



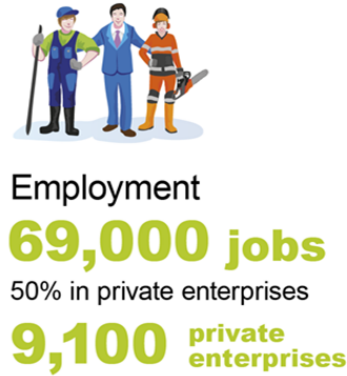
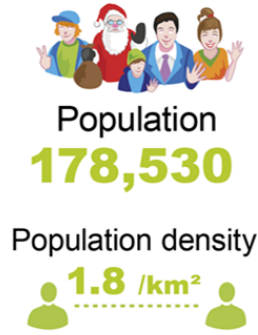
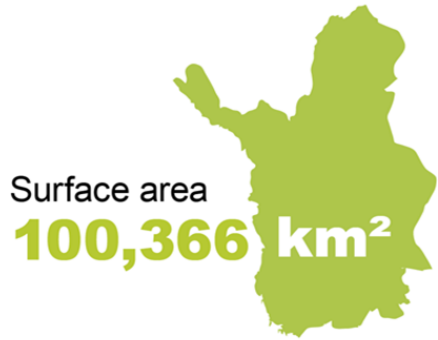
Cooperation in regional development – examples from Lapland

Ville Rauhala, RDI-manager, School of Arctic Natural Resources and Economy, Lapland University of Applied Sciences, Finland

Lapland - on top of the world



LAPLAND in facts & figures



- + World's northernmost bio, mining and metal industry hub
- + Only chromium mine and the largest gold mine in Europe
- + 9 national parks in the area
- + World's cleanest air and Europe's purest water
- + World's largest wild organic harvesting area
- + Strong educational structure:
University of Lapland, Lapland University of Applied Sciences, Vocational College Lappia, Lapland Education Centre REDU and Sami Education Institute
- + Research institutes:
Geological Survey of Finland (GTK), Natural Resources Institute Finland (LUKE), Sodankylä Geophysical Observatory (SGO) as the most notable
- + National circular and bio-economy centre in Kemi

Lapland UAS in figures (2025)



Students **6500***

Employees **426**

Operating area **98 984** km²

Turnover € **53,1** eur

Volume of RDI activities

€ **18,1** million

25 Bachelor degree programmes

13 Master degree programmes

1091 Bachelor degree graduates

291 Master degree graduates

Multidisciplinary boosts innovation

Arctic Natural Resources and Economy

Digital solutions

- Business and Administration
- Information Technology
- Data processing
- Fine Arts
- Master School

