Belgisch Wegencongres
Leuven, April 6 2022

Introduction to imec

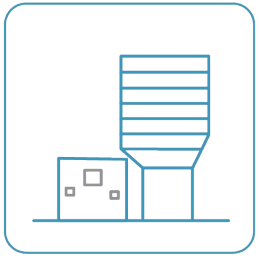
Birger Schrevens

Yanick Van
Hoeymissen

imec

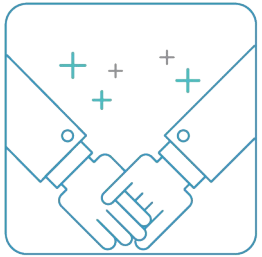
About imec

- World-leading R&D and innovation hub in nanoelectronics and digital technology
- Founded in 1984 in Leuven, Belgium
- Independent non-for-profit organization
- “We accelerate progress towards a connected, sustainable future.”



WORLD-CLASS INFRASTRUCTURE
> 12,000 M²
CLEANROOM
CAPACITY

Over
5,000 SKILLED PEOPLE
FROM OVER 95 NATIONALITIES

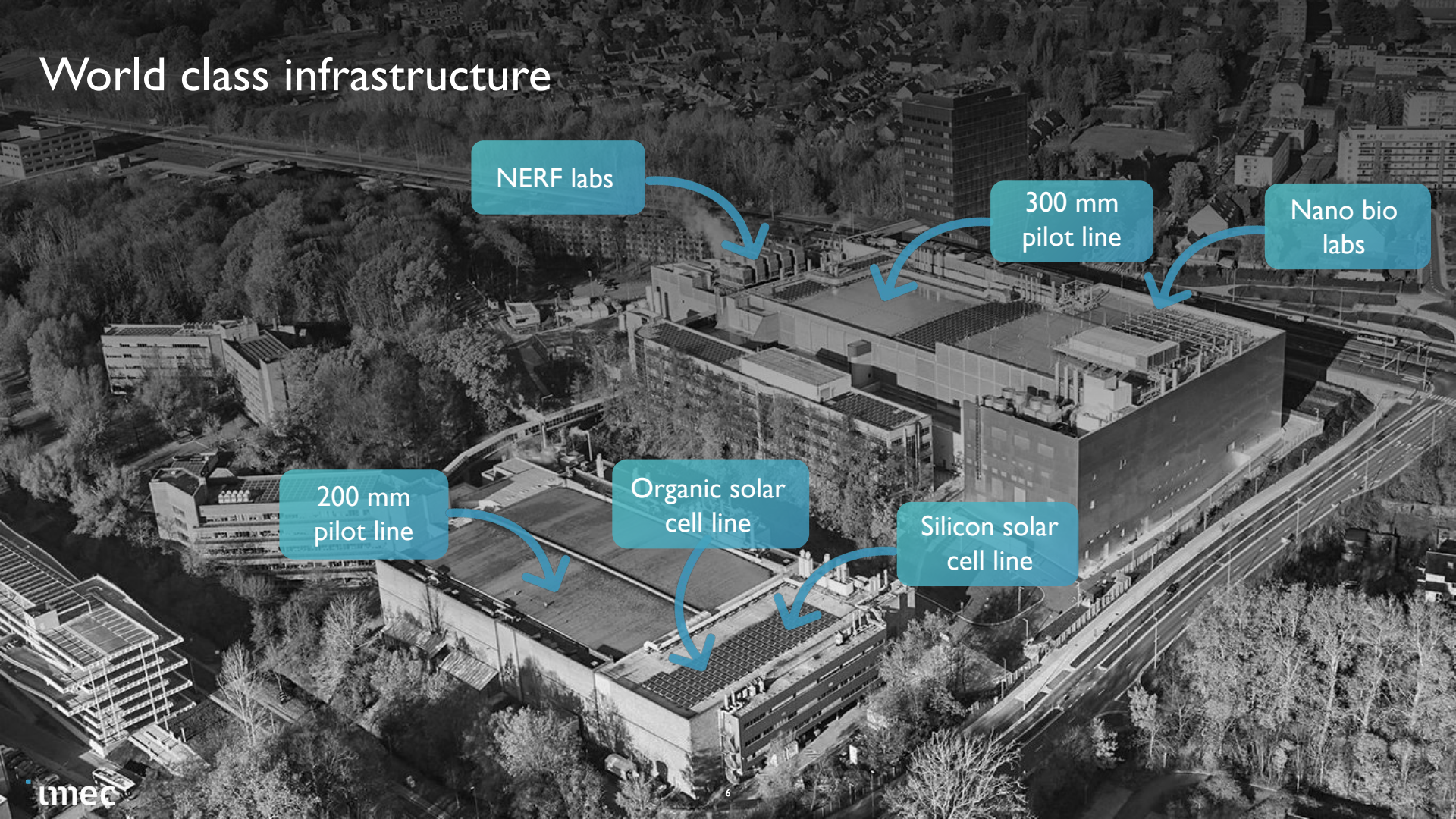


A
TRUSTED PARTNER
FOR COMPANIES, STARTUPS & ACADEMIA

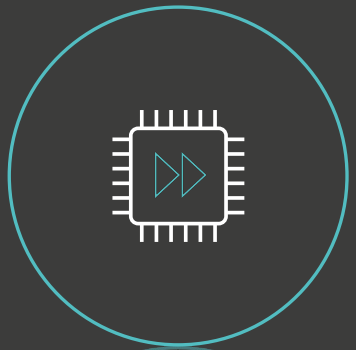
imec

USA
San Francisco/ San Jose
USA
Berkeley
USA
Orlando
Belgium
Leuven (HQ)
The Netherlands
Wageningen/Nijmegen – OnePlanet Research Center
The Netherlands
Eindhoven – Holst Centre
India
Bangalore
China
Shanghai
Japan
Osaka
Japan
Tokyo

