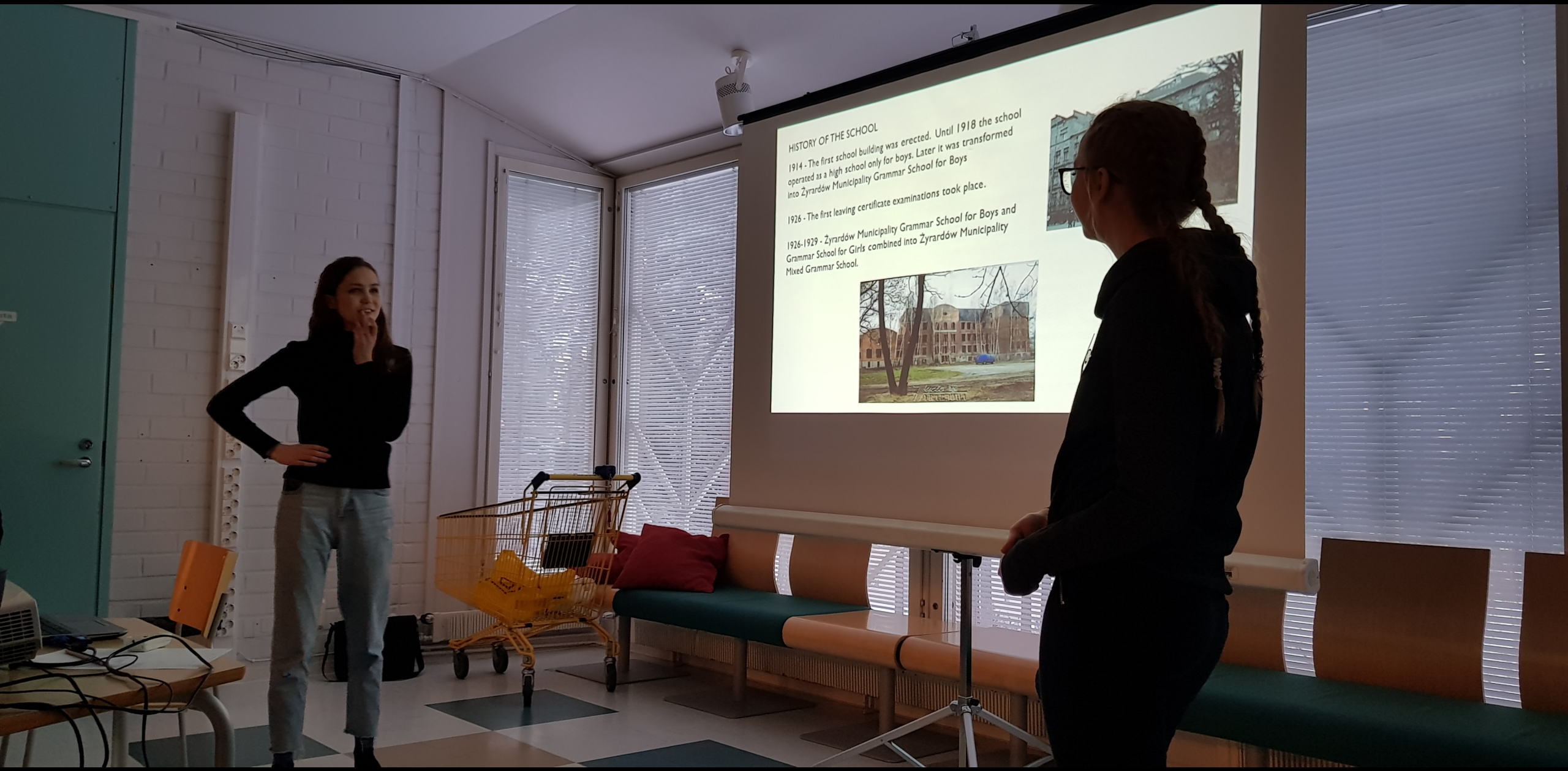