New industry

- Mechanical Engineering
- Electrical Engineering
- Logistics
- Master School

Future bioeconomy

- Forestry
- Rural Industries
- Master School

Smart built environment

- Civil Engineering
- Land Surveying Engineering
- Master School



Northern Well-being and Services

Participation and functional capacity

- Social Services
- Elderly Care
- Physiotherapy
- Master School

Future healthcare services

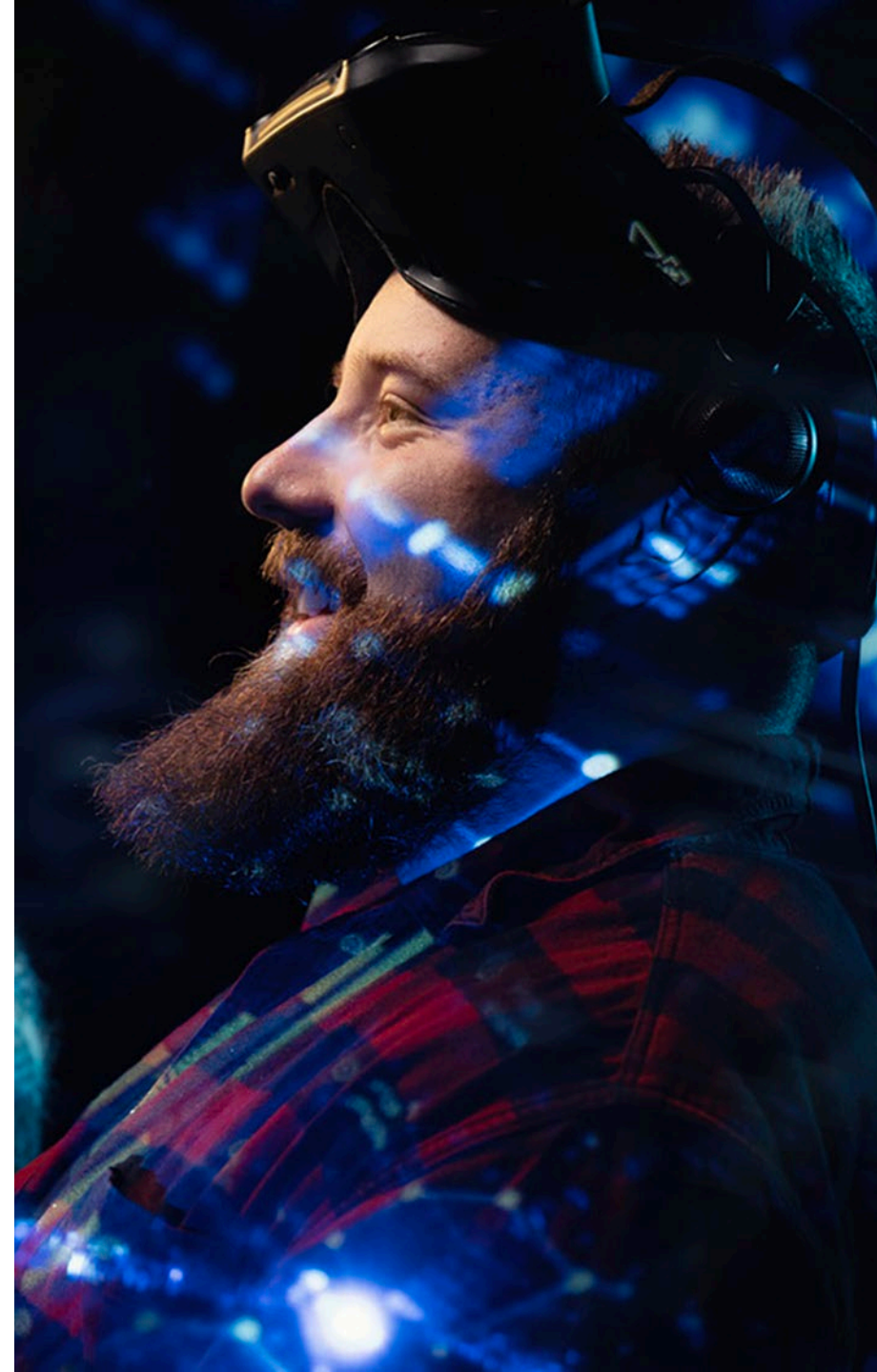
- Nursing
- Public Health Nurse
- Master School

Responsibility in business and services

- Tourism and Hospitality Management
- Business and Administration
- Sports and Leisure Studies
- Master School

Role of RDI in Lapland UAS

- strengthen the regional development, well-being and improvement of the competitiveness of the region and overall impact in society.
- respond to the development needs of business or other partners
- Involve collaboration with partnerships with industries, various stakeholders, UAS students and international organizations
- are applied and innovative and seeks results which can be implemented in practice.
- Staff competences combines qualification in scientific research and development work and wide-ranging experience in society and business world.



