



REALIZE  
TOGETHER



CONNECTING  
INNOVATORS

# YOUR SMART SOLUTIONS FUTURE STARTS HERE

CYBER PHYSICAL FACTORY

## SUSTAINABLE INNOVATION

### The power of networks and ecosystems

Sustainable innovation, is the development and implementation of new technologies, products, and processes that meet the needs of the present without compromising the ability of future generations to meet their own needs.

It is a way of creating value that is both environmentally and socially responsible.

Together, ecosystems and sustainable innovation can create a powerful force for positive change. This not only benefits the environment, but it also creates economic value by reducing waste and improving efficiency.

Furthermore, sustainable innovation can help to address some of the most pressing challenges facing our planet, such as climate change, resource depletion, and environmental degradation. By developing technologies and solutions that are more sustainable, we can create a more prosperous and equitable future for all.

In short, the power of ecosystems and sustainable innovation lies in their ability to create a better world for both people and the planet. By leveraging this power, we can create a more sustainable and prosperous future for all.



**Ricardo Abdoel**



**Pierre van Kleef**

## **CYBER PHYSICAL WORLD**

### Collaborative Innovation Community

Create a vibrant, collaborative community (academia, industry, and government ) that drives innovation, creativity and progress in the cyber physical world (integration of the digital and physical worlds), while also considering the impact on society and the environment



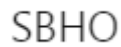
In this picture:

Students exploring the CPF before starting their own project

## REALIZE TOGETHER (4C)

Co-Creation Co-Operation Co-Design and Collaboration

Big dreams are supported by big thinkers. We are grateful for our founding partners, enabling us to accelerate smart solutions for business development and skills training.



REALIZE TOGETHER

AGRICULTURE

INDUSTRIAL

INFORMATION

PURPOSE/CREATORS

Human Machine

scale, scope & complexity

Wellbeing – Quality of life

Automation  
Digitization

Smart Industry

IR 5.0

IR 4.0

IR 3.0

Mass  
Production

IR 2.0

Mechanical  
Production

IR 1.0

On the basis of cyber physical  
production systems (CPPS),  
merging of real and virtual  
worlds

