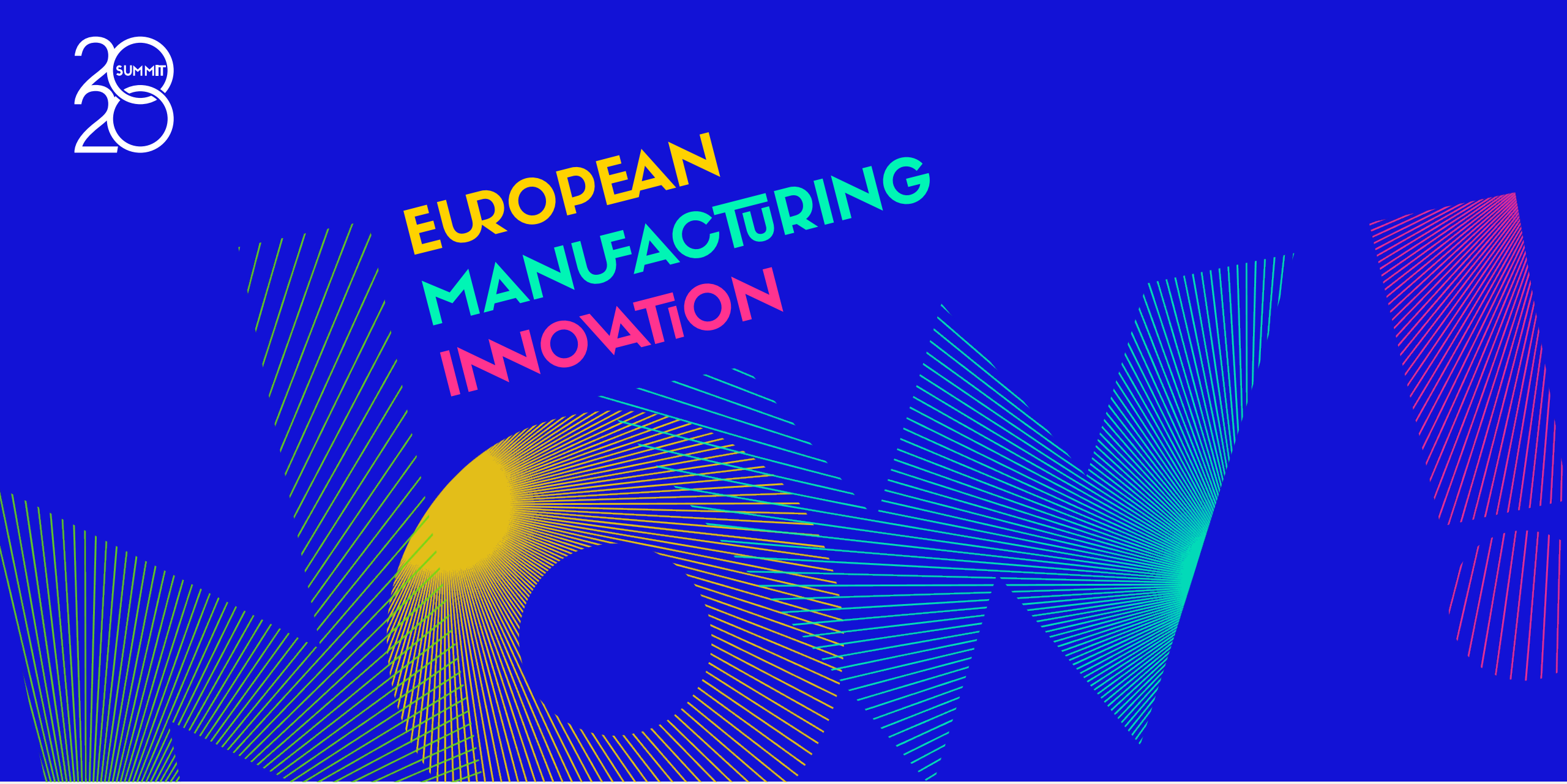
2020 SUMMIT

EUROPEAN MANUFACTURING INNOVATION



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Mach4.0

Learning Factory to Implement Industry 4.0 in Machining

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EUROPEAN MANUFACTURING INNOVATION

