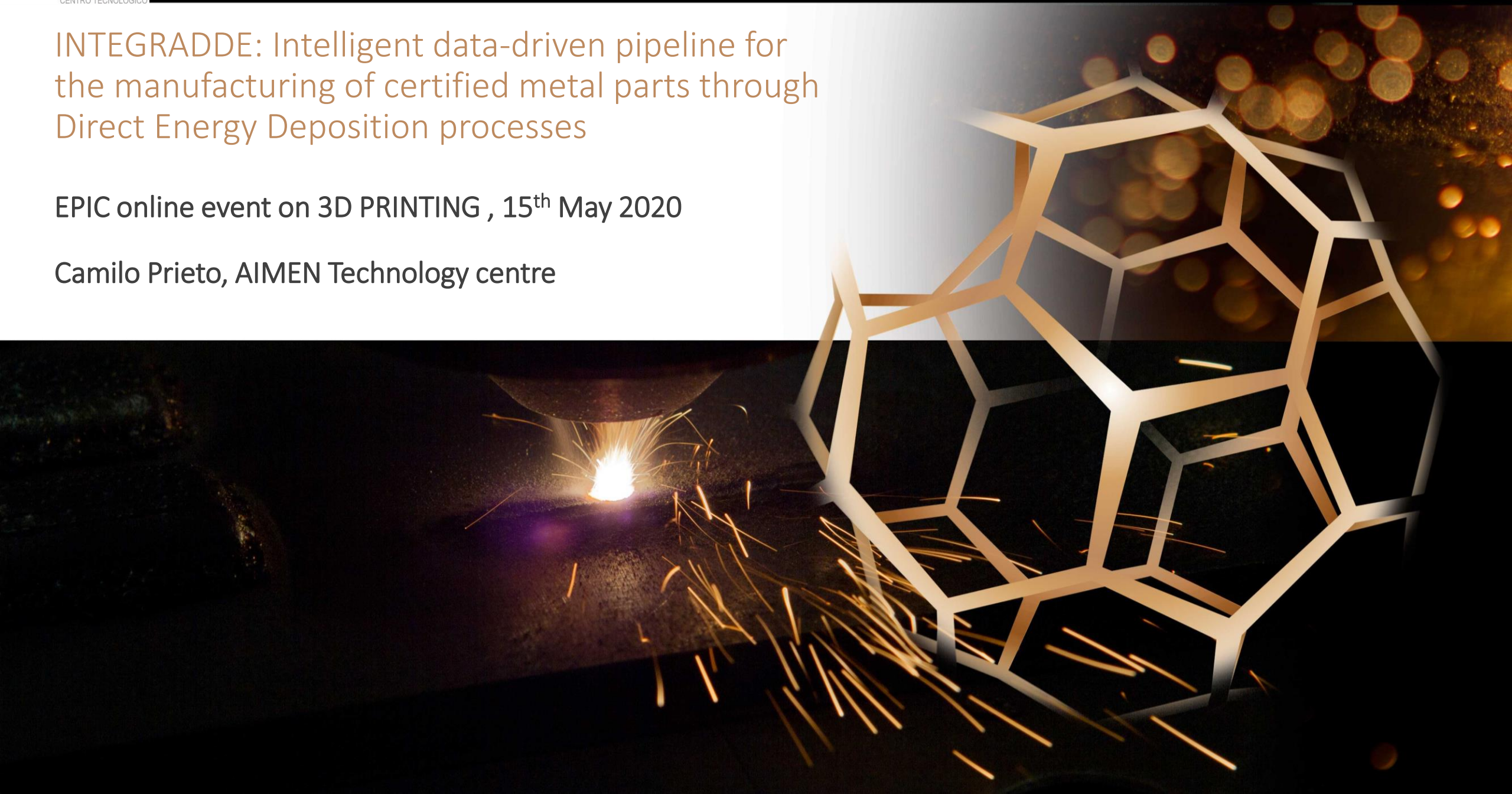
INTEGRADDE: Intelligent data-driven pipeline for the manufacturing of certified metal parts through Direct Energy Deposition processes

