# Nordic IoT News

## No. 5-2020

**Best practice during the COVID-19 pandemic**

In the last Newsletter we summarized some of the limitations caused by the current COVID-19 pandemic. It was also agreed to gather experiences from the partners on what works and what does not work when it comes to on-line training (experiences from using various tools, best practice from on-line training, how to ensure dialogue with the students, virtual labs, etc.).

An on-line survey was set up by Aalto to gather the required info. Basically 55% of our teachers replied that they during the pandemic solely have been using distance learning methods. 27% report that they have partly been using distance learning methods. Only 18% have not utilized any distance learning methods.


The majority of our teachers have used live remote lectures (89%) while 78% have used recorded lectures. It seems as the on-line set-up is still being developed among the Hub partners, as only 22% have tried out an "automatic exercise grading system" while 33% have made use of an "automatic exercise submission system".

The survey also gave the lecturers the possibility to orally comment their experiences – some statements being:

- "There is a lot of variation of adoption of Tools - hard to generalize. There are also pros and cons with cyber- vs. physical settings. The new Tools provide new capabilities (e.g., on-line quizzes, breakout rooms) that can be used beneficially, while the main drawback is the lack of direct feedback and informal interactions. Personally, I am still learning some of the tools, specifically for automating grading"
- "There are plenty of tools available that we use. Learning platforms and remote lecturing tools are the most typical (automatic grading, chats, etc. are more rarely used). However, support and privacy (etc.) are major technical concerns"
- "Platforms/tools used: Moodle, Canvas, Discord, Zoom, YouTube, + homemade server for exams and individual assignments generator"

Generally, one third of the lecturers reported that the distance learning methodology was limiting their teaching abilities. And slightly more than half the lecturers reported that the tools require a lot extra work to use. Finally, many teachers did not find much organizational support for their teaching!

**The Hub's IIoT Roadmap**

The work on the Hub's IIoT Roadmap has, despite the COVID-19 pandemic, progressed well during the last months. Currently, we have received nearly 100 contributions from our active Hub partners. It is divided into six main chapters, namely:

- Setting the scene, Nordic strengths
- Related roadmaps & agendas
- State of play in the Nordics
- Application areas
- Technological paradigms
- Industrial IoT research priorities

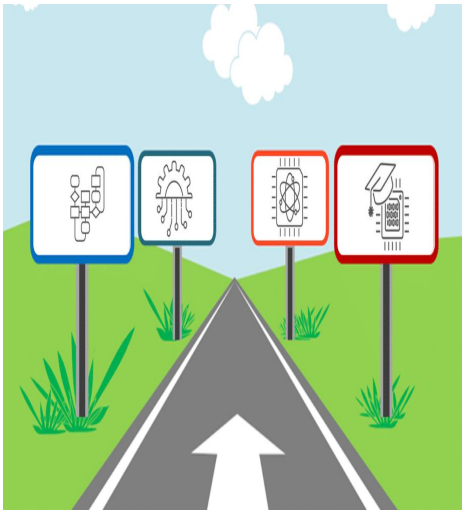
Nordic Hub IIoT

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

NordForsk

In January next year the first version of the roadmap will appear as a slide deck and by the end of 2021 we will issue a printed roadmap with the aim of demonstrating the Nordic strengths, i.e.:

- A high share of renewables (hydro, bio, wind, etc.), ranging from 32% to 73% in 2016, relative to the EU28 share of 17%
- Exceptionally low level of carbon intensity of Nordic electricity <60 gCO2/kWh (EU 447 gCO2/kWh)
- The Nordic Region has highly developed solutions in areas such as water supply, waste disposal, green town planning, transport, and energy
- High level utilization of electric vehicles (2020 market share in e.g. Norway >50%)
- High Nordic education level: 34% graduates with a tertiary degree (EU19 average: 25%)
- In the 2016 EC Innovation Scoreboard, the Nordic Region was the most innovative in Europe, not least in terms of clean technologies



The roadmap is supporting several large Nordic initiatives, such as:

- TECOSA (SE): Trustworthy Edge-Computing Systems and Applications
- FCAI (FI): Finnish Center for Artificial Intelligence
- WASP (SE): Wallenberg AI, Autonomous Systems & Software Program
- DIGITAL FUTURES (SE): KTH Digital Futures
- DIREC (DK): National Centre for Research in Digital Technologies
- SFI Autoship (NO): Development of autonomous ships for safe and sustainable operations
- ELLIIT (SE): Research on IT, mobile communications, and digitalization.

All together these programmes represent an investment of nearly 80 MEUR/year.

Please remember to check our Hub events calendar (currently all events are on-line due to Corona):

http://www.nordic-iot.org/events-page/