Lapland UAS RDI activities 2025

Volume **18,1** M€

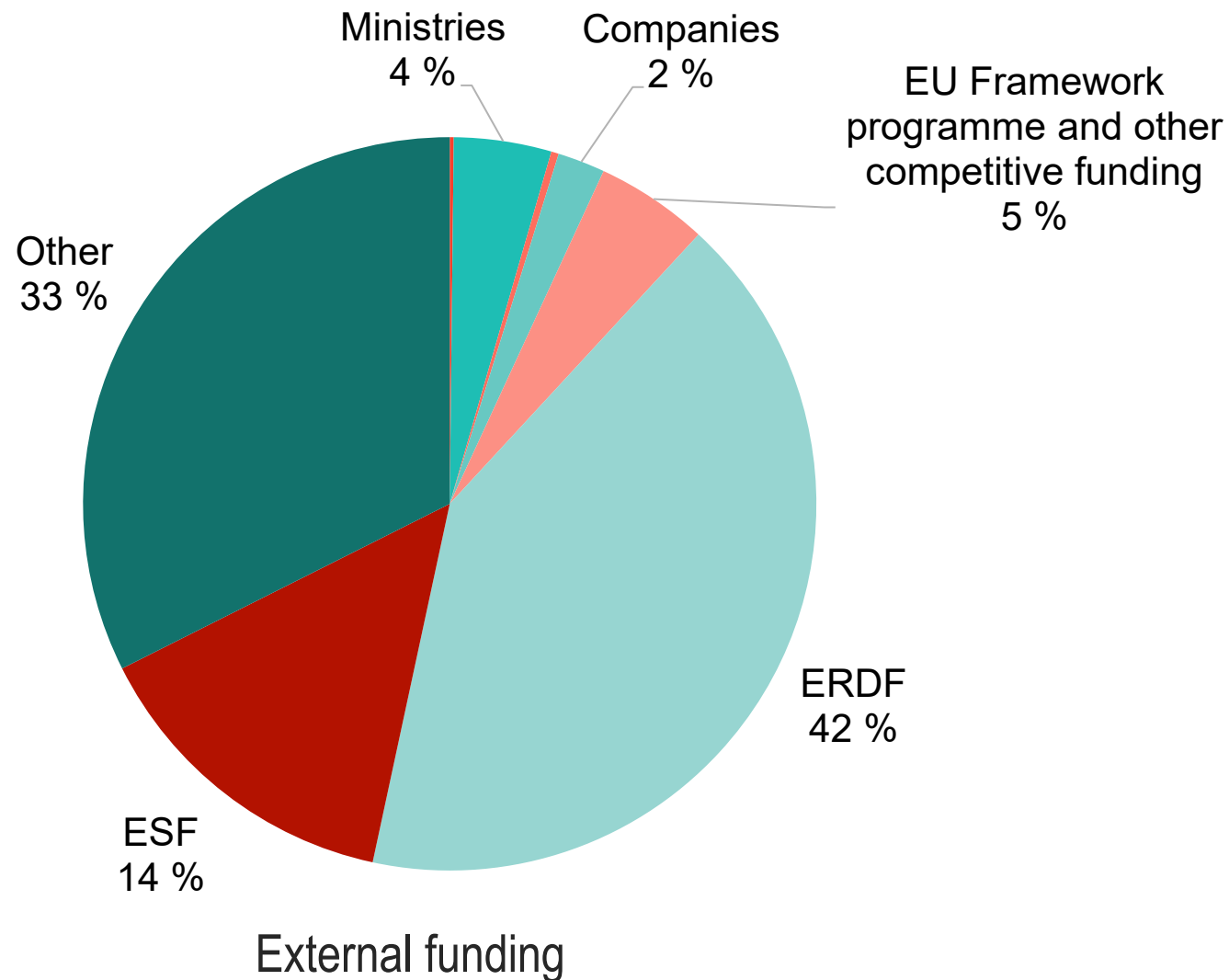
External funding **10,2** M€

18 % of external funding from international

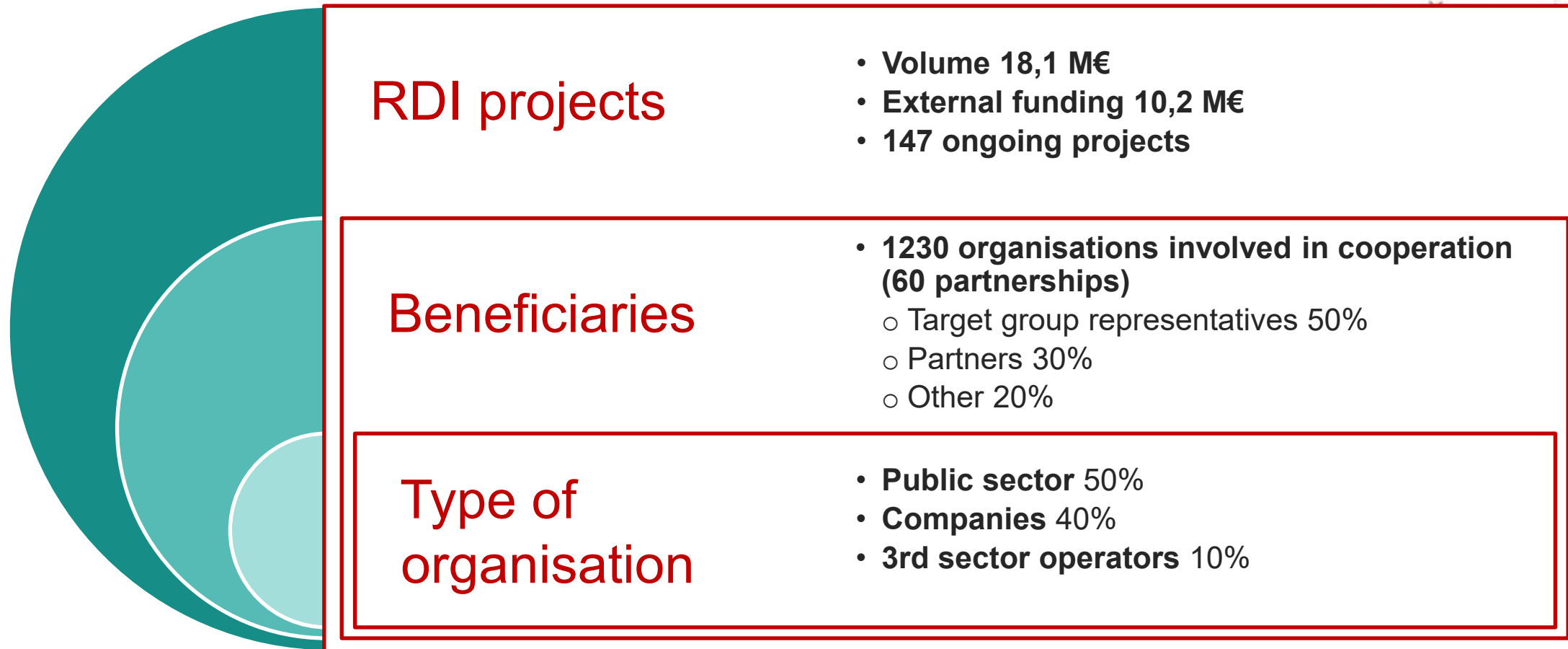
147 projects with external funding

198 manyears in RDI activities

466 publications



RDI-activities in cooperation with working life 2025



Active in networks

- uArctic
 - Arctic Safety and Security (Tourism subgroup) ja Circular Economy
- Thematic platforms for smart specialization
 - Digitalisation and safety for tourism
 - Clusport
 - Social economy
- EUF European University Foundation
- EARMA
- Vision 2020 (Crowdhelix)
- Robocoast EDIH
- Inside Industry Association
- MEFI – Metaverse Finland Ecosystem
- VAMOS Autonomous Mobility In Smart Spaces
- FAME Finnish Additive Manufacturing Ecosystem
- FIIF Finnish Industrial Internet Forum
- FUAVE Finnish UAV Ecosystem
- DDE Digital Defence Ecosystem
- Arctic Development Environments Cluster DIH
- SARA Savukoski Arctic Research Aerospace
- ERRIN European Regions Research and Innovation Network

STRATEGIC CHOICE:

Global Arctic Responsibility

DEVELOPMENT FOCUSES AND EXPERTISE

SUSTAINABLE BUILT ENVIRONMENT AND ENERGY

- Low carbon construction
- Renewable energy and energy efficiency

DIGITAL AND GREEN INDUSTRY

- Intelligent power grid and automation solutions
- Modern manufacturing and fossil-free materials

SUSTAINABLE FORESTRY AND FOOD PRODUCTION

- Sustainable forestry and logging
- Food security and smart agriculture



EMERGING TECHNOLOGIES



RENEWING BUSINESS MODELS



CIRCULAR ECONOMY



STRATEGIC CHOICE:

Sustainable Tourism

DEVELOPMENT
FOCUSES AND
EXPERTISE

CREATIVE, EXPERIENTIAL AND
SMART SOLUTIONS IN TOURISM

Redefining luxury in changing operating
environments



4 QUALITY EDUCATION

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

EMERGING TECHNOLOGIES

RENEWING BUSINESS MODELS

CIRCULAR ECONOMY

STRATEGIC CHOICE:

Future services and reachability

DEVELOPMENT FOCUSES AND EXPERTISE

SUSTAINABLE SOLUTIONS IN SUPPORTING WELFARE

- Effective services, operating models and smart environments in welfare work
- Active lifestyle to improve functional capacity and mobility

SOCIAL ECONOMY

- Social handprint
- Sustainable growth and work with new business models

3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



8 DECENT WORK AND ECONOMIC GROWTH