Through application of  
electronics and IT to  
further automate  
production

technology push & business pull

1765

1870

1969

TODAY

20XX

Purpose  
Driven



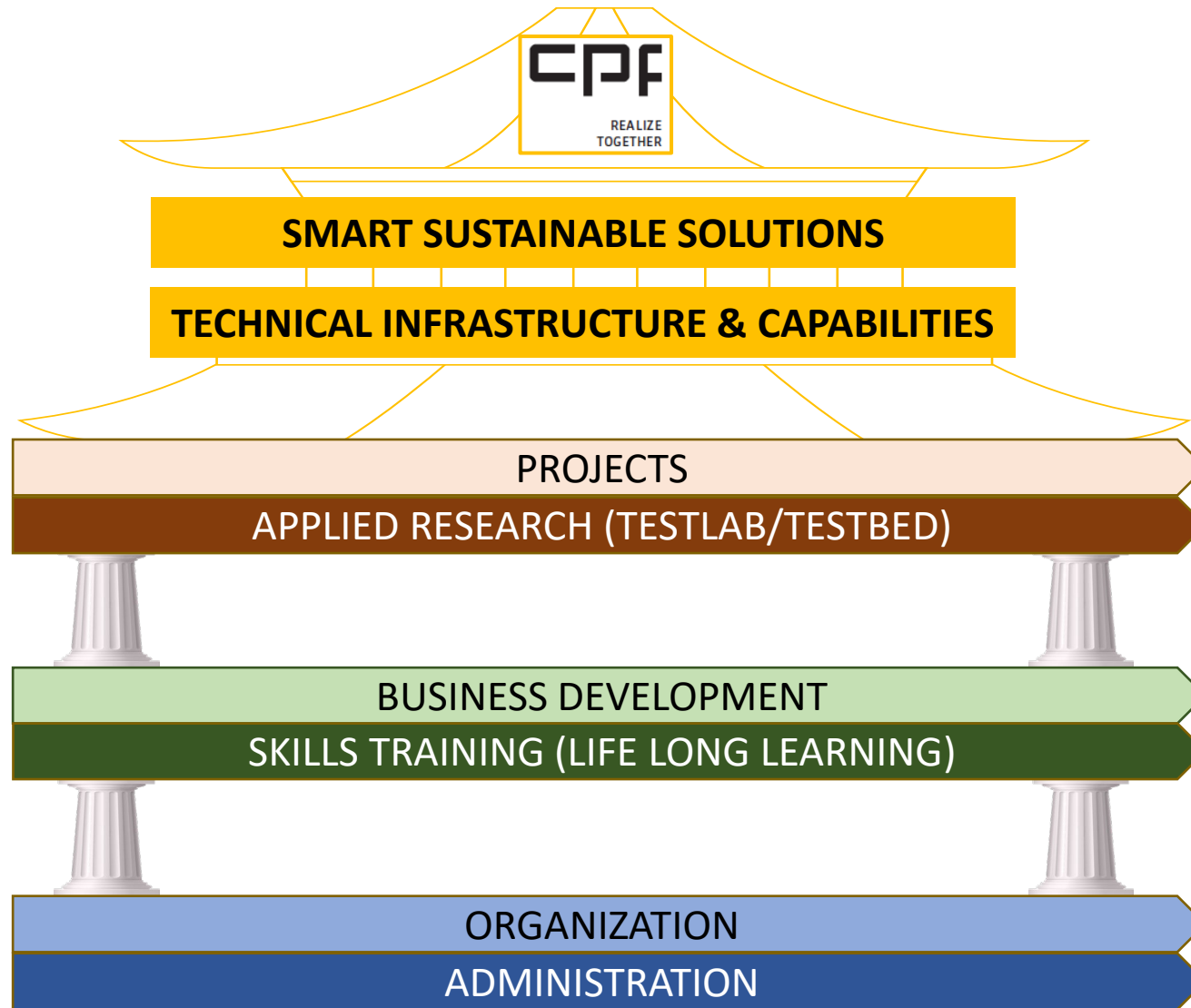
Action  
Driven



Value  
Driven



Excellence  
Driven



## BUSINESS & TALENT DEV.

The framework contains different levels of activities all which can be executed in parallel or sequential.

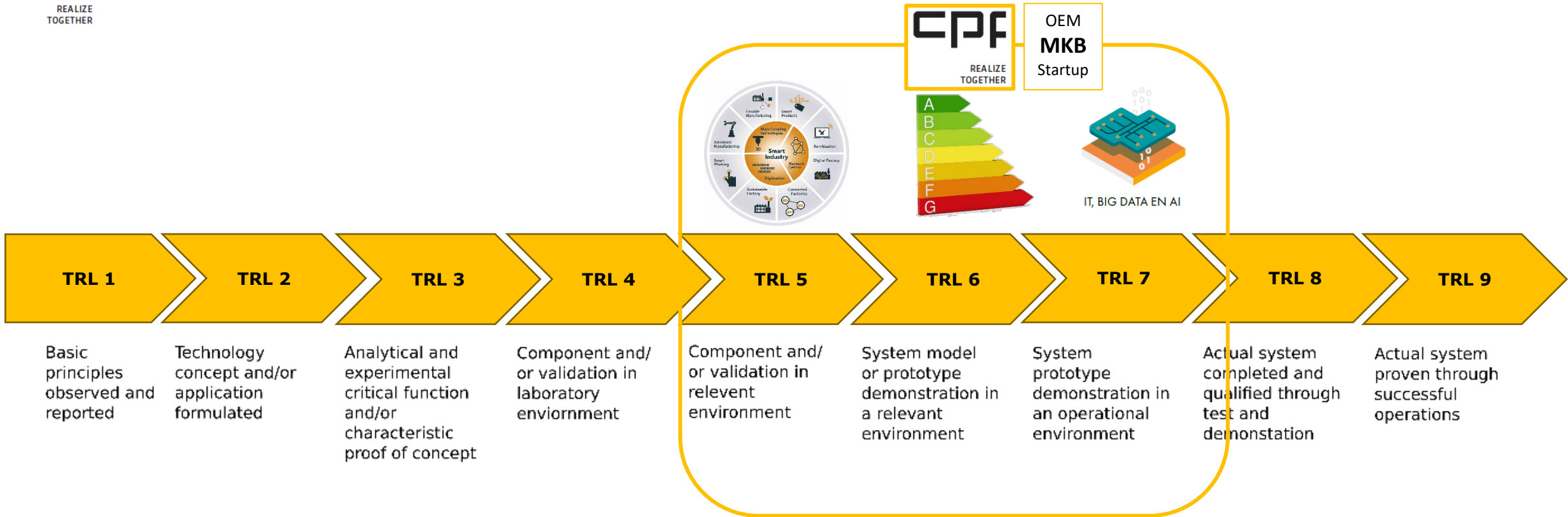


We focus on multi-stakeholder longer term perspective, with a strong purpose at the core.

