

Advanced concept of flexible machine for new Additive Manufacturing and Subtractive Manufacturing processes on next generation of complex 3D metal parts.

Horizon 2020



Collaborate project  
Project No.636992  
Program H2020  
FoF.2014-2

# BOREALIS

Enlightening Next Generation of Material

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The project will develop a prototype of Borealis, a novel Additive Manufacturing machine able to produce large and complex metal parts, at unprecedented throughput and efficiency, in true net shape, with closed loop controlled and certified quality.

## Ambition

- ❖ achievement of cutting edge manufacturing thresholds of accuracy, reliability and speed;
- ❖ need to dynamically manipulate and shift the technology, process parameters and manufacturing strategy in real time.



## Borealis Applications

Borealis machine is specifically conceived for industrial sectors that suffer extremely high manufacturing costs because of part complexity and low volumes, and the prohibitive cost of raw materials.

As a result, Borealis project focuses on the medtech, aerospace and automotive sectors as major target.



## Technical Impact

**Materials:** Metals, Focus on Titanium alloys

**Unprecedented throughput:** up to 2000 cm<sup>3</sup>/h

**Part dimensions:** Up to 1500 x 4000 x 1500 mm

**Material usage:** -70% with same final functionalities

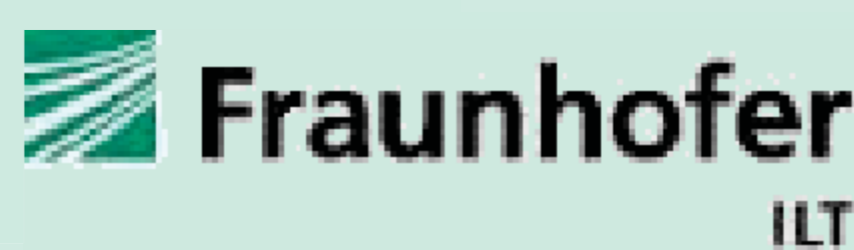
**Cost:** -30% with same final functionalities

**Energy consumption:** in manufacturing - 30%

**Quality:** 0 faulty manufactured parts



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