

BOREALIS

Enlightening New Materials

Project reference: 636992

Call for proposals: H2020 – FOF – 2014-2015

Start: 01 January, 2015

End: 31 December, 2018

Project duration: 36 months

Budget: € 8.016.625

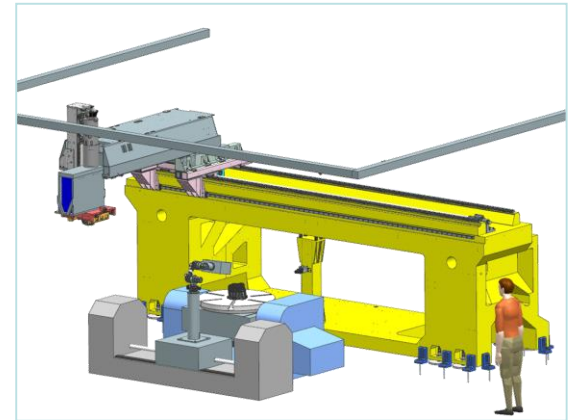


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BOREALIS

New Additive Manufacturing machine for the production of large metal components

- **Direct Energy Deposition** technology with (CW laser source)
- **Subtractive technology** (pulsed laser source)
- **Redundant Cartesian structure with variable working cubes** (from 250x250x250 mm to 4500x2500x1000 mm)
- **High deposition rate** (2000 cm³/h)
- **High efficiency** (40% energy and 75% material saving)
- **Completely closed automatic in line CAx chain** bound to the CNC
- **Smart sensing system** for process monitoring
- **Multi material** approach



Exploitable Results		Description
ER01	Borealis Machine	<ul style="list-style-type: none">• Redundant Cartesian ultra-light structure combining different technologies (deposition and ablation) in a single machine
ER02	Configurable head	<ul style="list-style-type: none">• Configurable head with different nozzles and laser sources• Dynamic collimation system for CW laser• Shielding gas for controlled atmosphere
ER03	Multi nozzle system	<ul style="list-style-type: none">• Optimized geometry and position of nozzles• Multi nozzles system
ER04	Powder feeding system	<ul style="list-style-type: none">• Independent regulation of carrier and powder flow rates• Innovative powder collecting system
ER05	Process control	<ul style="list-style-type: none">• Closed loop controlled process• Coordinated adaptive control of nozzles and laser beam

Thank you

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