# CYBER PHYSICAL SYSTEMS FUNCTIONS AND ATTRIBUTES (RAMI MODEL)



# TECHNOLOGY READINESS LEVEL – WHERE WE WORK



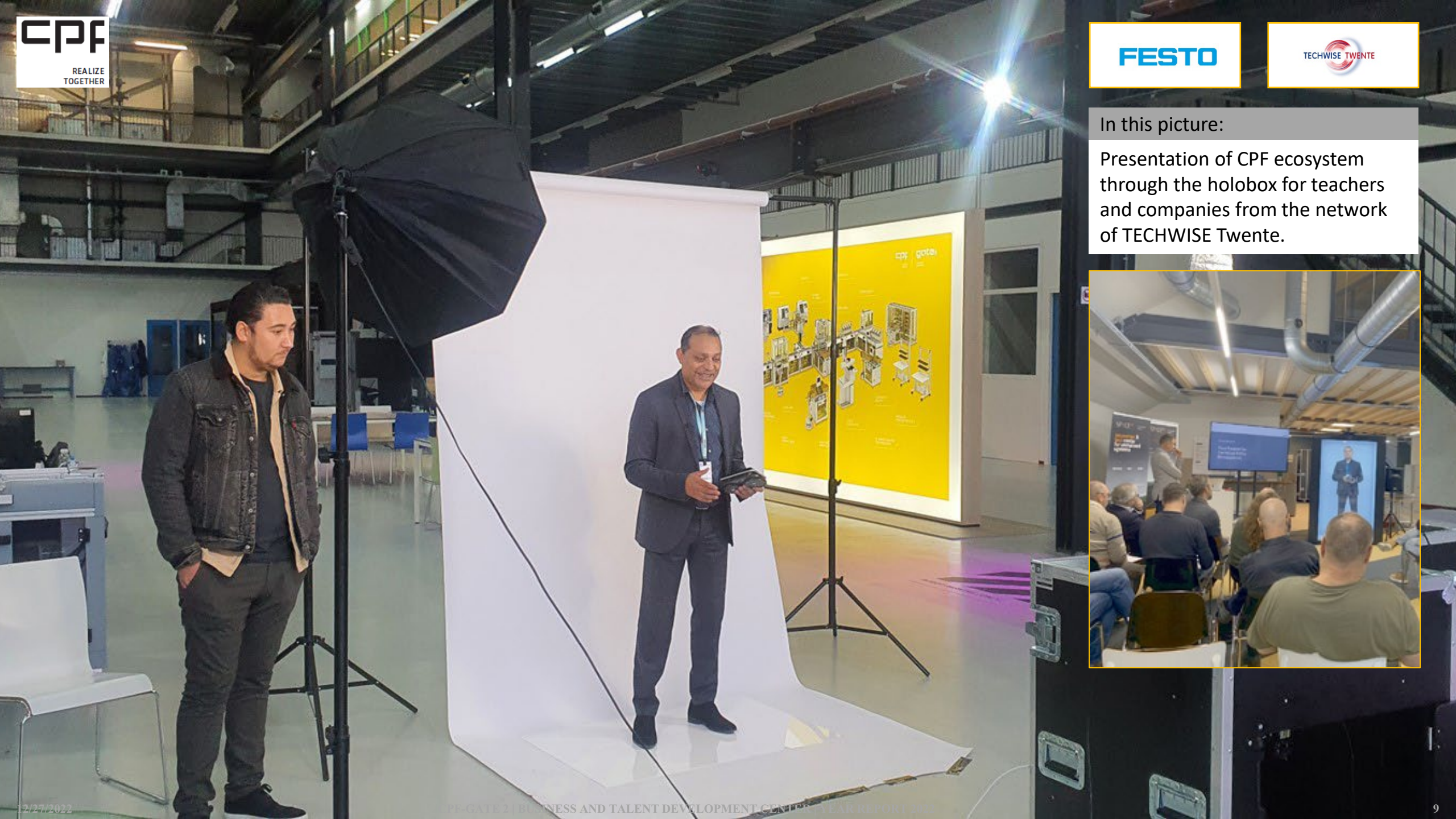
**PRACTICALITY & APPLICABILITY**

Through experiments we transform knowledge and skills into concrete applications, demo's and prototypes. Our focus and operational field is on TRL 5, 6 and 7.



In this picture:

Presentation of CPF ecosystem through the holobox for teachers and companies from the network of TECHWISE Twente.