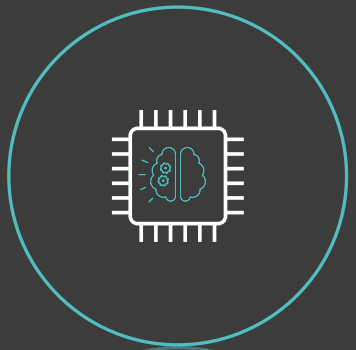
World class infrastructure



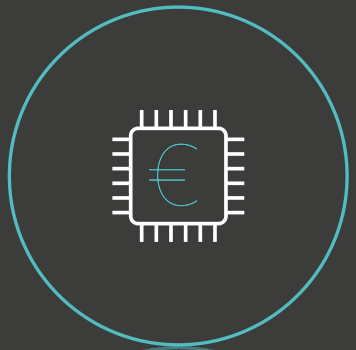
© imec



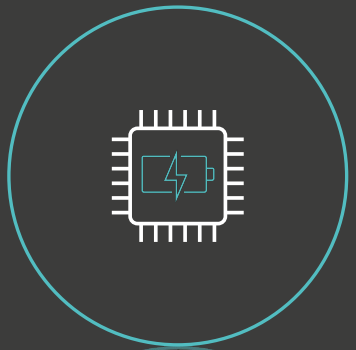
INCREASED PERFORMANCE



INCREASED COMPLEXITY



REDUCED COST

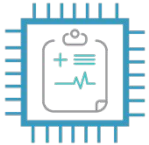


REDUCED POWER

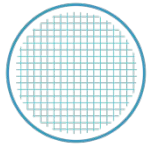
Imec thrives on connecting
the smart application grand challenges
with our strength in
advanced semiconductor technology.

