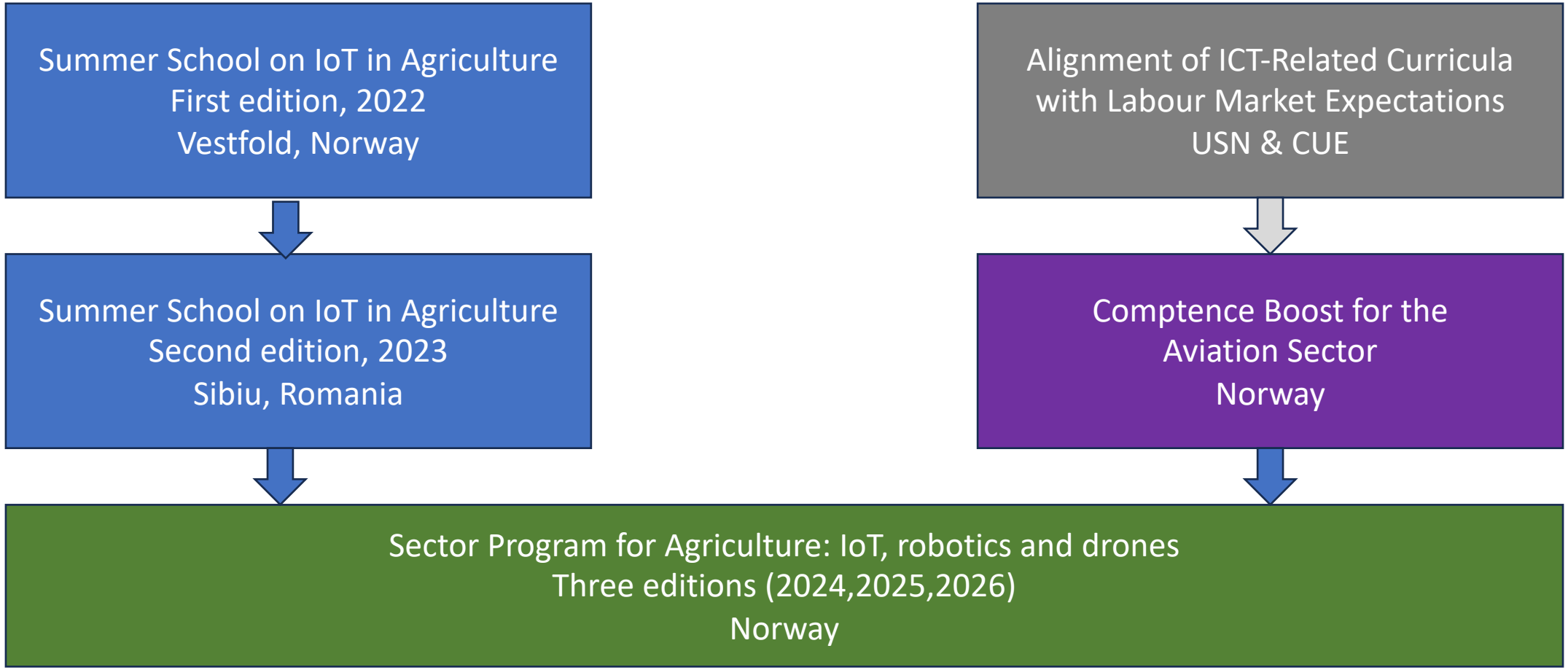
INFOCOM 2024
Athens, Greece
March 10th-March 14th, 2024

Harvesting Innovations: Nurturing Norway's Agricultural Future with Micro-credentials

Lasse Berntzen

University of South-Eastern Norway

Background


Summer School on IoT in Agriculture
First edition, 2022
Vestfold, Norway
Summer School on IoT in Agriculture
Second edition, 2023
Sibiu, Romania
Alignment of ICT-Related Curricula
with Labour Market Expectations
USN & CUE
Comptence Boost for the
Aviation Sector
Norway
Sector Program for Agriculture: IoT, robotics and drones
Three editions (2024,2025,2026)
Norway

Micro-credentials is High on the EU Agenda

- On 16 June 2022, the Council of the European Union (EU) adopted a Recommendation on a European approach to micro-credentials for lifelong learning and employability.
- The Recommendation seeks to support the development, implementation and recognition of micro-credentials across institutions, businesses, sectors and borders.

What Are Micro-credentials?

- Micro-credentials certify the learning outcomes of short-term learning experiences, for example a short course or training.
- They offer a flexible, targeted way to help people develop the knowledge, skills and competences they need for their personal and professional development.

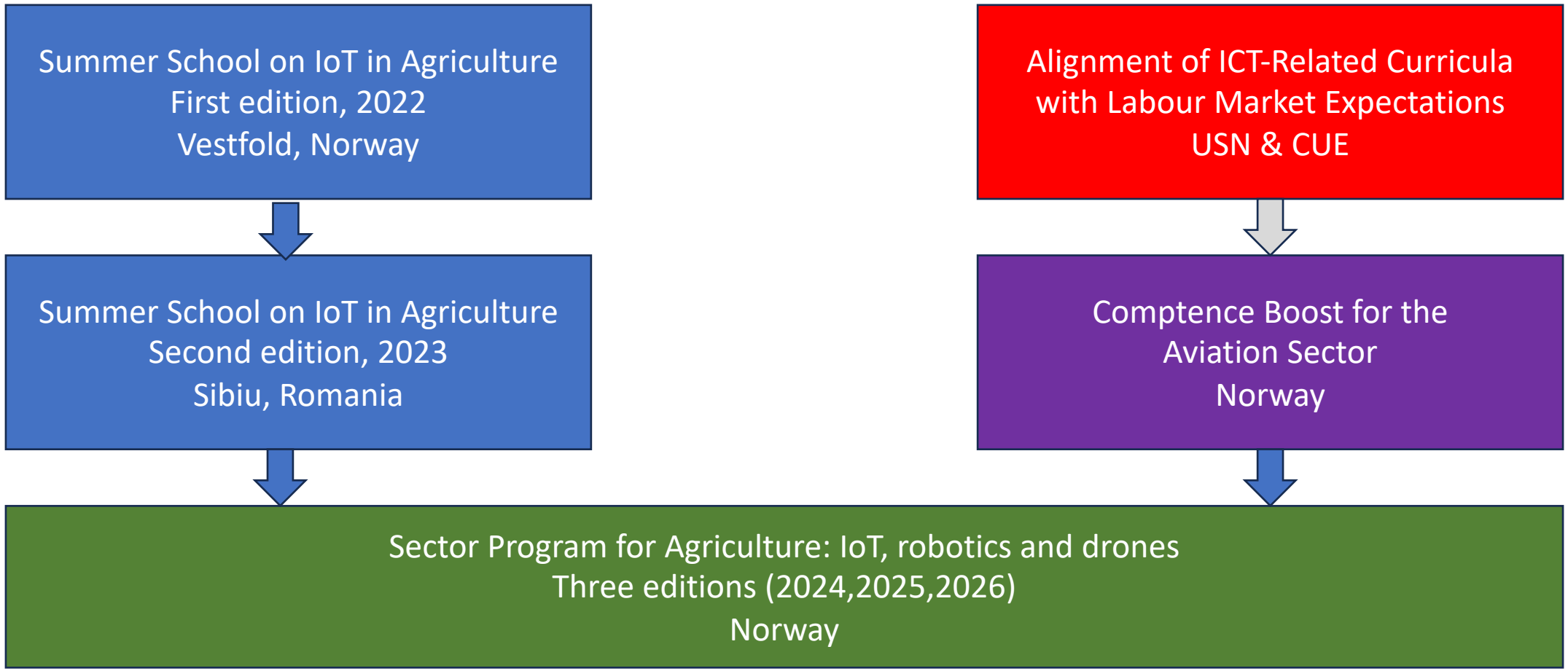
Why Micro-credentials?