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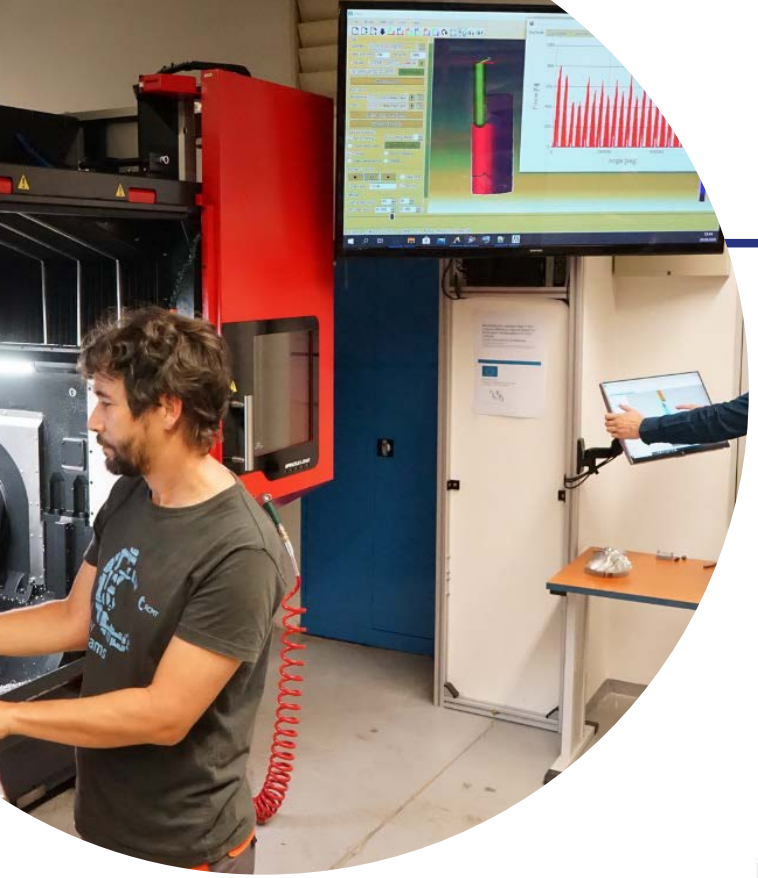
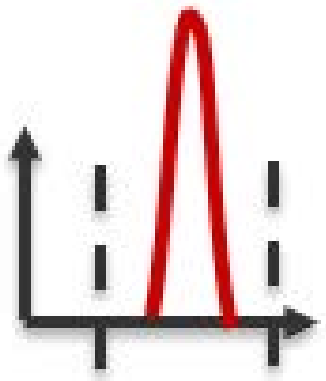


Can you imagine a world of zero defect machining?

MACH4.0



Poor Surface Finish

Good Surface Finish

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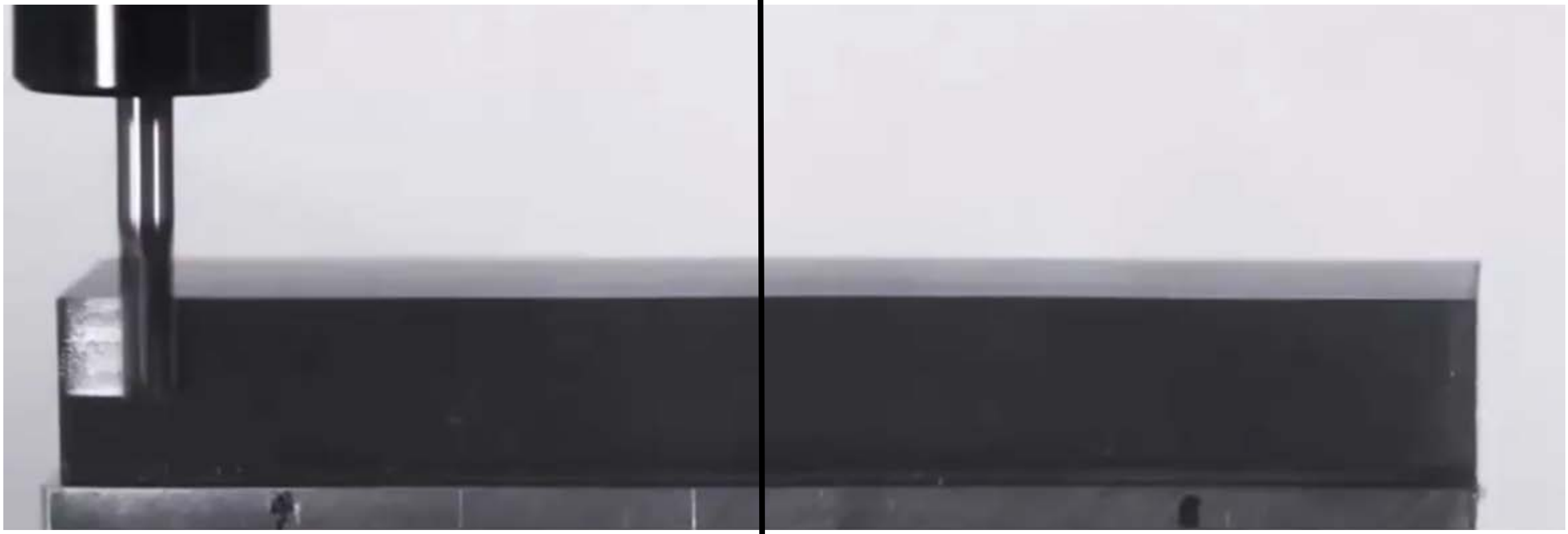
Machining

