contributions consists of the upgrades of the charged particle tracking and forward proton detection systems and the construction of a timing detector, whereas the ALICE ones include the construction of a new charged particle tracking system and a new forward energy measuring calorimeter. There is also an upgrade of the Finnish data storage resources for LHC related computing.

European Plate Observing System (EPOS-Finland)
University of Helsinki, Finnish Geospatial Research Institute (FGI) in the National Land Survey of Finland, VTT Technical Research Centre of Finland Ltd, Geological Survey of Finland, University of Oulu, Finnish Meteorological Institute
EPOS, the European Plate Observing System (http://www.epos-eu.org/) is an open-access e-infrastructure platform for distributed pan-European geoscientific research infrastructure aiming to be the principal source of data and tools geosciences. EPOS opens new possibilities for cross-cutting and innovative research in Solid Earth Sciences and their applications for society e.g. exploration of safe and sustainable raw material and energy, hazard mitigation, and environmental research and monitoring, critical infrastructure monitoring. Observations and online data are transferred to international data centers and metadata to EPOS.

Research Council of Finland

EPOS-FI consortium partners (UH, UOULU, Aalto, GTK, FMI, FGI, VTT, CSC) own and operate the geophysical and geodetic observatories, laboratories, a mobile instrument pool and data centers in Finland. Via EPOS-FI webpages Finnish academia, students, decision makers, industry, and citizens can access large multidisciplinary data sets and other services of EPOS.

Finnish Marine Research Infrastructure (FINMARI)
Finnish Environment Institute, University of Helsinki, University of Turku, Åbo Akademi University, Finnish Meteorological Institute, Geological Survey of Finland, Natural Resources Institute Finland
The Finnish Marine Research Infrastructure (FINMARI) combines all major partners of the Finnish marine research community (Syke, FMI, GTK, Luke, Universities of Helsinki, Turku and Åbo Akademi) into an integrated and distributed research infrastructure. It includes field stations, research vessels, laboratory facilities, flow-through platforms, autonomous measurement platforms and buoys within the partnership. FINMARI provides access to observational and experimental marine research facilities. The infrastructure development plan is based on addressing the multiscale variability of the marine environment by integrating the complementary areas of expertise of each partner. FINMARI concentrates on the global Triple Crisis, biodiversity loss, climate change and pollution, develops Open Access to data and services, and acts as a link between science and policy makers. FINMARI also has a broad impact on society, beyond the scientific community. https://www.finmari-infrastructure.fi/

Finnish Social Science Data Archive & CESSDA ERIC's Finnish Service Provider (FSD)
Tampere University
Finnish Social Science Data Archive (FSD) is a national mandate of Tampere University and a Service Provider (SP) for CESSDA ERIC, a distributed European infrastructure for social sciences. FSD serves the research community as an expert organisation that curates and preserves digital research data collected to study society, population, and cultural phenomena. FSD offers information services and support for data management, to facilitate easy and legitimate reuse of data. The digital services are always available, supported with personal service during office hours. FSD's core services are also CESSDA Finland's services. The centralised services of CESSDA are built by concerted effort of the SPs and the Main Office (in Norway). The content in CESSDA's platforms relies heavily on the expertise of SPs and what is harvested from them. FSD coordinates two social surveys and two national memberships of international data providers. (www.fsd.tuni.fi/en/)

Integrated Atmospheric and Earth System Science Research Infrastructure (INAR RI)
University of Helsinki, University of Eastern Finland, University of Turku, CSC - It Center 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 RI, coordinating the national nodes of European environmental research infrastructures (ICOS, ACTRIS, eLTER and AnaEE). INAR RI is benchmarking in the integration of multidisciplinary comprehensive environmental measurements with 30 stations, exploratory platforms and data infrastructure. INAR RI services include e.g. 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 for the 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 positively impact climate resilience, protection from environmental hazards, and human health.
https://www2.helsinki.fi/en/inar-institute-for-atmospheric-and-earth-system-research/infrastructure/national-research-infrastructures

Integrated Structural Biology Infrastructure Instruct-ERIC Centre Finland (Consortium FINStruct and Instruct FI)
University of Helsinki, University of Oulu, University of Eastern Finland, University of Turku, Åbo Akademi University
FINStruct is a national, distributed, open access structural biology research infrastructure leading international research and development in biomolecular complex purification; cryogenic electron microscopy; single cell proteomics; native mass spectrometry; structural bioinformatics, X-ray crystallography and data management. FINStruct's flagship services form the Instruct Centre Finland, which is the national node of Instruct-ERIC, providing expertise and services internationally through the Instruct-ERIC service catalogue. FINStruct and Instruct-ERIC Centre Finland serve the entire scientific community in universities and in the public and private sectors. Societal impact is reflected in new patents, start-ups, and diagnostic and therapeutic methods. Membership of Instruct ERIC enables Finnish researchers to benefit from Instruct ERIC's cutting-edge expertise and technologies, strengthening our international research profile.

National infrastructure for human in digital world (MAGICS)
Aalto University, Tampere University, University of the Arts Helsinki, University of Lapland, Turku University of Applied Sciences, University of Jyväskylä
The world is undergoing a profound transformation characterized by digitalization and virtualization of human behaviour, events, written content, and physical objects. This instigates profound changes we aim to understand in MAGICS using a multitude of methods. The strongly transdisciplinary MAGICS infrastructure spans across Finland, utilizing facilities at six major universities. This nationwide network facilitates a diverse and interdisciplinary environment, and efficent use of resources. MAGICS bridges the

gap between digital innovation and everyday human experiences. It supports societal and scientific advancement by utilizing new technologies that improve remote interactions, educational accessibility, and cultural participation. MAGICS is a community focusing on integrating digital technologies and human-centred research. The goal is to create a synergistic environment where diverse expertise from science, technologies and arts converges.

