11.12.2020

Research infrastructures selected to the roadmap of national research infrastructures 2021–2024

Listed in alphabetical order by research infrastructure name.

The Accelerator Laboratory of the University of Jyväskylä (JYFL-ACCLAB)

University of Jyväskylä

The Accelerator Laboratory of the University of Jyväskylä (JYFL-ACCLAB) was established in 1992 and has developed into a worldrenowned 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.

ALD center Finland - research infrastructure for atomic layer deposition and etching

University of Helsinki

ALD center Finland will be a national platform for research and education in atomic layer level processing techniques. The center will also support other fields of research requiring state-of-the-art techniques for thin film characterisation and surface chemistry (catalysis in particular). ALD center Finland offers services with three groups of equipment:
1. ALD/ALEt (atomic layer deposition and etching) reactors connected to analytical techniques for representative studies on reaction mechanisms
2. ALD/ALEt reactors for testing precursors and developing processes
3. Thin film characterisation techniques
ALD center Finland will have great impact beyond academia because the new materials and processes developed and studied will find use in many industries, like microelectronics, energy technologies, chemical industry, circular and bioeconomies and environmental technologies. Collaboration with industry will be active, and companies will also be users of the infrastructure.

Biobanking and Biomolecular Resources Research Infrastructure of Finland (BBMRI.fi)

The Finnish Biobank Cooperative (FINBB), Central Finland Health Care District, Finnish Institute for Health and Welfare, The Finnish Red Cross, Helsinki University Hospital, Kuopio University Hospital, Oulu University Hospital, Tampere University Hospital, Turku University Hospital, University of Oulu

BBMRI.fi (www.bbmri.fi) is a research infrastructure comprising all nine 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 Programme 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 Finland.

Biocenter Finland (BF)

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

Biocenter Finland (www.biocenter.fi) was founded by the University of Eastern Finland, University of Helsinki, Oulu University, Tampere University, University of Turku and Åbo Akademi University University. Biocenter Finland is rooted in the profiles of its host universities and supports implementation of their research strategies. It supports frontier research by coordination of a nation-wide network of fifteen technology platforms operating in five biocenters. Biocenter Finland serves on an open access principle the country's life scientists' community with its technology services, takes care of investments and safe-guards the quality of the services. It supports research collaboration, training, internationalization of the researcher base and translation of research findings into benefits for society. A number of the scientists using Biocenter Finland's technology services have produced scientific breakthroughs and innovations benefitting the economy.

Bioeconomy Infrastructure (BIOECONOMY RI)

Aalto University, VTT Technical Research Centre of Finland Ltd.

BIOECONOMY research infrastructure (RI) is a unique openly accessible research, education and innovation research environment hosted by Aalto University and VTT. It supports activities tackling such global challenges as climate change and resource sufficiency. Our RI is internationally exceptional as it covers the research value chain from lab to pilot scale and combines research and innovation facilities for material and chemical technologies as well as for biotechnical processes. This RI allows methods for upgrading the forest raw materials and biobased waste and side streams to high-value products. It enables academic research

discoveries to be scaled up to novel technology concepts to high TRL level close to the markets. Our vision is to realize the potential of Finland to become a world leader in biomass-based research and innovations in circular economy and to further improve competitiveness of the Finnish industry. The BIOECONOMY RI aims at growing to a European ESFRI.

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

University of Helsinki, Aalto University, CSC – tieteen tietotekniikan keskus Oy, University of Eastern Finland, University of Jyväskylä, The National Archives of Finland, Institute for the Languages of Finland, Tampere University, University of Turku, University of Vaasa

FIN-CLARIAH is a research infrastructure for Social Sciences and Humanities comprising two components, FIN-CLARIN and DARIAH-FI. Taking the best practices established in FIN-CLARIN, FIN-CLARIAH seeks to significantly broaden the scope of infrastructural support into two major new directions: first, to reach beyond FIN-CLARIN language materials into other kinds of structured and multi-modal big data; and second, to cater to a broad range of SSH research needs. 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. Beyond collaborating at the boundaries where these missions overlap, both components will also share facilities for the management and negotiation of material rights, for technical access, as well as for hosting the documentation, tools and services through the Language Bank of Finland (www.kielipankki.fi) and CSC.

