# Open Research Day

9 April 2025

# 16:40-17:30

## **A108: Panel Discussion –** Driving Impact through Advanced Digitalisation: Research, Innovation, and Policy

Chair: Professor Yifang Ban, KTH

# Driving Impact through Advanced Digitalisation: Research, Innovation, and Policy

**Jonas Bjarne**
PhD, Scientific Secretary, ICT & Applied Mathematics, SSF – Swedish Foundation for Strategic Research.
*SSF's program Cyber Resilience for AI Systems*

**Emil Björnson**
Professor, KTH and Representative in the program councils for VINNOVA's Advanced Digitalization Program.
*VINNOVA's Advanced Digitalization Program*

**Kristina Gabrielii**
Programme Director, Smart Built Environment, Formas
*Formas' Smart Built Environment: Digital Built Environment in Practice*

**Johan Lindberg**
Advisor at VINNOVA and National Contact Point (NCP) for Horizon Europe Cluster 4: Digital, industry & space. *Horizon Europe Cluster 4: Digital, industry & space*

**Jan Gulliksen**
Professor and former Vice President for Digitalisation at KTH, Member of Digital Futures' Strategic Research Committee

# Jonas Bjarne

PhD, Scientific Secretary, ICT & Applied Mathematics, SSF – Swedish Foundation for Strategic Research.
*SSF's program Cyber Resilience for AI Systems*

# SSF MRC Cyber-Resilience for AI-systems

## KTH Digital Futures Open Research Day, 250409

Stiftelsen för Strategisk Forskning

**Jonas Bjarne**

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# SSF MRC = Multidisciplinary Research Centers

- Scientific questions projected onto **urgent problem/application areas**
- Critical mass of internationaly **leading researchers** from **different** disciplines/faculties/HEI – **join forces**
- Collaboration with **relevant stake-holders** (industry, clinics, authorities)
- SSF MRC = strategic_relevance **.AND.** scientific_excellence
- First ICT MRC: Semiconductor System Design (**Chalmers**, LU, …)
- Second ICT MRC: 6G Satellite Communication (**KTH**, LTU, RISE, …)
- Third ICT MRC: **Cyber-Resilient AI-systems (Call open, deadline 2 Sept.)**

**Call open, deadline 2 Sept.**

## SSF Multidisciplinary Research Center

Cyber-Resilient AI-systems (MRC CRAI)

The Swedish Foundation for Strategic Research (SSF) announces **60 million SEK** in a national call for proposals for a Multidisciplinary Research Centre (MRC) that meets the highest international scientific standards. The call aims to stimulate truly multidisciplinary research collaboration between academia, research institutes, industry, and society.

SSF seeks to **fund one (1) MRC in the field of Cyber-Resilient AI-systems** (MRC CRAI).

The MRC will be granted up to **40+20 million SEK** in total including overhead costs for a period of **six years**. Full funding will be contingent upon a successful midterm evaluation.

SSF satsar 60 miljoner på cyberresiliens för AI-system! - Stiftelsen för strategisk forskning

# The successful SSF MRC CRAI has the following characteristics:

- The research focus is clearly on internationally excellent research on **making future AI-systems cyber-resilient**, these being purely cyber or cyber-physical in composition, operating independently or in groups or swarms (systems-of-AI-systems), i.e an **AI-centric effort**
- **Separate groups** of excellent AI-researchers and excellent cyber-resilience researchers **join forces**. **Demonstrated long-term excellence in both** is required for transformative research
- CRAI has **quantifiable efforts towards relevant AI-systems** through partnerships with selected research, industrial, and/or societal partners.
- Examples of **potential research questions** in this Call are:

  Threat and Risk Analyses and Implications for various AI-systems and use cases.

  Explainable AI (XAI) for transparency, traceability, trustworthiness in AI-systems.

  Secure-by-Design AI-Systems and Zero Trust Architectures for cyber-resilience.

  Systems-of-AI-Systems using swarm behavior features for cyber-resilience.

  Safe Training Infrastructures prevent data manipulation during AI learning phase.

  Data-Extraction Prevention shields AI training data from compromised model.