11 SUSTAINABLE CITIES AND COMMUNITIES



EMERGING TECHNOLOGIES



RENEWING BUSINESS MODELS



CIRCULAR ECONOMY

Vocational schools, universities and research organisations in Lapland

UNIVERSITIES' RESEARCH STATIONS

Lapland Research Centre Kevo
(University of Turku)

Kilpisjärvi
Biological
Station (University of Helsinki)

Värriö Research Station
(University of Helsinki)

Sodankylä Geophysics
Observatory (University of Oulu)

LAPLAND UNIVERSITY CONSORTIUM

University of Lapland

Lapland University
of Applied Sciences

VOCATIONAL SCHOOLS

Sámi Education
Institute

Rovaniemi
Educational Consortium
REDU

Lappia Vocational School

STATE RESEARCH INSTITUTES

Finnish Meteorological Institute

National Land Survey of Finland

Geological Survey in Finland

Natural Resources
Institute Finland (Luke)

Smart Specialisation

Smart specialisation is part of European innovation policy, where regions are expected to identify their own strengths and areas of expertise to which future resources and investments should be directed.

Through smart specialisation, the aim is to improve the competitiveness of business, make use of expertise and top-level research, and transform them into new commercial products and services.

The key perspectives are internationalisation, partnerships, and networks, as well as turning these into regional economic growth, business activity, and new jobs.

The strategy seeks both a vision for the future and concrete steps for the long-term development of the region's innovation activities.

The goals of the strategy

- 1 To boost research and education organisation's ability to support the innovation operations amongst Lapland's micro-, small- and medium-sized enterprises
- 2 To renew expertise and joint action models in the research and education sector
- 3 To promote the willingness of companies to invest in the advancement of expertise, production, services and processes, as well as foster the attractiveness of Lapland as an investment target
- 4 To strengthen co-operation among businesses, research and educational institutions, municipalities, the public sector, development organisations and civil society around strategic priorities

Key elements for Implementation

Renew the domains in which we excel, and identify and acknowledge the areas where we need expertise from elsewhere. Leveraging synergies from national and interregional networks

