

SINTEF AM OFFERS AND ACTIVITES

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EPIC Online Technology Meetings on Advanced and Additive Metal Manufacturing

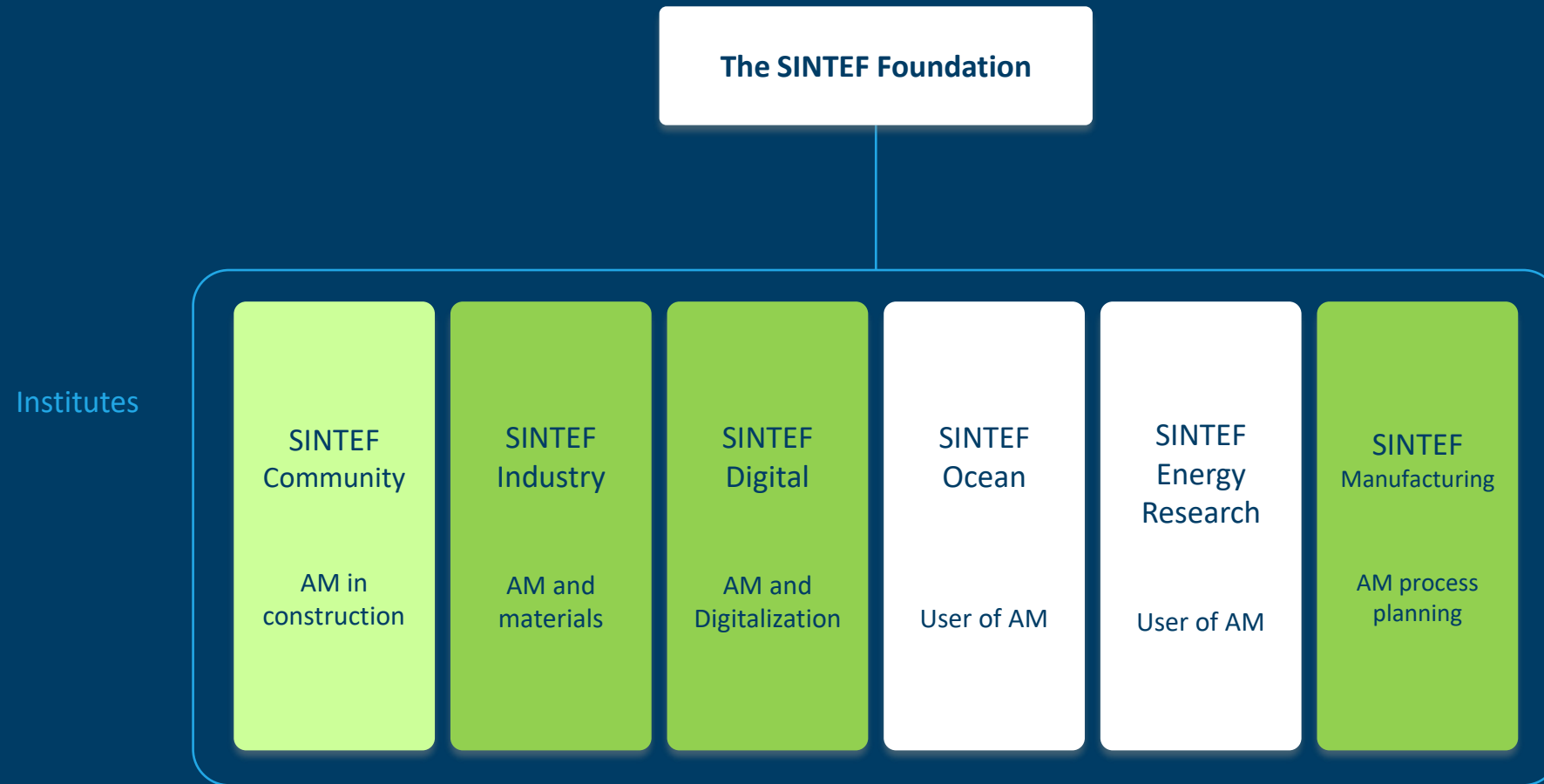
Online meeting, October 19, 2020

Vision: Technology for a better society

Additive Manufacturing a cross disciplinary enabling technology



SINTEF – where do we find AM activity?



