LASIMM-Large Additive Subtractive Integrated Modular Machine

Web site	**www.lasimm.eu**
Start/end year	2016/2019
Project budget	4.868.262,50€ (100%)
Coordinator/email	EWF egassuncao@ewf.be
Main Adressed sector	**AEROSPACE, ENERGY, CONSTRUCTION**
VC segments	**ALL**

LASIMM aims to develop a **large scale flexible hybrid additive/subtractive machine** based on a modular architecture which is easily scalable. The machine will feature capabilities for additive manufacture and machining, with the possibility of including cold-work, metrology and inspection, that will provide the optimum solution for the hybrid manufacturing of large engineering parts of high integrity, with cost benefits of more than 50% compared to conventional machining processes.

For large scale engineering structures material needs to be deposited at a relatively high rate with exceptional properties and excellent integrity. To ensure this the machine is based on wire + arc additive manufacture for the additive process. A unique feature of the machine will be the capability **for parallel manufacturing featuring either multiple deposition heads or concurrent addition and subtraction processes**. To facilitate parallel manufacturing the machine architecture is based on robotics. To ensure that the surface finish and accuracy needed for engineering components is obtained for the subtractive step a parallel kinematic motion robot is employed. A key part of this project is the development of **ICT infrastructure** and toolboxes needed to programme and run the machine.

LASIMM main Exploitable Results (ER)

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ER1	Large Additive Subtractive Integrated Modular Machine (**Prototype**) *Self-contained modular platform with TRL7, based on robotic manipulation for the additive and subtractive processes, with the possibility of including other functionalities like cold-working and metrology, capable of building complex, high-value, fully finished parts larger than 1 m in length and hundreds of kg in weight, in aluminium and steel, with excellent mechanical properties even better than the equivalent forged alloys.* TRL=7 Time to market: End of 2019
ER2	ICT Framework and toolboxes for first time right integrated hybrid manufacturing (**Software**) *Software package capable of handling the different phases of the production of a component from CAD file to fully finished and inspected part; enables parallel manufacturing, providing large gains in productivity and reduction in cost compared to the traditional serial processing route* TRL=6 Time to market: End of 2019