- More flexible and learner-centred forms of education and training
- Opportunities for disadvantaged and vulnerable groups.

Micro-courses are Hot

- Recent regulatory change in Norway
- One ECTS courses are acceptable
- National level is talking favorable about micro-credentials
- New unit established: **USN Flexible** to offer lifelong-learning courses

Background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Alignment of ICT-Related Curricula with Labour Market Expectations (2022-2023)

Project partners:

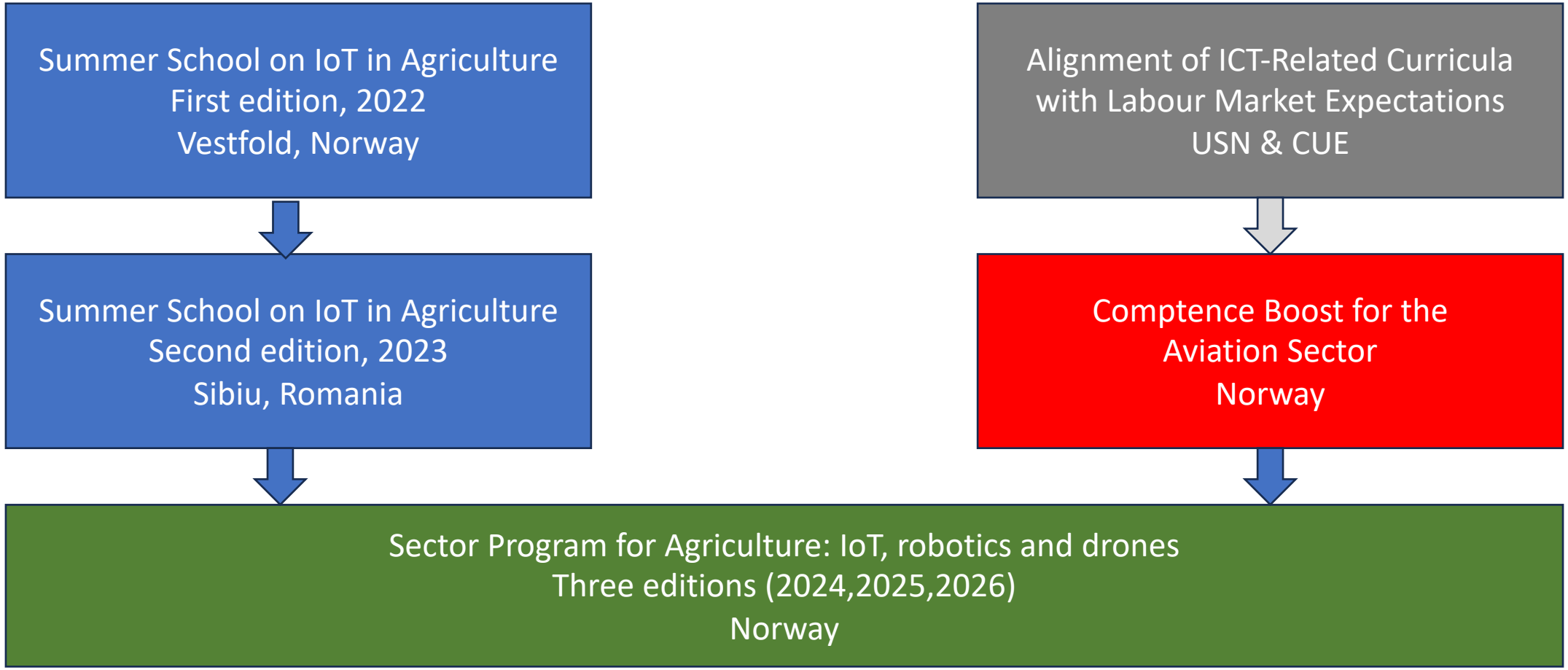
- Crakow University of Economics
- University of South-Eastern Norway

https://icam.uek.krakow.pl/project-projekt

Output 5

Analysis of the concept of micro-credentials and its feasibility of implementation at CUE and USN

Background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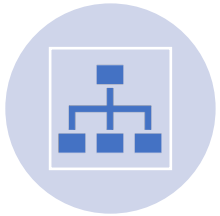
Norwegian (USN) Microcredentials Pilot

- Post-Covid
- 40 x 1 ECTS courses for the Aviation Sector (Competence Boost)
- Enhancing competence
- All courses digital and asynchronous
- Completed

Norwegian (USN) Microcredentials Pilot



CO-CREATION

WIDERØE AND AVARN

PODCAST GUESTS

- Introduction video
- Who am I?
- 8 lectures (15 min)
- 8 podcasts (15 min)
- Quiz
- Reflection