Semiconductor & system technologies

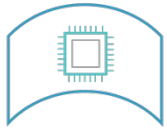
CORE CMOS



SENSOR TECHNOLOGY

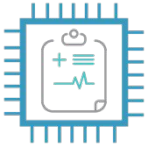


FLEXIBLE TECHNOLOGY

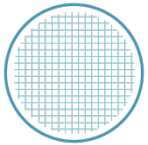


Digital technology platforms

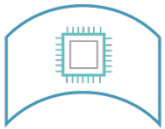
CORE CMOS



SENSOR TECHNOLOGY



FLEXIBLE TECHNOLOGY



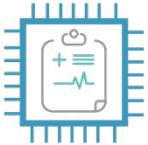
NETWORKING

PRIVACY & SECURITY

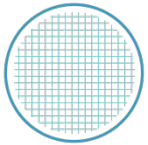
DATA AI

Application domains

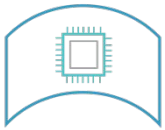
CORE CMOS



SENSOR TECHNOLOGY



FLEXIBLE TECHNOLOGY



NETWORKING

PRIVACY & SECURITY

DATA AI

SMART HEALTH

SMART AGROFOOD

SMART MOBILITY

SMART CITIES

SMART INFOTAINMENT

SMART INDUSTRIES

SMART ENERGY

