



**VTT**

# Finnish Digital Resilience

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**Safe and Connected Society  
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VTT – beyond the obvious

# Digital resilience at VTT Technical Research Centre of Finland

Finland:



1917 -



1995 -



2023 -



**DIANA**

Defence Innovation  
Accelerator for the  
North Atlantic

- VTT is an independent research centre
- Fully state-owned non-profit company
- Steered by Ministry of Economic Affairs and Employment
- Duty to promote utilisation and commercialisation of technology
- Supports the technology needs of the Finnish Defence Forces and other authorities
- Provides deep technology knowhow in many fields of digital resilience and defence
- Covers all domains of resilience: technology, cyber-security, and different verticals such as defence and public safety
- Applied academic level research together with industry to translate new technologies into capability and business
- Focus on dual-use technologies and next generation capabilities not yet available on market

Established

**1942**

Employees

**2390**

85 % a university degree  
32 % a doctorate or  
a licentiate's degree

Turnover (2024)

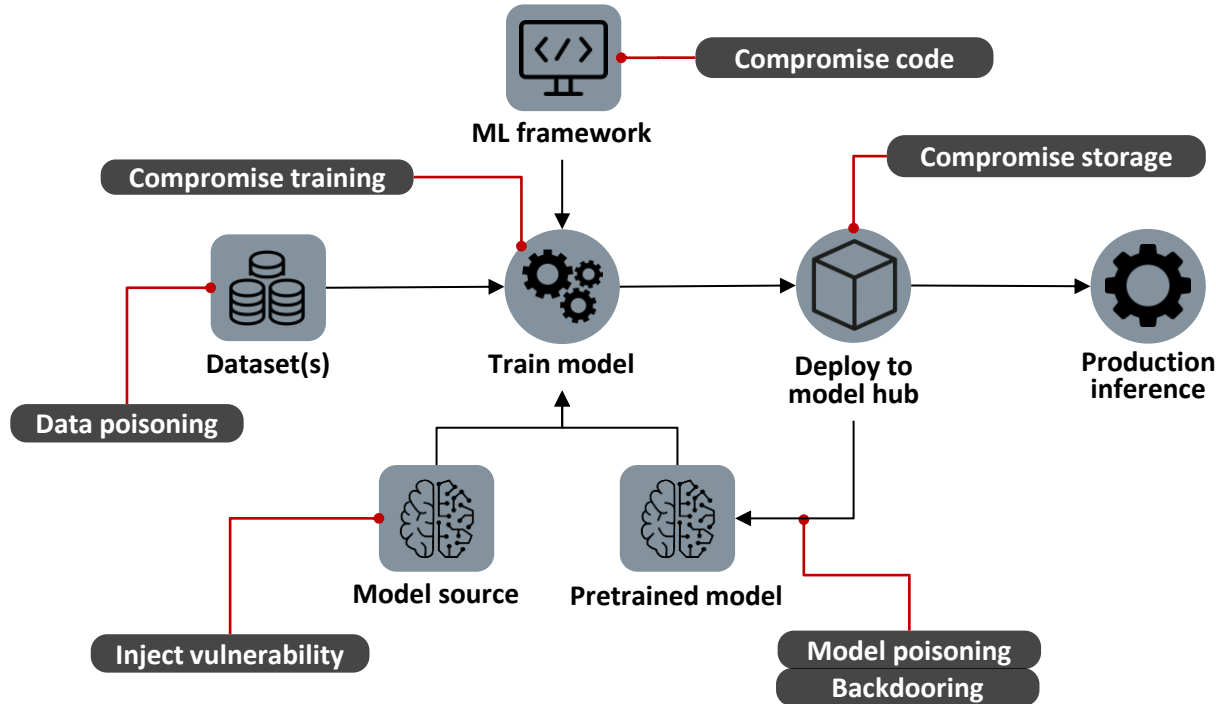
**296 M€**

**49 %**

of net turnover  
from abroad

# New technologies means also new threats:

## AI/ML based systems are vulnerable to cybersecurity attacks



Finland is turning its traditional mindset of “sisu” towards developing digital technologies that strengthen the country's resilience.

Besides creating trust in all situations, this includes investing in resilient connectivity, quantum-safe cybersecurity and other dual-use technologies.





# Finland's Revised Cyber Security Strategy (2024–2035)

## Target state for national cybersecurity

Cybersecurity is an integral part of Finland's comprehensive security.  
The functions of our digitalised society are dependable and reliable.

We seize the technological opportunities and understand the associated threats to the cyber domain and society. We develop competence extensively.

Finland detects, identifies, combats and withstands cybersecurity incidents, recovers from them, and responds to incidents decisively.

Finland promotes cybersecurity actively and purposefully through close national and international cooperation and information exchange.

Sufficient resources are ensured and efficiently applied to realise the target state.



