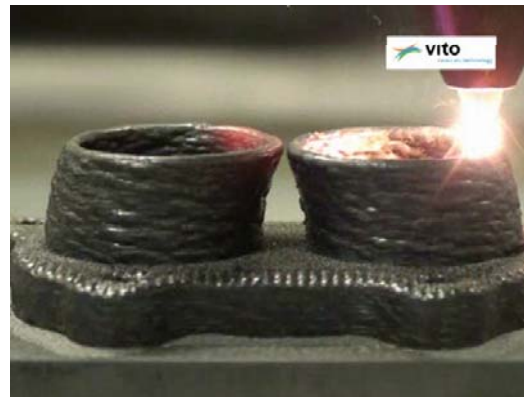


## Background

**High performance metals** like superalloys, titanium alloys and hard steels are difficult to machine using conventional processes.

Laser Metal Deposition is a **laser additive manufacturing (LAM)** technology for the production of metal parts starting from digital data. Additive manufacturing processes offer a high degree of **freedom in design**. LAM can be used to build up complex features on existing 3D components enabling the smart, **hybrid manufacturing** of products.

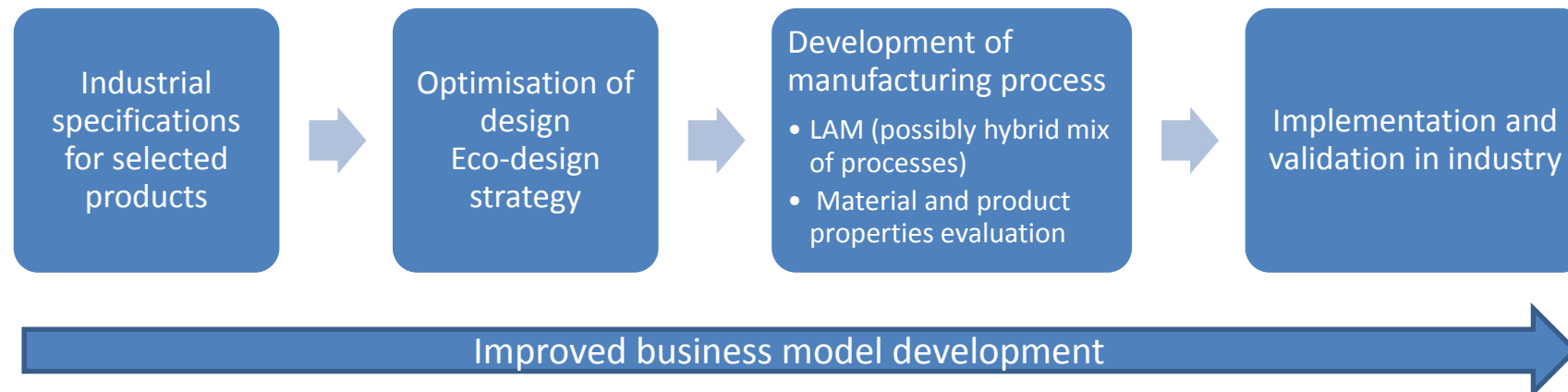
Using Laser Metal Deposition products with **graded, tailored functionalities** can be built by varying the feedstock powder during the process.



**Goal: DEMO-oriented project**

Development and demonstration of sustainable, industrially viable parts with improved functionality produced by laser additive manufacturing of high performance metals

**Project plan**



## Objectives

- » (Hybrid) laser additive manufacturing will be developed and demonstrated for parts with
  - » reliable and reproducible material properties
  - » improved performance by optimised design and graded material properties
- » Life cycle design strategy for selected products to ensure their sustainability
- » Holistic development of new business models to support the economic viability of selected LAM processes and products

## Expected results

- » (Hybrid) LAM parts with optimised design and reliable and possible graded functionalities tailored to the industrial application
- » Demonstration and improvement of the sustainability and economic viability of the developed LAM parts

## VITO contributions

- » Manufacturing process development:
  - » Near-net shape manufacturing of complex structures by laser metal deposition
  - » Materials development & characterization and testing
- » Low impact design strategy to ensure that the developed processes and products are sustainable
- » Development of business models to support the economic viability

## Partner search

Profile	Type	Role in the project
Industrial end users	Company	Specs, implementation and validation
Industrial designer	SME	Design optimisation
Machine tool producer	Company	Integration manufacturing process, software
Product manufacturer	SME	Development of manufacturing process
Laser additive manufacturing developer	RTD	Complementary LAM research

Organisation  
VITO

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