EPIC online event on 3D PRINTING , 15th May 2020

Camilo Prieto, AIMEN Technology centre

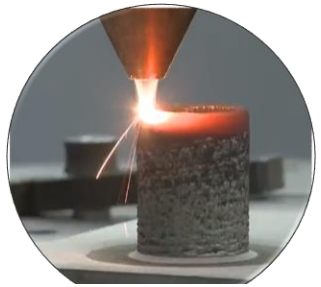


AIMEN AT A GLANCE

Industry supported, private centre. Applied R&D in

Advanced Materials

Smart Systems and Smart Manufacturing

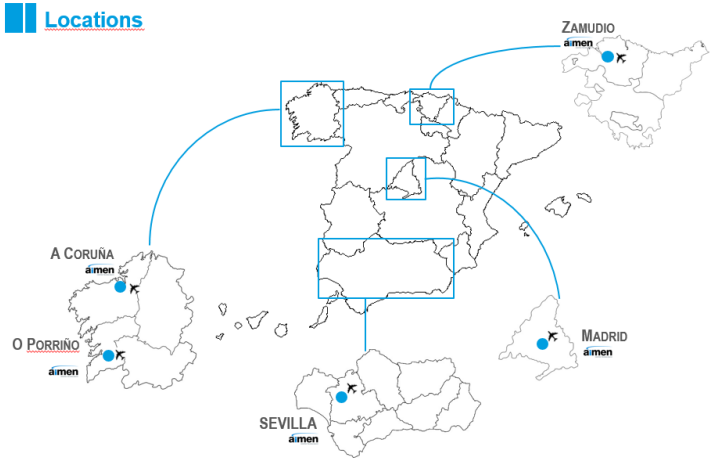


Advanced and Additive Manufacturing

Micro and High Precision Manufacturing

Sustainable Manufacturing Processes

Locations



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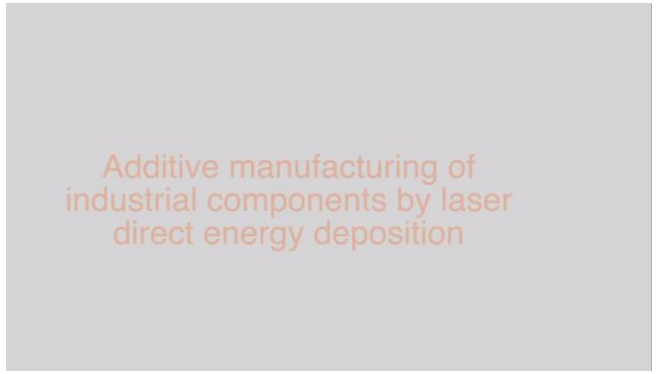
Topic: DT-FOF-04-2018. Pilot lines for metal Additive Manufacturing (IA)

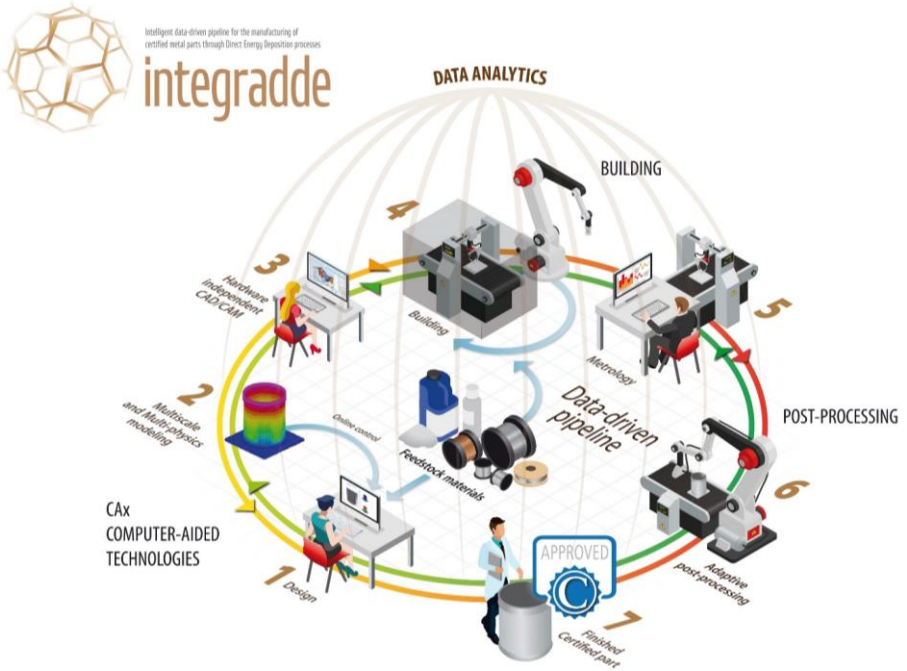
Manufacturability, reliability and quality of a target metal component **by DED technologies: LMD, WAAM**

- Suitable to large parts
- Design freedom: over non-flat parts, no support structures
- Combinations of materials possible
- Near-net shape -> machining as post-AM-process

