CUSTOMER & MARKET
- OEB srl Italy - Automotive

MAIN GOAL
- Flexible design and production time reduction

MATERIAL
- Ti6246

KEY CHALLENGES
- Design adaptation for AM
- Minimize as much as possible the printing supports to reduce post-processing time
PILOT LINE CAPABILITIES

PRINTERS (LPBF)
- EOS M270, EOS M290, EOS M400, etc.

MATERIALS
- Aluminum, titanium, steel, copper, hastelloy X, etc.

DESIGN
- Design adaptation for Additive Manufacturing (AM)
- Redesign
- Topology optimization
- FEM analysis (thermal, mechanical, etc.)
- Additive Manufacturing simulations
- Machining drawing
- Etc.

MANUFACTURING & POST-PROCESSING
- Build job preparation
- Build job printing & de-powdering
- Part marking
- Hot isostatic pressing treatment (HIP)
- Heat treatment
- Parts separation from build plate, supports removal & machining
- Blasting, polishing
- Surface laser treatment
- Welding
- Cleaning
- Etc.

INSPECTION
- Visual inspection
- Physical measurements
- 3D scanning
- X-ray tomography
- Etc.

QUALITY ASSURANCE
- Powder characterization
- Printed part mechanical proprieties
- Processes validation & record
- Etc.

Capabilities used for the presented part
POWER PART

CUSTOMER & MARKET
- ENEL (IT) – Power

MAIN GOAL
- Reproduce the part in AM

MATERIAL
- Hastelloy X

KEY CHALLENGES
- Print in multiple parts with final reassembly
- Deformation
- Post-processing
PILOT LINE CAPABILITIES

PRINTERS (LPBF)
- EOS M270, EOS M290, EOS M400, etc.

MATERIALS
- Aluminum, titanium, steel, copper, hastelloy X, etc.

DESIGN
- Design adaptation for Additive Manufacturing (AM)
- Redesign
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- Machining drawing
- Etc.

MANUFACTURING & POST-PROCESSING
- Build job preparation
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- Blasting, polishing
- Surface laser treatment
- Welding
- Cleaning
- Etc.

INSPECTION
- Visual inspection
- Physical measurements
- 3D scanning
- X-ray tomography
- Etc.

QUALITY ASSURANCE
- Powder characterization
- Printed part mechanical proprieties
- Processes validation & record
- Etc.

Capabilities used for the presented part
CUSTOMER & MARKET
- CEIT (SK) - Medical

MAIN GOAL
- Reduce manufacturing time via supports optimization
- Deformation minimization

MATERIAL
- Ti6Al4V ELI

KEY CHALLENGES
- Printing orientation & supports definition
- Part deformation
PILOT LINE CAPABILITIES

PRINTERS (LPBF)
- EOS M270, EOS M290, EOS M400, etc.

MATERIALS
- Aluminum, titanium, steel, copper, hastelloy X, etc.

DESIGN
- Design adaptation for Additive Manufacturing (AM)
- Redesign
- Topology optimization
- FEM analysis (thermal, mechanical, etc.)
- Additive Manufacturing simulations
- Machining drawing
- Etc.

MANUFACTURING & POST-PROCESSING
- Build job preparation
- Build job printing & de-powdering
- Part marking
- Hot isostatic pressing treatment (HIP)
- Heat treatment
- Parts separation from build plate, supports removal & machining
- Blasting, polishing
- Surface laser treatment
- Welding
- Cleaning
- Etc.

INSPECTION
- Visual inspection
- Physical measurements
- 3D scanning
- X-ray tomography
- Etc.

QUALITY ASSURANCE
- Powder characterization
- Printed part mechanical proprieties
- Processes validation & record
- Etc.

Capabilities used for the presented part
ENERGY PART

CUSTOMER & MARKET
- Siemens (SW) – Energy

MAIN GOAL
- Reproduce the part in AM

MATERIAL
- Hastelloy X

KEY CHALLENGES
- Small internal features
PILOT LINE CAPABILITIES

PRINTERS (LPBF)
- EOS M270, EOS M290, EOS M400, etc.

MATERIALS
- Aluminum, titanium, steel, copper, hastelloy X, etc.

DESIGN
- Design adaptation for Additive Manufacturing (AM)
- Redesign
- Topology optimization
- FEM analysis (thermal, mechanical, etc.)
- Additive Manufacturing simulations
- Machining drawing
- Etc.

MANUFACTURING & POST-PROCESSING
- Build job preparation
- Build job printing & de-powdering
- Part marking
- Hot isostatic pressing treatment (HIP)
- Heat treatment
- Parts separation from build plate, supports removal & machining
- Blasting, polishing
- Surface laser treatment
- Welding
- Cleaning
- Etc.

INSPECTION
- Visual inspection
- Physical measurements
- 3D scanning
- X-ray tomography
- Etc.