### Competence, technology and RDI

A competent, innovative and inventive cyber ecosystem



### Preparedness

Strong societal cyber resilience and operational reliability



### Cooperation

A solid national and international cooperation model



### Response and countermeasures

Timely response to cyber threats and assured sovereignty

Revised Cyber Security Strategy responds to changed security environment - Finnish Government

# Finland as an Innovator in Resilience

## Human resilience

- Sisu, but also common sense, preparedness and **digital literacy**

## Societal resilience

- Continuous preparation, foresight, education and dialogue, guaranteeing society's functions in every situation
- National Emergency Supply Agency (NESA) coordinating the efforts to ensure the operating capability of critical infrastructure that is essential for maintaining the vital functions of society, including the electrical grid, the water supply, transport routes and **secure connections for data communications** and financial transactions.
- PPP – public, private and third sector collaboration



Over 50 000 civil defense shelters

[Overall situational picture of security of supply 26 August, 2025: Operational Capacity Across Sectors Remains Strong Despite Uncertainties - Huoltovarmuuskeskus](#)



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Overall situational picture of security of supply 26 August, 2025:  
Operational Capacity Across Sectors Remains Strong Despite Uncertainties

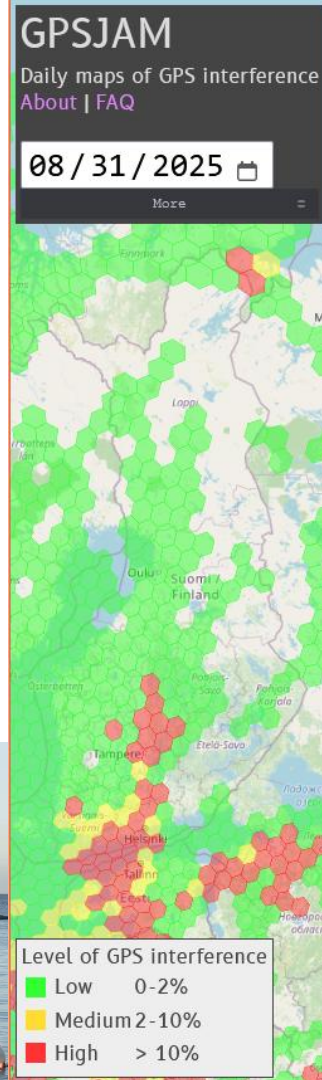
# Finland as an Innovator in Resilience

## Connectivity is the lifeline for resilient society

### Technology and resilience

- Finland has **strong digital infrastructure**
- Finland is a leading innovator in several emerging dual-use/resilience technology areas; wireless technologies/6G/5G, quantum technologies/ cybersecurity, energy transition, new materials
- Constantly building new capabilities for digital resilience, as part of technology development

Finnish Transport and Communications Agency (Traficom) works to guarantee **technical operability in telecommunications**

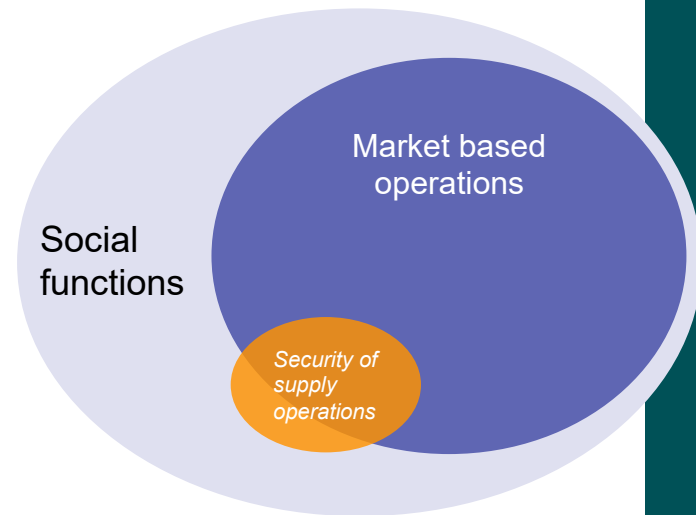




# Security of supply\* in Finland

## Digital Resilience being central part of it

- Ensuring that critical functions of the Finnish society operate at sufficient level in all situations including disturbances and crises
- Critical functions include food and water supply, energy supply, healthcare, logistics, finance and insurance, industry and digital services and infrastructure
- Foundation of the Finnish security of supply concept
  - Open, functional and competitive market economy
  - Co-operation between public and private sectors
  - Society-wide preparation
- Each Ministry is responsible for ensuring security of supply in their respective areas of responsibility
- NESAs coordinate and implement selected preparedness measures



*\*Security of supply is widely understood as a more narrow concept focusing on secure supply of (energy) products and services. Finnish concept is therefore much wider.*



# FINNISH DEFENSE AND DIGITAL RESILIENCE PROGRAM

**Focus on developing globally pioneering digital solutions to increase the resilience and security of societies and businesses**

1. Excellence in comprehensive security solutions through RDI
2. Enhanced innovation and business collaboration in international frameworks such as EU and NATO
3. Significant revenue growth through export of digital resilience offerings and business ecosystems



**Program runtime  
2024 – 2028**

**Funding target 100 M€  
in total**

**SUPPORTS DIGITAL  
NATIVE MISSION'S  
GOALS**

# Example of Finnish partnership promoting resilience: The eALLIANCE ecosystem for more secure societies

The eALLIANCE ecosystem will develop and integrate digital solutions across civil, security and defence technologies for introducing disruptive technologies for highly integrated mobility platforms. It will combine civil and defence knowhow in the digital technologies for increased interoperability and GHG savings in the defence sector, generating new turnover.