AM and digitalization in SINTEF

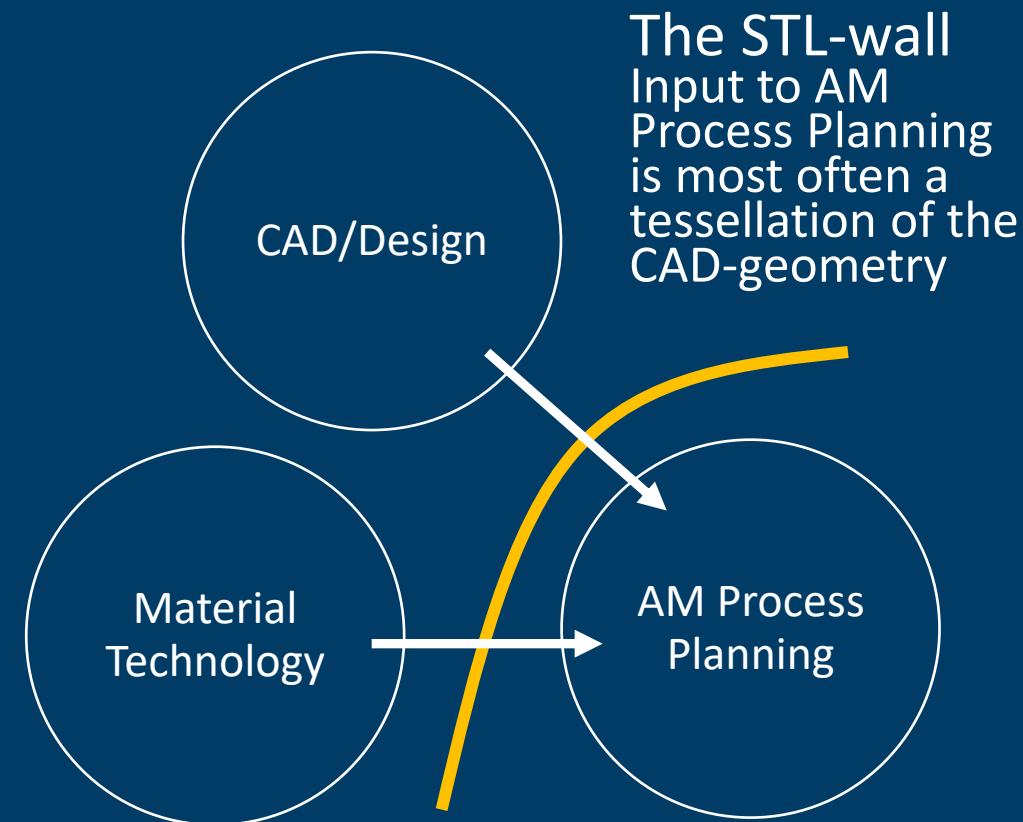
AM needs better interoperability and high quality digital twins

- From CAD B-rep to V-rep
- Representation of voids & inner structures
- Improved simulation
- Augmentation of ISO 10303 to support AM

H2020 Innovation Actions (2020-2024)

www.Change2Twin.eu and PULSATE

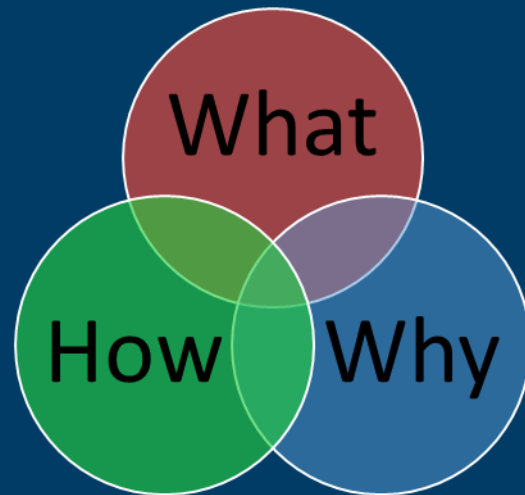
- AM central in Horizon Europe



Industrialization: Needs for building the intellectual infrastructure for AM in industry and society

Need for knowledge!