Lessons learnt

The administrative burden is high

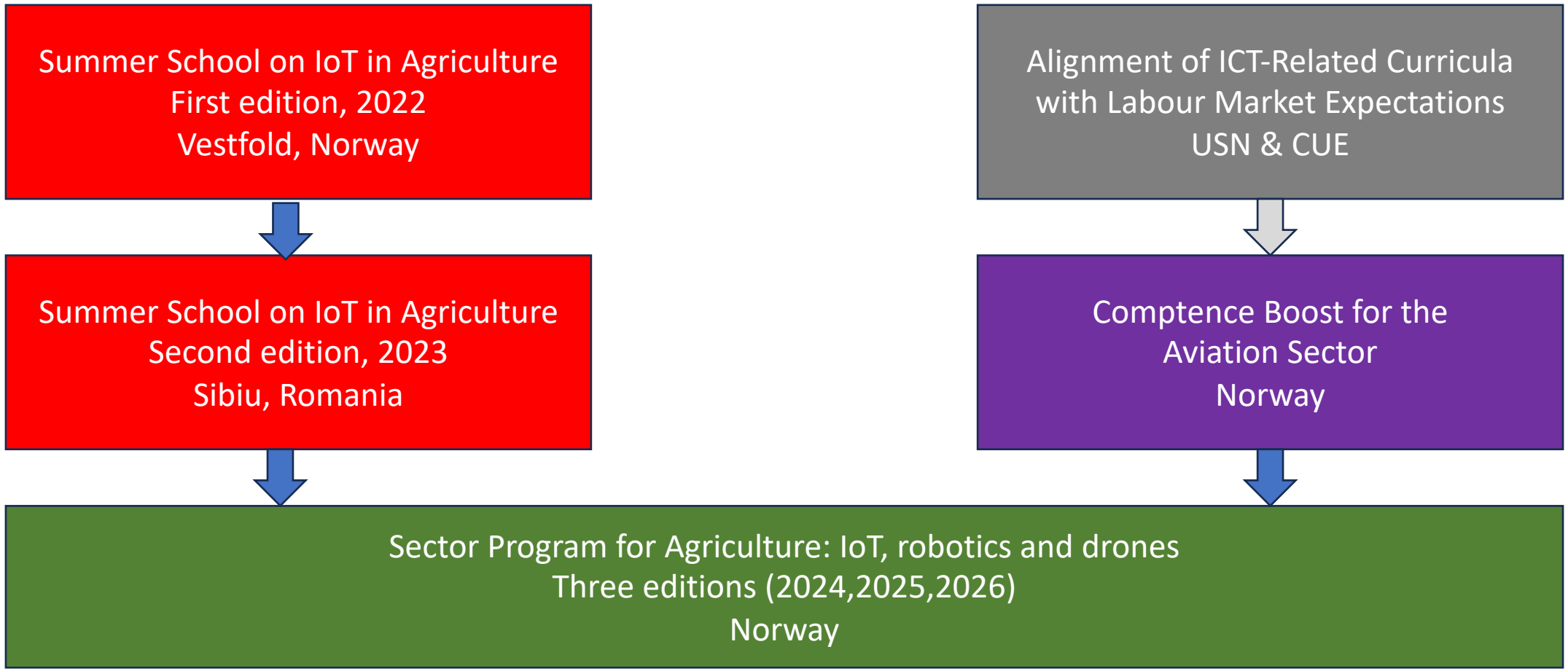
Larger units are more manageable

Students take courses sequentially

Free -> No shows

15-minute lectures and podcasts could be longer

Background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Norway

MaploT (Summer School)

Project partners:

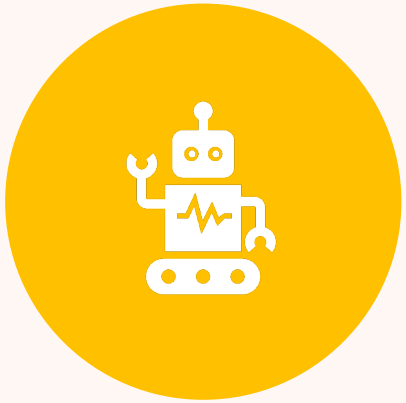
- Lucian Blaga University of Sibiu
- University of South-Eastern Norway

- Two editions
  - Summer 2022: Vestfold, Norway
  - Summer 2023: Sibiu, Romania

MapIoT (Summer School)