- **Reconstruction and Repairing:** Identical properties as base material or enhanced properties adapted to functionality
- **New components**



Digital end-to-end manufacturing solution for a seamless integration across the entire AM chain



Integradde Digital thread for AM

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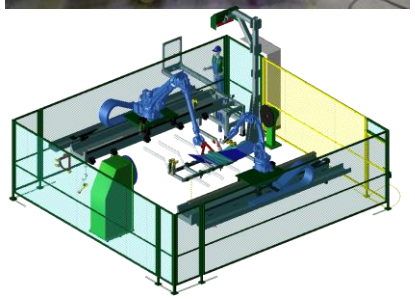
TARGET COMPONENT – APPLICATION DRIVEN PILOT LINES

LOIRETECH



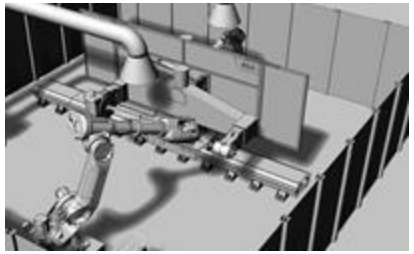
WAAM

Tooling – aeronautics

Moulding tooling for aeronautic

INVAR

MX3D



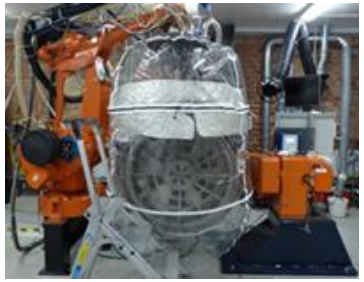
WAAM

Construction

3D printed steel structural components.

Steel

GKN AEROSPACE



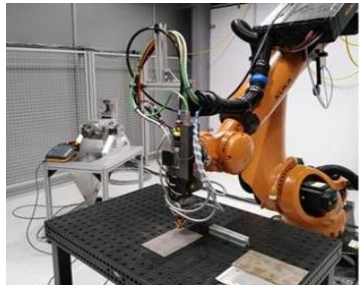
LMD-w

Aeronautics

Engine case

Titanium

ArcelorMittal



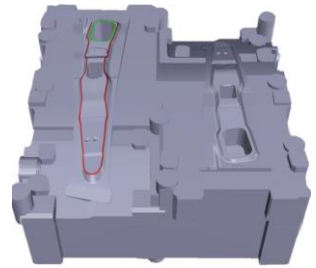
LMD-p

Steel industry

Large parts for the steelmaking

Metal-alloy

CORDA



LMD-p

Tooling - automotive

Cutting and stamping tools Tool-steel

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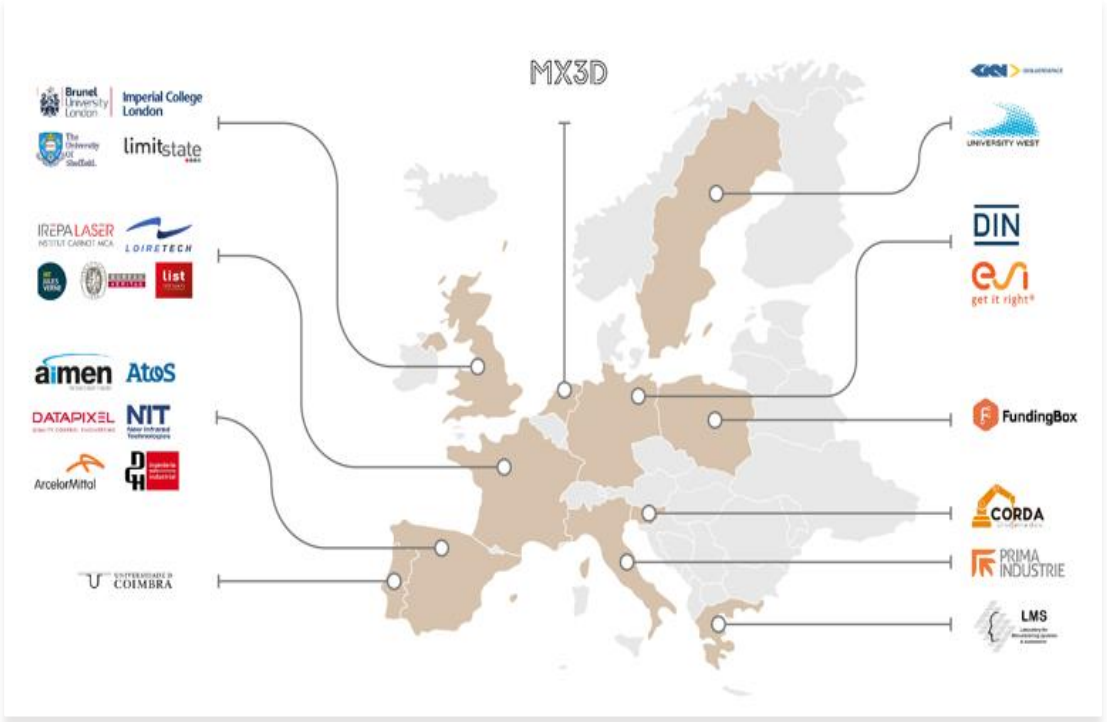

