



MADE IN EUROPE 2026

ONLINE PITCHING

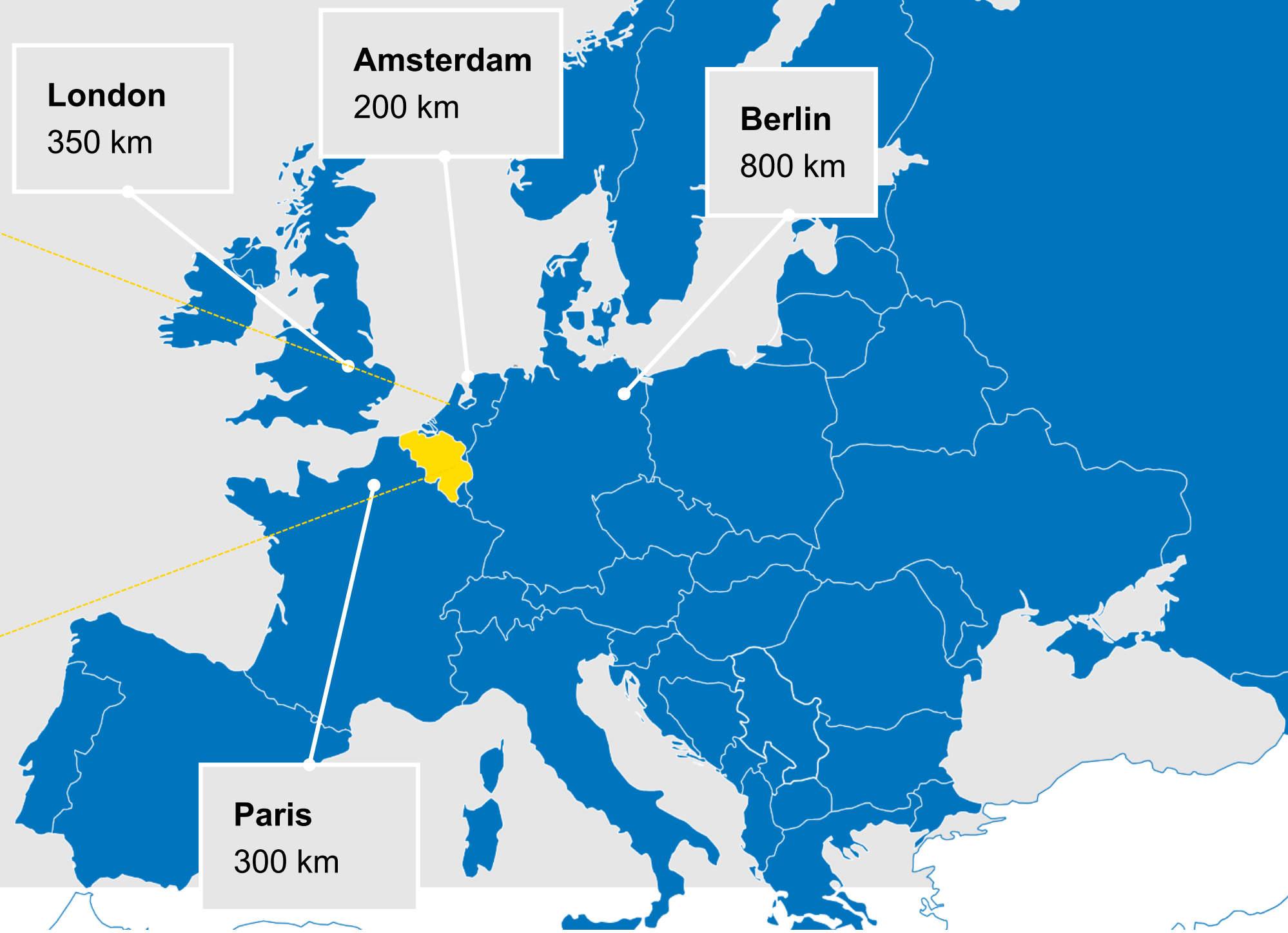


LET'S SHAPE THE FUTURE OF
MANUFACTURING TOGETHER!