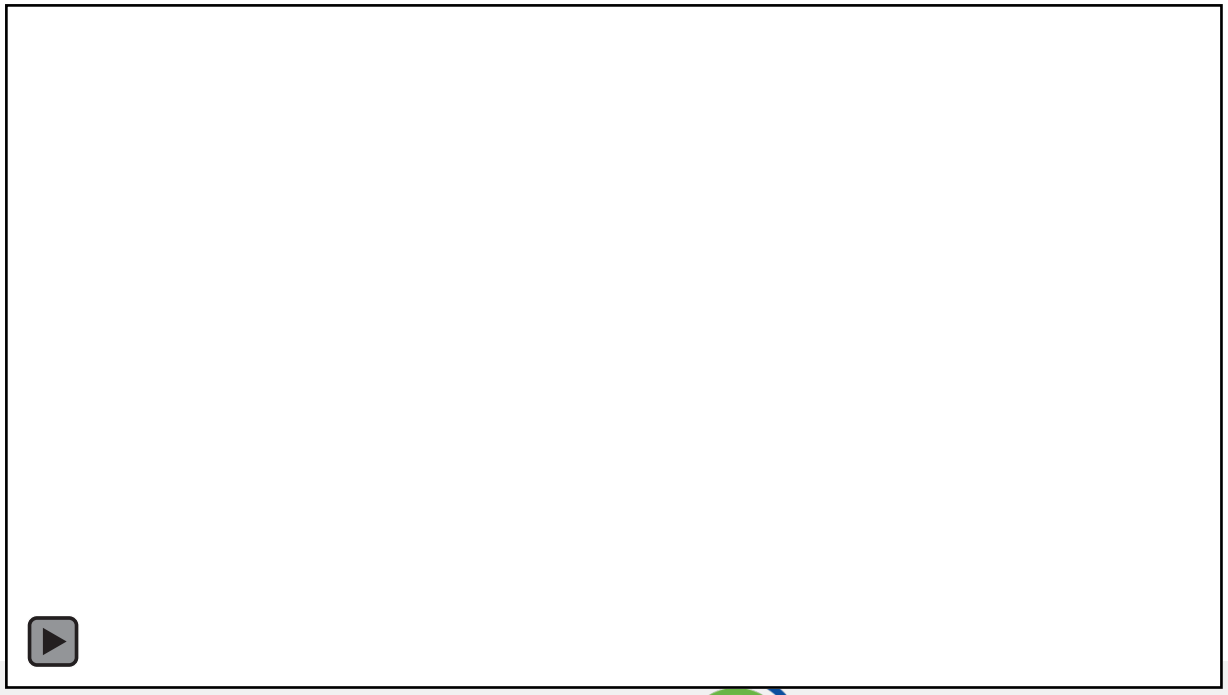
With Chatter

Without Chatter

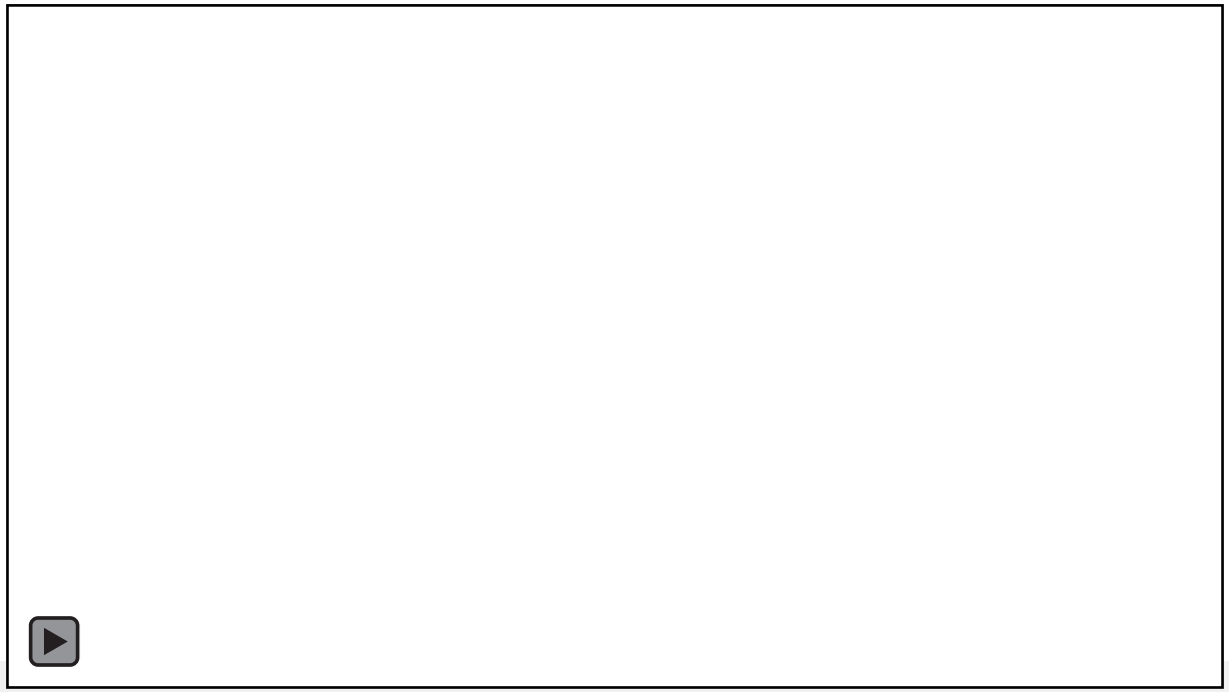


Machining