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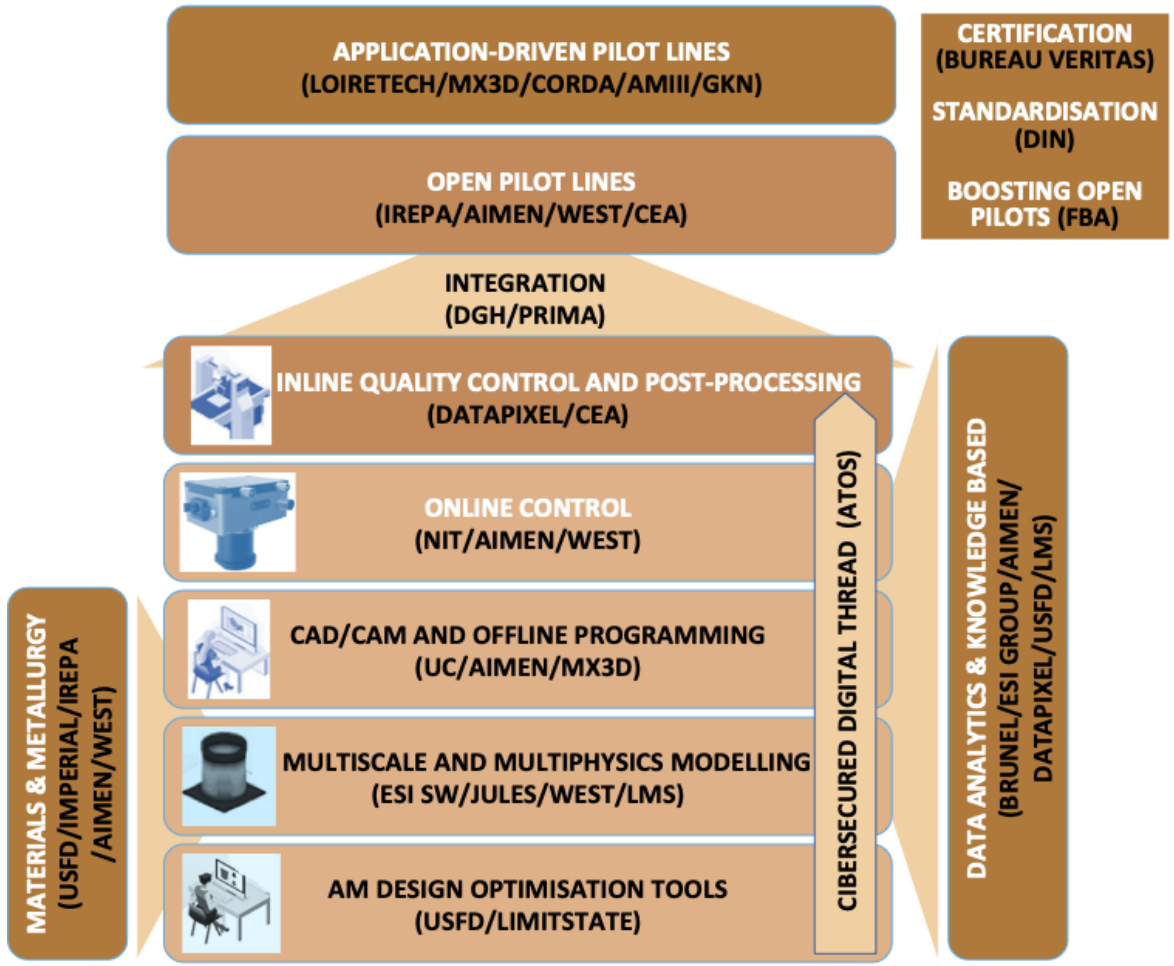
OPEN PILOT LINES NETWORK: Offering services to EU industry of consultancy and proof-of-concept of DED technologies for manufacturing



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END-TO-END MANUFACTURING SOLUTION FOR LMD