23 June 2026

IN BELGIUM

In the heart of Europe



GHENT UNIVERSITY

- Top 100 university
- Since 1817
- 11 faculties



BELGIUM

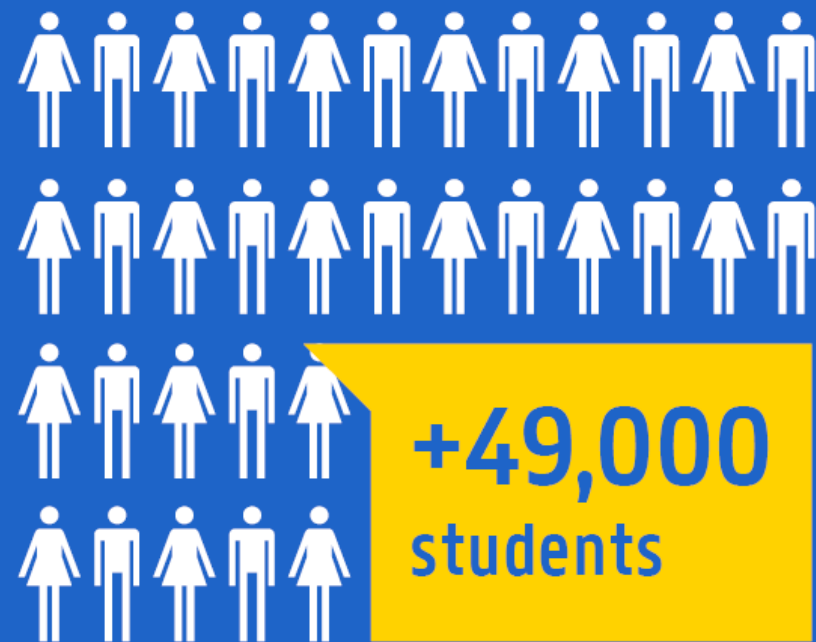


SOUTH KOREA



The 1st European university in Korea.

 **+200** programmes



64 English-taught master's programmes

2,000 Ghent University students abroad

6,000 Foreign students at Ghent University (including exchange students)



DARE TO THINK

Our credo: critical and independent minds.



PLURALISM & PARTICIPATION

Open to everyone irrespective of ideological, political, cultural or social background.



SUSTAINABILITY

For a future that is ecologically, socially and economically sustainable, within a local global context.



BUSINESS DEVELOPMENT CENTRE MACHINERIES & FACTORIES (M&F)

Jeroen De Maeyer, BD UGent-Flanders Make; Kurt Stockman, promotor M&F



VISION

*We aim to **IMPACT***

*the **productivity (*) of smart machines and factories***

Partnering with industry

*Leveraging on our **excellent research***

-concretized in novel concepts, models, algorithms, tools and hardware (prototypes, test infrastructure)-

*Incorporating **industry 4.0 and 5.0 concepts and objectives,***

Capitalising on our thorough understanding

***in electromechanical,
industrial systems and
business engineering.***



AgriTech

Process industry

Construction

Transport and logistics

Healthcare operations

Defense & Security

Smart manufacturing

Sustainable Energy



() productivity = zero defect, energy efficiency, dynamic performance, cost effective, ...*

OUR EXPERTISE



1. Electromechanical Systems Engineering

- **Multi-physics modelling** based on in-depth understanding of physical (electromechanical, electromagnetic, thermal, mechanical and material) phenomena to support the **design, monitoring, control and production quality check of** (novel) **hardware** concepts for drive train(s) (components) and (electromechanical) systems.
- **Hybrid AI (physics based learning)** for identification & condition monitoring (hybrid models for soft sensing); for control (merging traditional control with AI learning control); for decision making (graph based quality decision support) supporting or leveraging digital twin.
- **Test benches** to validate mechatronic products and their **digital twins** in a relevant environments (TRL4/5).

2. Industrial Systems Engineering

- Design, optimise and validate flexible (hybrid) **assembly systems** incl. **operator support, task allocation** and virtual commissioning based on digital twin.
- Strategies for **operational excellence**: planning and scheduling (combined production and maintenance, taking into account well being, ...); quality control, in-line factory quality sensors and recommender strategies; and supply chain logistics and line feeding.
- Our **lab infrastructure** resembles real industrial assembly cells and factory settings.

