

Applications funded with RRF funding within FIRI 2021 call (December decision meeting)

Listed in alphabetical order by research infrastructure name.

* marks the research infrastructures that were selected for the 8 million euro share in aid sector 009a (investments in the digital sector and related research and innovation).

1. **Aalto Ice Tank**

Aalto University

The Aalto Ice and Wave Tank is a water basin equipped to produce sea ice and waves in model scale. The tank is used to study ships and structures, including offshore wind turbines, under loads due to ice and waves. The size of the tank (40 m × 40 m) is what makes it unique. Typically, ice tanks are long and narrow while wave tanks are wide. The Aalto Ice and Wave Tank is the only wide basin in the world that allows tests with both ice and waves. The basin is multifunctional and can also be used for open water tests. The basin is used by Aalto University researchers and students as well as scientific and industrial partners. Climate change has stimulated political and industrial interest in the Arctic and increased the importance of Arctic research.

2. **FIN-CLARIAH – Developing a Common RI for CLARIAH Finland (CLARIAH)***

University of Helsinki, Aalto University, CSC – IT Centre for Science, University of Eastern Finland, University of Jyväskylä, Tampere University, University of Turku

FIN-CLARIAH is a research infrastructure for the social sciences and humanities (SSH) comprising two components: FIN-CLARIN and DARIAH-FI. In this project, FIN-CLARIAH seeks to significantly broaden the scope of SSH infrastructural support in three major directions: first, to reach beyond processing of spoken standard Finnish into processing everyday speech; second, to cater to a broad range of SSH research needs for processing unstructured text; and third, to facilitate research based on metadata. 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 SSH research. An important additional aim of the project is for the two components to share and consolidate best common practices for the management and negotiation of deposition and access rights to data, tools and services as well as their hosting and documentation.

3. **Finnish Marine Research Infrastructure (FINMARI)**

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

The Finnish Marine Research Infrastructure (FINMARI) pools together an ecosystem that is part of Finland's national research infrastructure roadmap and involves all major partners of the Finnish marine research community. It is a distributed infrastructure network of field stations, research vessels, laboratory facilities, ferryboxes, fixed measurement platforms and buoys.

FINMARI forms a whole that covers observation activities and experimental research, combining the special expertise of the consortium's partners. The consortium will provide a platform for scientific research and observations aimed at understanding the multilevel temporal and local variation of marine ecosystems and its causes as a basis for marine protection, focusing in particular on research into the range of species and climate change and the development of open data and services.

4. **Finnish Quantum Computing Infrastructure (FiQCI)***

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

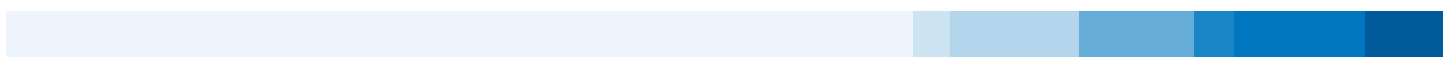
Quantum computers can dramatically increase the impact of research by enabling solutions to problems that will forever stay intractable using conventional computing. Quantum computing is expected to revolutionise a number of scientific disciplines. Many of the greatest challenges of our time, from accurate modelling of complex meteorological systems to optimising resource use and developing new, more sustainable materials, could be met with the computing capacity promised by quantum computers. To harness the full potential of this quantum revolution, quantum computers need tailor-made algorithms and software, the successful development of which requires that researchers have access to a sufficiently mature quantum computing infrastructure. The Finnish Quantum Computing Infrastructure (FiQCI) offers an open-access platform for quantum computing that serves Finland's national research and development scene.

5. **Climate-Smart Food and Nutrition Research Infrastructure (FOODNUTRI)**

University of Helsinki, University of Eastern Finland, South-Eastern Finland University of Applied Sciences, Natural Resources Institute Finland, Finnish Food Authority, Finnish Environment Institute, VTT Technical Research Centre of Finland Ltd, Finnish Institute for Health and Welfare, University of Turku

FOODNUTRI will contribute to achieving the global strategic aims included in the EU's Food 2030 policy and reflected in the Finnish Government's vision: "In 2030, Finnish consumers eat tasty, healthy and safe Finnish food that has been produced sustainably and ethically." Consumers have the ability and the possibility to make conscious choices. FOODNUTRI will produce innovative solutions, diversely utilising Finnish raw materials as well as novel technical solutions for processing and packaging, and also producing information on the composition, structure and safety of food products and their ingredients, physiological responses to food, consumer attitudes, food consumption, nutrient intake and the sustainability of food choices. FOODNUTRI will serve researchers, businesses, authorities, healthcare professionals, farmers and other stakeholders.

6. **Hydrological Research Infrastructure Platform (HYDRO-RI)**



University of Turku, Aalto University, National Land Survey of Finland/Finnish Geospatial Research Institute, University of Oulu, Finnish Environment Institute

The water sector needs a competence centre focusing on boreal and subarctic river and lake environments. It will facilitate solving environmental issues, such as erosion, flooding and water quality, in these fragile environments. The HYDRO-RI Platform includes a pool of unique instruments for hydrological, hydraulic, morphodynamic and water quality measurements, with a variety of autonomous under- and above-water sensor platforms, a mobile field laboratory facility, and a data sharing platform to study essential scientific questions in present and future hydrology. The new research infrastructure, with its high-accuracy and high-frequency datasets, and their efficient/real-time and open sharing, will enable world-leading research, train new generations of scientists and facilitate new services and business solutions within the water sector. This will enable sustainable water resources management, decision-making, efficient knowledge transfer and future environmental assessments.

7. Integrated Atmospheric and Earth System Research Infrastructure: integrated observations for effective climate solutions in terrestrial ecosystems (INAR RI)

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

INAR RI is an umbrella research infrastructure, coordinating the distributed Finnish nodes of four European environmental research infrastructures (ICOS, ACTRIS, eLTER and AnaEE). INAR RI consists of 30 measurement stations, several laboratories and mobile units and two data infrastructures. INAR RI integrates multidisciplinary and comprehensive environmental measurements. This project will upgrade the existing RI, build new INAR RI facilities and develop services related to data management and access provision, for instance, to help society answer questions related to sustainability, climate change and environment degradation. The project strongly supports Finland's goals of carbon neutrality by having a special focus on improving the RI for better quantifying carbon sinks and related climate effects.

8. Partnership for Advanced Computing in Europe (PRACE)*

CSC – IT Centre for Science

EuroHPC/PRACE Finland facilitates access to world-class computing resources. High-performance computing (HPC) has become a key enabling technology for all advanced economies. It increases the possibilities for scientific breakthroughs with immense societal impact, such as understanding climate change and advancing cancer research. The EuroHPC Joint Undertaking is establishing a world-class HPC ecosystem in Europe. One of the EuroHPC “pre-exascale” systems, LUMI, will be located in Kajaani, Finland. LUMI will be one of the fastest and greenest supercomputers in the world.



ACADEMY OF FINLAND

EuroHPC/PRACE Finland is a virtual research infrastructure (RI) that brings the former PRACE Finland RI to the EuroHPC era. EuroHPC/PRACE FI will help Finnish researchers access state-of-the-art computational and data resources to perform world-class science.