## **eALLIANCE mission**

is to integrate disruptive digital solutions across civil, security and defence technologies for more secure societies.

# Digital Resilience – Public Private Partnership – example of a committed private company

## Check for free if your **router** is safe

See if your router type has known vulnerabilities that may compromise your security.



You can find your router's model from the bottom of your router.

*Type your router model here*

How do I use Router Checker? ▾

<https://www.f-secure.com/en/router-checker>

# VTT is working for Securing Network Intelligence

## ➡ Better resilience for critical infrastructure



VTT

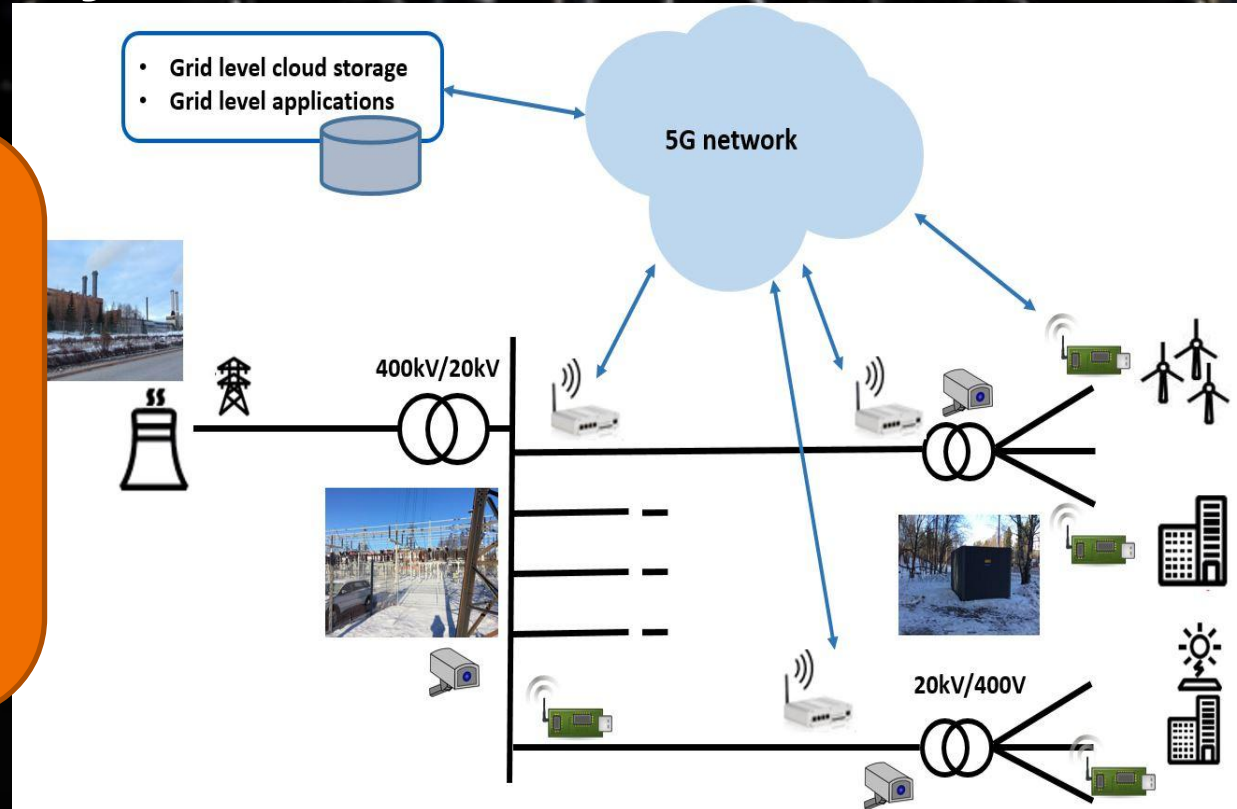
### Network security must follow the development of networks

- In AI-NET-ANTILLAS project VTT was working for developing solutions in detecting threats, improving the energy efficiency and information security of AI solutions, as well as examining information security requirements, architecture and metrics and developing solutions for remote authentication of device reliability.
- What has been done in practise:
  - Public safety communications trials via LEO satellite networks/backhaul
  - Multi-access routing and AI-enhanced security testing
  - Vulnerability analysis of Intent-Based Networking
  - UAV test flights at VTT 5G test network
  - Orchestration of drone control intelligence to edge



# Tackling energy grid challenges with wireless connectivity solutions

- 5G for controlling evolving smart grids with sustainable energy sources and distributed production
- Solutions for supervision, protection, control and security





# Digital resilience and situational awareness

## Port of Oulu and VTT Lead €12.8M Security and Resilience Project

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R&D project aimed at improving the security and situational awareness of critical systems, to reduce risks related to both digital and physical attacks and ensure that the port can recover quickly from disruptions.

**Looking forward to successful  
European collaboration to improve  
our common resilience!**



# bey<sup>0</sup>nd

## the obvious

Thank you!

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