IOT

DRONES

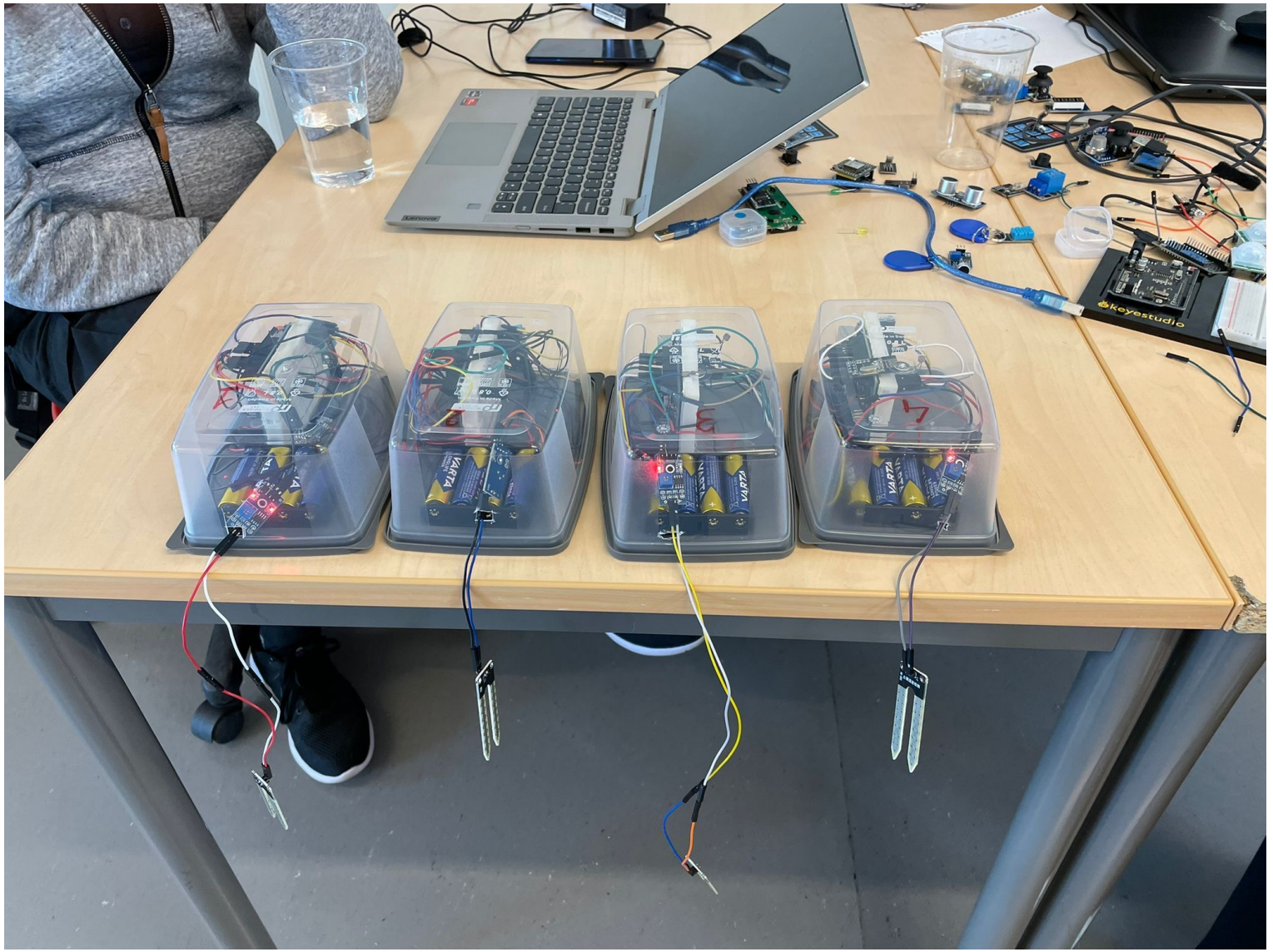


ROBOTICS

Working on IoTProjects

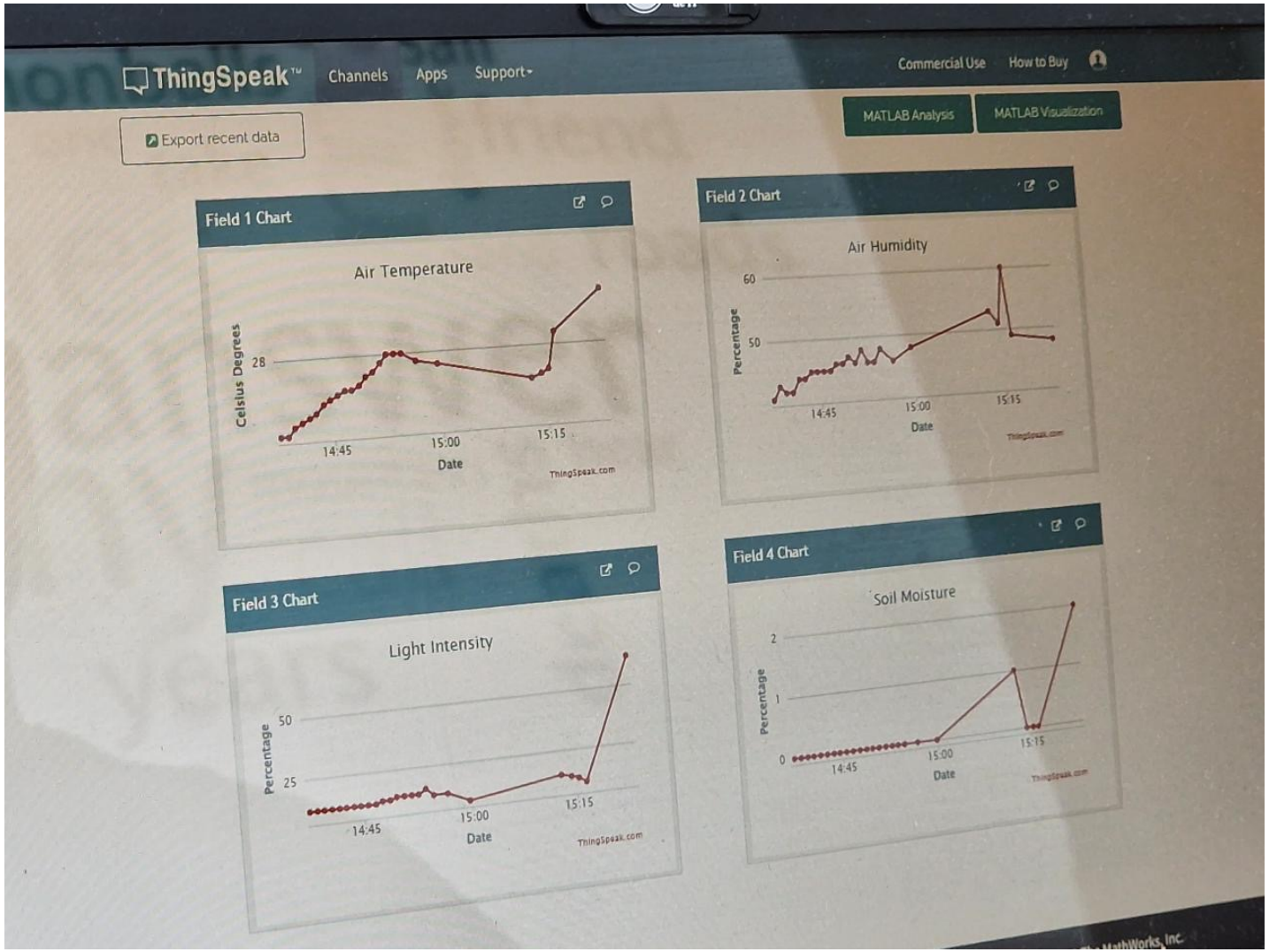
Creating an environmental monitoring station