SMART EDUCATION

imec

SMART
HEALTH

ADVANCED SENSOR TECHNOLOGIES & SIGNAL PROCESSING

SMART
PATCHES

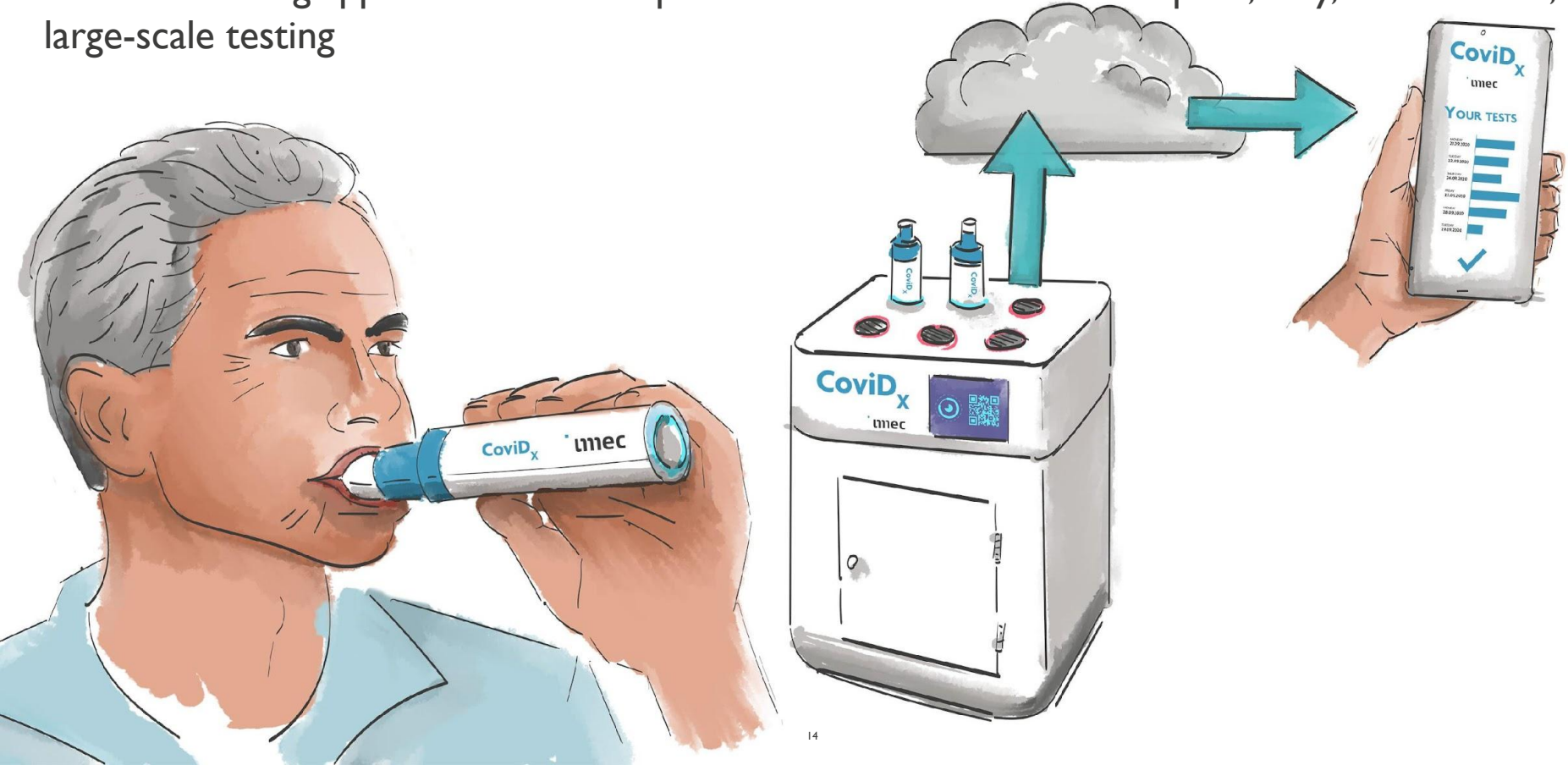
SMART
WATCHES

BRAIN
MONITORING

FULLY MINIATURIZED LABS

COVID rapid test

Groundbreaking approach uses virus particles in exhaled breath for quick, easy, comfortable, large-scale testing



SMART INDUSTRIES

NEW SENSOR TECHNOLOGIES

WIRELESS CONNECTIVITY (INDOOR) LOCALIZATION

HUMAN- COBOT INTERACTION FUTURE HEALTH/WORK CONTEXT

DECISION SUPPORT SYSTEMS DRIVEN BY (HYBRID) AI

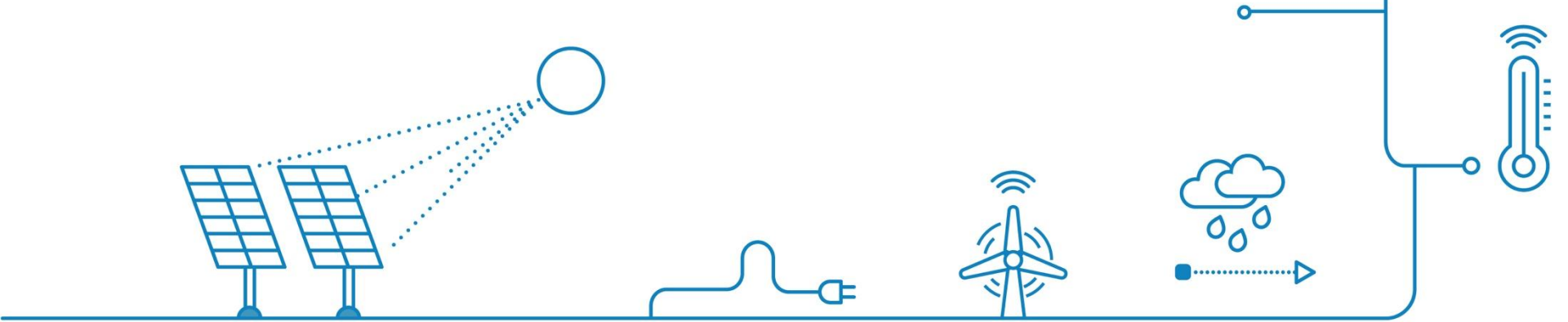
SMART ENERGY

TECHNOLOGY INNOVATION

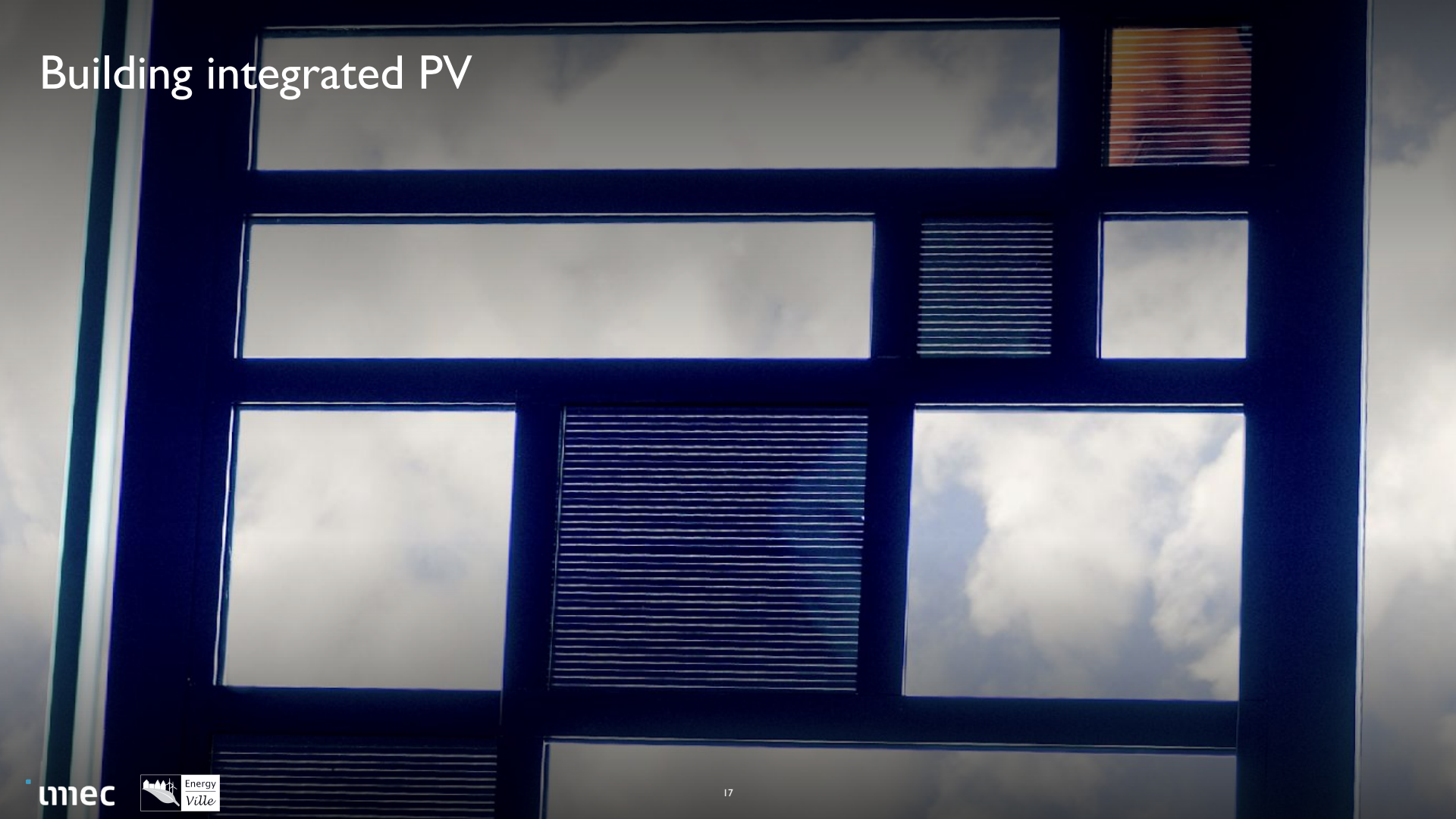
- PHOTOVOLTAICS
- STORAGE
- POWER-TO-MOLECULES
- POWER CONVERSION
- DATA COMMUNICATION & ANALYSIS