3. Industrial Management

- **Extraction and development of executable models** supported by process mining techniques, data analytics and AI/machine learning capturing **human system interaction/decision making**.
- **Robust cost-optimal decision making** (stochastic optimisation) for manufacturing, intralogistics, supply chains and planning/scheduling under uncertainty incl. **analytical CRM**,.

M&F INFORMATION SHEET

Our double affiliation (Ghent University and ...)

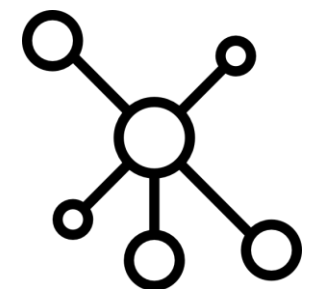
- Flanders Make is the (600+researchers, 150+ companies) strategic research initiative w.r.t. manufacturing
- imec is the (4000+ researchers, 1000+companies) strategic research initiative w.r.t. SW (AI, web, security) and HW (chips, broadband, wireless, radar, IoT)



290 FTE
42 prof.
40% PhD



2M/yr ind. income
14M/yr industrial
relevant
turn over



5M/yr in HEu
Coordinator in
HEu. +/-10 appl./yr
Currently 2 coord.

Experience with



Member of



Affiliation/partner



GHENT
UNIVERSITY

FLANDERS MAKE

imec

Guillaume Crevecoeur

Kurt Stockman

Peter Sergeant

Jeroen De Kooning

Hendrik Vansompel

Lieven Vandevelde

Frederik De Belie

Luc Dupré

Tom Lefebvre

Patrick De Baets

Dieter Fauconnier

Wim De Waele

Kris Hectors

Joris Degroote

Michel De Paepe

Steven Lecompte