VO

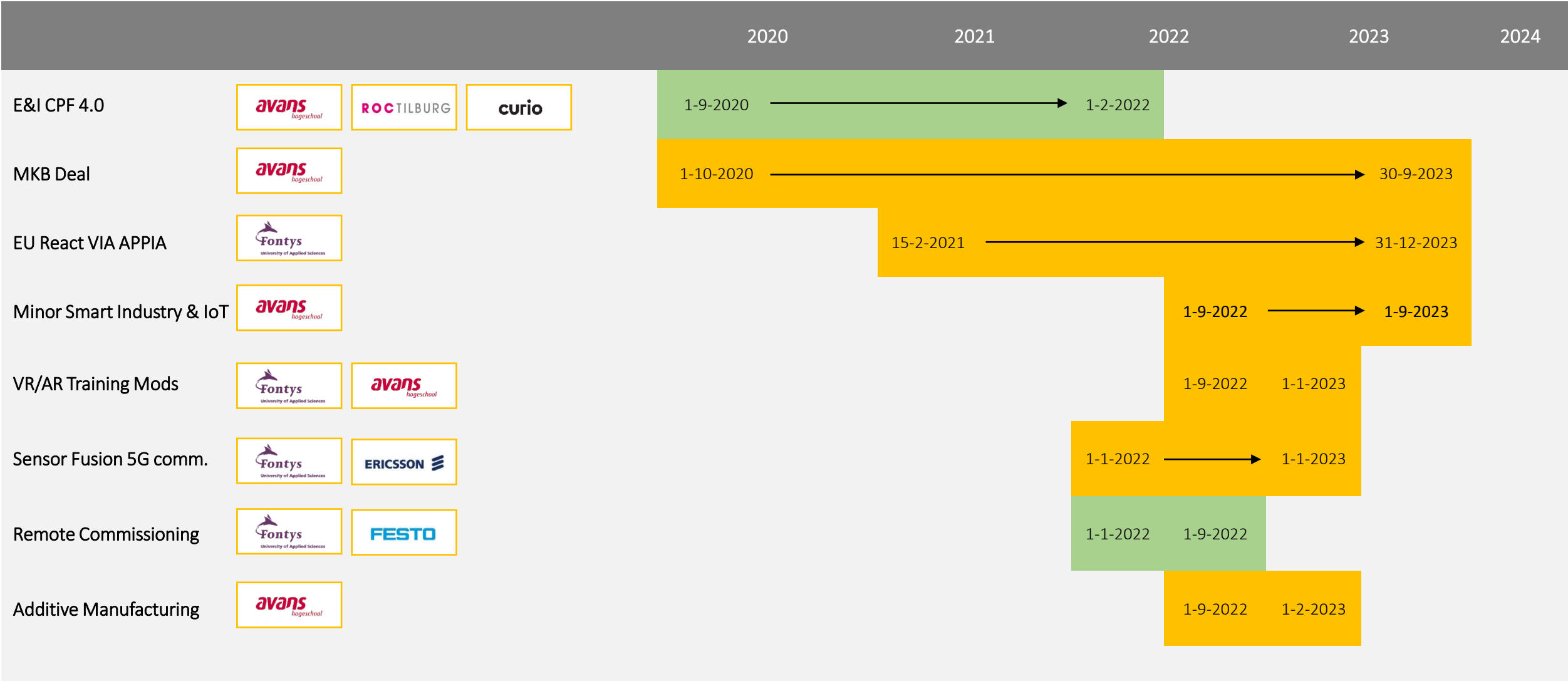
MBO

HBO

WO

**>75**  
Students







- AR VR XR
- Artificial Intelligence
- Business Intelligence
- Computer Vision
- Cyber Security
- Data Science
- Digital Transformation
- HMI
- ISA 88
- Lean Manufacturing
- Mastering Innovation
- MES
- PLC Programming
- Project Management
- Robotics
- Sensor Fusion
- Data Communication
- Smart Industry
- IIoT
- Systems Engineering

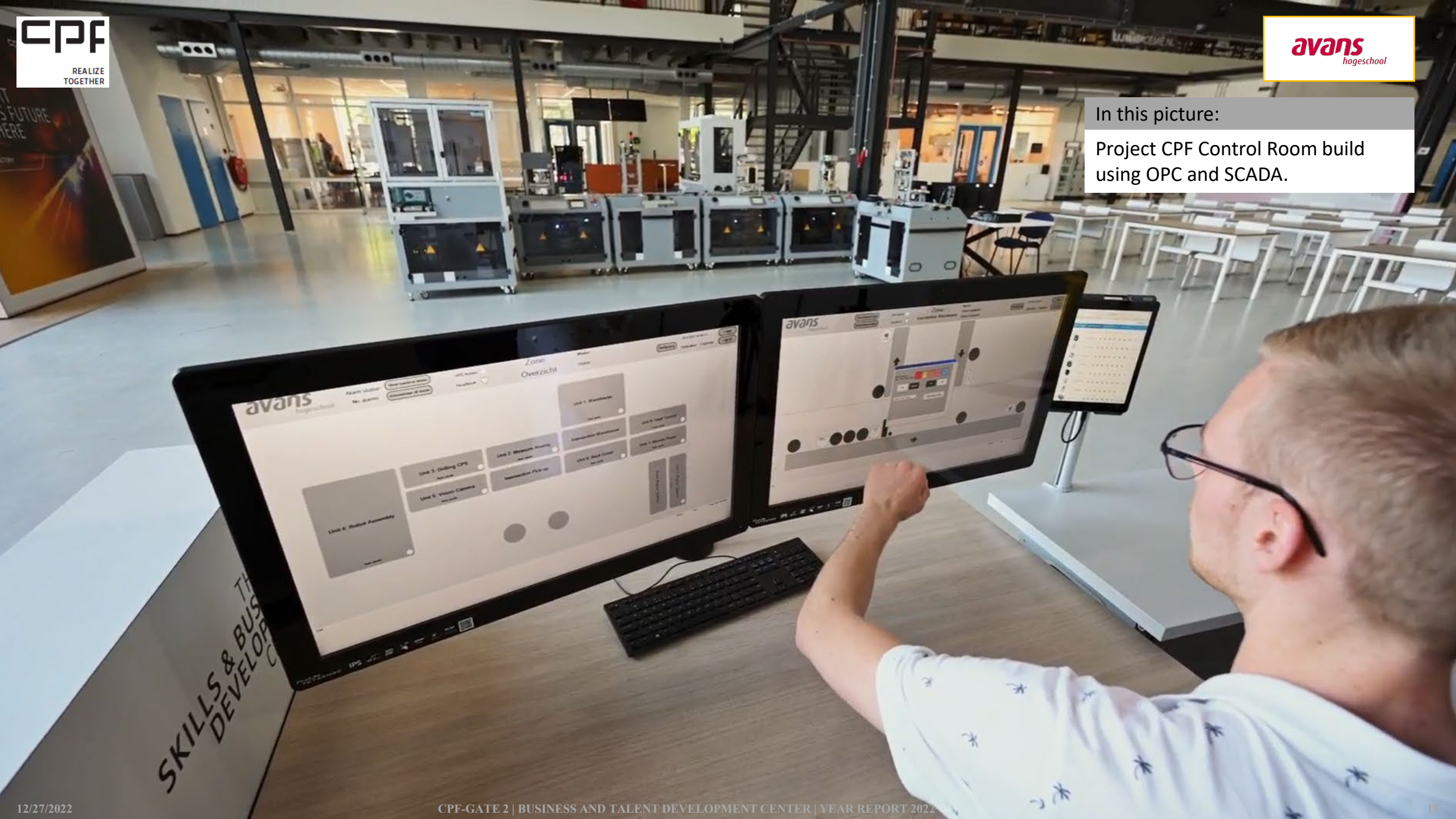
In this picture:  
Kick-Off Fontys School Of ICT. Smart  
Industry Track Group 1.