- Potential users..!
- Potential customers..!

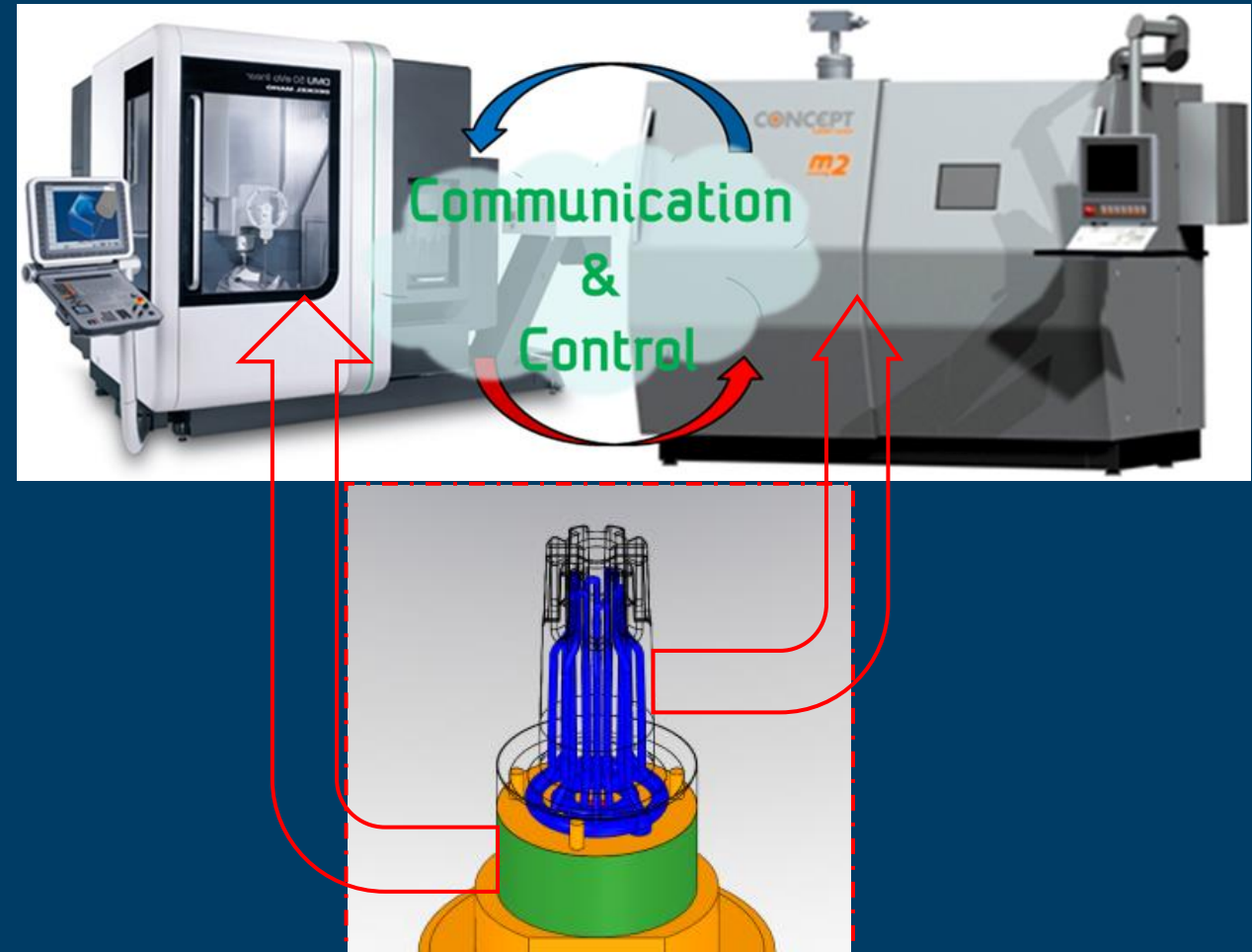


Need for structure!