Without Collision



With Collision



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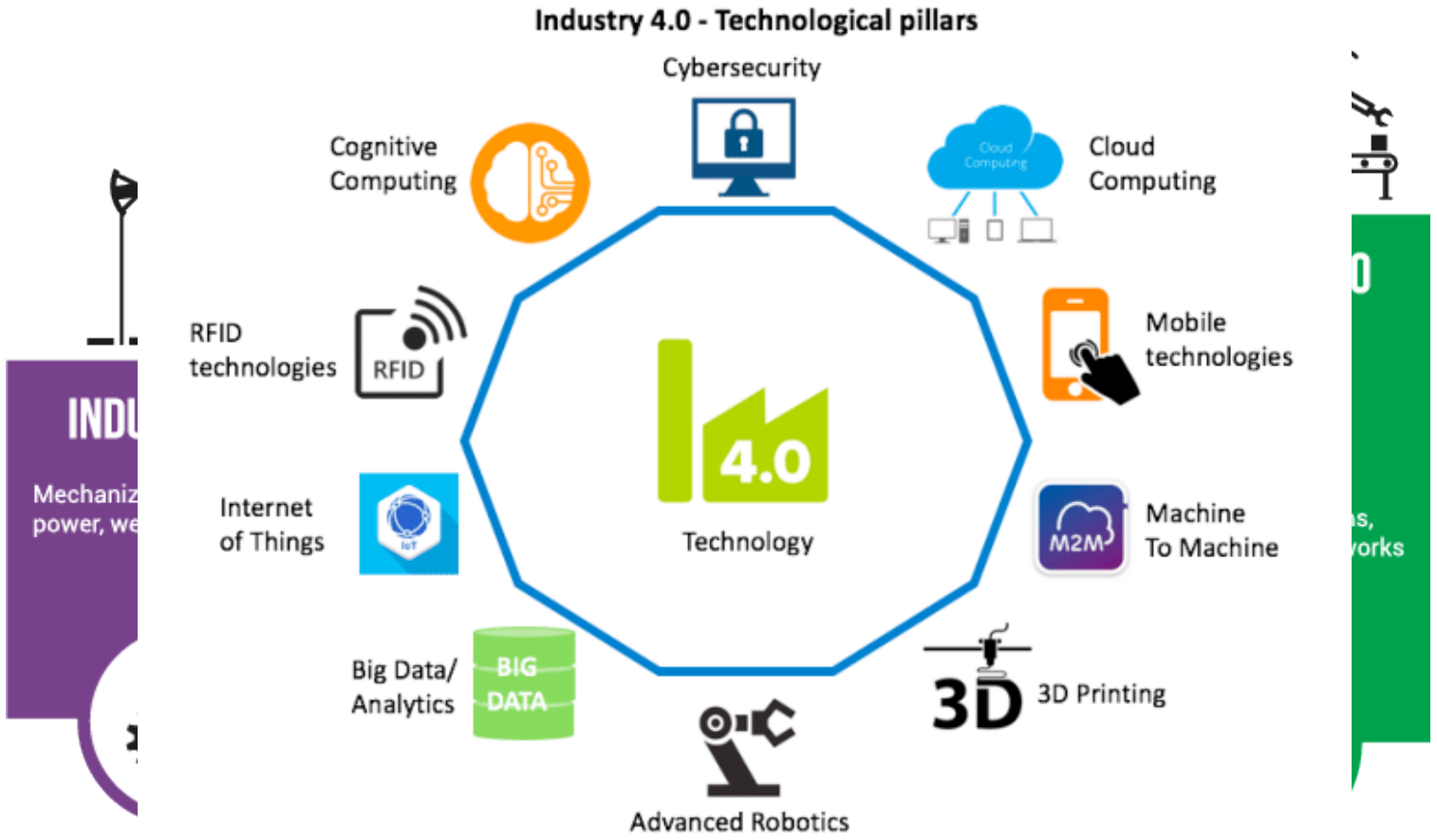
Machining