Open Geospatial Information Infrastructure for Research (Geoportti)
Finnish Geospatial Research Institute (FGI) in the National Land Survey of Finland, Aalto University, CSC - It Center for Science Ltd., Natural Resources Institute Finland, Finnish Environment Institute, University of Eastern Finland, University of Helsinki, National Archives, University of Turku
Geoportti – Open Geospatial Information Infrastructure for Research is a cutting-edge digital research infrastructure (RI) enabling scientists to easily access geospatial data and geocomputing resources through centralized high-performance computing and cloud infrastructure. We empower renewal and excellence in science by promoting widespread use of geographical data and geoinformatics methods, catalyzing collaboration, and fostering the creation of disruptive location innovations with broad societal impact. We offer more than 20 services related to data, geocomputing, equipment, geovisualization and training. We together with the EDIH Location Innovation Hub support the national innovation system in addressing societal and business challenges that require geographic information solutions. Our thousands of users prove that we have become a key service provider for researchers and an integral part of the Finnish RI ecosystem.

Operando research infrastructure for energy materials and systems (OperaRI)
University of Oulu, VTT Technical Research Centre of Finland, Tampere University
The green and hydrogen transitions pose unprecedented challenges in the energy, raw materials, and process industries. Green hydrogen production and new hydrogen-based processes and applications need to be introduced in a very short time to meet climate goals. However, electrolyser efficiency still needs improvement, and little is known about the interactions of hydrogen with materials such as steels, central to the functions of our society. Understanding these interactions is increasingly important for the development and commercialization of efficient, reliable and safe hydrogen technologies. For example, in load-bearing structures, embrittlement caused by hydrogen can have catastrophic effects, and the use of critical raw materials in hydrogen technologies challenges our security of supply, and alternatives are needed. OperaRI provides powerful in-situ and operando characterization techniques to deepen scientific know-how necessary for advances in hydrogen and green technologies.

Otaniemi Micro- and Nanotechnology Research Infrastructure (Otanano)
Aalto University, VTT Technical Research Centre of Finland Ltd
OtaNano (http://www.otanano.fi/) is the national research and development center for micro- and nanotechnology, and it serves as a state-of-the-art working environment for internationally recognized research fields, such as quantum technology, nanoelectronics, micro-and nanophotonics, and new materials. It provides centralized

access to advanced nanofabrication, nanomicroscopy and low-temperature measurement facilities only 15 minutes away from the capital Helsinki, at the heart of the leading Nordic innovation hub in Otaniemi, Espoo. OtaNano operates as a national hub in relevant European research infrastructure (RI) collaborations, covering all of its fields of operation. OtaNano serves as a first-rate educational center for young researchers and acts as a node for scientific and technological collaboration as well as commercial development. The facilities accommodate over 700 users, and over 40 companies collaborate in and exploit the facilities of the RI.

Research Infrastructure for Future Wireless Communication Networks (FUWIRI)
University of Oulu, Tampere University, VTT Technical Research Centre of Finland, Aalto University
FUWIRI is a nation-wide high-impact research, innovation and collaboration infrastructure in the area of future wireless technologies, jointly hosted by University of Oulu, Tampere University, Aalto University and VTT, while being tightly connected also to the 6G Flagship. The infrastructure facilitates experimental research related to the future radio and computer network technologies and applications, including research and innovation activities for developing new hardware, algorithms, software and applications. Also radio-based positioning and radio-based sensing solutions are associated technology developments that are strongly present.

The Finnish BioFoundry for synthetic biology and biomanufacturing (FIN-BioFoundry)
VTT Technical Research Centre of Finland, Aalto University, University of Turku, Tampere University
The Finnish Biofoundry for synthetic biology and biomanufacturing (FIN-BioFoundry) brings together the scientific excellence and industry interface of VTT, Aalto University, University of Turku and Tampere University to develop cutting-edge, enabling solutions for industrial biotechnology. Key objectives of the FIN-BioFoundry are to provide a unique and enabling platform for cutting-edge science in synthetic biology and biomanufacturing research, enable high-level education and workforce training for research and bio-based industries, support an essential part of future circular bioeconomy development and national manufacturing resiliency, and form the Finnish node in the European IBISBA ESFRI infrastructure network dedicated to Industrial biotechnology. Large investments are taking place globally to enable development of biofoundry-enabled biomanufacturing solutions. FIN-BioFoundry ensures Finland's competitiveness and ability to act as a relevant scientific collaboration partner.

The Finnish Infrastructure for Register-Based Research (FIRE)
University of Turku, University of Eastern Finland, University of Jyväskylä, Tampere University, Statistics Finland, University of Helsinki, Aalto University, VATT Institute for Economic Research
The Finnish Infrastructure for Register-Based Reserch (FIRE) is a remote access, application service and training infrastructure for conducting register-based research in Finland. Building on the foundation of the existing FIONA remote access system of Statistics Finland, it will provide a computing environment and a register-data catalogue

Research Council of Finland

that is world-leading in its technical quality, usability, and ability to foster breakthrough research. It will support the construction of novel research datasets and register-based research projects and train future generations of register data specialists in research and evidence-based decision-making. As a joint effort of the key partners in the field, the infrastructure will allow register-based research conducted in Finland to regain its top-level status in the increasingly competitive field globally by facilitating beyond-the-state-of-the-art scientific research. University of Turku coordinates the FIRE consortium consisting of eight parties.