  AI Cyber Threat Intelligence for automated threat prevention, prediction, detection, and response

# MRC eligibility, main points only (see call text for details)

- An MRC consists of applicants from **one hosting Higher Educational Institution (HEI)** and applicants from **one to three other HEIs or Research Institutes (RI),** supported by at least **two industrial and/or societal partners**.
- Each **HEI** may be represented by its employees in **maximum of one (1) application as main applicant** in this call. There is **no limit** to the number of applications in which the given HEI or RI is represented by an employee **as co-applicant.**
- Each **industrial and/or societal partner** may be represented in **maximum of two (2) applications** in this call. Applications with industrial and/or societal partners registered in Sweden are prioritized.
- **International research organizations** may participate only by their **own means**, apart from international researchers that becomes employed by the MRC through the participating Swedish HEIs/RIs.

# TENTATIVE! future SSF-calls

## Yearly calls

- Industrial PhD
  Apply for SSF Industrial PhD student 2024! (strategiska.se)
- Strategic Mobility
  Change research environment – apply to Strategic mobility 2024! (strategiska.se)

## 2025

- MRC Cyber-Resilient AI-systems
  SSF satsar 60 miljoner på cyberresiliens för AI-system! - Stiftelsen för strategisk forskning
- EU Research Application Support
  New support for writing an EU application! (strategiska.se)
- Taiwanese – Swedish Research Collaboration (?)

## 2026

- Industry-oriented PostDoc
  Apply for SSF Industry-oriented Postdoc! (strategiska.se)
- Adjunct (Associate) Professor
  New call – SSF Adjunct professor or adjunct lecturer! (strategiska.se)
- Research Institute PhD
  New opportunity to apply for a Research Institute doctoral student! (strategiska.se)
- 1-2 Multidisciplinary Research Centres

## 2027

- Future Research Leaders
  Apply for SSF Future Research Leaders! (strategiska.se)

www.strategiska.se

# Thank you

# Emil Björnson

Professor, KTH and Representative in the program councils for VINNOVA's Advanced Digitalization Program. *VINNOVA's Advanced Digitalization Program*

Advanced Digitalisation

# Advanced Digitalisation

The research and innovation program

Long-term, powerful and collaborative

# Sustainability, new technology and security drives development and competition

Climate and sustainability posing new and necessary demands.

New opportunities through technological development.


National security


# Industry in focus

For the continued success of Sweden

# We want

- Advanced Digitalisation is based on a vision that Sweden will remain a leading nation in innovation and research.
- Through joint efforts, we aim to accelerate the development of next generation digital solutions here in Sweden.
- We strive to promote initiatives addressing relevant and current challenges, thereby fostering mobilization, collaboration, and broad synergies.
- By doing this, we achieve our goals. We are committed to ensuring that the initiatives we support today build the knowledge needed to develop the advanced solutions of tomorrow.

# A multi-billion initiative

- In March 2023, the government announced that the state would contribute SEK 2.3 billion to Advanced Digitalisation through to 2027.
- In this way, a multi-billion investment is currently underway, as the partnership is based on the industry matching the state's contribution with an equivalent amount.
- With this budget, Advanced Digitalisation has the opportunity to fund initiatives that truly make a difference.
- However, the partners' ambition is higher, aiming for the program to continue until at least 2030 with an annual budget that doubles during this period.