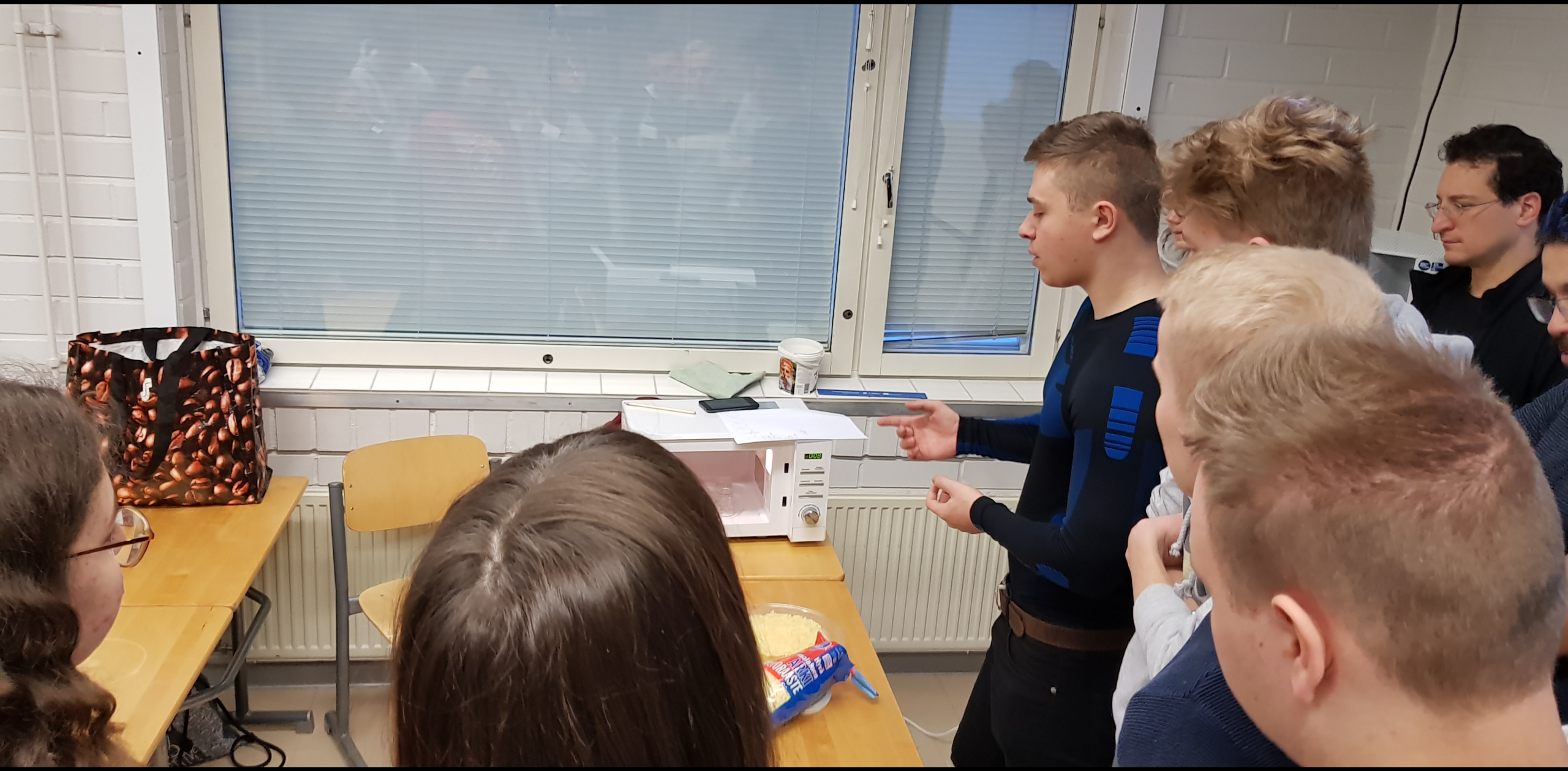
