ProcTwin

Integrated modelling for sustainable and optimized steel manufacturing processes

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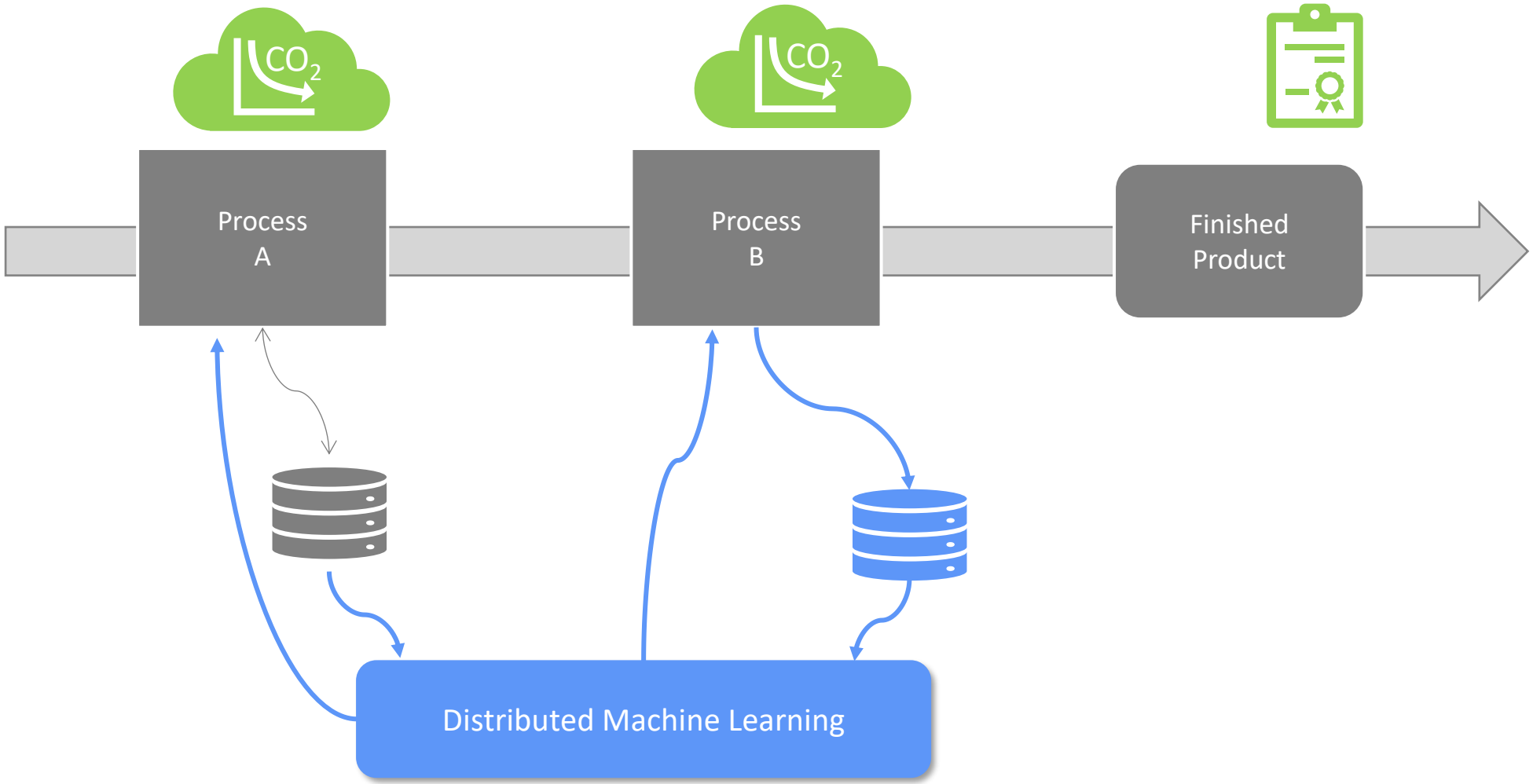
Funded by the European Union

PROCTWIN

Concept of PROCTWIN



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Beyond state of the art

- ✓Novel Sensor techniques in continuous casting
- ✓Simulation of process chain
- ✓Distributed Machine Learning
- ✓Data management and integration
- ✓Demonstration platform for visualization and communication

Optical cameras for billet surface inspection.