- Legislation
 - IPR issues
 - Responsibilities
- Regulation
 - Trade regulations
 - Certification
- Standardization
 - International coherency and coordination

Process integration: The hybrid manufacturing cell

- PBF-LB machine integrated collaboration with 5-axis CNC milling
- No compromise -each machine maintain its process integrity and can be used separately
- Generic pallet and positioning system: work piece is moved manually
- Position and coordinates are communicated between the machines



Specification of the AM-enabled process chain:

Fundamental need: First-time-right-production & reproducibility!

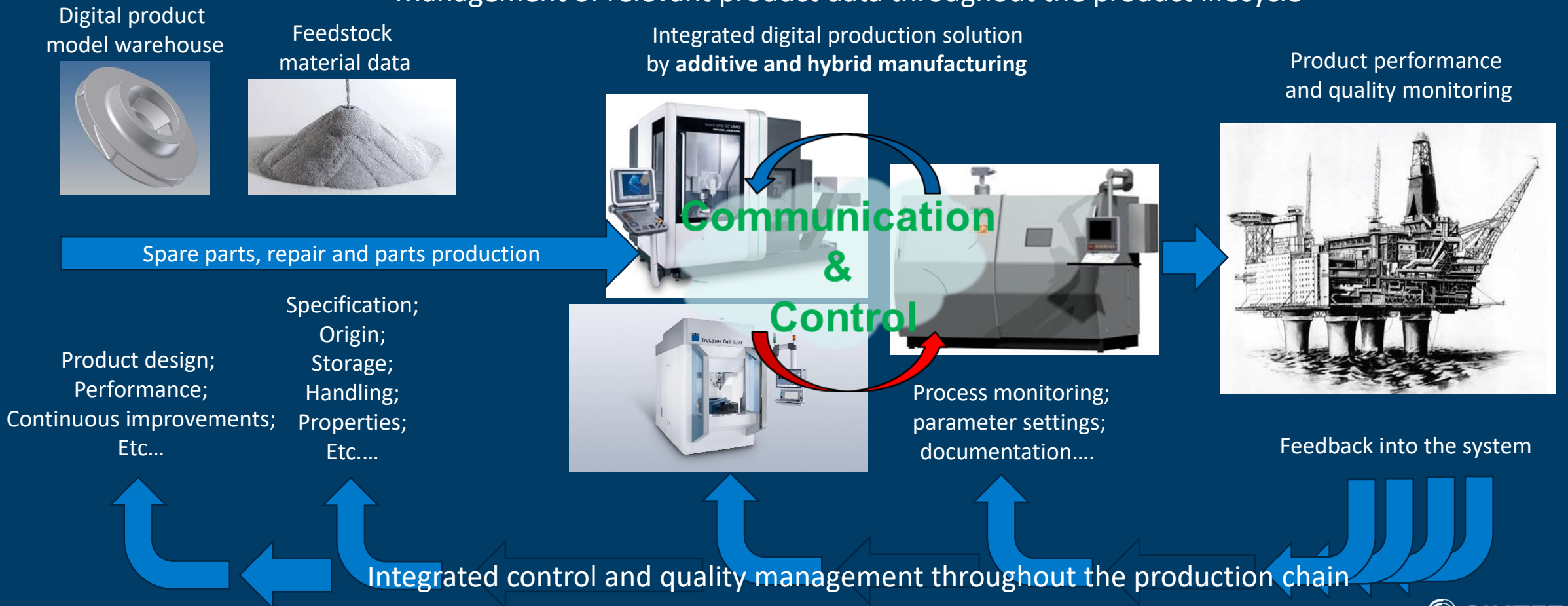
Technological keys:

- Specification of the process
- Specification of material, feedstock requirements, and acceptable variability
- Composition of optimized process route, AM and complementary processes, based on geometry, application and specific requirements
 - Specification of requirements for each sub-process: input and output
- In-process monitoring, (-possibly integrated NDT) and documentation of key properties to verify compliance to the specified requirements
 - Data monitoring and evaluation by statistical process control

Digital production integration with additive manufacturing

SINTEF Vision: Pilot solution for digitalization in manufacturing

Management of relevant product data throughout the product lifecycle





Technology for a better society