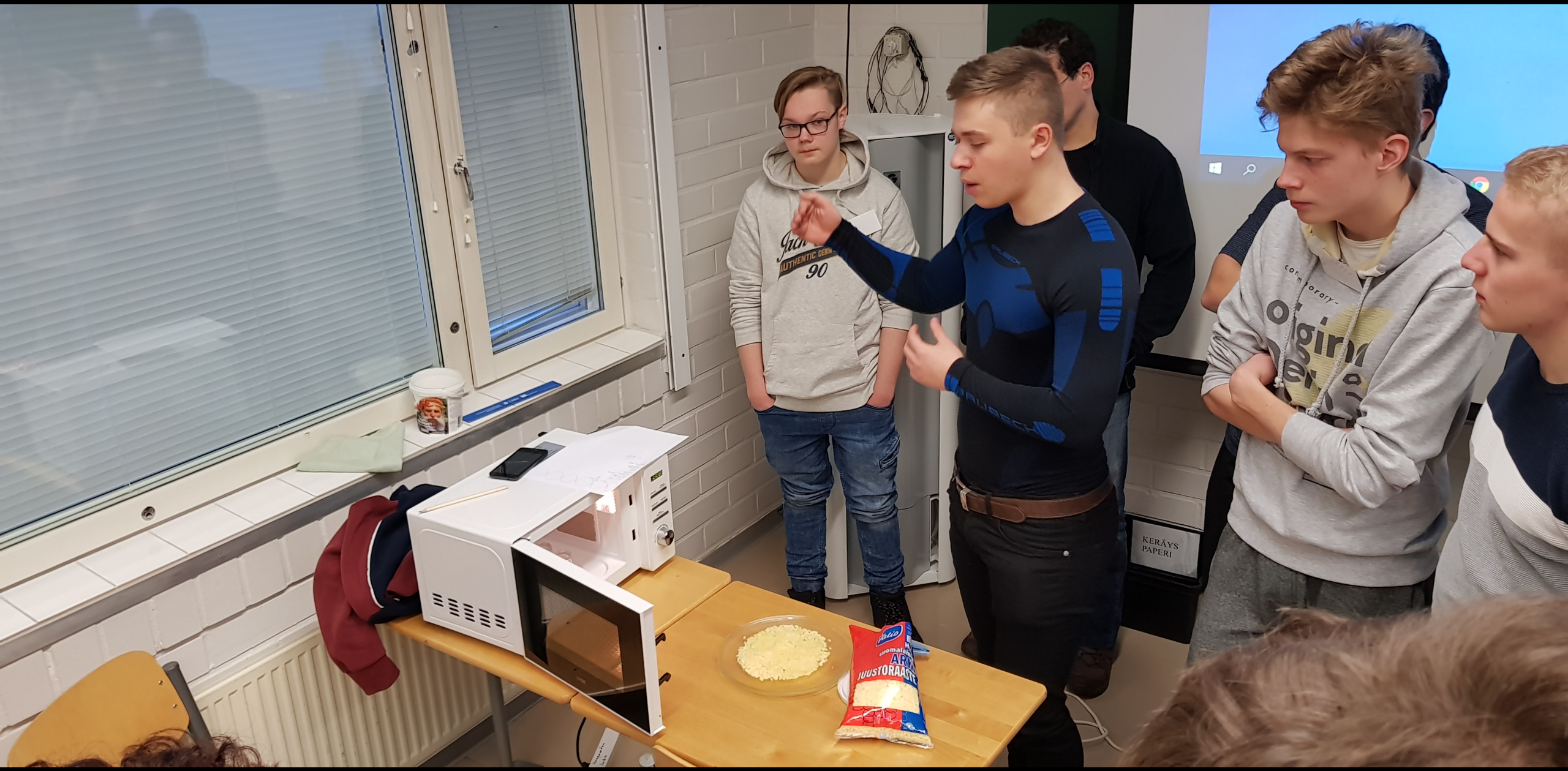
Haapavesi 2019