Expertise, research and development

- Increasing competence in smart specialisation priorities
- Utilising the competence of creative industries as well as social sciences and legal research within the development of companies' business operations
- Evolving collaborative models as well as investments towards the renewal of know-how and ensuring expertise-based exchange and accessibility to skilled labour
- Increasing the knowledge and application of research facilities located within the region in order to promote the competitive edge of enterprises
- Building and developing goal-oriented, innovation system-reforming operations between companies, research and educational institutions, municipalities, the public sector and civil society

Renewal of industries

- Promoting the development of structures and culture connected with SMEs' innovation operations
- Investing in end user-based planning in RDI activities
- Developing the recognition and accessibility of RDI environments
- The utilisation of more effective development environments in the creation of innovations is being enabled
- Supporting industries in green and digital transition

International collaboration

- Reinforcing the role of actors and operational readiness in international networks
- Taking advantage of international networks and partnerships in the implementation of influential development packages
- Utilising Lapland's geographical position as a neighbouring region of Sweden and Norway and traditional crossborder co-operation in reinforcing livelihoods and in export

Priorities and their goals

Target: To strengthen Lapland's role as a pioneer in the circular economy and support the transition of companies towards a resource-wiser economy

Circular economy as the basis of sustainable growth

Target: To utilise nature sustainably as a source of wellness and experience economy services as well as accelerate the responsible growth of enterprises

Wellness and experience economy services based on nature

Priorities with the strongest potential for sustainable growth:

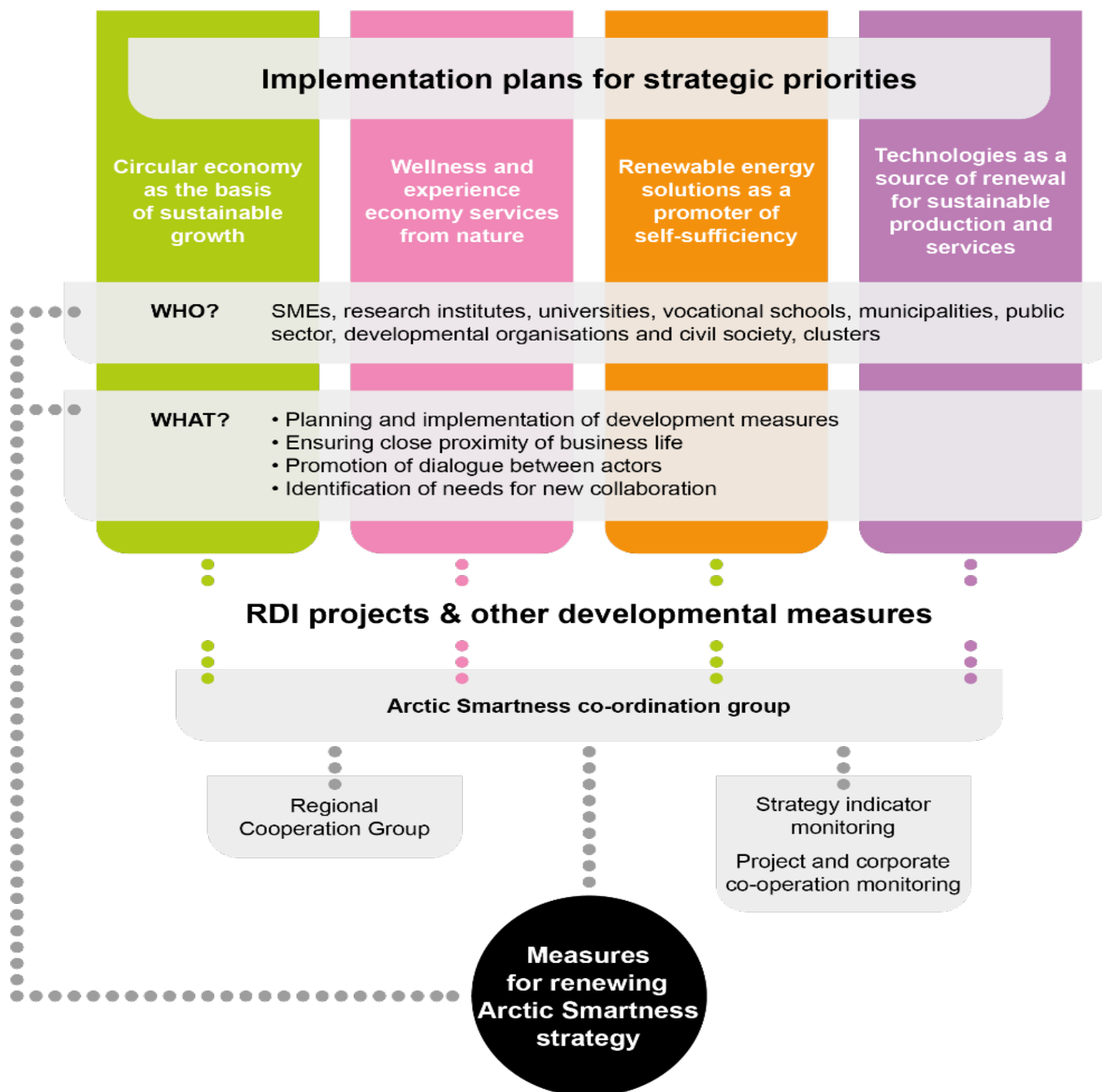
- ✓ Companies' needs
- ✓ Regional expertise
- ✓ Need for collaboration
- ✓ Sustainability aspects
- ✓ Changes in the operating environment