# The Board of the Advanced Digitalisation program

ERICSSON

SAAB

Tetra Pak®

VOLVO

SWEDISH INCUBATORS & SCIENCE PARKS

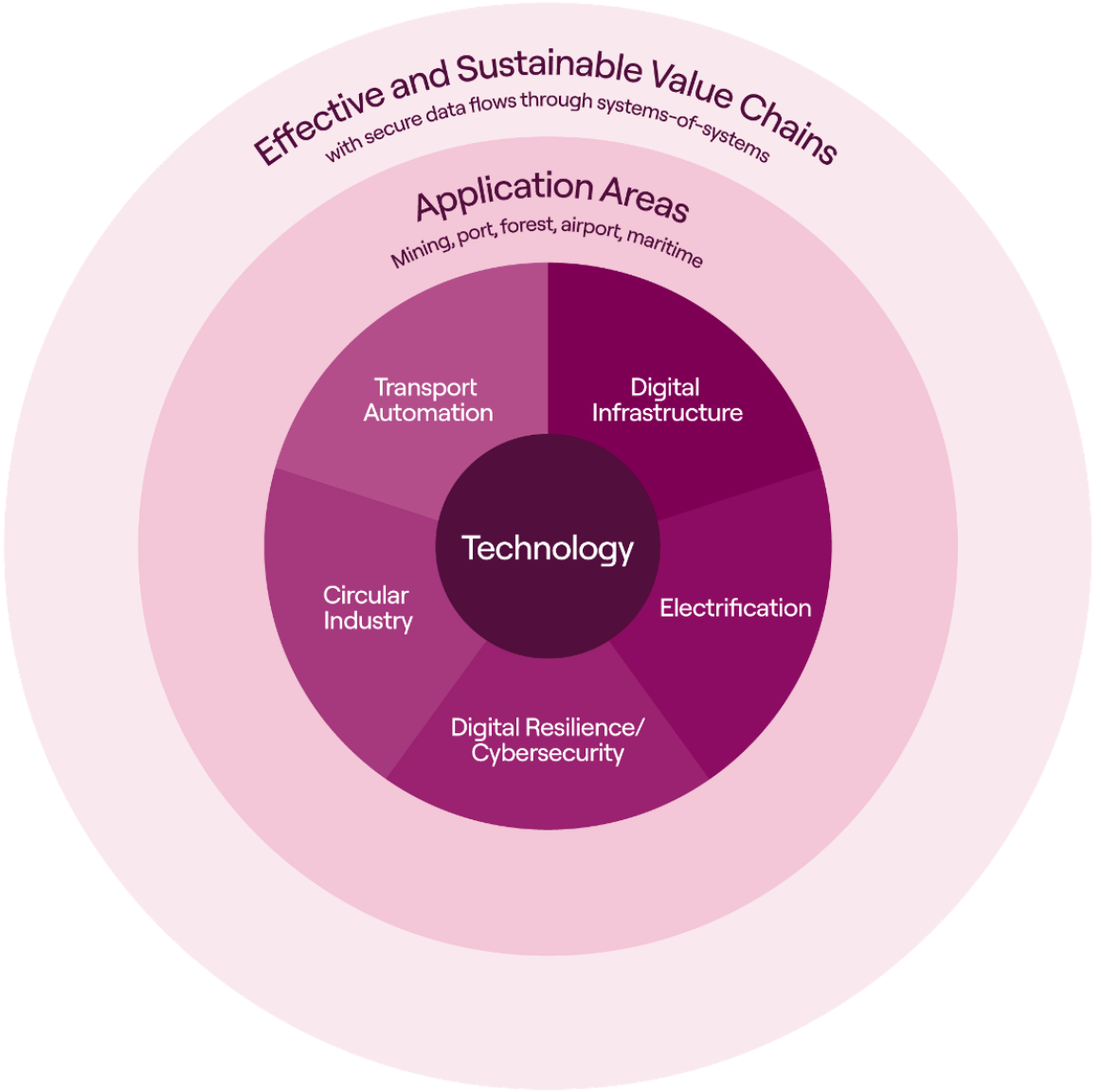
Teknikföretagen
Technology Industries of Sweden

VINNOVA

# The program aims to contribute to the following six goals

1. To contribute to the next generation of advanced, powerful and secure digital solutions – developed in Sweden.
2. To strengthen Sweden’s attractiveness for research and innovation investments.
3. To ensure increased competitiveness for the industry operating in Sweden.
4. To help elevate the Swedish business sector's expertise and implementation capacity in the field of advanced digitalisation.
5. To serve as a collaboration platform and work as a knowledge hub for other Swedish initiatives in the digitalisation field.
6. To contribute to society's digital transformation, sustainable development, and the efforts to achieve Sweden's environmental goals.