CSC's Research Infrastructure Services

CSC – IT Center for Science Ltd.

CSC – IT Center for Science Ltd has been providing ICT services for the Finnish scientific community since 1971. CSC is one of Northern Europe's largest supercomputing centres and is involved as a member in major European research e-infrastructures. CSC RI acts as a partner in several ESFRI projects and has an important role in horizontal e-infrastructures that integrate scientific disciplines and organisations across the Europe. Computational modelling and data analysis have been a fundamental part of scientific research in recent decades. CSC RI, Finland's national e-infrastructure, offers services for all scientific diciplines free of charge through agreement with Ministry of Education and Culture. CSC RI has recently upgraded its national data management and computing platform as well as the national research network Funet to match the increasingly important capacity and reliability requirements of continuously growing research needs.
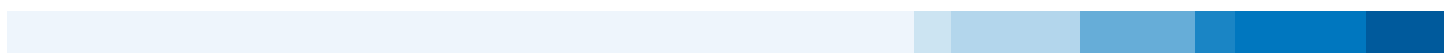
The Earth-Space Research Ecosystem (E2S)

University of Oulu, Aalto University, Finnish Meteorological Institute, Finnish Geospatial Research Institute

The Earth-space Research Ecosystem (E2S) consist of observations from Tähtelä and Metsähovi megasites. Both megasites are one of the best-equipped sites in the northern regions and data collected for over 170 years enable studying cyclical changes in the Arctic environment. Tähtelä and Metsähovi megasites form globally unique infrastructure covering measurements from distant and near-Earth space to atmosphere and ground. The combined infrastructure enable resolving how (1) to separate natural and man-made GPS disturbances from each others, (2) how the radio environment evolves in different time-scales, (3) how to best predict geohazards and solar storm effecst to our society's daily operation, and (4) how the Arctic environment change over the seasons, years, decades and centuries. The E2S infrastructure acts as a new innovation ecosystem which will boost research, education and industry both nationwide and internationally.

Euro-BioImaging: Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences (EuBI-Fi)

Åbo Akademi University, Aalto University, University of Helsinki, Helsinki University Hospital, University of Eastern Finland, Central Finland Health Care District, University of Oulu, University of Turku, Turku University Hospital

Euro-BioImaging ERIC is a European-wide research infrastructure for imaging technologies in biological and medical sciences on the ESFRI Roadmap. The mission of Euro-BioImaging ERIC is to deploy high-quality biological and biomedical imaging in Europe in a coordinated manner, to maintain a leading position in the global landscape. By participating in Euro-BioImaging ERIC, scientists will gain open access to the best imaging technologies in Europe in a cost-effective manner. Euro-BioImaging Finland is the Finnish service branch of Euro-BioImaging, consisting of two multi-sited service centres called Nodes: Finnish Advanced Light Microscopy Node and Finnish Biomedical Imaging Node. The Finnish Nodes cover effectively the imaging technology areas that are of highest demand in Europe. The Finnish Nodes also provide special expertise and education in biological and medical imaging supporting high-level research in both academia and healthcare industry.

European Infrastructure of Screening Platforms for Chemical Biology (EU-OS FI)

University of Helsinki, CSC – IT Center for Science Ltd., University of Turku, Åbo Akademi University

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), a European research infrastructure consortium, provides open access to world class infrastructures, technologies and expertise, with a compound collection of

> 100 000 compounds and open database. The adopted open access policy aims to ensure maximal scientific and societal impact of investments. As founding member, Finland has a key role in EU-OS. Finnish membership in EU-OS brings domestic scientists outstanding opportunities for high quality research breakthroughs, innovation, and access to technologies, services and resources not currently available in Finland, as well as collaboration opportunities through incoming projects.

European Life-Science Infrastructure for Biological Information (ELIXIR)

CSC – IT Center for Science Ltd.