In this picture:  
Kick-Off Fontys School Of ICT. Smart  
Industry Track Group 2.



In this picture:  
Project CPF Control Room build  
using OPC and SCADA.

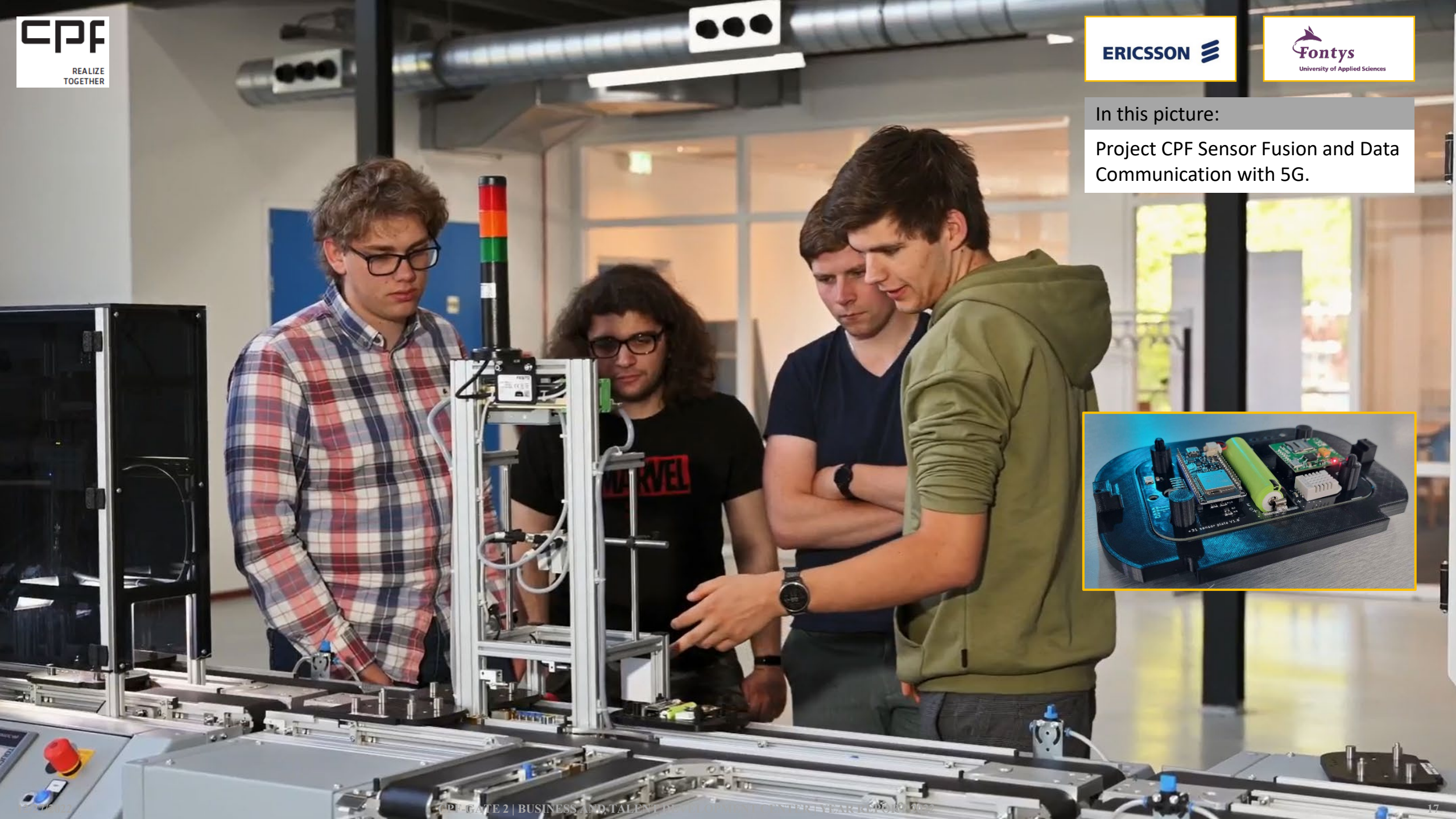


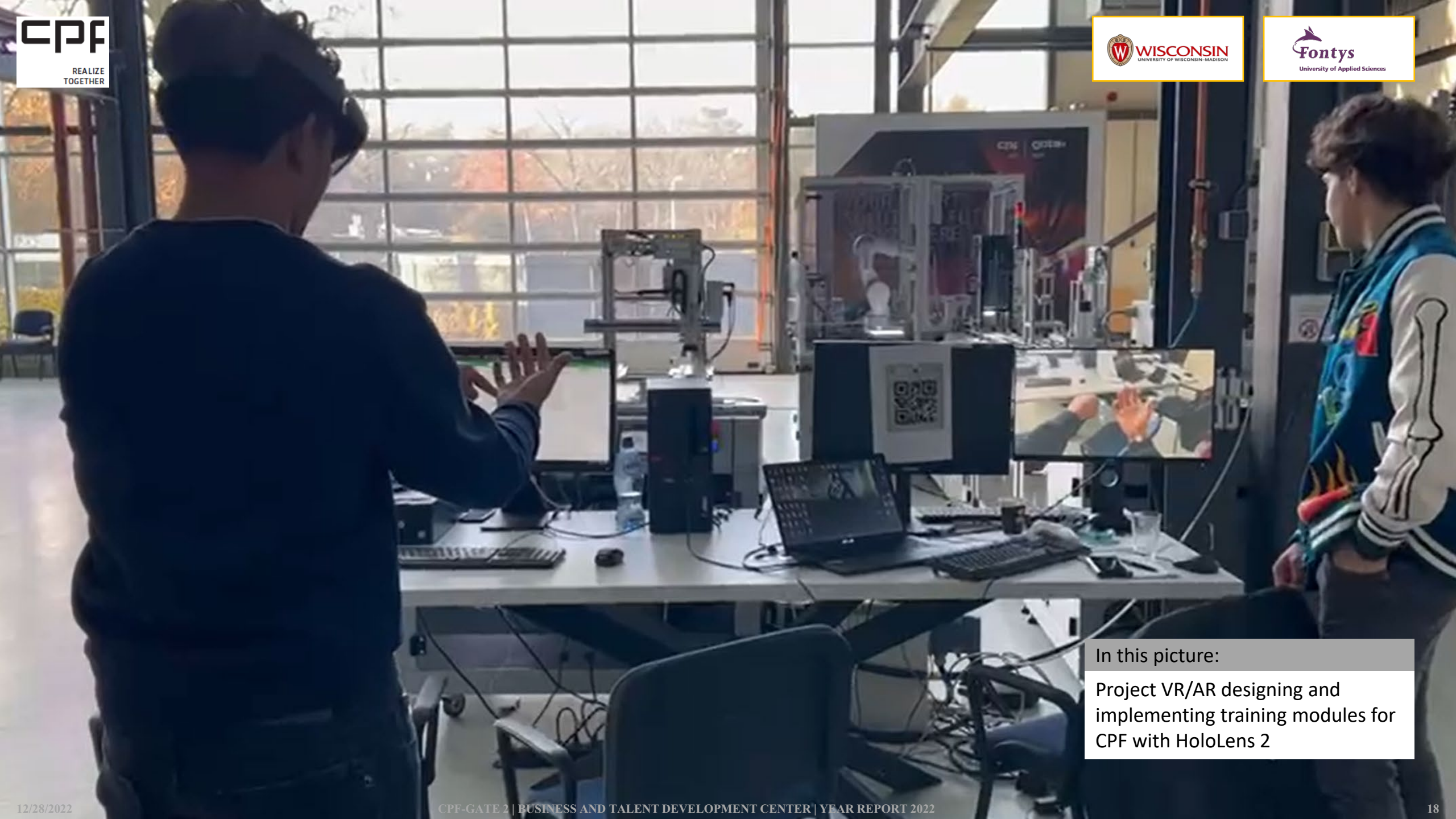
In this picture:  
Project CPF Remote Commissioning  
and Service.





In this picture:  
Project CPF Sensor Fusion and Data  
Communication with 5G.





In this picture:  
Project VR/AR designing and  
implementing training modules for  
CPF with HoloLens 2

In this picture:  
Project CPF Digital Twin



## MASTERCLASS CYCLE

### Knowledge Sharing Community

How do you keep up with all the different technologies, products and services? It is impossible to know it all. For the purpose of knowledge sharing and networking we introduced the Masterclass Cycle. We are grateful and thankful for all our partners willing to share their expertise.

**+30**  
Guests

**ERICSSON** 

**bc**  
blom consultancy

 **cboost**

 **Fontys**  
University of Applied Sciences

 **VBTI**  
Vrije Universiteit Brussel

 **HORIZON**  
INTERNET TECHNOLOGIES

**SIEMENS**

**FESTO**

In this picture:  
Overview, junior researchers, interns, technology introduction for non-technology students.



Saif Abdoel

Introduction internship:  
in 3D Printing, robotics  
Programming and  
Data dashboarding



Ioan Popa

Internship: Design VR/AR  
training modules with  
HoloLens and Digital  
Twin Robot module  
programming



Ludwig Schindler

Research: 3D printing  
For industrial application  
in metal, plastics and  
composites



Neosha Larmoni

Internship: Designing  
and testing a Industrial  
4.0 maturity and  
transformation  
framework



Mati Stricker

Research: Training  
modules for Digital Twin  
and VR/AR CPF Modules  
using the HoloLens



Kelvin Otoo

Research: Training  
modules for Digital Twin  
and VR/AR CPF Modules  
using the HoloLens



Thomas van Gool

Graduation: Design and  
implement new learning  
modules for the CPF.  
Supervising students.