Wim Beyne

Mia Loccufier

Clara Ionescu

Jos Knockaert

Sofie Van Hoecke

Tom Dhaene

Ivo Couckuyt

Johannes Cottyn

El-Houssaine

Aghezzaf

Stijn De Vuyst

Birger Raa

Dieter Claeys

Sidharta Gautama

Ivana Semanjski

Pieter Leyman

Geert Poels

Dirk Van den Poel

Frederik Gailly

Matthias Bogaert

Dries Benoit

Veronique Limère

Broos Maenhout

Dries Goossens

Katrien Verleye

Seppe Vanden Broucke



INTRODUCTION BY GHENT UNIVERSITY



Topics of interest from the short list

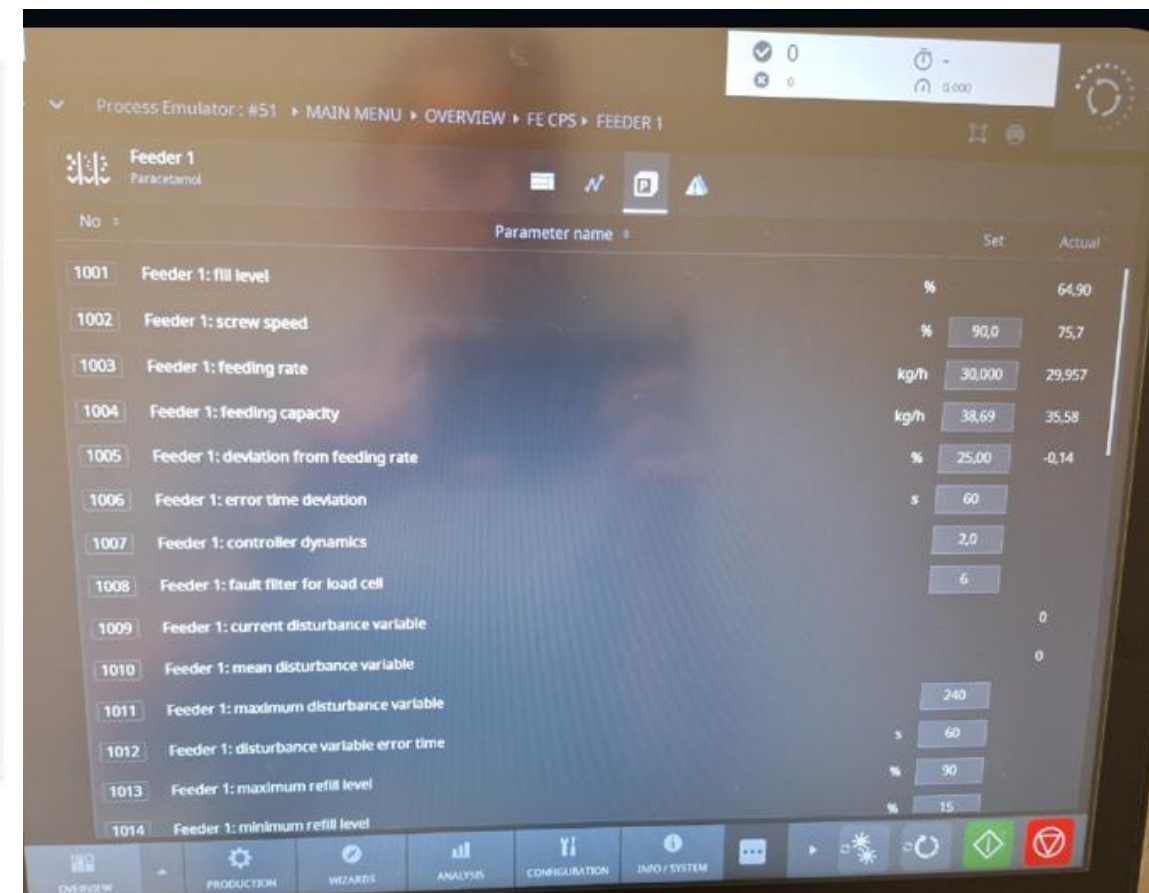
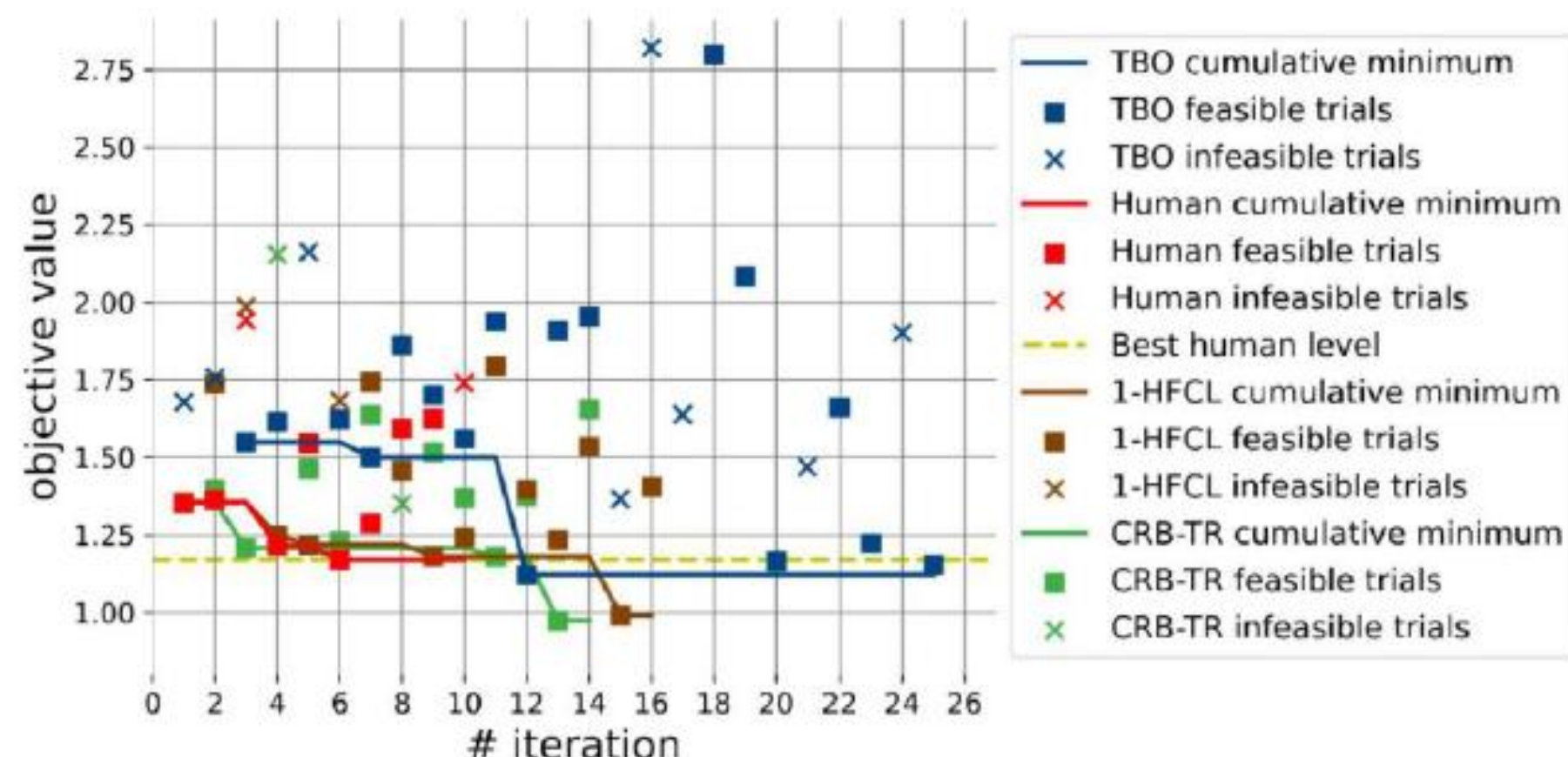
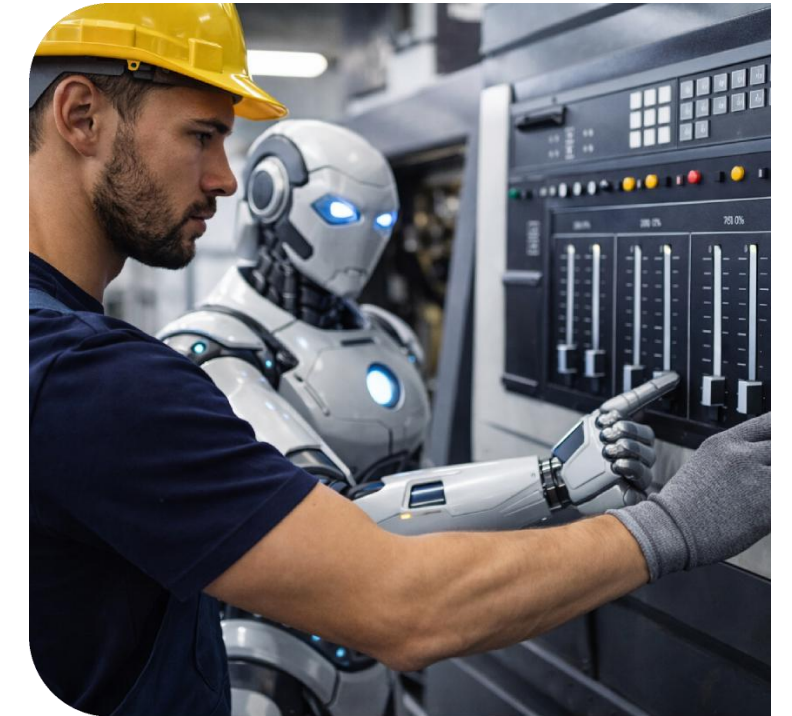
- HORIZON-CL4-2027-02-DIGITAL-EMERGING-52-two-stage