# Program logic



# Portfolio data

301

Granted projects

700 +

Unique actors

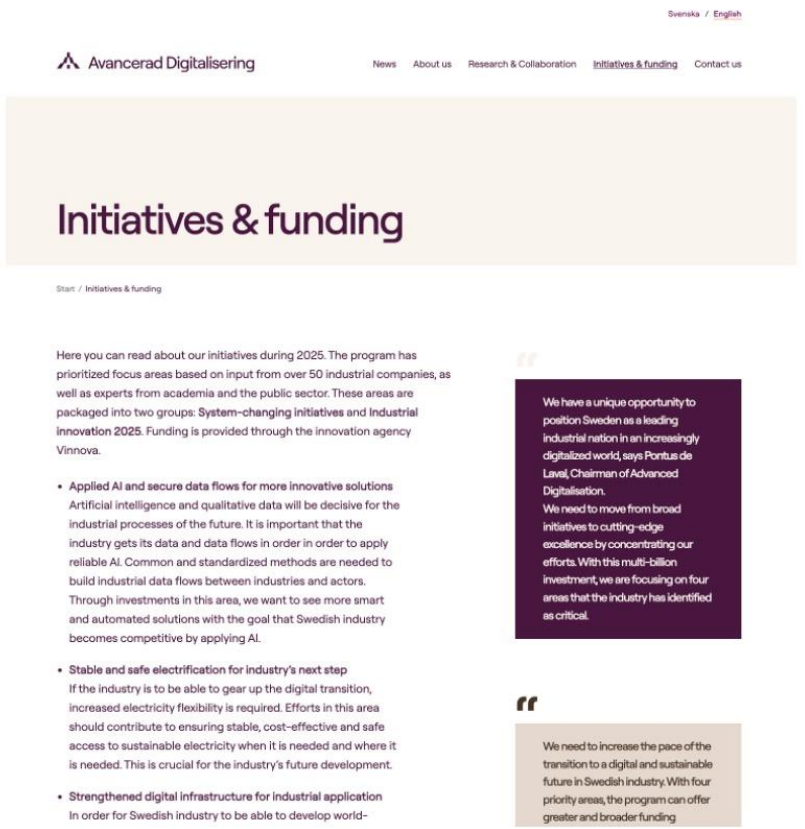
3 766

Billion SEK
amount invested

# Funding Opportunities

- System-changing initiatives, pre-study project 2025
- Industrial innovation 2025

- View all current calls on our website: avanceraddigitalisering.se or Vinnova's website, vinnova.se



Svenska / English

Avancerad Digitalisering

News About us Research & Collaboration Initiatives & funding Contact us

## Initiatives & funding

Start / Initiatives & funding

Here you can read about our initiatives during 2025. The program has prioritized focus areas based on input from over 50 industrial companies, as well as experts from academia and the public sector. These areas are packaged into two groups: **System-changing initiatives** and **Industrial innovation 2025**. Funding is provided through the innovation agency Vinnova.

- **Applied AI and secure data flows for more innovative solutions**
  Artificial intelligence and qualitative data will be decisive for the industrial processes of the future. It is important that the industry gets its data and data flows in order in order to apply reliable AI. Common and standardized methods are needed to build industrial data flows between industries and actors. Through investments in this area, we want to see more smart and automated solutions with the goal that Swedish industry becomes competitive by applying AI.
- **Stable and safe electrification for industry's next step**
  If the industry is to be able to gear up the digital transition, increased electricity flexibility is required. Efforts in this area should contribute to ensuring stable, cost-effective and safe access to sustainable electricity when it is needed and where it is needed. This is crucial for the industry's future development.
- **Strengthened digital infrastructure for industrial application**
  In order for Swedish industry to be able to develop world-

"

We have a unique opportunity to position Sweden as a leading industrial nation in an increasingly digitalized world, says Pontus de Laval, Chairman of Advanced Digitalisation.
We need to move from broad initiatives to cutting-edge excellence by concentrating our efforts. With this multi-billion investment, we are focusing on four areas that the industry has identified as critical.

"

We need to increase the pace of the transition to a digital and sustainable future in Swedish industry. With four priority areas, the program can offer greater and broader funding