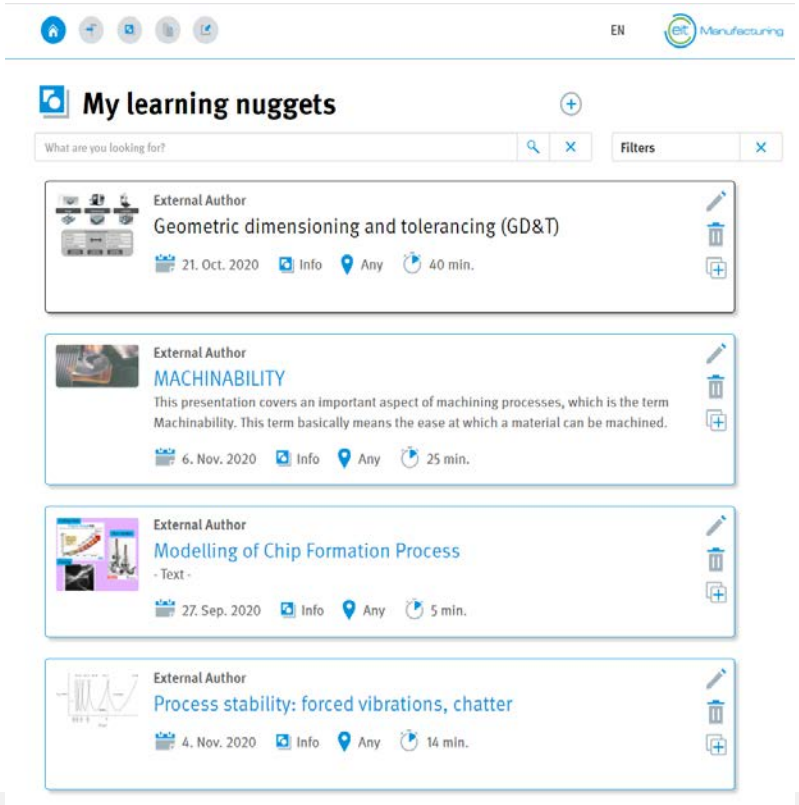
Enviro Steward

Machining

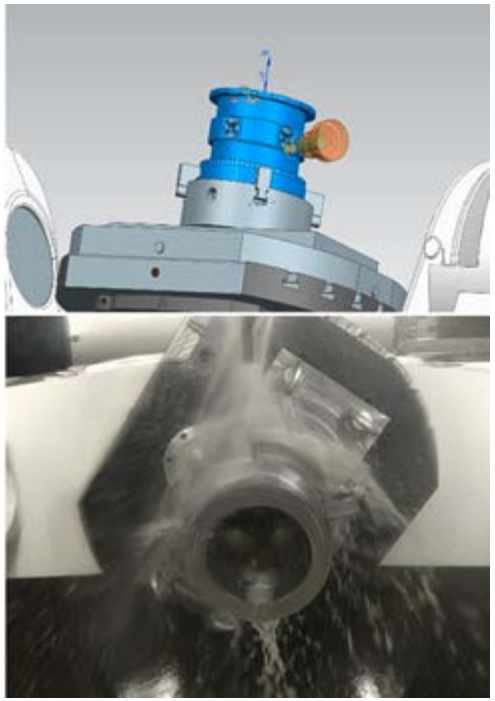

Industry 4.0 - Technological pillars
Cybersecurity
Cognitive Computing
Cloud Computing
Cloud Computing
RFID technologies
RFID
Mobile technologies
4.0
Technology
Internet of Things
IoT
Machine To Machine
M2M
Big Data/ Analytics
BIG DATA
3D
3D Printing
Advanced Robotics

Preparing our workforce for the Digital Age

GUIDED LEARNING PLATFOM



DIGITAL TWIN



PROCESS MONITORING

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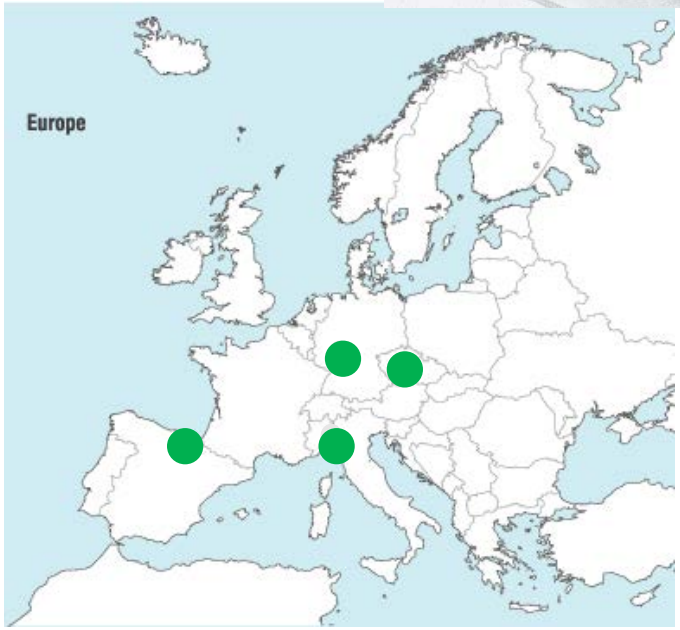
TECHNISCHE UNIVERSITÄT DARMSTADT