In this picture:  
Visit of Board of Commissioners  
Gate-2. Current state to future  
state.

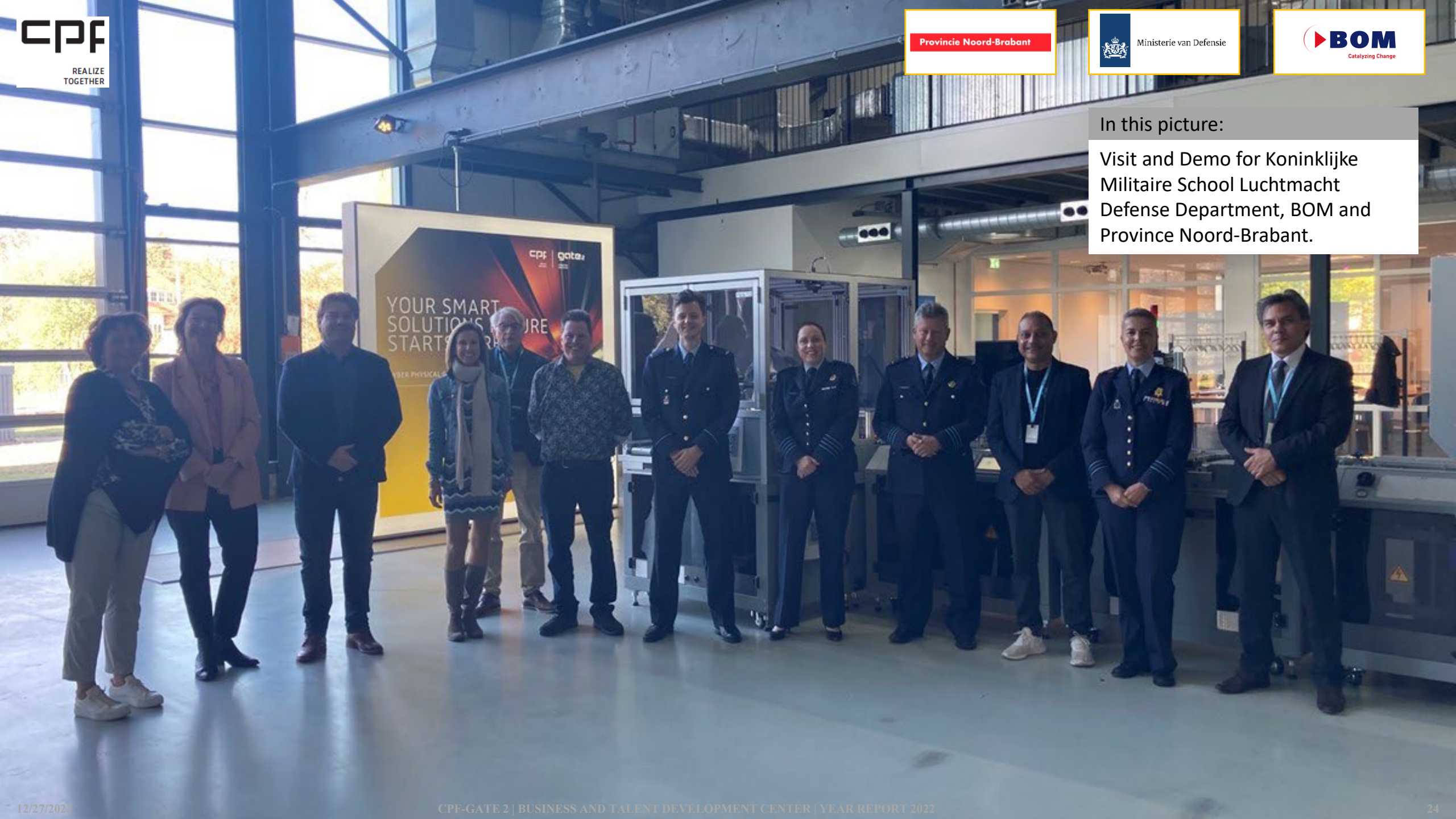


In this picture:  
Visit and demonstration of CPF as  
VR/AR/AI testbed for the VIA APPIA  
Project for Stimulus Program  
Management



In this picture:

Visit and Demo for Koninklijke Militaire School Luchtmacht Defense Department, BOM and Province Noord-Brabant.





In this picture:  
Visit and demonstration of CPF for  
Young Management Kring West-  
Brabant.