HISTORY OF THE SCHOOL
1914 - The first school building was erected. Until 1918 the school operated as a high school only for boys. Later it was transformed into Żyrardów Municipality Grammar School for Boys
1926 - The first leaving certificate examinations took place.
1926-1929 - Żyrardów Municipality Grammar School for Boys and Grammar School for Girls combined into Żyrardów Municipality Mixed Grammar School.

LUKIO
59b
P
123-BAY
aprilia

original




KERÄYS
PAPERI

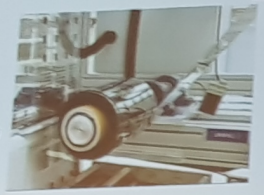
VENEZIA
Vice City

Canadian
Peak1983

PELEJÄ
SAA PELATA!

PrintoCent
9.45 Welcome / Ilkka Kaisto, VTT& PrintoCent
PrintoCent introduction - 30min / Ilkka
Educational opportunities related to Printed Intelligence
. in University of Oulu - 7min/ Tapio Fabritius, Oulun Yliopisto
. in Oulu University of Applied Sciences - 7min / Harri Määttä, Oulun Ammattikorkeakoulu
10.30 PrintoCent Pilot Factory Tour - Roll to Roll - In 3 GROUPS
. Printing & Component Assembly / Teemu Alajoki, VTT
. Testing / Tuomas Happonen, VTT
. Special topics / Ilkka
11.15 Discussion /Ilkka
... and then to the bus

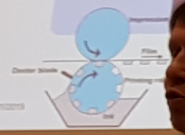
Printed Intelligence Is Based on…



- fluid processable materials technology
- large area high-volume printing like mass-manufacturing methods
- functionality from electronics, biotechnology, chemistry, optics, optoelectronics, etc. integrated as devices and systems

Generic, enabling technologies

- **Patterning, devices, integration, systems-on-foil, embedding 'electronics' into products**
- **R2R to hybrid processes & production equipment**
- **Materials**



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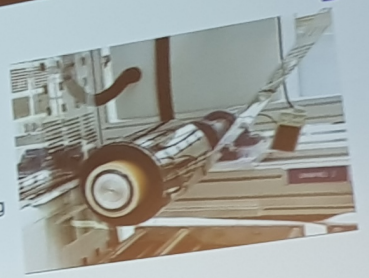
Printed Intelligence Is Based on…



- fluid processable materials technology
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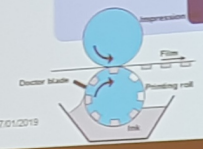

17/01/2019

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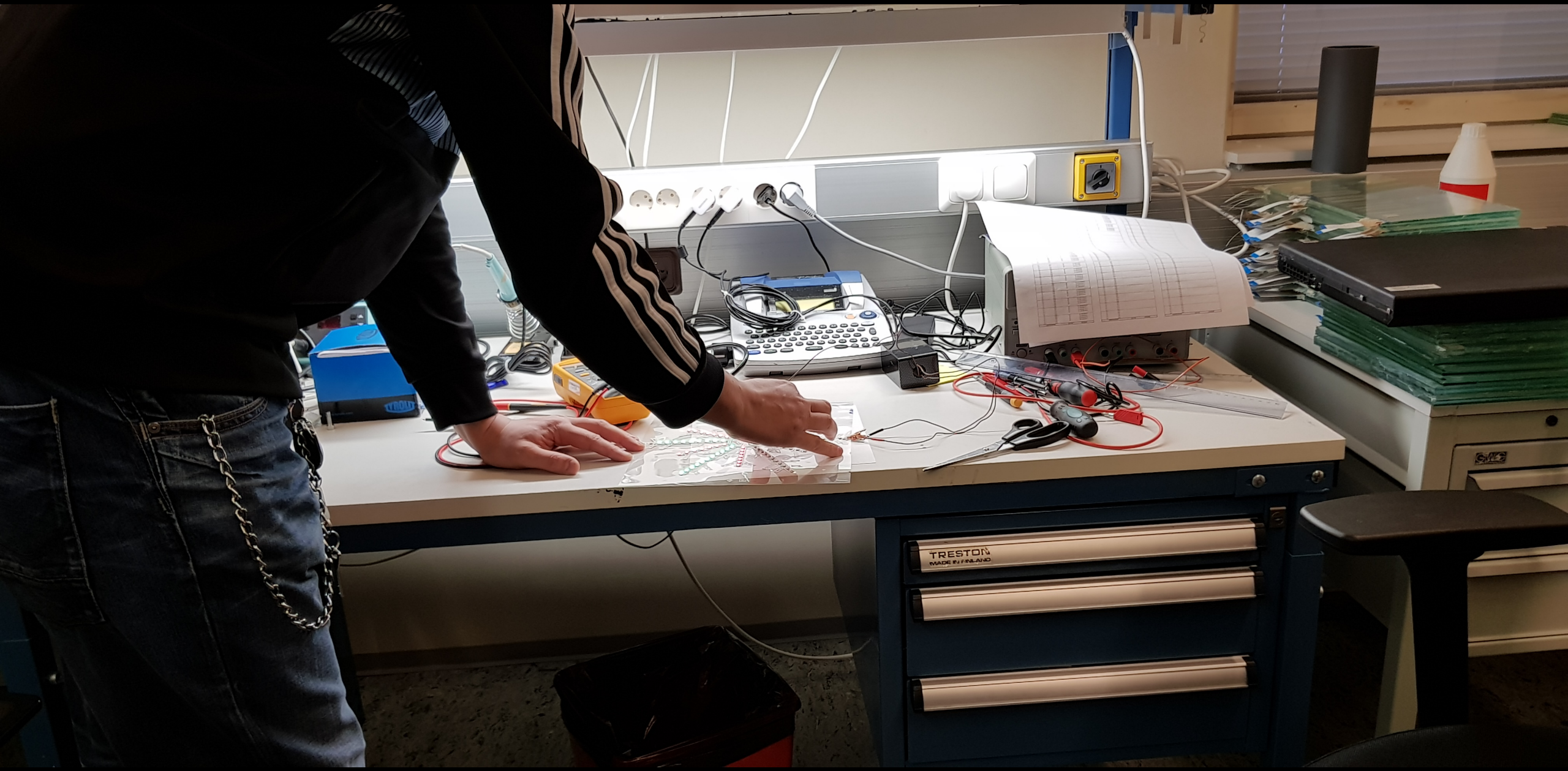
5