Environmental monitoring stations

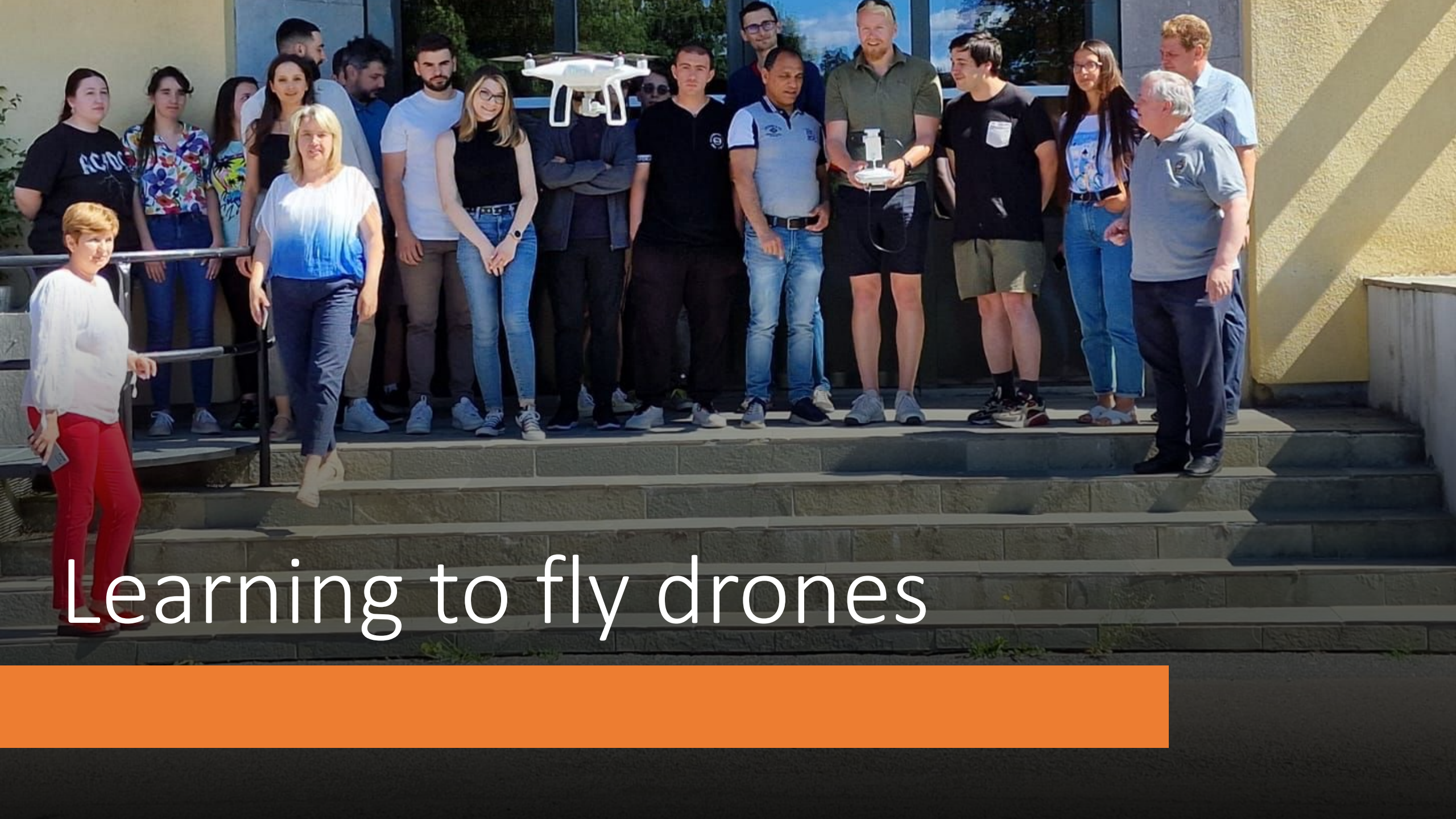


Environmental monitoring stations deployed in the field

Collecting environmental data



Learning to fly drones



Learning to fly drones

Learning to fly drones

Capturing images

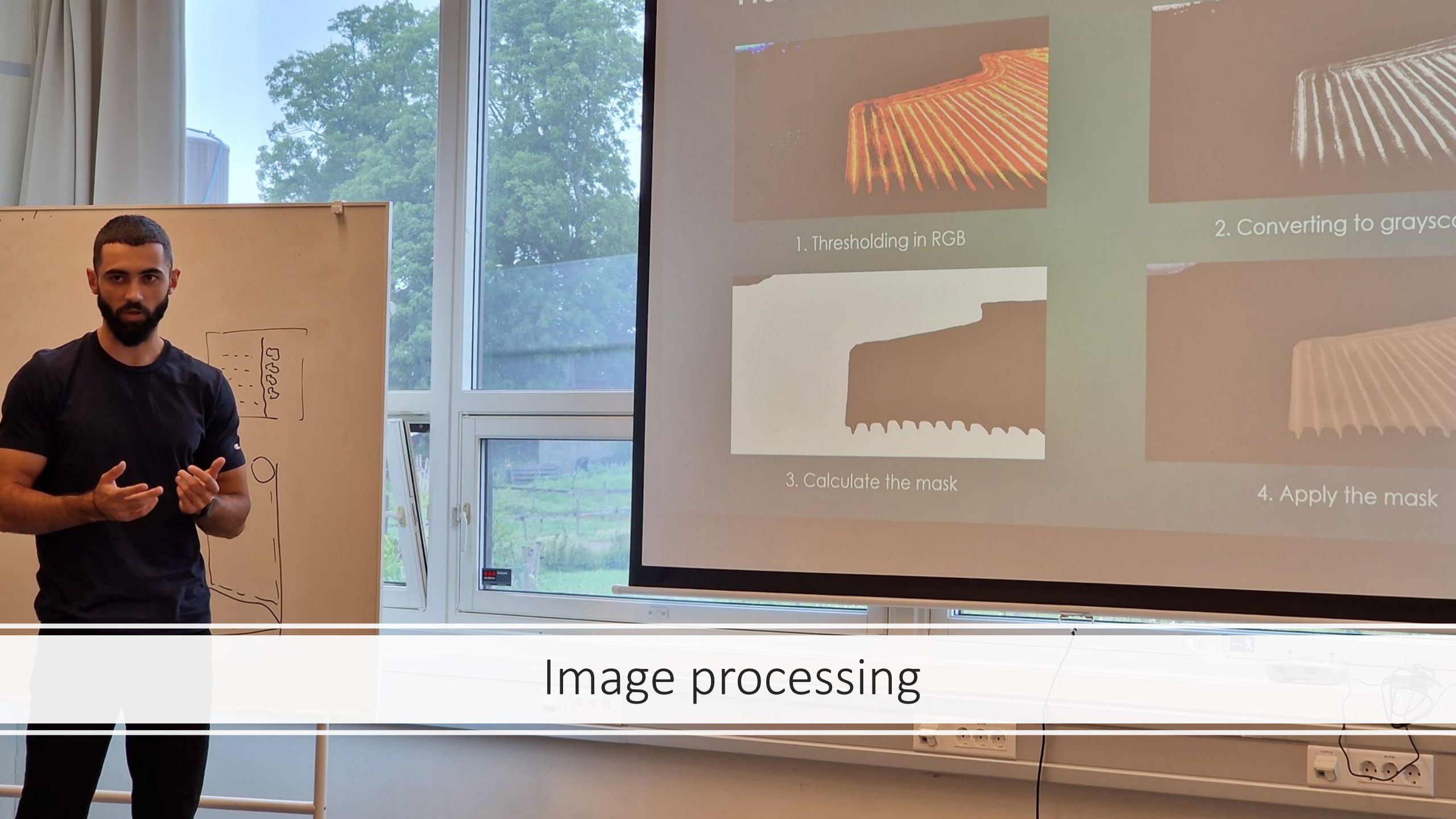
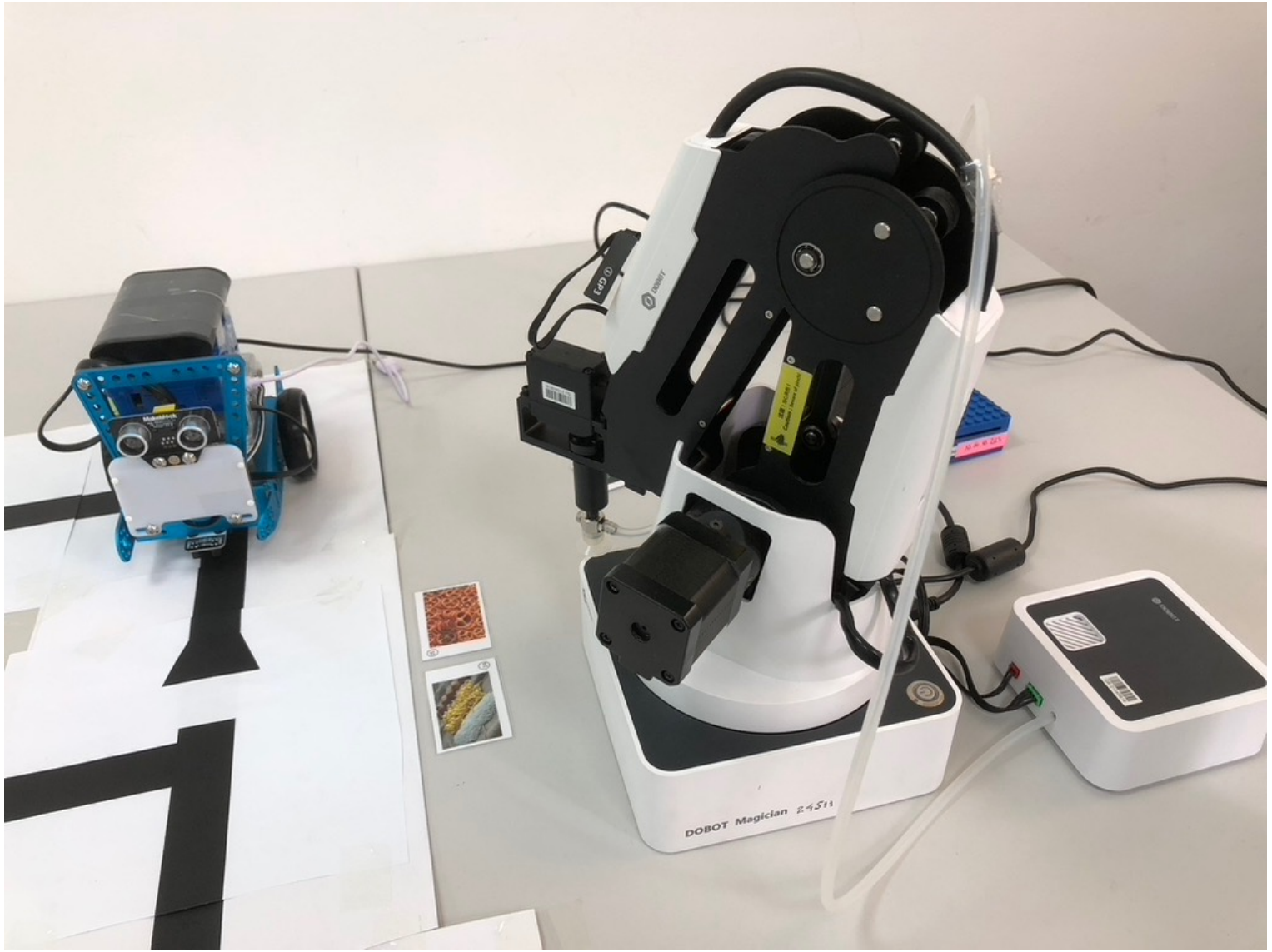