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Continuous Casting

Digital Twin

CFD (BFI)

Novel sensors

PROCTWIN

GSW

Global Steel Wire

CELSA group

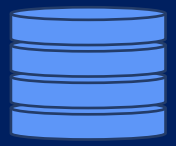
Distributed machine learning

Continuous Casting

Digital Twin

CFD + FEM

Novel sensors

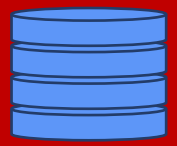


Reheating

Digital Twin

FOCS

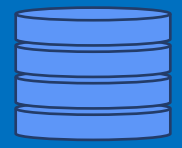
Thermal camera



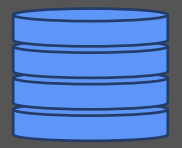
Wire rolling

Digital Twin

FEA

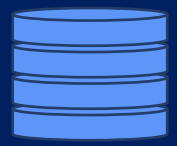


Quality check

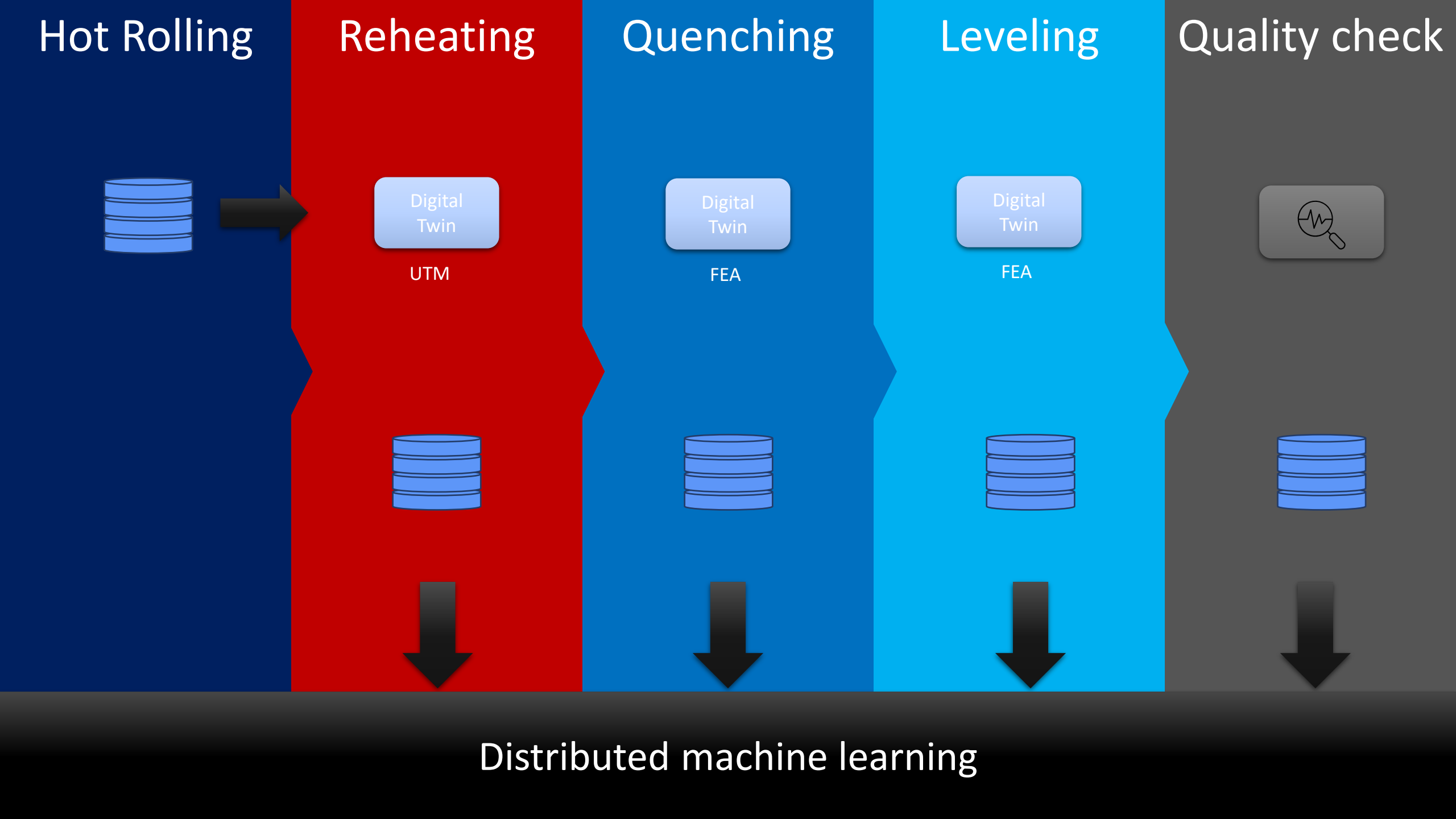


Distributed machine learning

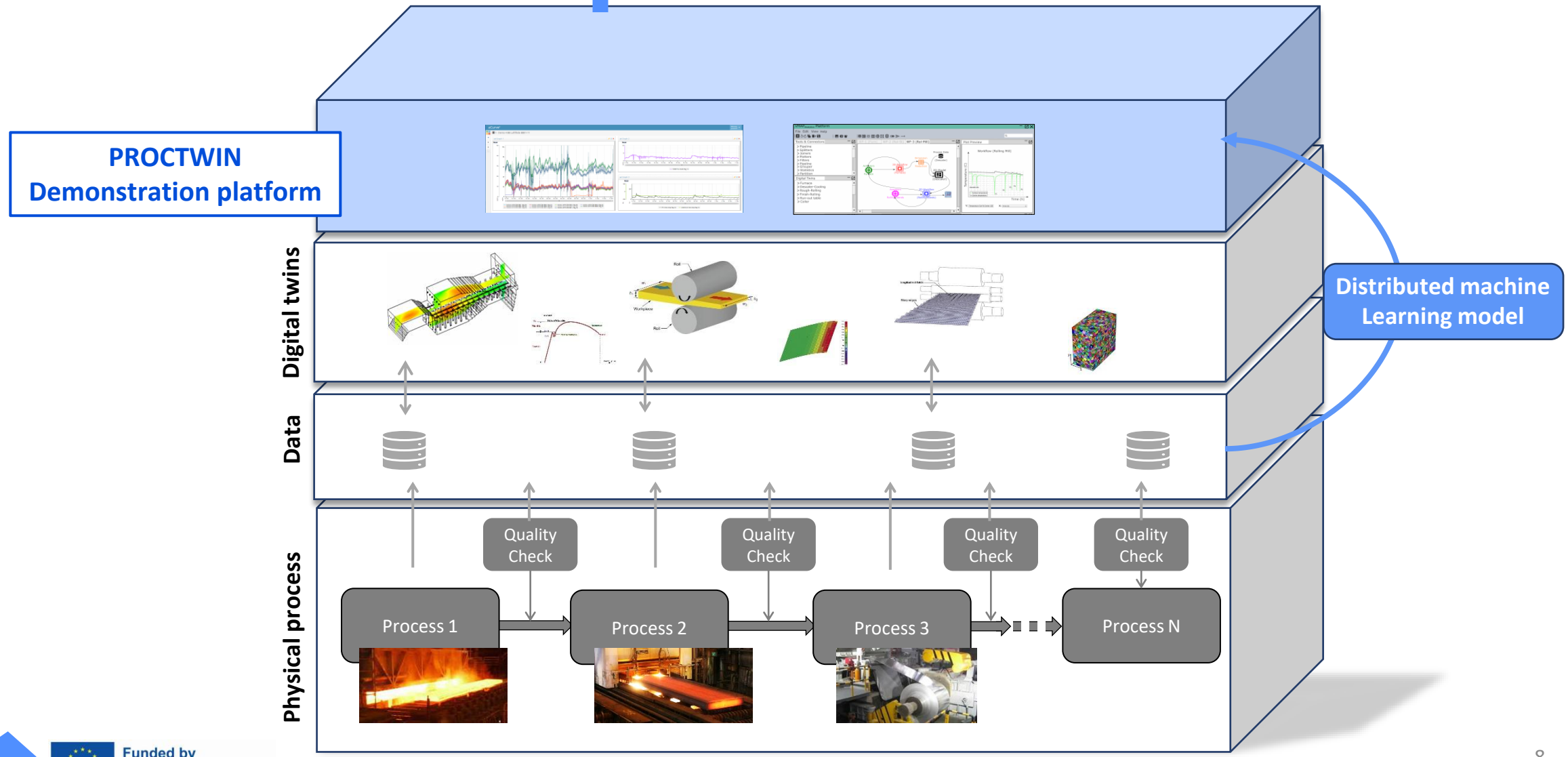
Hot Rolling



Distributed machine learning


Hot Rolling
Reheating
Quenching
Leveling
Quality check
Digital Twin
UTM
Digital Twin
FEA
Digital Twin
FEA
Distributed machine learning

Demonstration platform



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Impact long term and expected outcome