ELIXIR is an intergovernmental organisation that brings together life science resources across Europe. These resources include databases, software tools, training materials, cloud storage and supercomputers. ELIXIR provides structure for Europe's leading life science organisations to manage and safeguard increasing volume of data generated by public funding. ELIXIR data forms the core European biological knowledge base with a global impact. It currently sustains 2,7 billion findable and interoperable digital data entries. ELIXIR provides strategy for long-term sustainability for bioinformatics resources across the member states and enables users in academia and industry to reuse these data and access services that are vital for their research. ELIXIR includes 22 members, and 1 observer, and brings together over 220 European research organisations. ELIXIR Finland aligns with the Biocenter Finland and Finnish BMS ESFRI Nodes. ELIXIR Finland is operated by CSC – IT Center for Science.

European Plate Observing System (FIN-EPOS)

University of Helsinki, Aalto University, Geological Survey of Finland, Finnish Geospatial Research Institute, University of Oulu, VTT Technical Research Centre of Finland Ltd., CSC – IT Center for Science Ltd.

EPOS, the European Plate Observing System, is an open-access e-infrastructure platform for distributed pan-European geoscientific research infrastructure and aiming to be the principal source of data and tools geosciences. EPOS will simplify and speed-up the process of combining information from different fields of geophysics. 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.

The FIN-EPOS consortium partners (UH, UOULU, AALTO, GTK, FMI, FGI, VTT, CSC) own and operate the geophysical and geodetic observatory, laboratory and data center RIs in Finland. Through FIN-EPOS webpages and entry portal Finnish academia, students, decision makers, industry and citizens can use large multidisciplinary open access data sets. FIN-EPOS coordination office is hosted by UH.

European Social Survey (ESS)

University of Turku

The European Social Survey (ESS) is an academically-driven comparative social survey designed to chart and explain the interaction between Europe's changing societies and the attitudes, beliefs and behaviour pattern of its diverse populations. In addition, the ESS conducts methodological research to develope survey methods. The ESS employs extremely rigorous methodological standards in sampling, question-testing, translation and field-work procedures, and continuously develops and tests new survey methods. The ESS covers more than 30 countries and it forms a bi-annual time series starting from 2002. All data and documentation are freely available for all researchers. A multidisciplinary research community consisting of more than 150.000 users from all over the world use the ESS data. The ESS has served as a data source for thousands of journal articles, conference papers, books and other publications.

Finnish Biodiversity Information Facility (FinBIF)

University of Helsinki, University of Jyväskylä, Kuopio Natural History Museum, University of Oulu, University of Turku

Biodiversity is rapidly vanishing. This undermines the ability of mankind to adapt to global change. We must therefore develop our understanding of and ability to protect biodiversity. The research infrastructure 'Finnish Biodiversity Information Facility – FinBIF' accelerates the digitisation, mobilisation, and open-access distribution of biodiversity data to support research, governance, education, and business. FinBIF is an integrated e-infrastructure that combines three kinds of biodiversity data (specimens, observations, and DNA), links them with modern research tools enabling rapid generation of further data, and distributes these services openly. FinBIF allows the research community to reach scientific breakthroughs at a rate matching the urgency of the need to achieve conservation and sustainable use of our imperilled biodiversity. At the same time, FinBIF supports the public administration in effective biodiversity management.

Finnish Computing Competence Infrastructure (FCCI)

University of Helsinki, Aalto University, CSC – IT Center for Science Ltd., University of Eastern Finland, University of Jyväskylä, LUT University, University of Oulu, Tampere University, University of Turku, Åbo Akademi University

Among other things, drug development and weather forecasts are largely based on computational science, which is one of Finland's key areas of strength in science and technology. Finnish Computing Competence Infrastructure (FCCI) provides Finnish universities with Tier-2 computational and data storage resources that heterogeneously support each university's specific research activities and thus the national profiling of the universities. FCCI integrates these capacities into a single entity that is coordinated through centralized maintenance and integrated into computational Tier-1 and Tier-0 resources. FCCI supports e.g.

data-intensive research, artificial intelligence, and high-performance computing. FCCI User Groups cover both science and the arts. In general, FCCI coordinates university cooperation in computational research, supports the training of top experts in computational science, and strengthens Finland's identity as one of the leading countries in computational science.firi