Target: Raising of companies' competitiveness by accelerating the deployment of advanced technologies

Technologies as a source of renewal for sustainable production and services

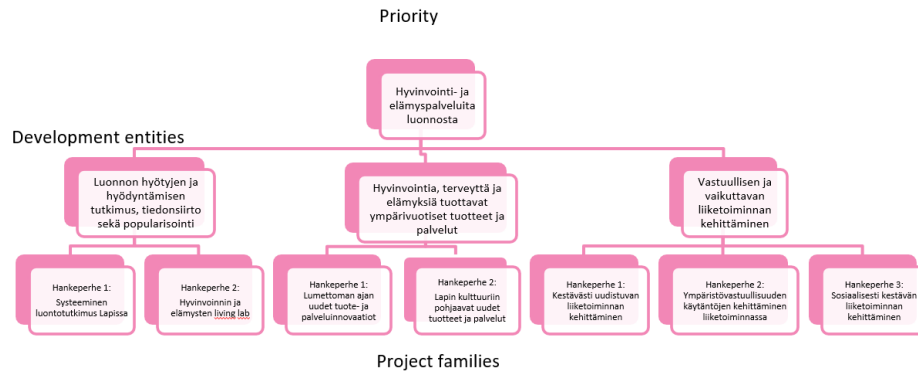
Target: To strengthen Lapland's role as a top region for the application of renewable energy and energy technologies

Renewable energy solutions as promoters of self-sufficiency

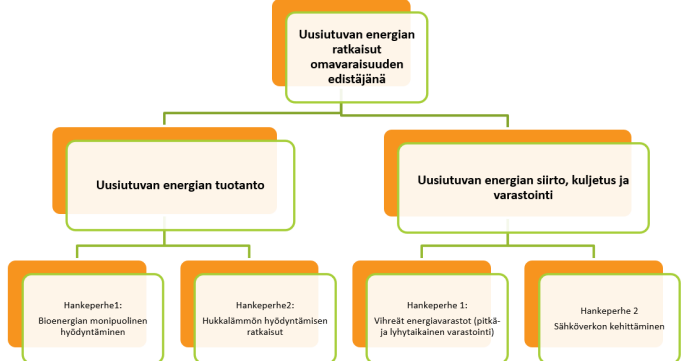
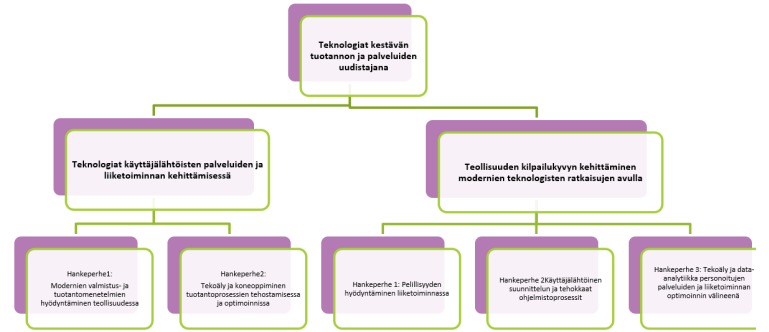
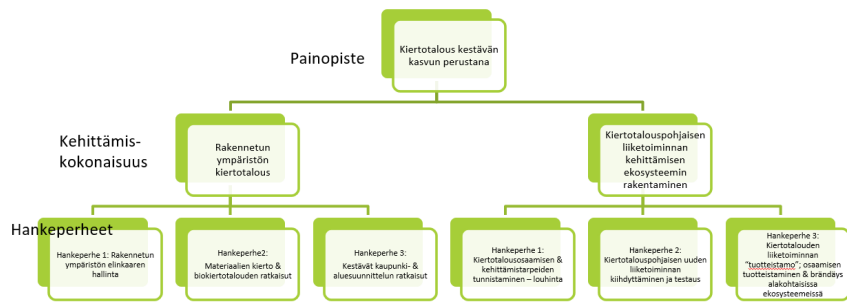


Fostering Competitiveness through Open Collaboration and Validated Implementation Plans