PRODUCT ENGINEERING

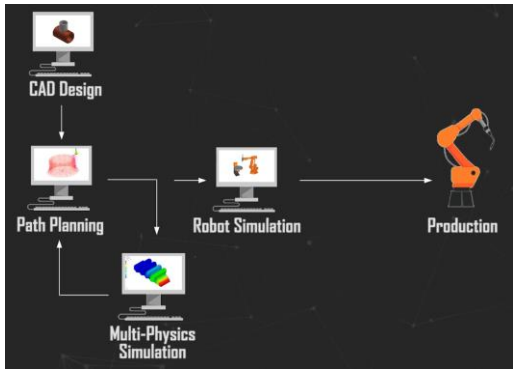
- Part design & Topology optimisation (CAD)
- Path planning & process simulation (CAPP/CAE)
- Automatic Off line programming (CAM)

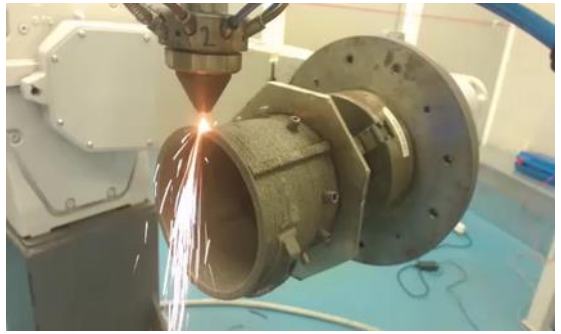
BUILD & CONTROL

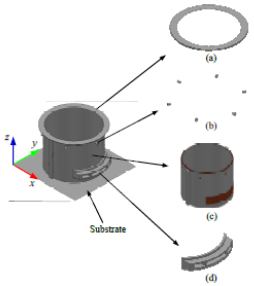
- Additive Manufacturing
- Process monitoring and control
- Data analytics

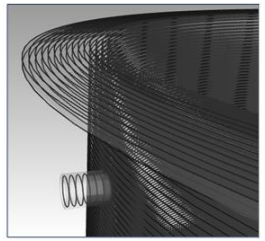
QC AND POSTPROCESS

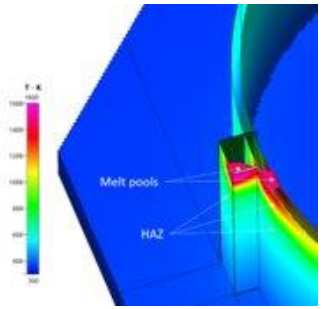
- Metrology and NDT

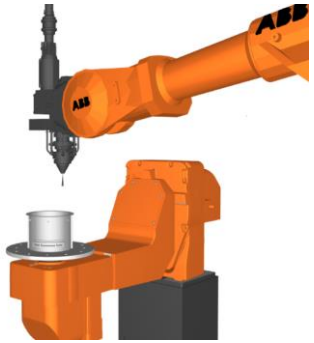


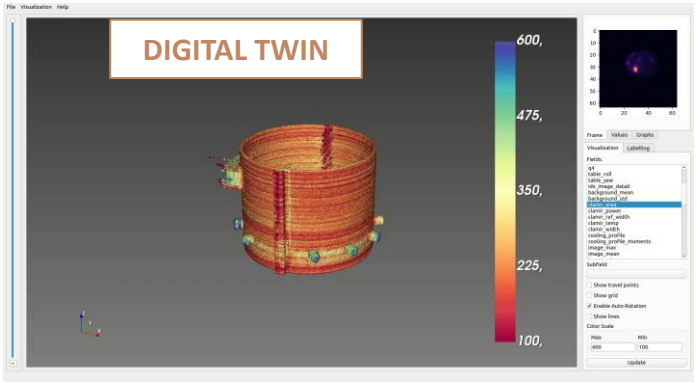


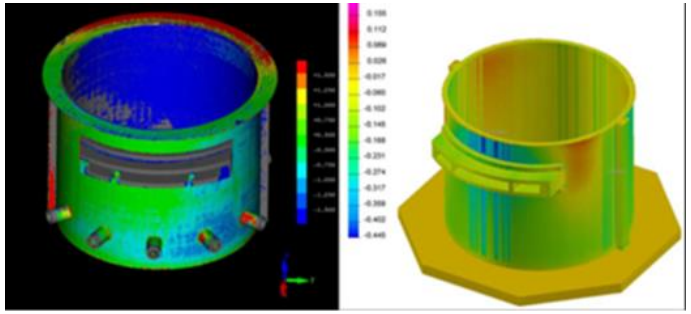












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Thank you for your attention

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