The Finnish Infrastructure for Public Opinion (FIRIPO)

Åbo Akademi University, University of Turku, Tampere University

The Finnish Research Infrastructure for Public Opinion (FIRIPO) is a multidisciplinary consortium for the study of public opinion, attitude formation and choice behavior. FIRIPO will serve a broad spectrum of academic disciplines and scholars around the world who study public opinion. FIRIPO will also inform the society, especially decision-makers and the media. Through large-scale panel data design, FIRIPO is able to track developments in public opinion. FIRIPO has four central aims:
1. To systematize and coordinate scientific research on public opinion and choice behavior in Finland;
2. To learn, develop and share (new) methods in public opinion research, and to advise on the use of public opinion in policy-making;
3. To create an open node for public opinion research;
4. To accelerate open science aims through open data and open collaboration in public opinion research in collaboration with the Finnish Social Science Data Archive FSD.

Finnish Marine Research Infrastructure (FINMARI)

Finnish Environment Institute, Geological Survey of Finland, University of Helsinki, Finnish Meteorological Institute, National Resources Institute Finland, University of Turku, Åbo Akademi University

Finnish Marine Research Infrastructure (FINMARI) combines all major components of the Finnish marine research community. It is a distributed infrastructure network of field stations, research vessels, gliders, laboratory facilities, ferryboxes, fixed measurement platforms, profiling buoys and multiple autonomous platforms.

FINMARI, coordinated by the Marine Research Centre of SYKE, allies research infrastructure of 4 Finnish research institutes (Finnish Environment Institute, Finnish Meteorological Institute, Geological Survey of Finland, Natural Resources Institute Finland), major field stations of 3 universities (Helsinki, Turku, Åbo Academi).

FINMARI provides a unique contact point to observational and experimental Finnish marine research facilities. Our joint infrastructure development plan is based on addressing the multiscale variability of the marine environment, through synergetic integration of the research foci and RI competence profiles of the partnership.
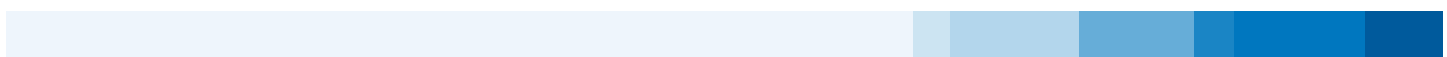
Finnish National Infrastructure for Light-Based Technologies (FinnLight)

Tampere University, University of Eastern Finland, VTT Technical Research Centre of Finland Ltd.

Photonics is the key technology of the 21st century, playing a central role in nearly every facet of a sustainable future. The overall rationale of the FinnLight proposal is to include light-based technologies into the Finnish Research Infrastructure Roadmap to enhance significantly the capabilities needed across the entire Photonics innovation value chain. The infrastructure is multi-disciplinary at the interface between physics, materials, quantum technology and energy devices. FinnLight will benefit to the large collaboration networks of FinnLight partners as well as to numerous national and EU users in different fields including but not limited to ICT, health, energy technologies, process control, security, and digital economy. By facilitating cutting-edge education and research and development, FinnLight will support the Finnish industry and extend its strong position in the photonics international ecosystem.

Finnish Research Infrastructure for Population Based Surveys (FIRI-PBS)

Finnish Institute for Health and Welfare, University of Helsinki, University of Eastern Finland, University of Oulu, Tampere University, University of Turku, Finnish Institute for Occupational Health

Population based health surveys and extensive health related registers have been available in Finland since 1950's. Different data sources at the individual level can be linked with a unique personal identification code. Together these survey and register data form a unique resource for research.

The FIRI-PBS will enhance active use of existing and newly collected population based survey data in both national and international research initiatives and multidisciplinary collaborations, to increase knowledge and use of common standardized tools for collection of new survey data; and to enhance data quality and cost-effective collection of new data.

The FIRI-PBS will provide support for researchers and research groups in accessing existing survey data by supporting the FAIR principle of data use; and in preparing a new survey by facilitating the use of standardized and validated methods and instruments to enhance comparability of the outcomes between studies and over time.