Image processing

Learning robotics

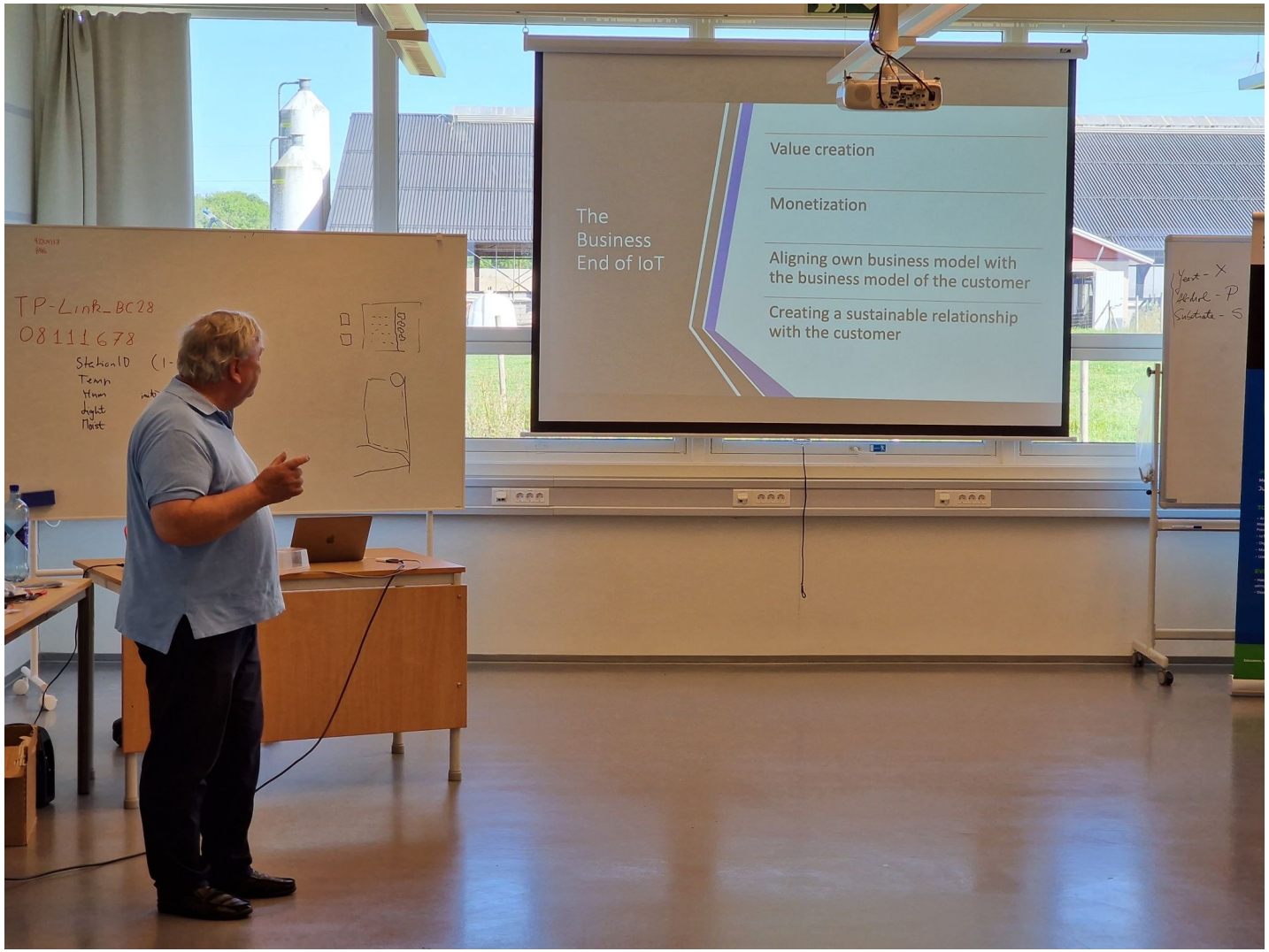
The DoBot Magician



Real-world robotics

Presentations by industrial companies

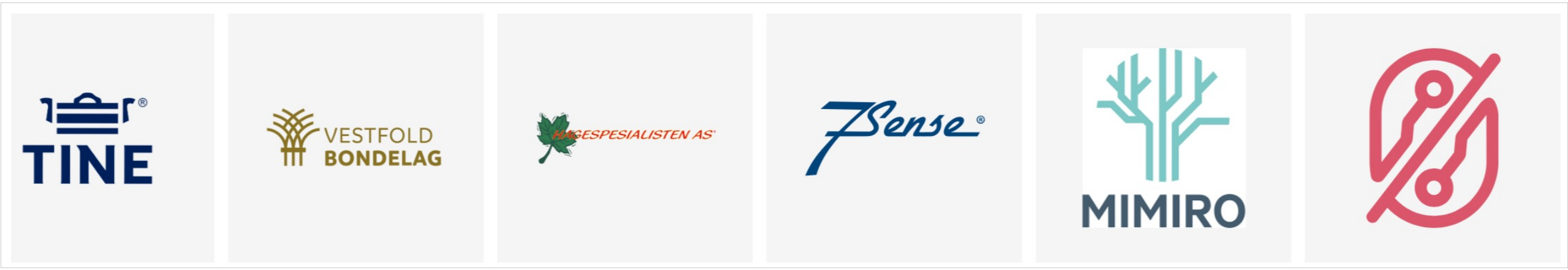
How to turn knowledge into business



New Microcredential Courses

- Continuing education for three sectors
- Agriculture: IoT, Drones, Robots (3 x 2,5 ECTS)
- Maritime: Cybersecurity, Sustainability (4 x 2,5 ECTS)
- Waste handling: Strategic communication (5 x 2,5 ECTS)
- The courses are funded for three years (30 students each year)
- Adopted most of the ideas used in the Aviation sector
- Most important: From 1 to 2,5 ECTS (less admin)
- Also, some physical events (varies)

Partners


TINE
VESTFOLD
BONDELAG
HAGESPESIALISTEN AS
7Sense
MIMIRO

	Preparation	Gathering	Post-gathering	Reflection/ report
Lecture	3 x 20 min	6 x 30 min	3 x 20 min	
Other teacher-led activities		3 x 90 min (rotation)		
Podcasts	6 x 20 min		3 x 20 min	
TOTAL	3 hours	7.5 hours	2 hours	
Homework	12 hours	4.5 hours	8 hours	30 hours

