

# Nordic IoT News

## No. 1-2021

### Nordic IIoT Roadmap released

The Hub has just released the Nordic IIoT roadmap. It supplements the existing European roadmaps released recently, however, since the Nordic countries are far ahead on digitalization compared to the rest of Europe it calls for specific Nordic measures. According to the EU's digital DESI index the Nordic countries are ranked at numbers one, two, three and four within the EU. Therefore, the Nordic countries are years ahead of their EU counterparts in the digital roll out of implementing digital services and infrastructure. The Nordic roadmap suggests several measures to be pursued in the next decade.

- To maintain and strengthen the Nordic leading position in trustworthy digitalization. A general enabler for this leadership has been the long-term focus on security and trustworthiness of the IIoT systems. However, further success and industrialization will require a strong emphasis on collaboration, and synergies between the currently scattered national competences. We therefore recommend establishing a joint Nordic Center doing research in trustworthy methodologies for the implementation of sustainable IIoT.
- To prioritize R&D with increased focus on IIoT solutions facilitating traceability, reparability, durability and recyclability, with a specific goal to establish the required multidisciplinary collaborations. This focus is motivated by the green transition, which will require a framework for green growth and the circular economy, enhanced by digital technologies.
- To train the next generation of students in both digitalization and the green transition, the Nordic universities should focus on sharing advanced course modules that are easily integrated into the current curricula.

We have chosen to present our roadmap in the innovative format of a "slidedoc". A slidedoc is a visual document intended to be read and referenced instead of projected. Flipping through the pages of a slidedoc should feel like flipping through the printed pages of a book or swiping the screen of a tablet device. The way we communicate is changing. In our time-strapped world, we like information that is consumed quickly. We hope you will enjoy swiping through our roadmap:

**NORDIC INDUSTRIAL  
IIoT ROADMAP**  
RESEARCH AND INNOVATION FOR THE  
GREEN TRANSITION

<http://www.nordic-iiot.org/roadmap/>

### National supporters

The PhD students associated with the Nordic IIoT Hub are financially sponsored by national initiatives. The Hub adds infrastructure, projects, and joint courses to our students. Some of the national funding schemes are described below:



TECoSA is a Vinnova center that started in 2020. The center brings together KTH and 13 industrial partners. The aim is to provide methods, tools and theory for building safe, secure and predictable systems relying on edge computing. TECoSA is a ten years effort with the participation of nine academic institutions and 13 industrial partners with a total budget of 240 MSEK.



Aalto University, FI  
Lund University, SE  
Norwegian University of Science and Technology, NO  
Royal Institute of Technology, SE  
Technical University of Denmark, DK



# WASP

Wallenberg AI, Autonomous Systems and Software Program (WASP) is Sweden's largest individual research program ever and provides unique opportunities for achieving international research excellence with industrial relevance. WASP is funded by the Knut and Alice Wallenberg Foundation. The focus of the research within WASP is artificial intelligence and autonomous systems acting in collaboration with humans, adapting to and learning from their environment through sensors, information and knowledge, forming intelligent systems-of-systems. Software is the main enabler in these systems and is an integrated research theme of the program. The associated WASP graduate school currently have nearly 300 PhD students enrolled.

# DIREC

Digital Research Centre Denmark

DIREC is a newly established Danish research center with the purpose of performing world-class digital research to ensure that Denmark is in front regarding digital technologies and thereby expand the capacity within research and education in Denmark. The center is a unique alliance between seven Danish universities and the Alexandra Institute in the field of digital technologies. The vision of DIREC is to be an international flagship center for computer science and be able to match the most renowned CS departments in Europe and the United States and thus attract the best researchers.

# SFI

SFI Autoship is an 8-years research-based innovation center that will contribute to Norwegian players taking a leading role in the development of autonomous ships for safe and sustainable operations. The center has more than 20 partners from the Norwegian maritime industry, including end users, product and service suppliers, research institutes, universities, and government. The center was launched in December 2020.

# FCAI

The goal of the Finnish Center for Artificial Intelligence (FCAI) is to create new types of AI, which can operate with humans in the complex world, and to renew the Finnish industry with this new AI. FCAI research and impact agenda is spearheaded by seven Research Programs and five Highlight Programs with multiple research groups involved in each. Currently, about 60 professors with their groups actively progress the FCAI research and impact agenda.

## New PhD students associated with the Hub

Four new PhD students have been associated with the Hub. Please welcome:

- Management of Predictable Fog Computing Systems  
Jaakko Harjuhahto, Aalto University, FI
- Automated vehicle planning in edge-based collaborative CPS  
Jose Sanchez, KTH
- Architectures for edge-based CPS  
Rusyadi Ramli, KTH
- Architectures and safety for automated vehicles  
Naveen Mohan, KTH



In total we now have 50 PhD students affiliated to the Hub meaning that their Hub activities are eligible for funding. Please visit <http://www.nordic-iot.org/doctoral-school/list-of-affiliated-phds/> for a complete list of students.



Aalto University, FI  
Lund University, SE  
Norwegian University of Science and Technology, NO  
Royal Institute of Technology, SE  
Technical University of Denmark, DK