Contact us:
www.avanceraddigitalisering.se

# Thank you

# Kristina Gabrielii

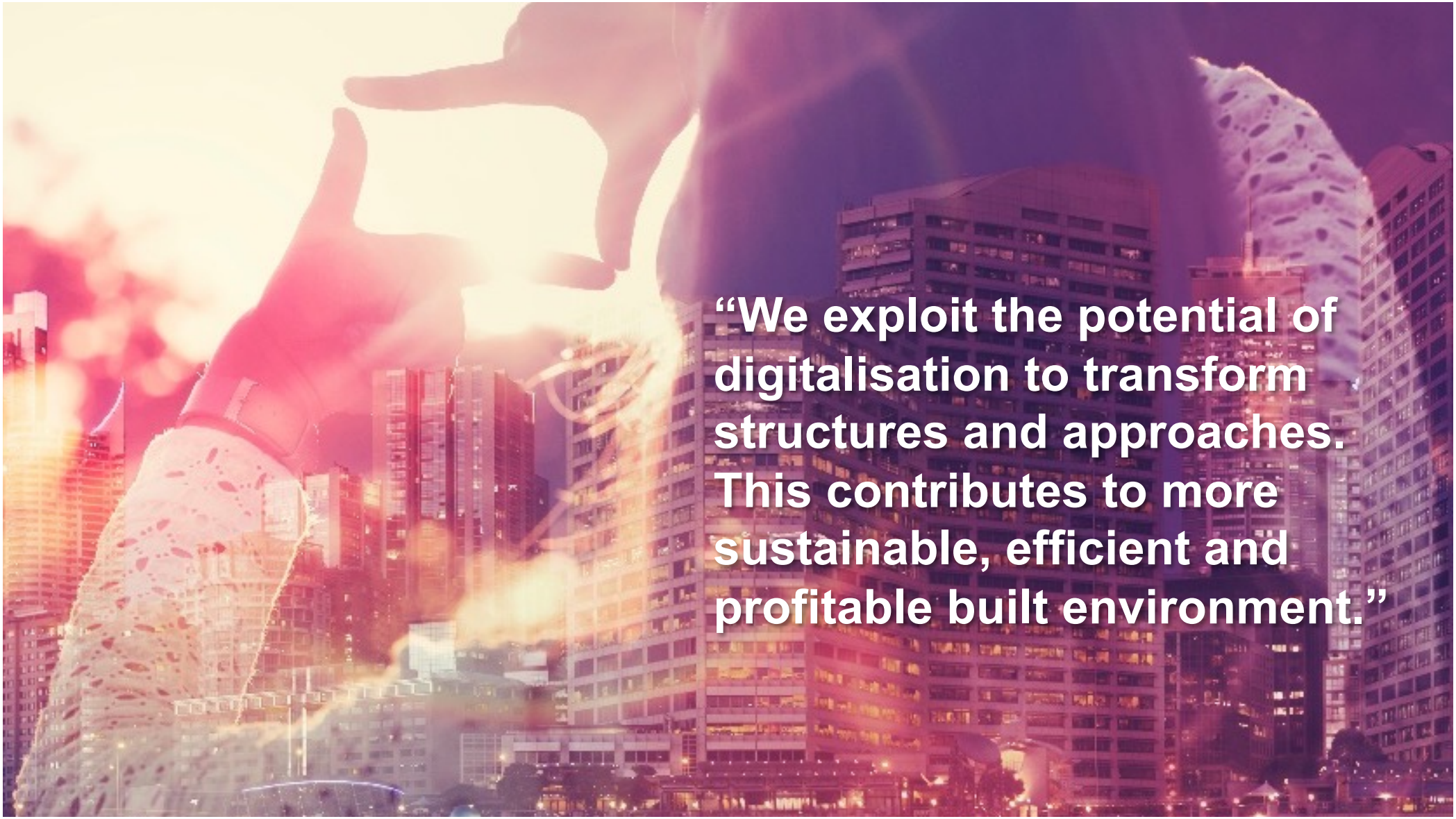
Programme Director, Smart Built Environment, Formas
*Formas' Smart Built Environment: Digital Built Environment in Practice*

# Smart Built Environment

## A Swedish Strategic Innovation Program

2025-04-09 Kristina Gabrielii, Program manager

SMART BUILT ENVIRONMENT


“We exploit the potential of digitalisation to transform structures and approaches. This contributes to more sustainable, efficient and profitable built environment.”

# Objectives of the programme - 2030

Circular resource management and more efficient processes (time and cost)

Functional durability, aesthetic design, longevity and robustness characterise the built environment quality

Reduction of greenhouse gas emissions in compliance with Sweden's climate targets for 2030

New value chains and business logic based on
life cycle perspective, platforms and new stakeholder constellations

With support from
VINNOVA Sweden's Innovation Agency
Swedish Energy Agency
FORMAS
Strategic innovation programmes

SMART BUILT ENVIRONMENT

# Some other initiatives and organisations

**InfraSweden ›**

Works to develop a sustainable transport infrastructure system.