Impact through larger, well-coordinated entities

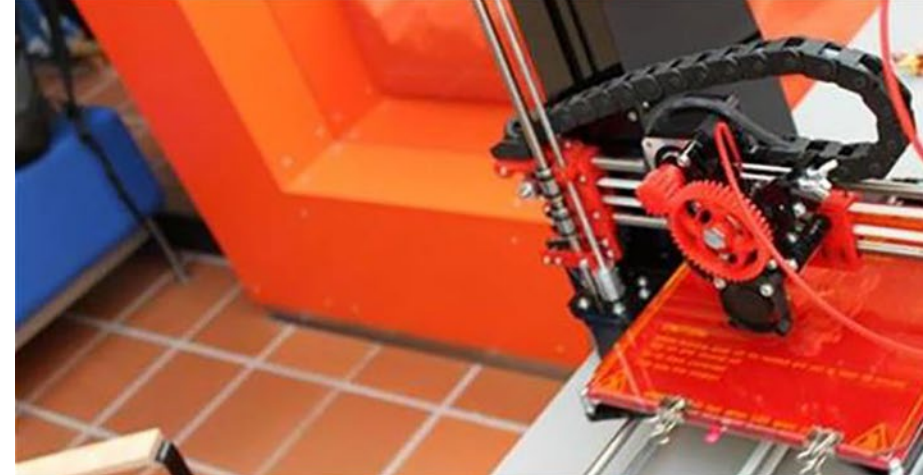


Responsibility organisations for the entities and the families



Three examples of collaboration in R&D-projects

- Regional level:
 - TEQU-projects <https://www.tequ.fi/en/>
- National level:
 - Robocoast EDIH <https://robocoast.eu/?lang=en>
- International level:
 - Energy ECS <https://energyecs.eu/>





Our Prototyping Process



Tell us your tech problem or product idea



Choose from the concepts developed for you



Receive a designed, functional prototype of your idea!

Main Areas of Expertise



Business



Design



Media

Our team consists of professionals in Business, Design and Media.

Proto Portfolio



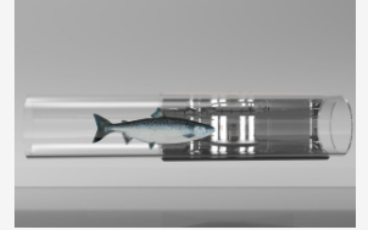
THE TRANSMETER

TransMeter was created for the needs of the SmartCharge project. The Lehtojärvi pilot consists of an energy metering system which...



AURORASCANNER – ENSURE THE OPTIMAL WEATHER

AuroraScanner is a off-grid camera prototype for ensuring the optimal weather conditions to hunt the northern lights!



KALASYDÄN – FISH RECOGNITION SYSTEM

Fish recognition system is a part of Kalasydän process. System allows the data collection and helps the automatization of the process.



SOLARKIT – POWER PLANT ON THE GO

Solarkit is a mobile solar power plant and works as an entry-level prototype to familiarize and learn about solar power.



LATAUSMAJA – CHARGE YOUR E-BIKE OFF-THE-GRID!

Latausmaja is a e-bike charging station, that can be located off-the-grid as it creates the needed power itself. It enables longer and greener hikes!



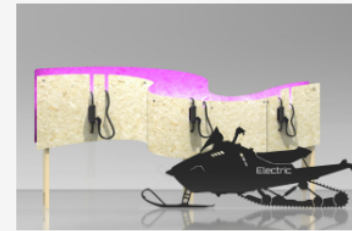
TOURIST CARD – CONNECTING YOU TO LOCAL SERVICES

By utilizing your mobile phone, the card leads you to a digital service portal. No more need for multiple brochures and paper waste!



PORONAPPI – A DEVICE FOR REINDEER WARNING

With audiovisual and haptic aid, the button provides a driver-friendly way to both send and receive warnings of reindeer sightings on road.



CHARGING STATION FOR ELECTRIC SNOWMOBILES

An easy and memorable way to charge electric snowmobiles during safaris. The station keeps the wiring organized and can be easily prolonged.



DROPSTICK -TEMPERATURE MEASUREMENT FOR SAFER ROADS

The device collects real time data from the surface and different layers of the road, to better forecast slippery driving conditions.

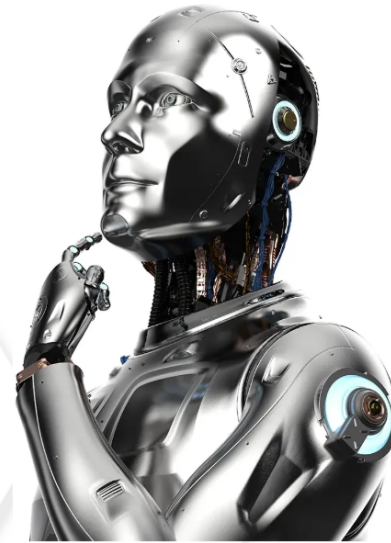
Robocoast EDIH – Expertise in Industrial Renewal

Do you need information about digital solutions such as robotics or artificial intelligence? Or do you want to make sure your company's cybersecurity is up to date?

Robocoast is a non-profit European Digital Innovation Hub (EDIH) whose mission is to provide companies with services to implement the digital transition.

Through our services, you will have access to the excellence and RDI environments of 15 Finnish higher education institutions.