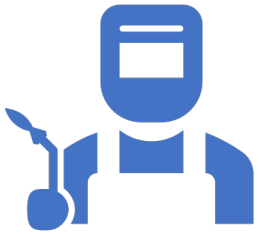
Online training material

LECTURES 6 X 20 MINUTES

PODCASTS 9 X 20 MINUTES

Challenge – educational background

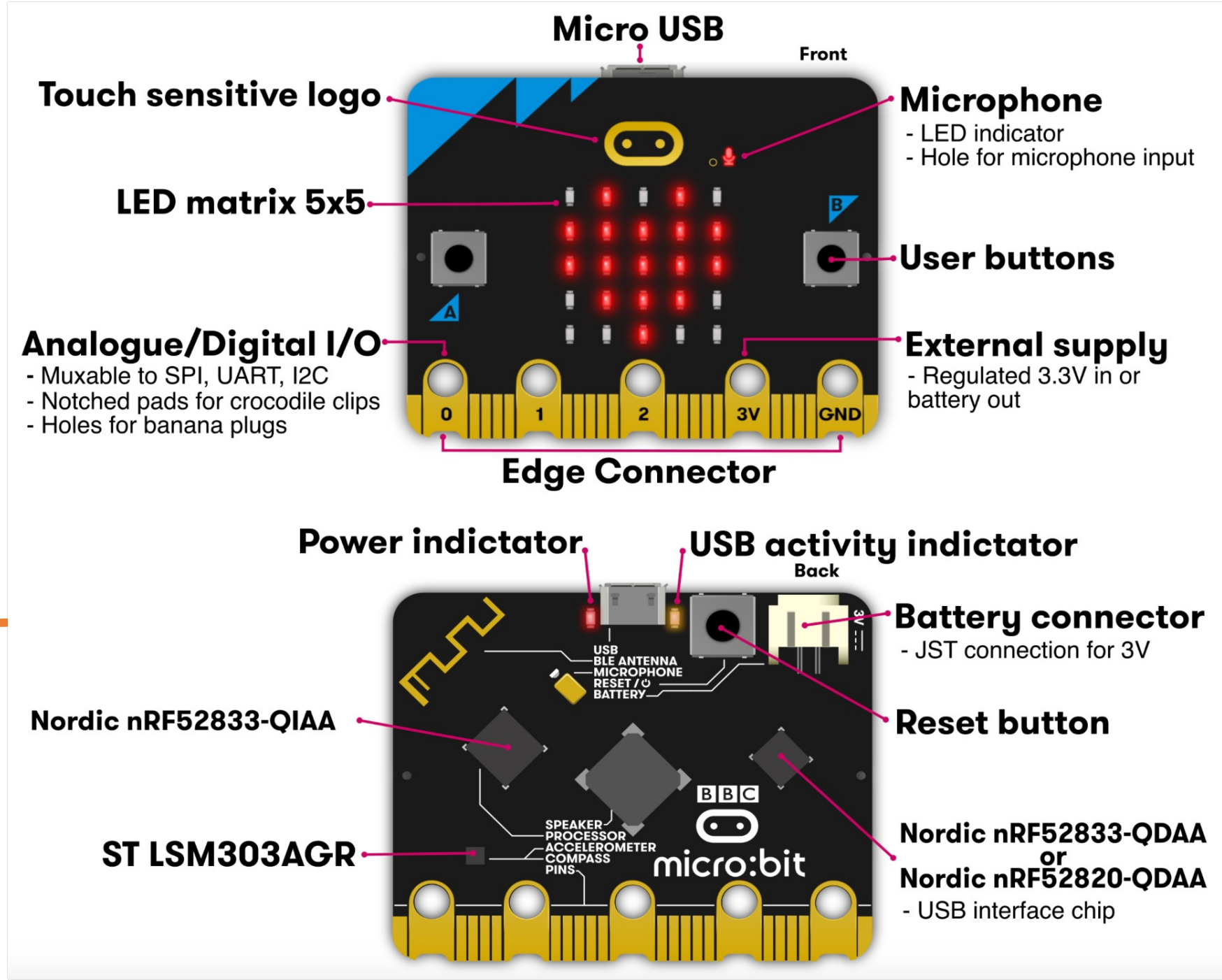
Farmers are not engineers.



However, they have considerable technical expertise.

So we need to use suitable tools to teach the opportunities of technology

BBC:microbit



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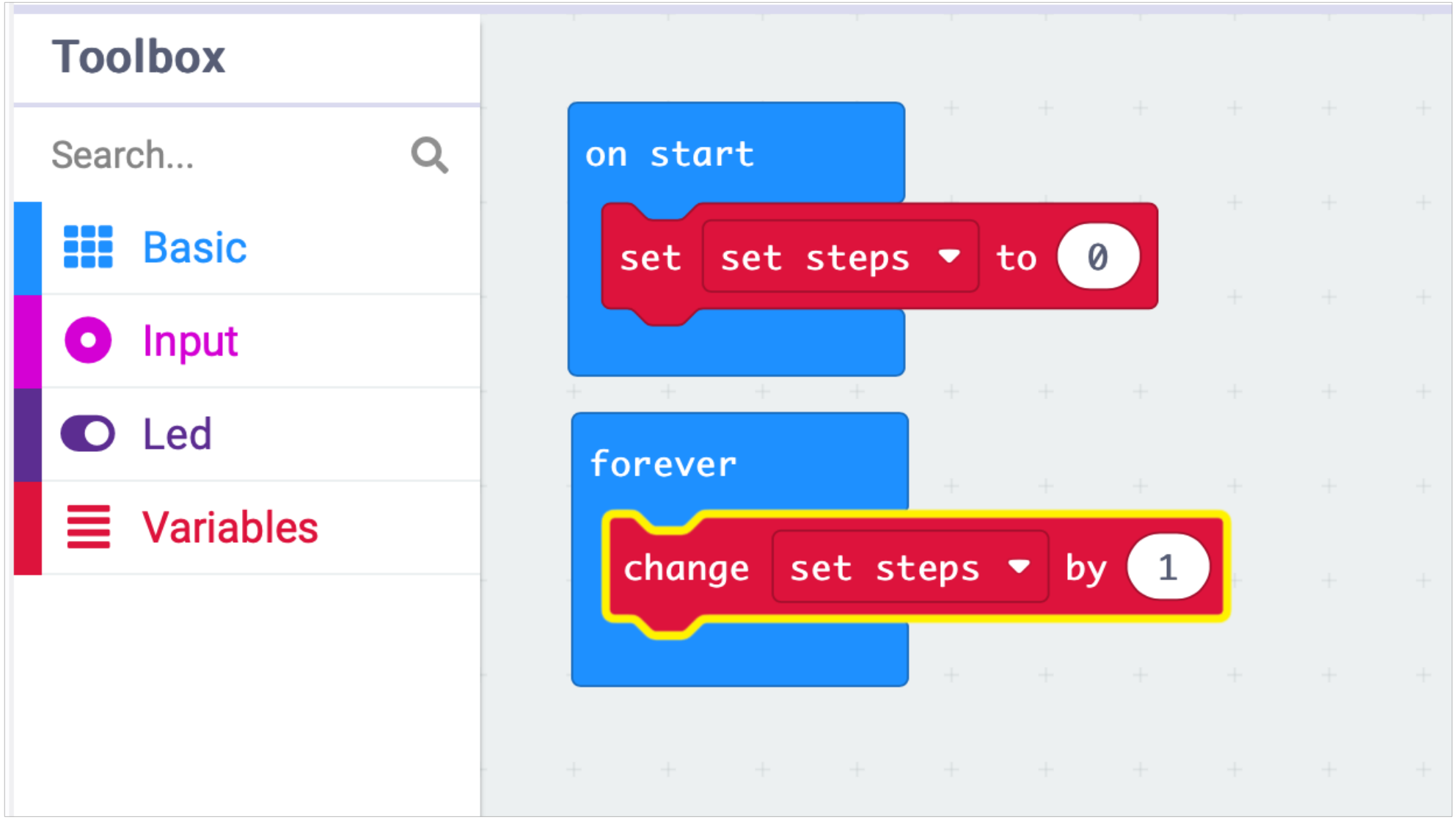