New approaches for Human/AI collaboration for the workforce of the future (RIA)

Proposals should produce dedicated innovative AI approaches for human-machine collaboration in advanced manufacturing to be applied in at least two of following fields:

- Human-AI Co-Learning and knowledge capture to share competences, **capture expert knowledge, provide interactive mentoring** to up-skill the workforce, and support re-qualification and continuous training – leading to increased **knowledge at factory level and avoiding loss of know-how.**
- Human-AI teamwork thanks to innovative natural interaction models (considering the e.g. related hardware interfaces and/or collaborative machine tools), enabling to control complexity in cognitive cooperating production systems, including **planning activities** at shop floor level.
- Interfaces with automation which automatically adapt to the need of the humans including different abilities and different cultural needs.

- **Support junior operators in tuning** parameters of (complex) production machines
 - Using AI techniques to capture the gut feeling of expert operators
 - Combine with hybrid (physics and data driven) process modelling
 - Results with a company (in the pharmaceutical industry (potential partner)) show faster and better tuning of their machines;
 - (alternative applications possible)



- **Planning and scheduling to support planners in case of emergency decision**
 - Planning and scheduling tools exist however still require on human planners
 - When confronted with **disruptions** these planners are challenged to balance multiple objectives and there is no time to perform a full reoptimisation
 - We are developing AI supported decision making (patent protected) and are working on this with steel manufacturer (alternative applications possible)
 - Alternative case: planning for flexible line feeding

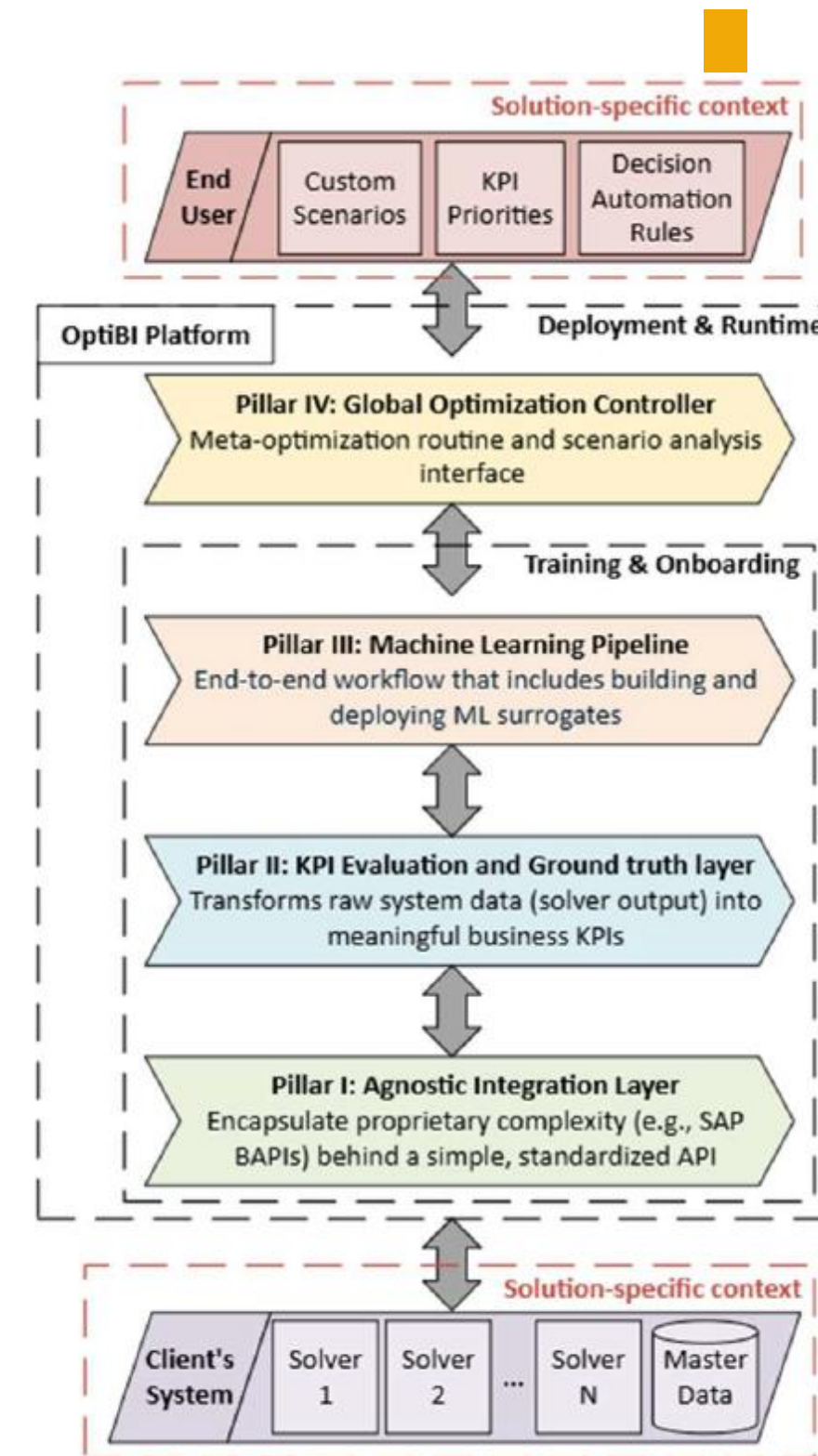
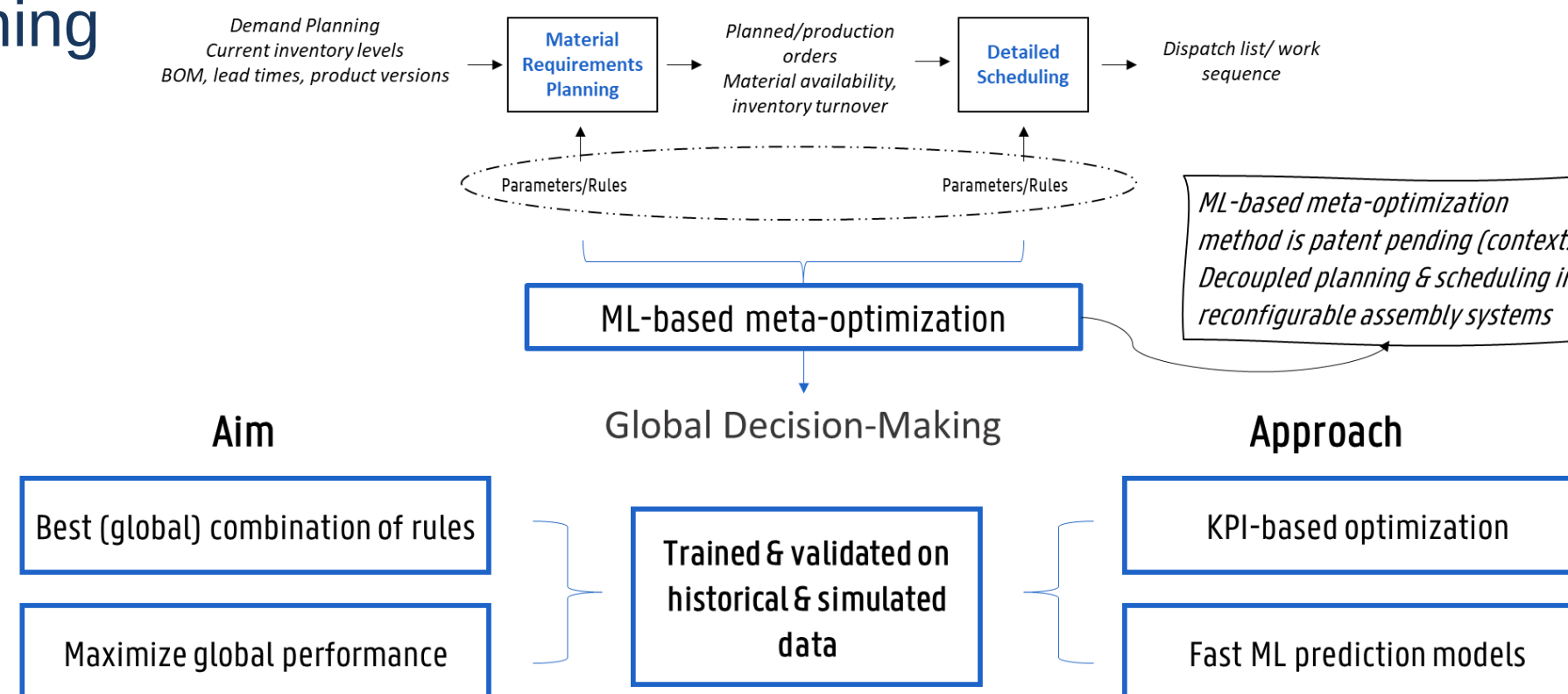


Figure 1. High-level architecture of OptiBI.

Other calls



- HORIZON-CL4-2027-01-MAT-PROD-08
 - Potential contributions
 1. Understanding the behaviour of recycled yarn (e.g., strength)
 2. Use of CFD and FSI to predict yarn behaviour in air flow (air weaving)
 3. Support operators in tuning production machines for larger uncertainty in yarn behaviour
 - Key assets
 1. Access to high TRL weaving, knitting, ... machines for testing
 2. Contacts with weaving loom manufacturers



THANK YOU

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