Start cooperation for your company commissioned by our people Free Digital Review – contact us!



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Cybersecurity



AI & HPC



Data analytics



Robotics



IOT & Industry 4.0



5G & Smartgrid

Our services



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Innovation Ecosystems and Networks

Receive support for your product development through the expertise of 15 universities and numerous R&D laboratories. Participation in projects is also possible. Learn more!

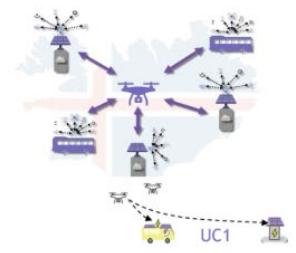
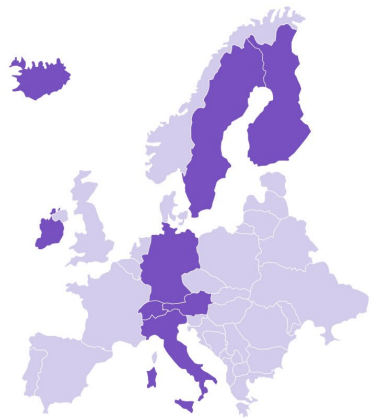
Smart and secure energy solutions for future mobility

[READ MORE >](#)



WHAT IS ENERGY ECS?

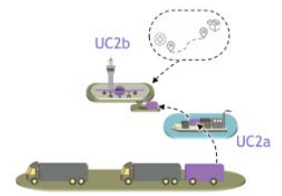
Energy ECS (Electronics, Components, Systems) project is a large 3-year consortium project on smart and secure energy solutions for future mobility. The project aims to develop a set of technologies to improve the digitalization of e-mobility systems and related energy solutions.



DroneZones - Autonomous Drone Ecosystem

Charging of drones on e-bus rooftop and transportable photovoltaic (PV) based charging stations.

[Learn More UC 1](#)



Smart Containers in intramodal transport & Smart and Light Air Cargo Containers

Enabling the monitoring of containers by battery charging wireless sensors from renewable sources, including the aspects of PV technologies, cargo location and fleet management

[Learn More UC 2A](#)

[Learn More UC 2B](#)



Smart Mobility with E-mobility

Balancing and AI-based monitoring of microgrids specifically in connection of charging/discharging of an e-vehicle

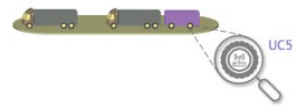
[Learn More UC 3](#)



Vehicle To Grid

Bidirectional onboard and offboard charging technologies for electric vehicles to enable smart V2G applications

[Learn More UC 4](#)



Self-powered System in Tyres

Kinetic/strain energy harvesting based continuous monitoring of care tyre condition for both improved safety and autonomous driving related needs

[Learn More UC 5](#)



Autonomous Driving of EV to Charging Station

E-vehicle or E-bus autonomously driving to charging station at a bus depot area, including real-time location, safe approaching and charging

[Learn More UC 6](#)

This project has received funding from the ECSEL Joint Undertaking (JU) under grant agreement No 101007247. The JU receives support from the European Union's Horizon 2020 research and innovation programme and Finland, Austria, Germany, Ireland, Iceland, Italy, Sweden, and Switzerland.



Energy ECS project is an extensive 3-year project that develops smart and secure energy solutions for future mobility and green energy transition. The project has a total of 29 partners from eight European countries and an overall budget of 33 ME. It is co-financed via the ECSEL Joint Undertaking of the EU Horizon 2020, national funding agencies of the participating countries, and the consortium partners. The project is coordinated by TietoEVRY and consists of 15 small and mid-sized enterprises, eight large enterprises, and six research and technology organisations from Finland, Austria, Germany, Ireland, Iceland, Italy, Sweden, and Switzerland. The project consortium and proposal were built with the help of Spinverse.

As a summary...

- Lapland's strengths in collaboration in regional development:
 - Not so many R&D actors → We know each other
 - Not so many companies → We know them
 - Joint Smart Specialisation Strategy to which everybody is committed → Joint thematics and ecosystems around them for R&D
 - Large investment potential in those chosen thematics → Fruitful ground for R&D
- Lapland's challenges in collaboration in regional development:
 - Partly different economical back bones in 6 regions, 21 municipalities and 9 000 companies → Not always same needs for R&D
 - 95% of the companies employ less that 10 people → Not so many R&D intensive growth companies
 - Companies do more adhoc and daily development → less long term strategy and growth oriented development
 - Companies cautiousness to invest and put effort in R&D → Cautious to grow and cautious to participate in national and international level R&D-projects (apply for funding)



*We are cold. We are hot.
We are tenacious and live with passion.*

*We shape, we create and
let inspiration carry us forward.
We let information flow
because together we are more.*

*We are committed to growing
under all circumstances.*

We have the Northern Factor.

LAPIN AMK⁷
Lapland University of Applied Sciences