LEFT LOCK
RIGHT LOCK
adidas
AFA
VTT
HAPPONEN TUOMAS
Swagelok
WASHED


TRESTON
MADE IN FINLAND

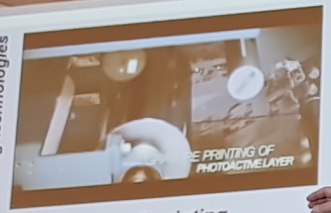
Printed Intelligence Today

PrintoCent

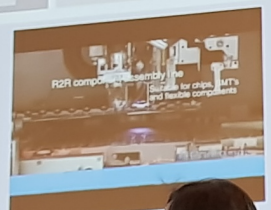
Commercialisation Drivers

Candidates for next wave commercialisation

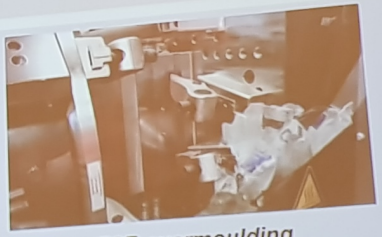
Key enabling technologies



Roll-to-roll printing



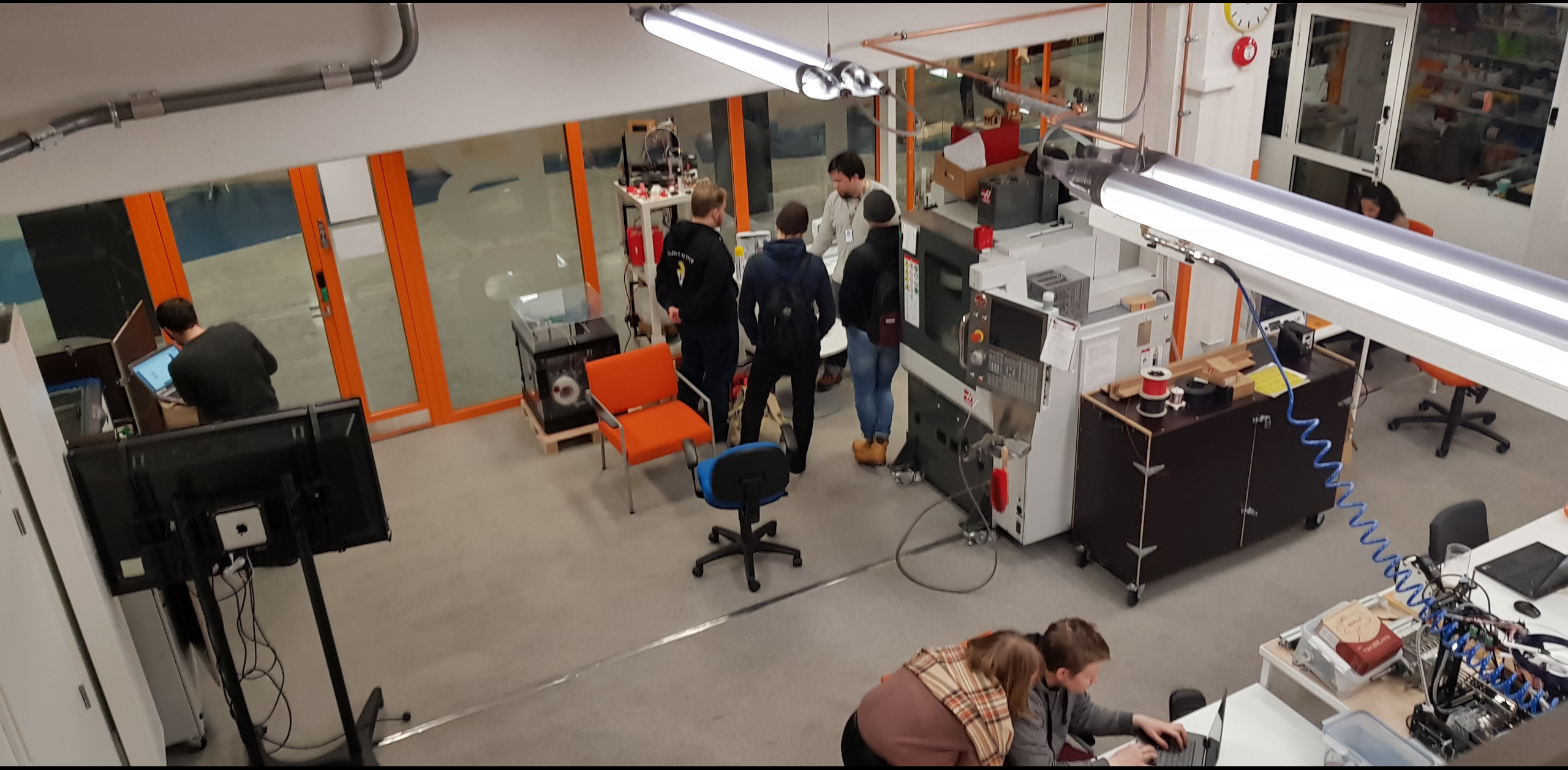