Drone

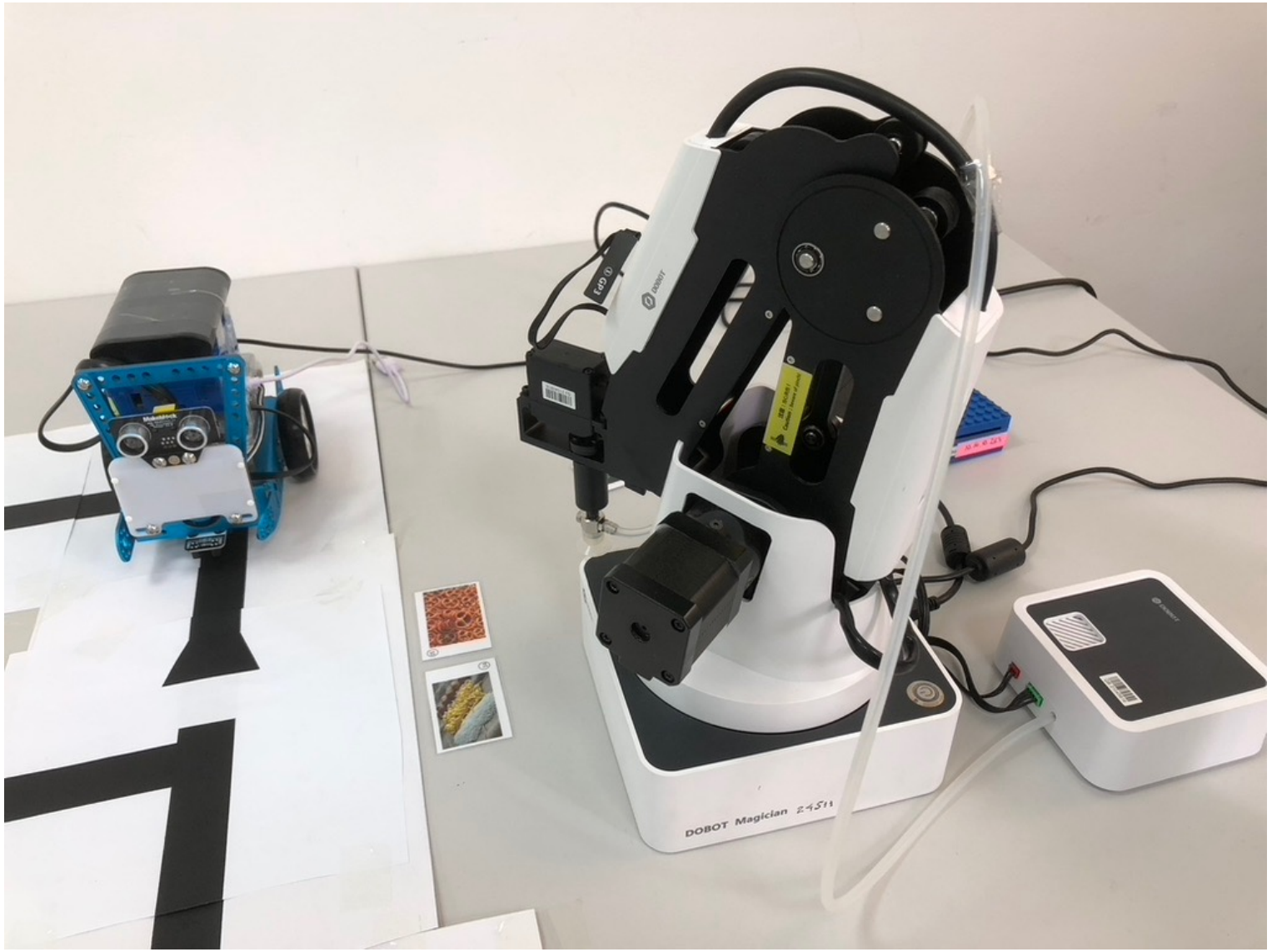
E88 Pro

<20 Euro

DJI Mavic 3 Pro

>2500 Euro

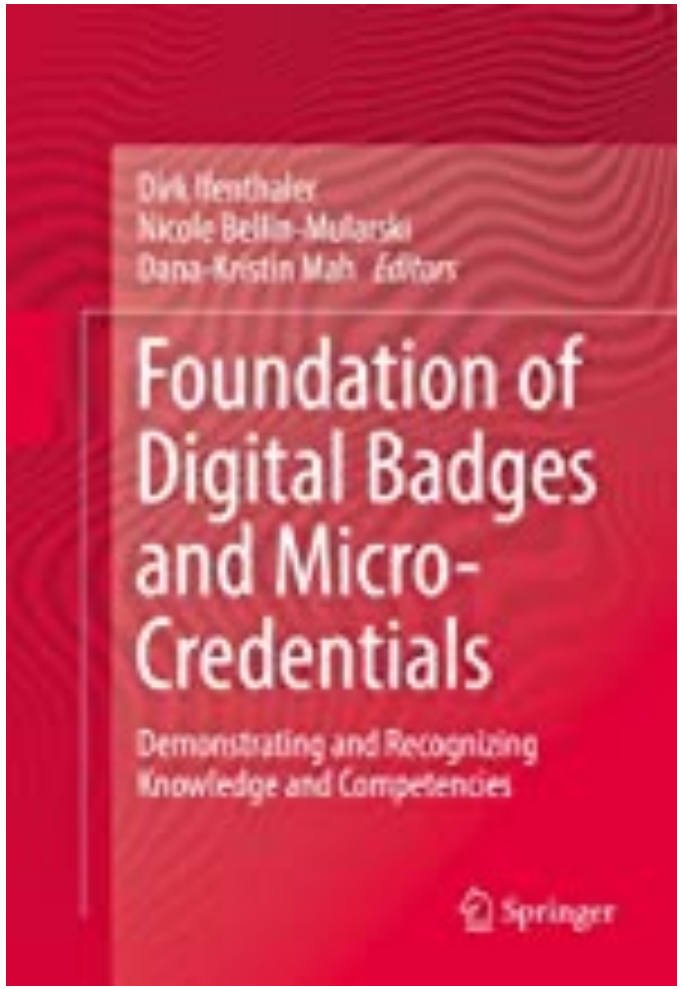
The DoBot Magician



Thank You for Listening

lasse.berntzen@usn.no

Further Reading



Inspiration

- https://dteach.deakin.edu.au/wp-content/uploads/sites/103/2019/08/Making-micro-credentials-work-Oliver-Deakin-2019-full-report.pdf

- https://teachonline.ca/tools-trends/ten-facts-you-need-know-about-micro-credentials

- Continuing Professional Development
- https://cpduk.co.uk/explained