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 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 virtual access 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 relies on the expertise of SP's and what is harvested from the SPs to its platform. FSD coordinates three other RI memberships: International Social Survey Programme -ISSP, European Values Study -EVS and ICPSR data archive (www.fsd.tuni.fi/en/).

FiQCI: Finnish Quantum Computing Infrastructure

VTT Technical Research Centre of Finland Ltd., Aalto University, CSC – IT Center for Science Ltd.

Quantum computing holds exceptional promise to disruptively change our society. It is expected to become of great benefit in fields such as quantum chemistry, drug design, artificial intelligence, cyber security, and financial technology. With the first commercial quantum computers now arriving on the market and the investments in this technology globally ramping up to billions, it is time to plan how this new computational technology will be utilized in near future. We propose the Finnish Quantum-Computing Infrastructure (FiQCI) operated and owned by a consortium composed of VTT Technical Research Centre of Finland Ltd., Aalto University, and CSC - IT Center for Science. The mission of FiQCI is to provide state-of-the-art quantum-computing services such as computing time and related training. For maximal benefit to academic customers, FiQCI will also aim to provide deep access to the hosted quantum-computer hardware to enable quantum physics experiments.

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

University of Helsinki, Finnish Meteorological Institute, University of Eastern Finland, National Resources Institute Finland, Finnish Environment Institute, Tampere University

Integrated Atmospheric and Earth System Research Infrastructure (INAR RI) is an internationally leading, multidisciplinary and comprehensive environmental RI. It provides integrated, continuous data about atmosphere, ecosphere and their interaction for researchers and other end-users to answer challenges the societies meet especially regarding climate change, biodiversity and air quality. INAR RI maintains and develops observation stations, experimental laboratories and field sites, modeling tools, and open data services. INAR RI hosts the Finnish activities related to several European level ESFRI-infrastructures: ICOS focusing on greenhouse gases, ACTRIS on aerosols and clouds, eLTER on ecosystem monitoring and AnaEE on ecosystem experiments.
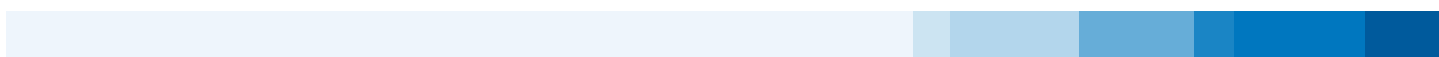
Integrated Structural Biology Infrastructure (FinStruct & Instruct-ERIC Centre FI)

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

FINStruct is a national, distributed, open-access research infrastructure for structural biology. It spearheads international research and development in biomolecular complex purification; cryo-electron microscopy; nuclear magnetic resonance; single cell proteomics; native mass spectrometry; structural bioinformatics; X-ray crystallography and data management. FINStruct top services were inaugurated as Instruct Centre Finland, a national node of Instruct-ERIC, making Finnish expertise in sample preparation, characterisation, and structure determination available through the Instruct-ERIC service catalogue. FINStruct serves the whole research community in academia and industry. Societal impact is in patent applications, start-ups, and diagnostic and therapeutic tool development. A benefit of Instruct-ERIC membership to all Finnish researchers is funded access to top-class Instruct-ERIC services and expertise, which boosts their international research profile.

Measuring Spatiotemporal Changes in Forest Ecosystem (Scan4estEcosystem)

Finnish Geospatial Research Institute, University of Eastern Finland

To understand complex forest dynamics, long time series of repeated measurements are required as the process of cyclic forest growth can last centuries while having variation at diurnal and annual scales. The lack of methods to characterise tree structure and competition status over time limits our understanding on tree growth allocation and wood formation. Thus, there is no universally acknowledged theory on how trees allocate and compete for the sunlight, nutrients, and water.

The RI consists of detailed measurements from ~10 000 trees growing in varying environmental conditions at the test site of Evo in southern Finland (120 sample plots with area of 1024 m2). A 30-year-long time series with annual measurements will be collected using various laser scanning sensors for investigating single tree growth processes, forest dynamics, and forest monitoring technologies. RI is internationally know and serving R&D needs of the forest industry and of the many SMEs operating in the field.