**Viable Cities ›**

Med IT and digitalisation, we accelerate the transition to sustainable energy systems for cities.

**RE: Source ›**

RE: Source focuses on developing circular, resource-efficient material flows to achieve sustainable material use.

**PiiA: Process industrial automation ›**

Strengthens the Swedish process industry and develops the innovation capacity of the industry's suppliers.

SEIIA

SwEdish Industrial Interoperability Association

BIM Alliance SWEDEN

**BIM Alliance Sweden**
Nonprofit organization working for a better built environment by maintaining seamless information flows in the design, construction and maintenance processes

SMART BUILT ENVIRONMENT

# Contact

info@smartbuilt.se
www.smartbuilt.se/in-english

kristina.gabrielii@iqs.se

SMART BUILT
ENVIRONMENT

# Thank you

# Johan Lindberg

Advisor at VINNOVA and National Contact Point (NCP) for Horizon Europe Cluster 4: Digital, industry & space. *Horizon Europe Cluster 4: Digital, industry & space*

# NCP?

- National EU-node

**NCP**

- National contact points

VINNOVA
Sweden's Innovation Agency

FORMAS · Vetenskapsrådet · MSB · FORTE · Energimyndigheten · RYMDSTYRELSEN Swedish National Space Board

- Answers questions on Horizon Europe
- Helps to find matching calls and topics
- Legal and financial advice
- Spreads information
- Strategic advice

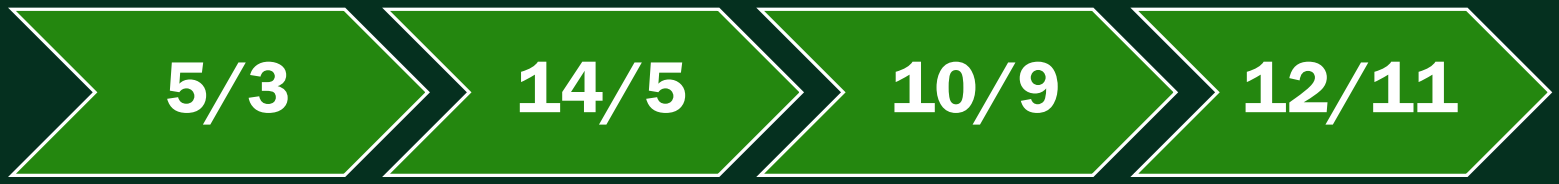
Information from SE system to EC
via NCP networks, experts and PC

European Commission

VINNOVA

# Planning grant

- Who can apply?
  - Swedish organisations - academic actors, research institutes, public sector, civil society or SMEs … who are planning to design an application for a research and innovation project for an international call
- < 300 000 SEK Plan to apply for an international call
- < 500 000 SEK Plan to coordinate an international project
- The identified international call must be published at the time of the application
- Planning grant for international proposal 2025 | Vinnova
- Informationsmöte om planeringsbidrag inför internationell ansökan | Vinnova (recording)




Closing dates 2025

VINNOVA

# Important EU-events

- EU virtual info-day on Digital, Industry & Space calls 2025, 13-14 May
  - https://research-innovation-community.ec.europa.eu/events/9ds9jXc5ca1xdrdJ5dEGI/overview

- The Future of Digital Investments in the EU, 2-3 July, Aalborg, Denmark
  - https://en.digst.dk/policy/international-cooperation/european-conference-2025/

# Horizon Europe 2021-2027


## Cluster 4. Digital, Industry and Space

- **Destination 1**: Climate neutral, circular and digitised production
- **Destination 2**: A digitised, resource-efficient and resilient industry
- **Destination 3**: World leading data and computing technologies
- **Destination 4**: Digital and emerging technologies for competitiveness and fit for green deal
- **Destination 5**: Strategic autonomy in developing, deploying and using global space-based infrastructure, services, applications and data
- **Destination 6**: A human-centered and ethical development of digital and industrial technologies

VINNOVA

# Thank you

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# Thank you

# digital futures

**PARTNERS**