MACH4.0

Mondragon Unibertsitatea Faculty of Engineering



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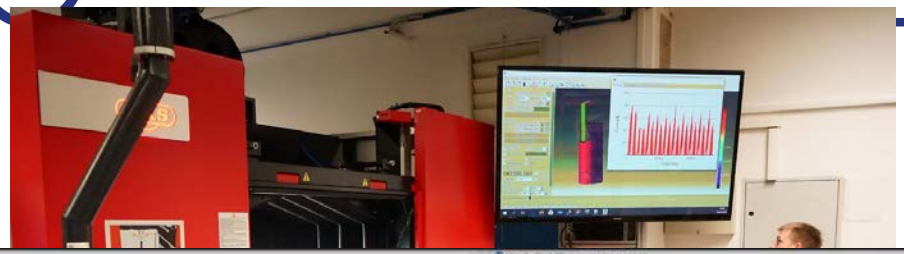
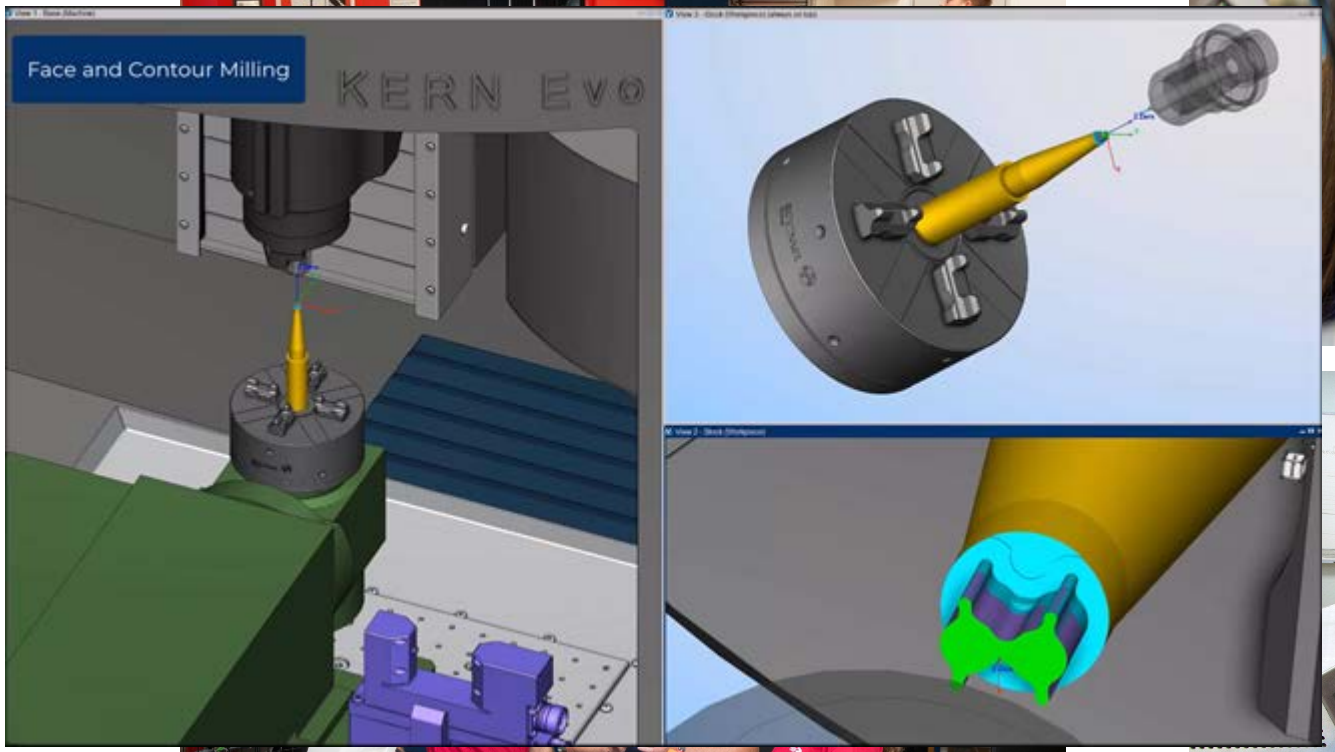
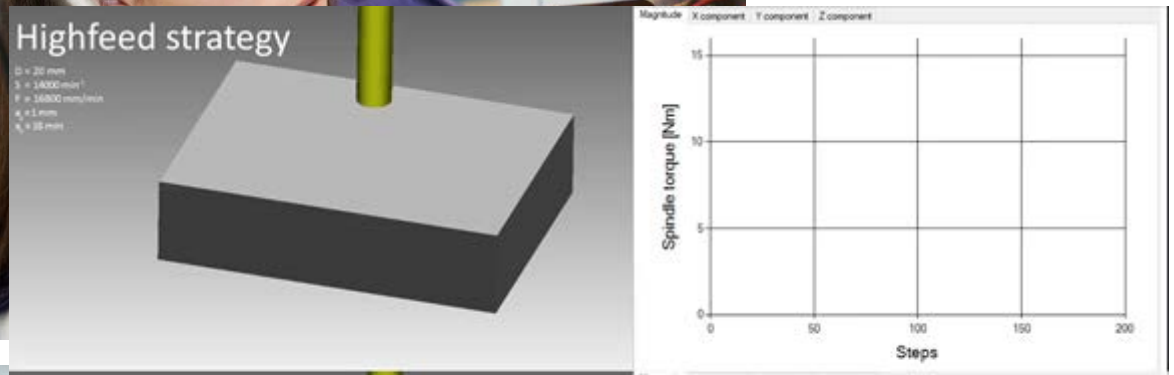
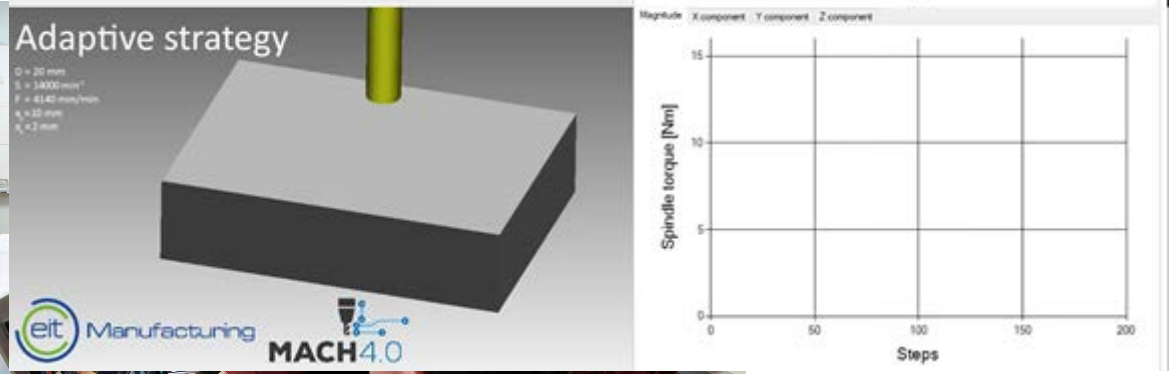
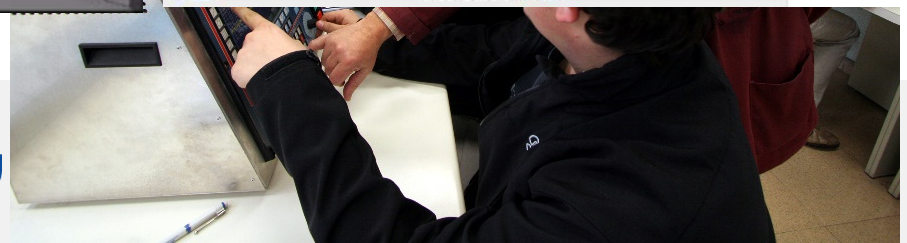
Practice and Simulation