R2R hybrid int



R2R overmoulding

SAMSUNG
FIN
11.23
17.1.2019

COMBO
1
75
×1
75



Inkscape
TF245

「KURE」
2. Kerros
Korut
Kengät
Vaatteet

käsityökeskus
taito shop
lovi factory shop
AUORINNA / OPEN
MA–PE 10–18 MON–FRI
LA 10–14 SAT

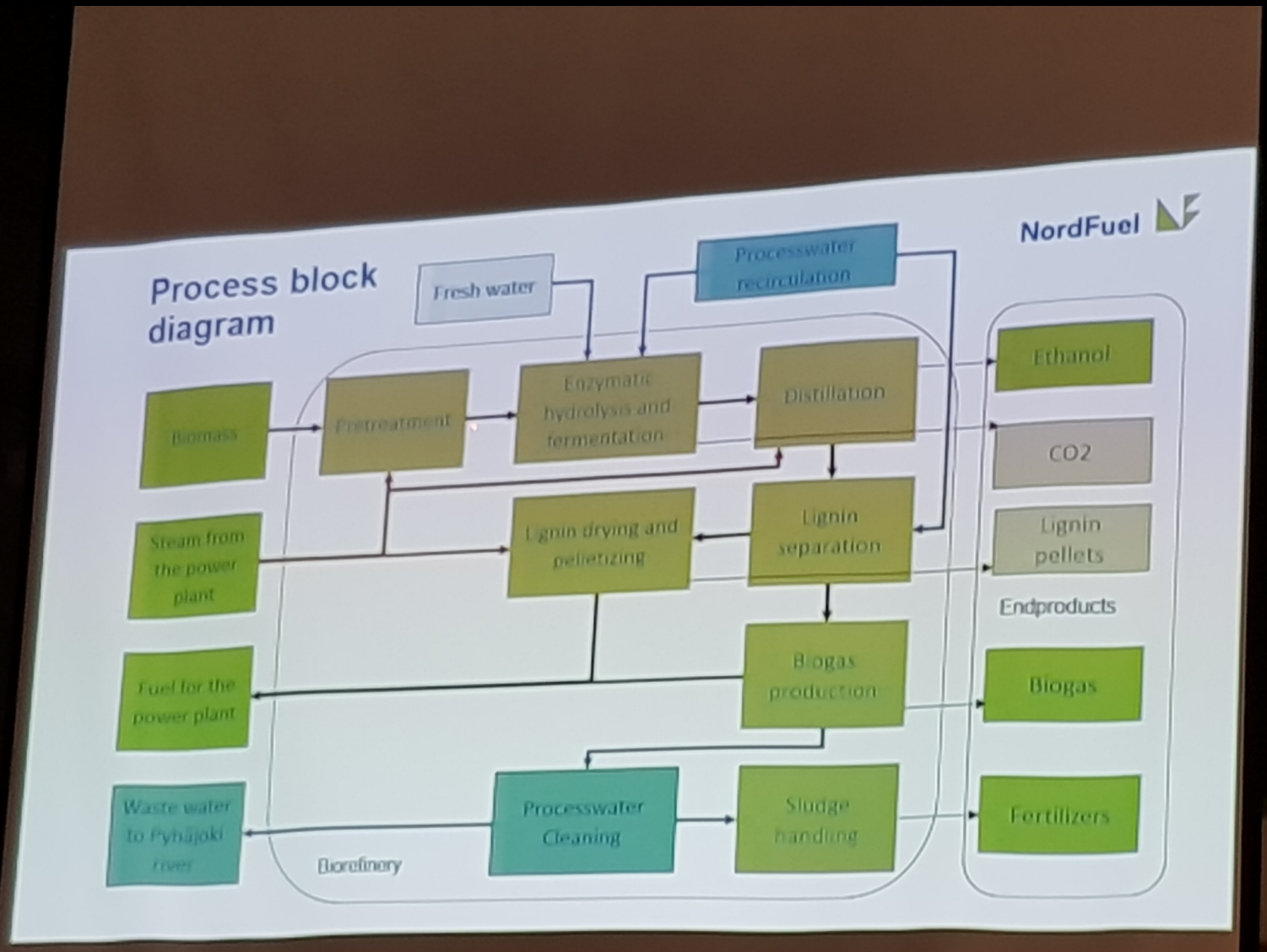
lovi factory shop
CAFE HANNA
cityökeskus
taito shop
lovi factory shop
CAFE HANNA
1
C
POISTOJA
POISTOJA
POISTOJA
POISTOJA