SYSTEM LEVEL

- PV-DEPLOYMENT IN AN URBAN CONTEXT
- SMART BATTERY CELLS AND SYSTEMS
- GREEN ELECTRICITY TO CHEMICALS
- BIPOLAR DC-NANOGRIDS
- LOCAL ENERGY COMMUNITIES

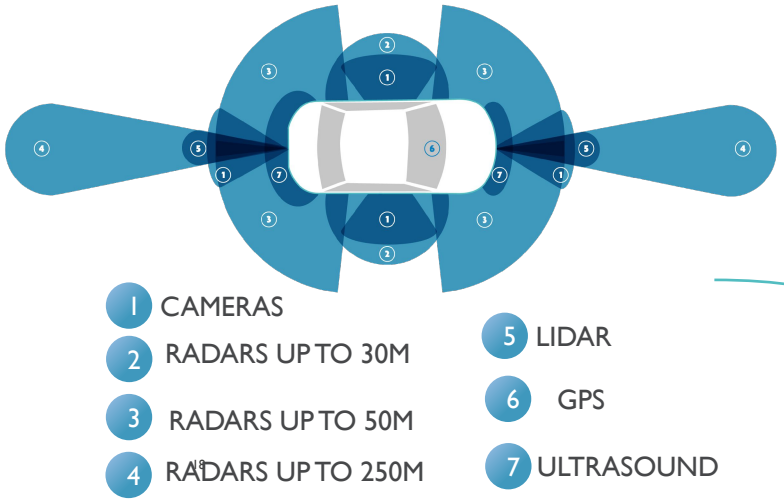


Building integrated PV

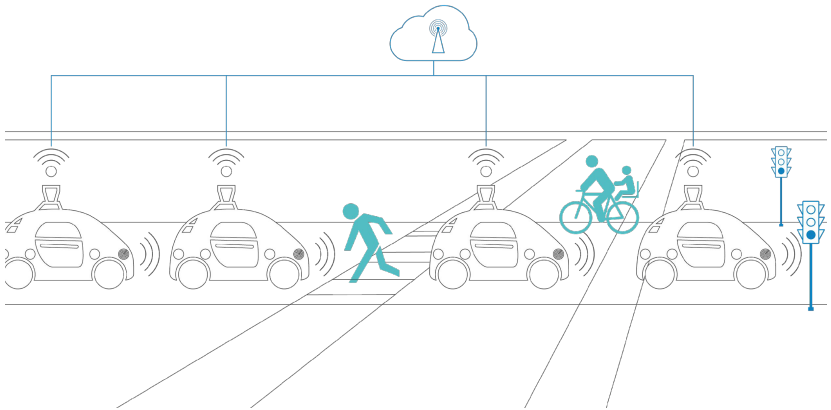


SMART MOBILITY

- Sensor systems with integrated processing and memory / on-board processing



- Connected - driverless car



- Sensor Fusion: combining data from radar, lidar, sensors and imagers

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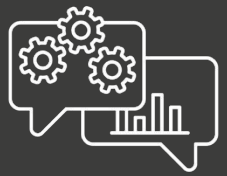
Imec in Flanders

Imec in Flanders

R&D
COLLABORATION



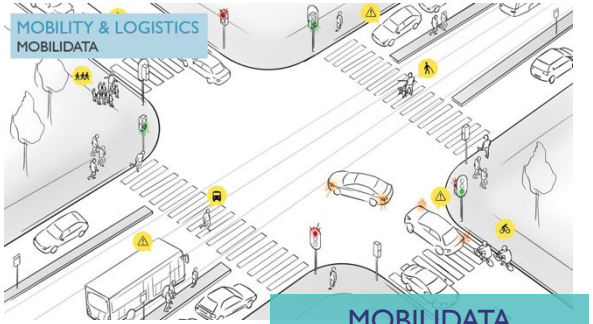
INNOVATION
SERVICES

VENTURING
STARTUPS & FUNDS

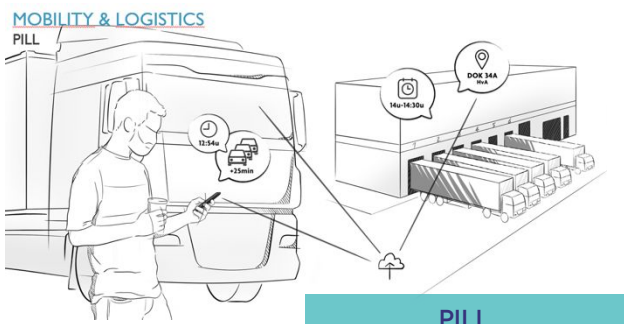
Imec in Flanders

ANTWERP
CITY OF THINGS
Universiteit Antwerpen
KORTRIJK
SMART EDUCATION
UNIVERSITEIT GENT
VUB VRIJE UNIVERSITEIT BRUSSEL
LEUVEN
HEADQUARTERS
GENK
ENERGYVILLE
UHASSELT
KU LEUVEN
GHENT
SMART APPLICATIONS
BRUSSELS
EU HUB