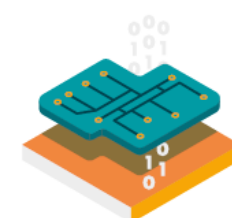


In this picture:  
Strategic partnership with  
international 3D print company  
Seido Systems

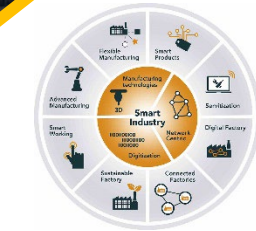


In this picture:  
Gate2 and CPF become Partner in Education of Fontys School of ICT





IT, BIG DATA EN AI



- Flex. Manufacturing**
  - Applicatie Extensies (interne logistiek)
  - C3 Lab (creativiteit, nieuwsgierigheid, vakmanschap)
- Digital Networks**
  - AI/Data/Cyber Security Platform
  - Cyberspace in de Cloud (digital twin)
  - Remote Lab (5G, AR/VR/XR)
- Sustainability**
  - Energie Efficiëntie, Maintenance Platform Monitor
  - Slim- en Veilige werkomgeving (Mens Machine)
- Adaptief Onderwijs**
  - Skills Academy
  - Xperience Center



In this picture:  
End of Year Drinks with all partners  
and stakeholders.





07 december 2022

**Upgrade Fieldlab Campione: slimme bypass voor minder warmteverlies**


25 november 2022

**Young Management Kring West-Brabant op bezoek bij Gate2**


07 november 2022

**Bezoek BOM, PNB en Vliegbasis Woensdrecht aan Gate2**


## Komt er een geïntegreerde industrie 4.0 omgeving in de regio?

Tijdens het Cyber Physical Factory event bij Space 53 over de ontwikkelingen van industrie 4.0 op 29 november is daar volop over gesproken.

Aanwezige deelnemers uit het onderwijs en bedrijfsleven concludeerden dat er reden genoeg is om de mogelijkheden verder te gaan onderzoeken.

Bij het Cyber Physical Factory event konden deelnemers vooraf het Technoferium bezoeken. Daar liet Festo veel bestaande en nieuwe producten zien uit hun programma. Ook was er verbinding met de Holobox van de Gate 2 Smart Industry hub uit Rijen. Dat gaf de mogelijkheid aan docenten mbo en hbo en de ondernemers om "live" de projectleider te bevragen over zijn ervaringen met de cyber physical factory.

TechWise Twente, T-Valley en Oost NL, de organisatoren van het event, pakken dit verder op en plannen binnenkort een bezoek met geïnteresseerden aan [Gate 2 in Rijen](#), Brabant. Gate 2 is een mooi voorbeeld van een Smart Industry hub gericht op de ontwikkeling en realisatie van innovatieprojecten van productietechnieken, simulatie en digitalisering.

Vragen of opmerkingen?

Laat het ons weten via [info@techwisetwente.nl](mailto:info@techwisetwente.nl)



## Cyber Physical Factory: samenwerken aan industriële innovatieprojecten

In Brabant ligt dé proeftuin voor industriële innovatieprojecten. Zo mogen we de voor Nederland unieke Cyber Physical Factory van de Gate2 Campus wel noemen. Hier komen kennis- en talentontwikkeling op het gebied van innovatie, technologie, digitalisering en productietechnologie samen. Een logische plek: het sluit naadloos aan bij de ambitie van Brabant om tot de internationale top van de high-tech maakindustrie te blijven horen.

Cyber Physical Factory (CPF) richt zich op ontwikkeling en realisatie van volledig geautomatiseerde productietechnieken, simulatie en digitalisering. Dankzij slimmigheden en nieuwe technologieën vind je in Rijen een machinepark dat volledig autonoom kan opereren. Denk aan processen als aanvoer, productie, assemblage en afvoer.

Delen via: [f](#) [t](#) [in](#) [cs](#)



12 juli 2022

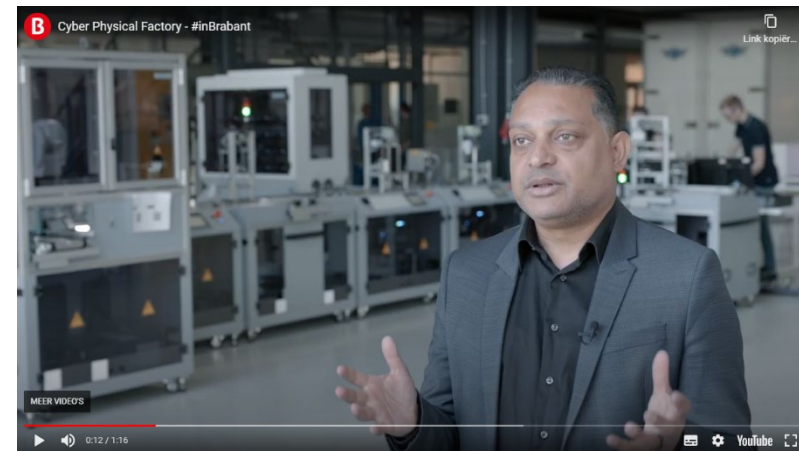
**CPF in actie - kwetsbare producten volgen met smart sensoren op carrier plates**


12 juli 2022

**CPF in actie - digital twinning door TU/e en Fontys ICT**

## MEDIA: SHARING IS CARING

In today's fast-paced world, it is often difficult to find the time to read through lengthy reports or documents. As a result, CPF is turning to short videos as a way to share information and communicate with their stakeholders.



# JOIN CPF - GATE 2

## gateway to the cyber physical world

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