KAUPPAHALLI
110
KAUPPAHALLI

Radisson
bar & cafe

NordFuel
NordFuel

NordFuel
NordFuel project at a glance
350 employees locally
A tank truck load of transportation fuel in every fifth hour
Uses wood (chips, sawdust, spines) two truck loads in an hour
Ethanol and biogas for fuel to 30,000 cars
€150 million investment
Power plant produces flexibly weatherproof electricity 300 to 500 GWh/a


Process block diagram
NordFuel
Fresh water
Processwater recirculation
Biomass
Pretreatment
Enzymatic hydrolysis and fermentation
Distillation
Ethanol
CO2
Steam from the power plant
Lignin drying and pelletizing
Lignin separation
Lignin pellets
Endproducts
Fuel for the power plant
Biogas production
Biogas
Waste water to Pyhäjoki river
Processwater Cleaning
Sludge handling
Fertilizers
Biorefinery

EST 1960

adidas

KWU

KWU

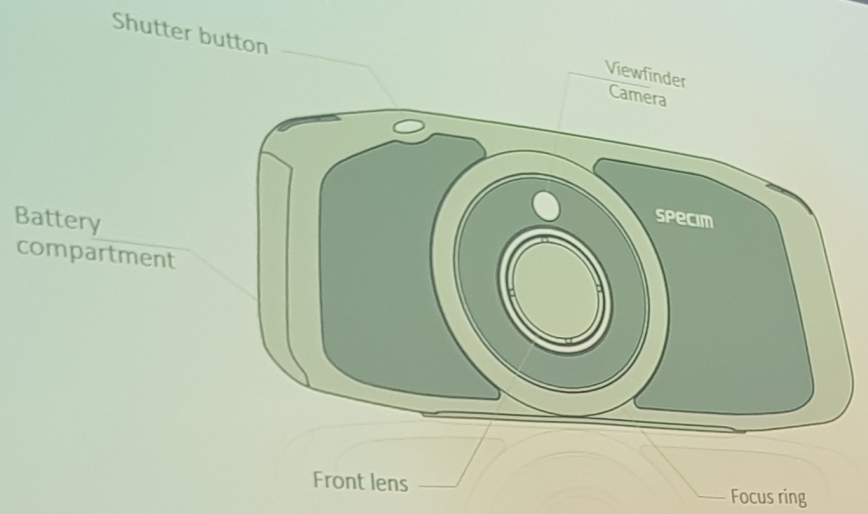
KWU
Visitor
Champ

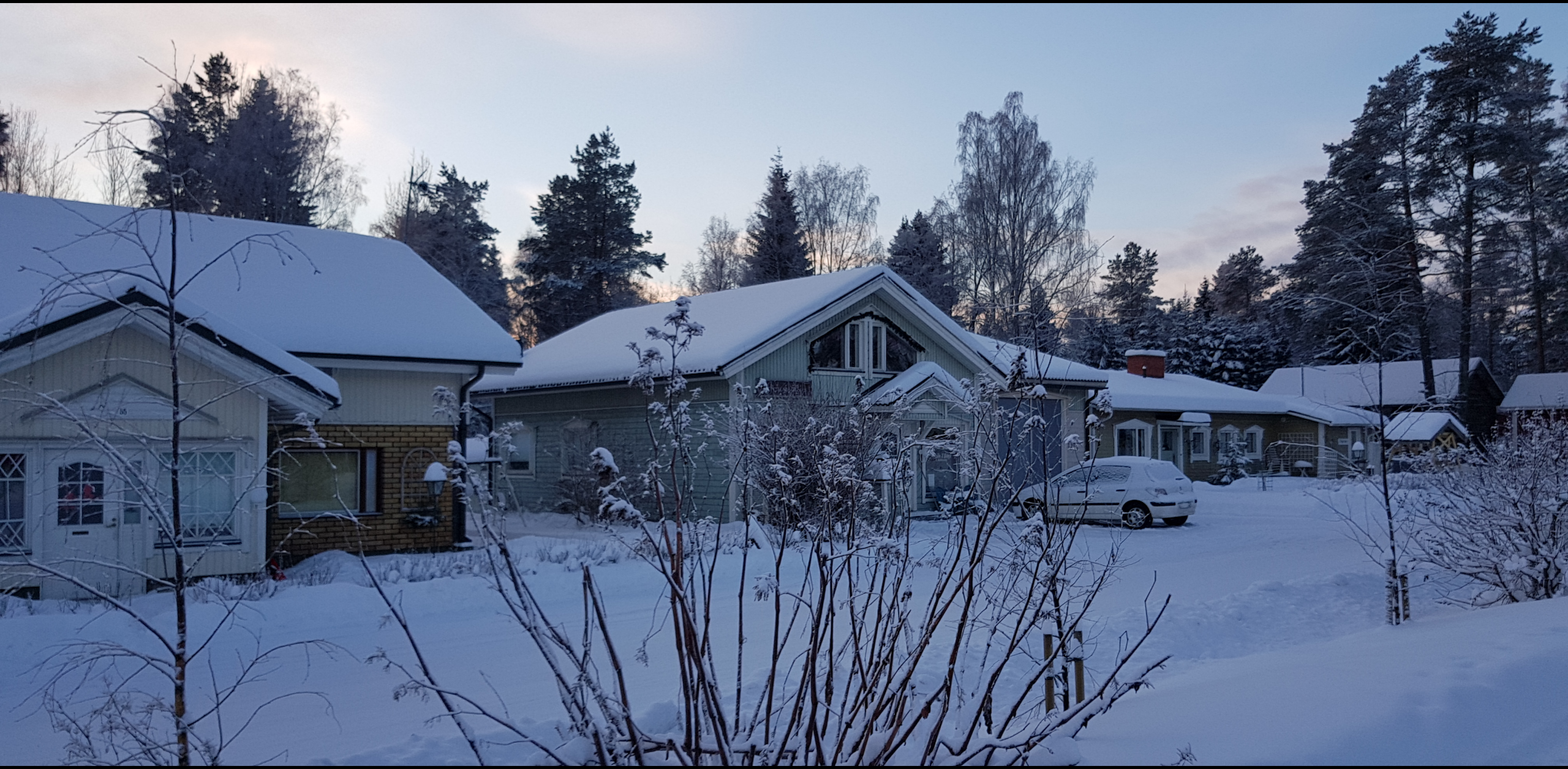
SPECTRAL IMAGING
Jouni Jussila
EUROOPAN UNIONI
Erasmus+
SCIENCE AROUND US

EUROOPAN UNIONI
Erasmus+
SCIENCE AROUND US

EUROOPAN UNIONI
Erasmus+
SCIENCE AROUND US

SPECIM IQ | Physical User Interface





Hotelli
Haapakanne
TAKSI
KAHVIKULMA
TERVETULOA
P

WC