"ProcTwin's optimization tools target energy-intensive steps like reheating furnaces, aiming for a challenging 5% reduction in energy consumption."

KPI	GSW	SSAB
Reduction of reprocessing	25%	10%
Reduction of energy consumption	5%	5%
Reduction of CO2 emissions	3%	3%
Costs reduction	4M€	3,5M€

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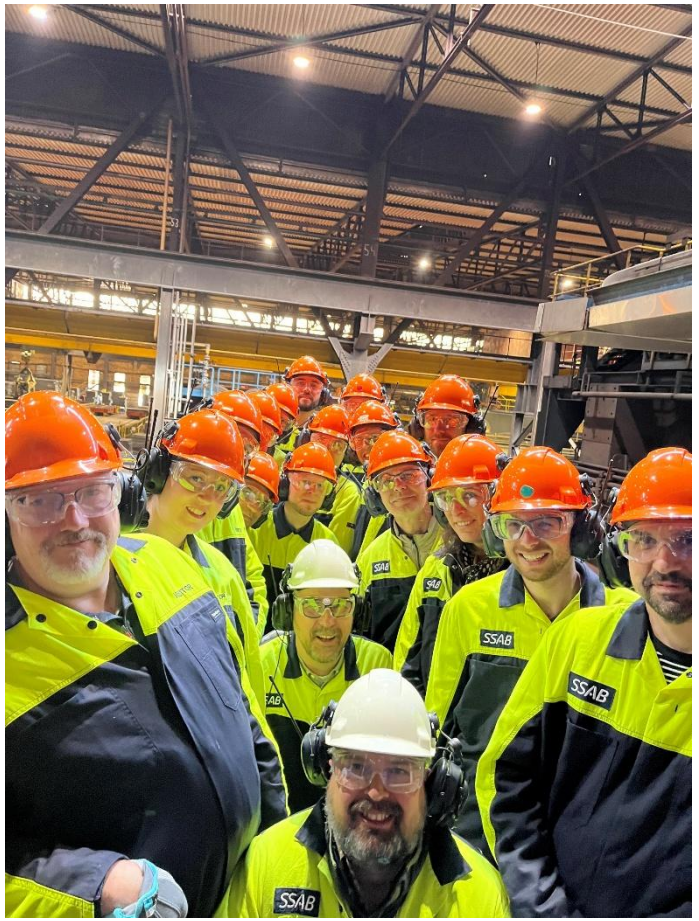
First meeting at Swerim + SSAB



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THANK YOU!

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