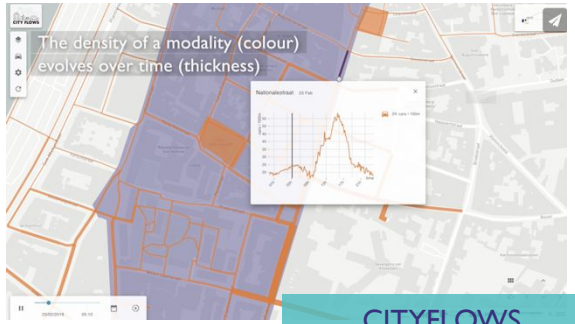
SMART
MOBILITY & LOGISTICS



MOBILIDATA

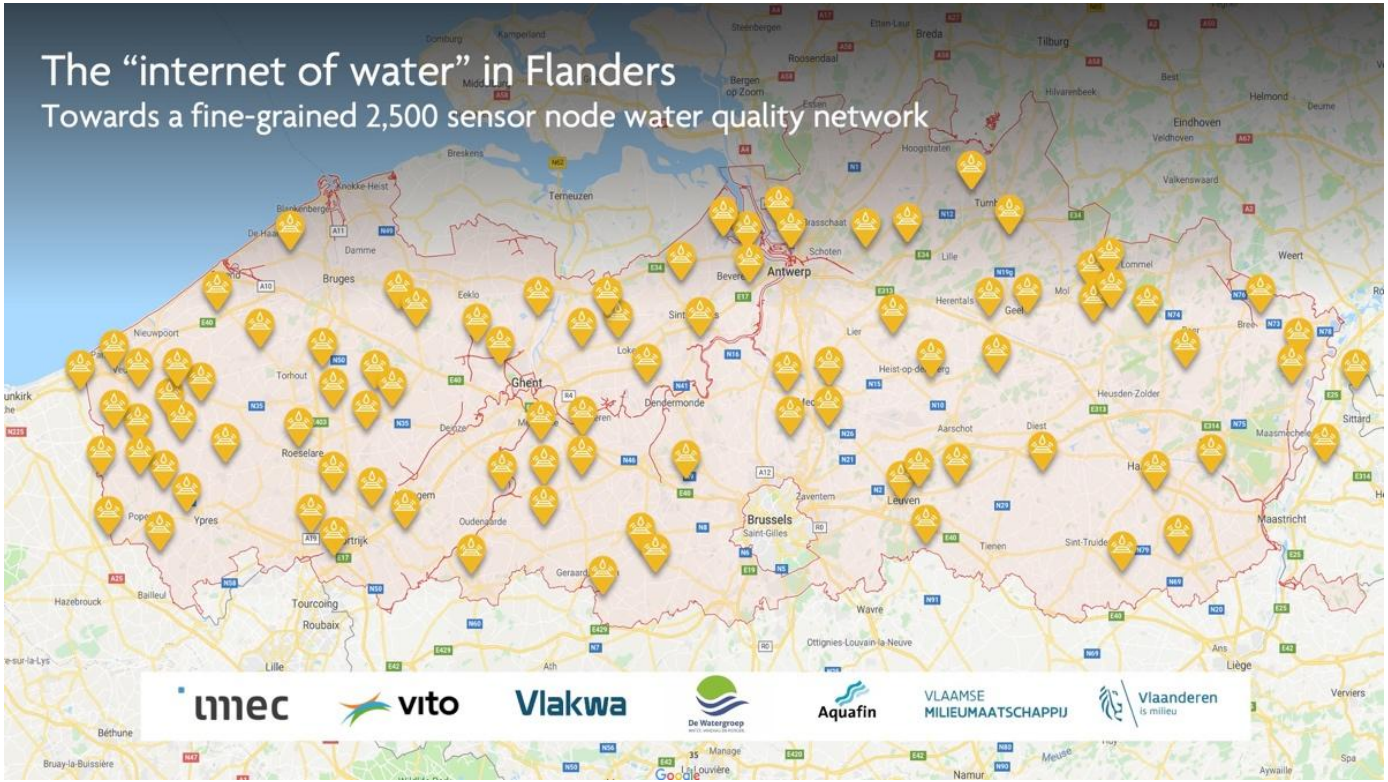


PILL

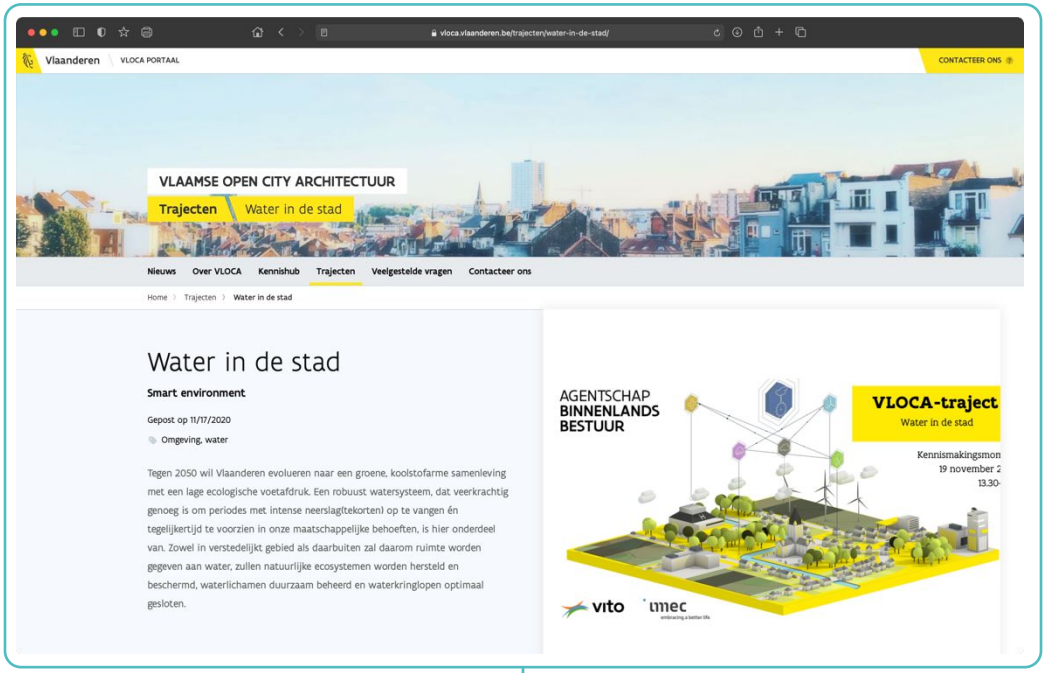


CITYFLOWS

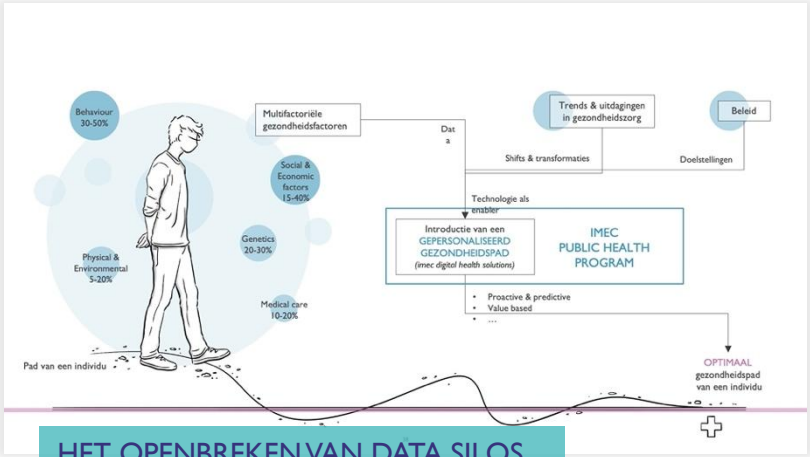
SMART
CITIES

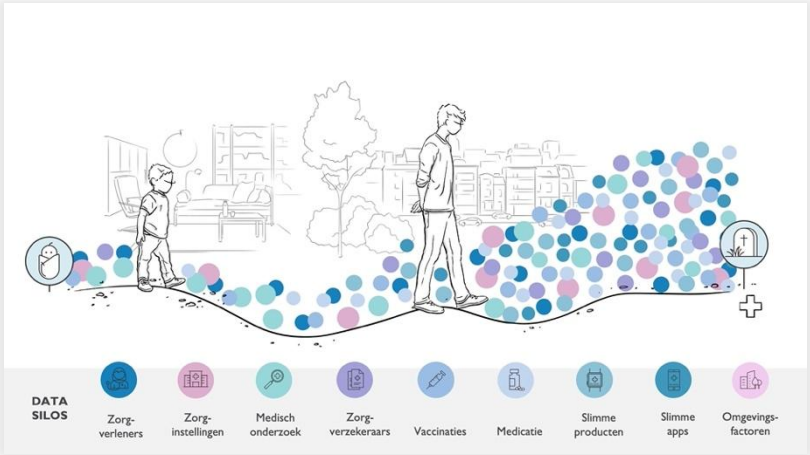

The “internet of water” in Flanders
Towards a fine-grained 2,500 sensor node water quality network
imec
vito
Vlakwa
De Watergroep
Aquafin
VLAAMSE
MILIEUMAATSCHAPPIJ
Vlaanderen
is milieu