QUALITY ASSURANCE
- Powder characterization
- Printed part mechanical proprieties
- Processes validation & record
- Etc.

Capabilities used for the presented part
AVIONICS PART

CUSTOMER & MARKET
- Qioptiq (UK) – Aeronautics

MAIN GOAL
- Mass reduction
- Cost and manufacturing time reduction

MATERIAL
- A20X

KEY CHALLENGES
- Printing orientation
- Deformation
- Post-processing
PILOT LINE CAPABILITIES

PRINTERS (LPBF)
- EOS M270, EOS M290, EOS M400, etc.

MATERIALS
- Aluminum, titanium, steel, copper, hastelloy X, etc.

DESIGN
- Design adaptation for Additive Manufacturing (AM)
- Redesign
- Topology optimization
- FEM analysis (thermal, mechanical, etc.)
- Additive Manufacturing simulations
- Machining drawing
- Etc.

MANUFACTURING & POST-PROCESSING
- Build job preparation
- Build job printing & de-powdering
- Part marking
- Hot isostatic pressing treatment (HIP)
- Heat treatment
- Parts separation from build plate, supports removal & machining
- Blasting, polishing
- Surface laser treatment
- Welding
- Cleaning
- Etc.

INSPECTION
- Visual inspection
- Physical measurements
- 3D scanning
- X-ray tomography
- Etc.

QUALITY ASSURANCE
- Powder characterization
- Printed part mechanical proprieties
- Processes validation & record
- Etc.

Capabilities used for the presented part
POWER PART

CUSTOMER & MARKET
- ENEL (IT) – Power

MAIN GOAL
- Reproduce the part in AM

MATERIAL
- Hastelloy X

KEY CHALLENGES
- Print in multiple parts with final reassembly
- Post-processing
PILOT LINE CAPABILITIES

PRINTERS (LPBF)
- EOS M270, EOS M290, EOS M400, etc.

MATERIALS
- Aluminum, titanium, steel, copper, hastelloy X, etc.

DESIGN
- Design adaptation for Additive Manufacturing (AM)
- Redesign
- Topology optimization
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- Etc.

MANUFACTURING & POST-PROCESSING
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- Blasting, polishing
- Surface laser treatment
- Welding
- Cleaning
- Etc.

INSPECTION
- Visual inspection
- Physical measurements
- 3D scanning
- X-ray tomography
- Etc.

QUALITY ASSURANCE
- Powder characterization
- Printed part mechanical proprieties
- Processes validation & record
- Etc.

Capabilities used for the presented part
SPACE PART

CUSTOMER & MARKET
- Beyond Gravity (CH) - Space

MAIN GOAL
- Reduction of the number of parts
- Integration of electrical functionalities

MATERIAL
- Cu 997

KEY CHALLENGES
- Integration of electrical functionalities
- Printing of small features
- Post-processing
PILOT LINE CAPABILITIES

PRINTERS (LPBF)
- EOS M270, EOS M290, EOS M400, etc.

MATERIALS
- Aluminum, titanium, steel, copper, hastelloy X, etc.

DESIGN
- Design adaptation for Additive Manufacturing (AM)
- Redesign
- Topology optimization
- FEM analysis (thermal, mechanical, etc.)
- Additive Manufacturing simulations
- Machining drawing
- Etc.

MANUFACTURING & POST-PROCESSING
- Build job preparation
- Build job printing & de-powdering
- Part marking
- Hot isostatic pressing treatment (HIP)
- Heat treatment
- Parts separation from build plate, supports removal & machining
- Blasting, polishing
- Surface laser treatment
- Welding
- Cleaning
- Etc.

INSPECTION
- Visual inspection
- Physical measurements
- 3D scanning
- X-ray tomography
- Etc.

QUALITY ASSURANCE
- Powder characterization
- Printed part mechanical proprieties
- Processes validation & record
- Etc.

Capabilities used for the presented part
CUSTOMER & MARKET
- Beyond Gravity (CH) - Space

MAIN GOAL
- Reduction of mass (20%)

MATERIAL
- A2Ox, Al2139

KEY CHALLENGES
- Topology optimization while satisfying mechanical requirements for space environment
- Post-processing
PILOT LINE CAPABILITIES

PRINTERS (LPBF)
- EOS M270, EOS M290, EOS M400, etc.

MATERIALS
- Aluminum, titanium, steel, copper, hastelloy X, etc.

DESIGN
- Design adaptation for Additive Manufacturing (AM)
- Redesign
- Topology optimization
- FEM analysis (thermal, mechanical, etc.)
- Additive Manufacturing simulations
- Machining drawing
- Etc.

MANUFACTURING & POST-PROCESSING
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- Cleaning
- Etc.

INSPECTION
- Visual inspection
- Physical measurements
- 3D scanning
- X-ray tomography
- Etc.

QUALITY ASSURANCE
- Powder characterization
- Printed part mechanical proprieties
- Processes validation & record
- Etc.

Capabilities used for the presented part