Artificial Intelligence in machining

Conventional data analysis

Domain knowledge

- Experience
- Technical dependencies
- Historical quality data

→ **Program / Rules** — Decisions based on domain knowledge

Data analysis via AI

Process data

- E.g. current, pressure, temperature, …

Quality data

- E.g. Good & Bad parts, measurement results

→ **Trained Algorithm** — Decisions based on historical data

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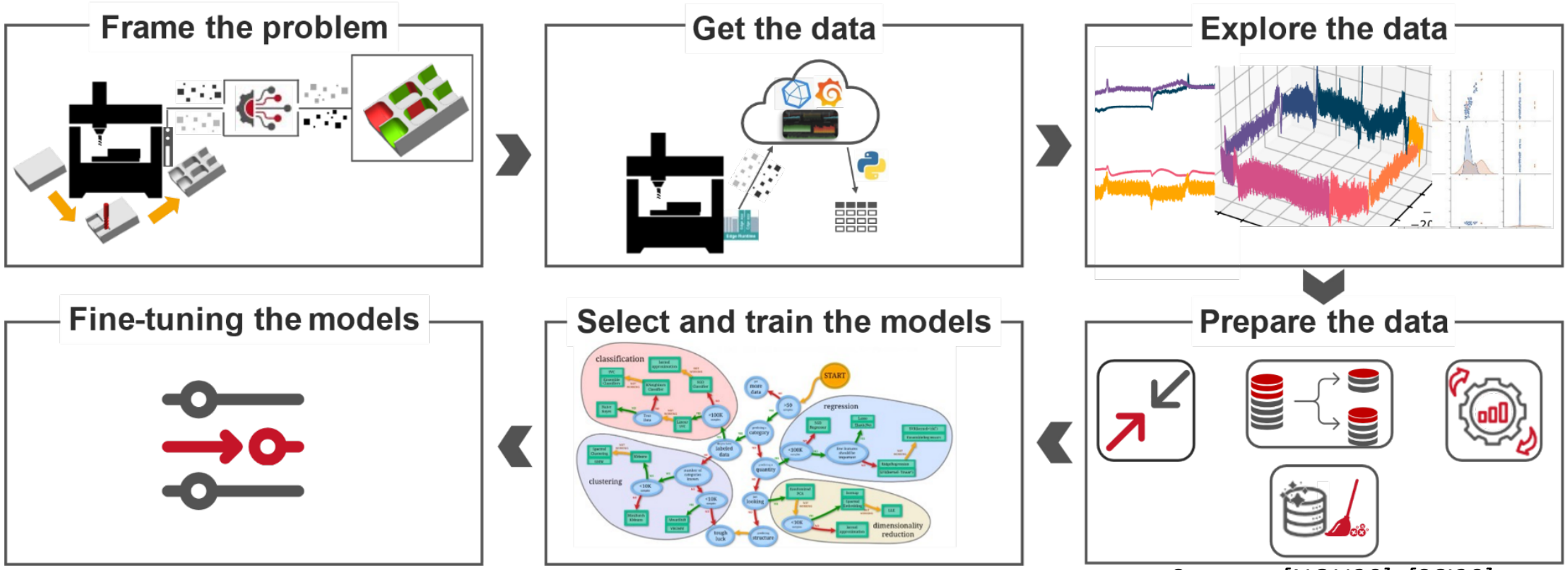
Artificial Intelligence in machining