Otaniemi Micro- and Nanotechnology Research Infrastructure (OtaNano)

Aalto University, VTT Technical Research Centre of Finland Ltd.

OtaNano is a national research infrastructure (RI) offering a wide variety of facilities for the needs of micro- and nanoscience and technology, and quantum engineering. These facilities are important for scientists as well as for high-tech companies working with micro- and nanotechnology applications. The RI is a national platform to develop innovative enabling technologies and apply them to practical micro- and nano-systems. It serves as a first-rate educational centre for young researchers, and acts as a national node for scientific collaboration.

OtaNano is is an open access RI, operated by Aalto University and VTT, and available for academic and commercial users internationally.

Partnership for Advanced Computing in Europe (EuroHPC)

CSC – IT Center for Science Ltd.

High Performance Computing (HPC) has become a key enabling technology for all advanced economies, and one of the fundamental pillars in scientific discovery.

The EuroHPC Joint Undertaking is establishing a world-class HPC ecosystem in Europe, acquiring leadership-class supercomputers, and deploying HPC services for science, industry and SMEs. One of the EuroHPC "pre-exascale" systems will be located in Kajaani, Finland, one of the fastest supercomputers in the world.

The main allocation mechanism of these resources will be PRACE, an established infrastructure on the ESFRI and FIRI roadmaps. PRACE provides a consistent pan-European service, enabling both scientific and industrial users to access competitive HPC systems.
The EuroHPC/PRACE Finland is a virtual research infrastructure (RI) that brings the PRACE Finland FIRI to the era of EuroHPC.
https://eurohpc-ju.europa.eu/
https://prace-ri.eu/

Printed Intelligence Infrastructure (PII)

University of Oulu, Tampere University, VTT Technical Research Centre of Finland Ltd., Åbo Akademi University

Printed intelligence is rapidly emerging key enable technology for next generation products such as flexible, thin, light-weight and cost- and resource-efficient electronics. Printed intelligence infrastructure (PII) is established to provide word-class research and development environment to researchers and technology developers. It offers an efficient use and easy access to a modern research and pilot-manufacturing infrastructure covering the whole research/development path from (i) materials via (ii) functional printing, (iii) components and devices to (iv) circuits and systems. Available processes include synthesis on novel materials, formulation of inks, high-density digital fabrication and large-area roll-to-roll (R2R) processes for low-voltage thin-film devices and circuitry including finishing and integration. Application areas are e.g. distributed sensors (IoE), diagnostics, on-skin electronics, and personalized drug dosing, with sustainability as a comprehensive approach.
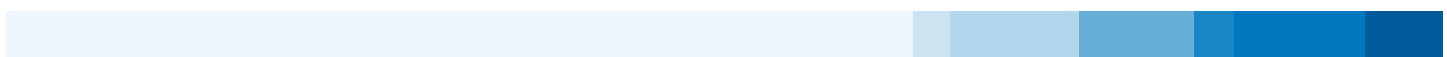
RawMatTERS Finland Infrastructure (RAMI RI)

Aalto University, Geologian tutkimuskeskus, VTT Technical Research Centre of Finland Ltd.

The RAMI Circular Raw Materials Research Infrastructure (RI) is hosted by Aalto, GTK and VTT. It is designed to strengthen the long-term core expertise to place Finland among the world leaders in natural and new inorganic material research needed for the Circular Economy. The RI is especially important for activities related to closing the raw material loops and sustainable energy research, to increase the value of primary mining products, secondary raw materials, their processing, and sustainable use in high-performance applications. It is fundamental for education of the future experts in the field. Close collaboration with the industrial stakeholders ensures the rapid transfer of the scientific results to market applications. By year 2030 our target is to grow RAMI to be an active national, European and global RI Hub as the openly accessible RI is already linked to infra-networks of the EIT Raw Materials.

Research Infrastructure for Future Wireless Communication Networks (FUWIRI)

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

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.