SMART
CITIES



SMART
PUBLIC HEALTH





HET OPENBREKEN VAN DATA SILOS

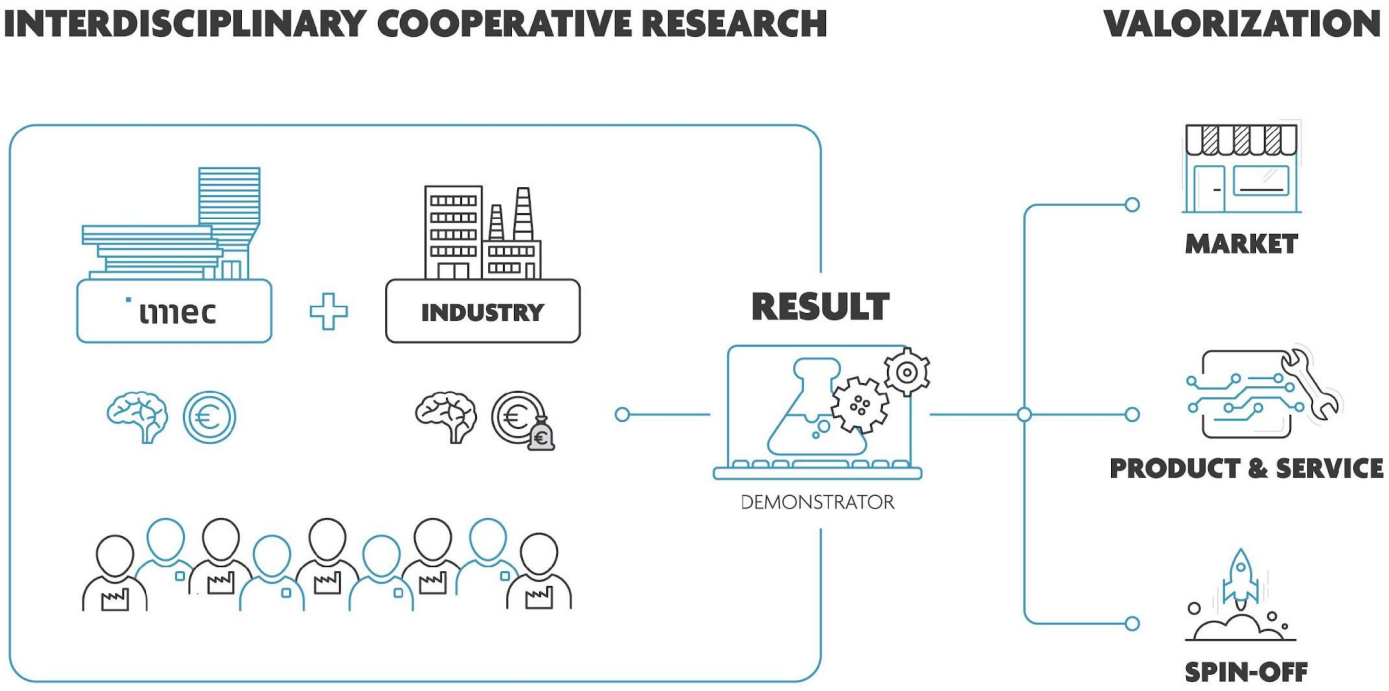
HET GENEREREN VAN INZICHTEN UIT DEZE BESCHIKBARE DATA

HET GEBRUIKEN VAN SLIMME TECHNOLOGIE VOOR HET GENEREREN VAN GEPERSONALISEERDE GEZONDHEIDSPADEN

imec

Imec.icon

Collaborative research between imec and Flemish industry with focus on valorization



Imec in Flanders

Imec.xpand

Major player in the venture capital ecosystem

Supported by imec & Flemish government

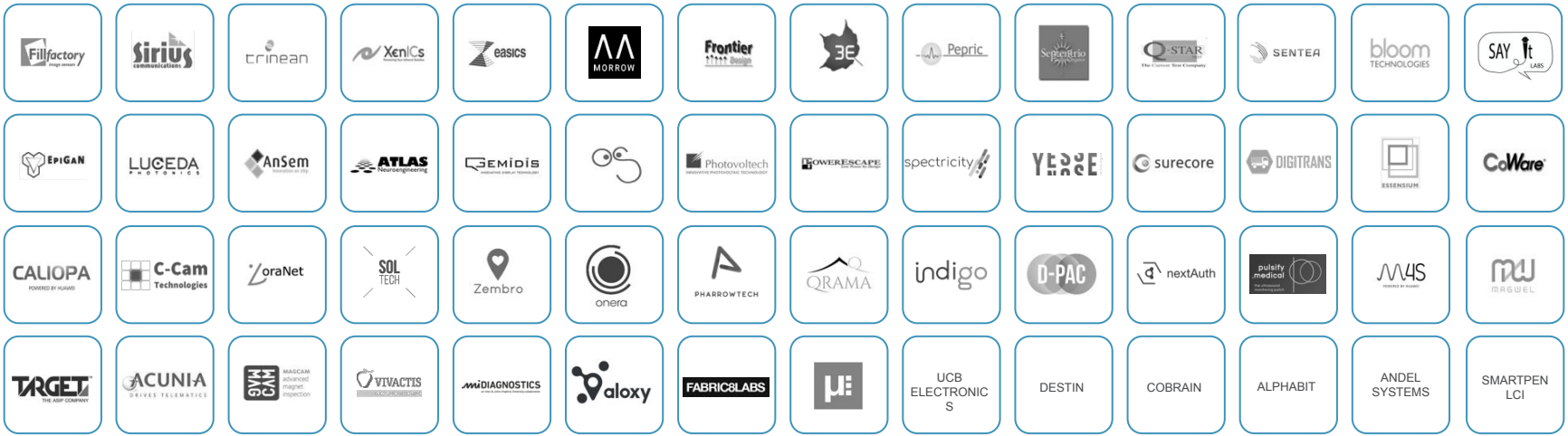
International strategic and institutional investors

117€M FUND

Universities

High-net worth individuals

Spin-offs


Fillfactory
Sirius communications
crinean
XenICs
easics
MORROW
Frontier
3E
Pepric
Septentrio
Q-STAR
SENTEA
bloom TECHNOLOGIES
SAY It LABS
EPIGAN
LUCEDA PHOTONICS
AnSem
ATLAS Neuroengineering
GEMIDIS
Photovoltech
POWERESCAPE
spectricity
YERGE
surecore
DIGITRANS
ESSENSIUM
CoWare
CALIOPA
C-Cam Technologies
oraNet
SOL TECH
Zembro
onera
PHARROWTECH
QRAMA
indigo
D-PAC
nextAuth
pulsify medical
MAGWEL
TARGET
ACUNIA
VIVACTIS
miDIAGNOSTICS
aloxy
FABRIC8LABS
UCB ELECTRONICS
DESTIN
COBRAIN
ALPHABIT
ANDEL SYSTEMS
SMARTPEN LCI