Sources: [NOU20], [SCI20]

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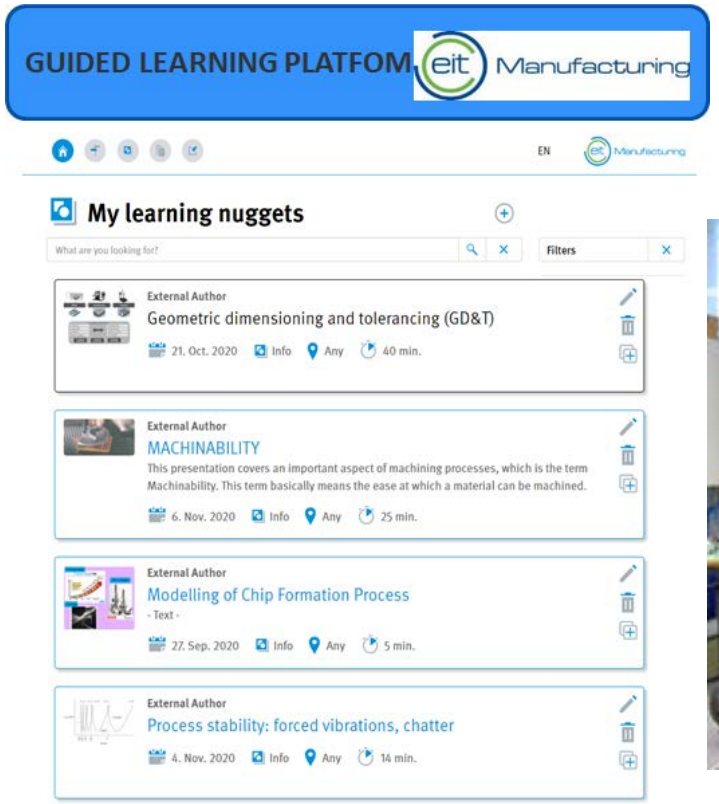
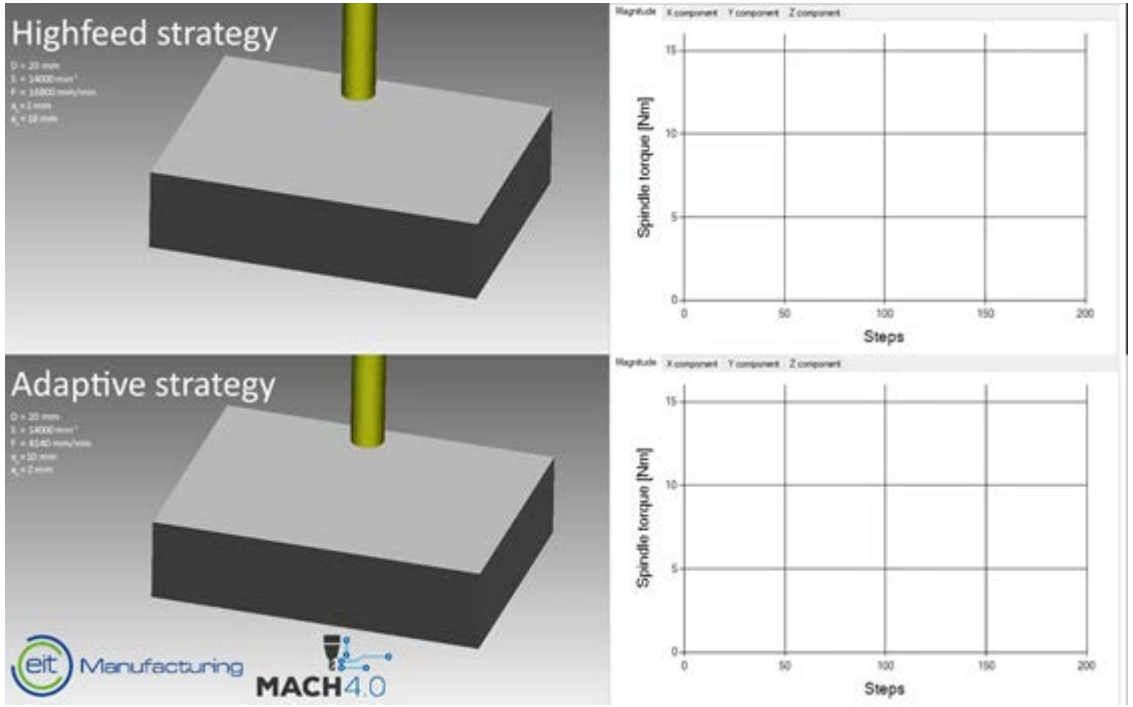
Artificial Intelligence in machining

ARTIFICIAL INTELLIGENCE





A more sustainable and competitive Europe

- Better quality products
- Increased efficiency
- Reduced waste, pollution and lower energy consumption

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