Imec.istart

Business accelerator for digital start-ups

#1
RANKED*

+220
STARTUPS

+300M
FOLLOW-UP FUNDING

85%
SURVIVAL RATE

Imec in Flanders

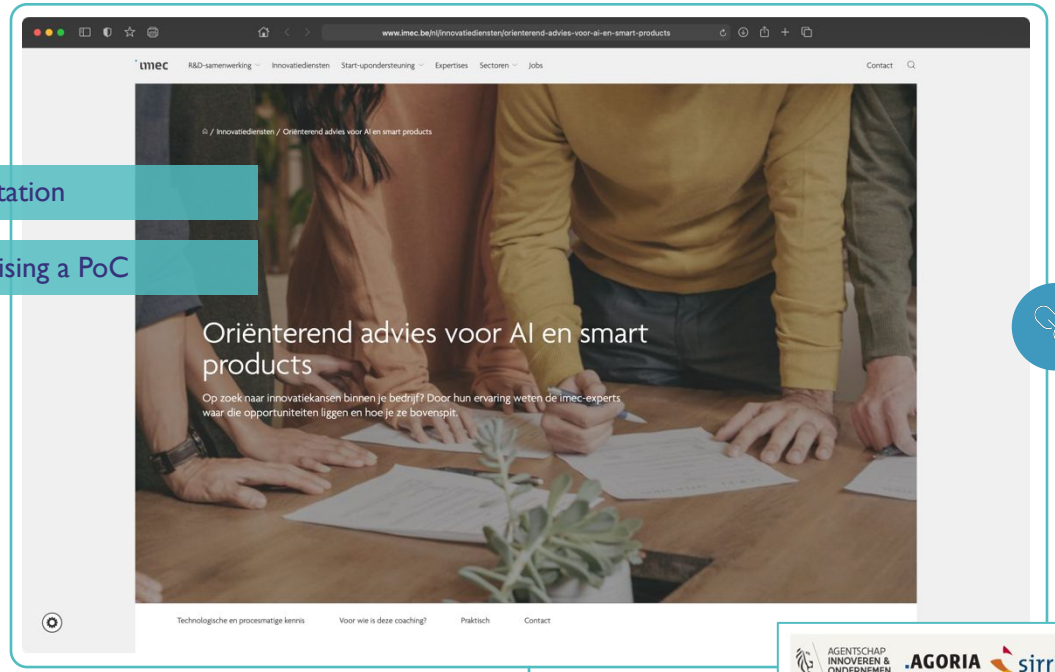
INNOVATION
SERVICES

Advice formats supported by VLAIO

With partner AGORIA-SIRRIS

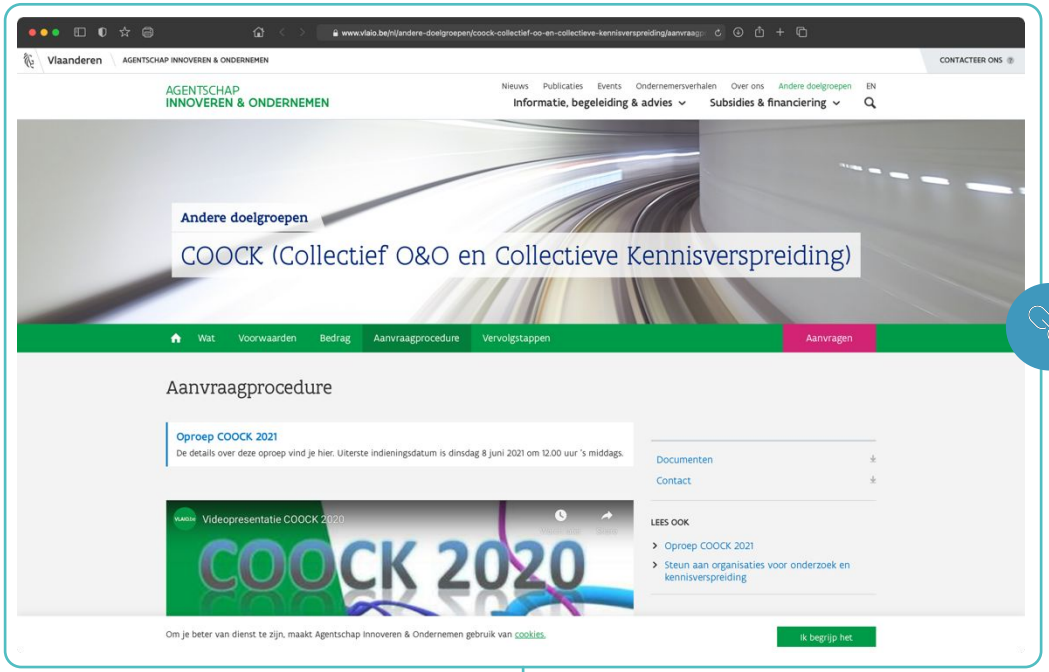
Orientation

Conceptualising a PoC



AGENTSCHAP INNOVEREN & ONDERNEMEN .AGORIA sirris imec samen voor #sterkondernemen

COOCK



Aim

Accelerate knowledge sharing

Bring technology in higher TRL to companies

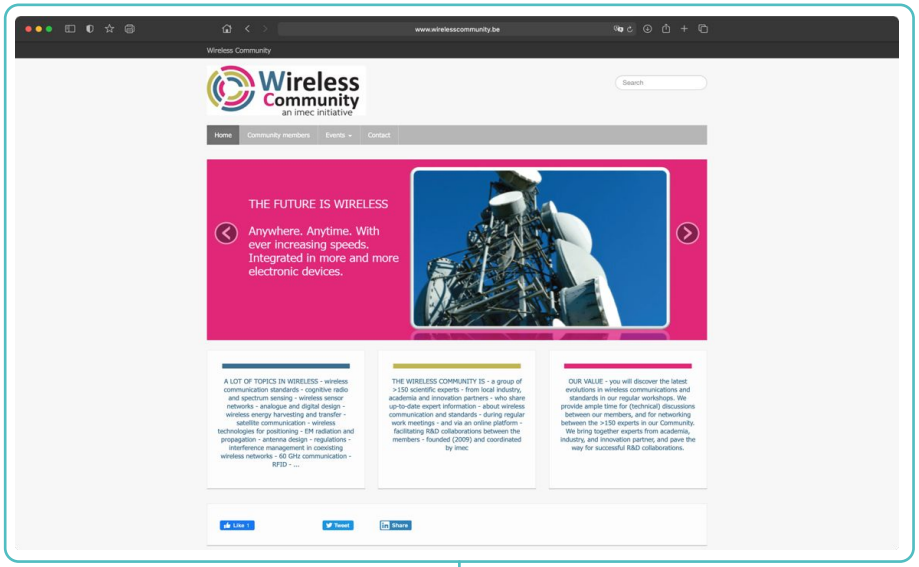
Examples:

Open Cities
Smart products exploration
Smart Port 2025
Safe Warehouse

Community building

- Electronic Design & Manufacturing Forum

- Wireless Community



Other research centers & organizations

SOCs

IBNs

SPCs

Academic Partners

imec

Small and large cities; Government partners; Public sector

Federations

CCs

imec
embracing a better life