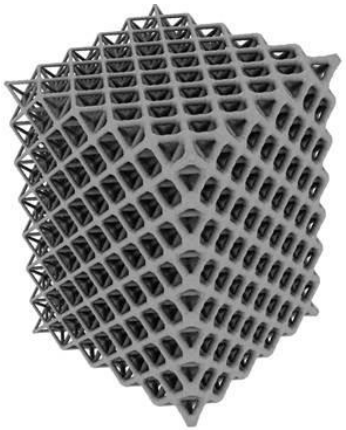
ADDFAB
3Dmetalsfabricated

Challenges in Additive Manufacturing

Why 3D printing?

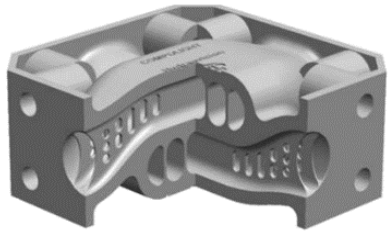
- Only functional material required.
- High level of part/system optimization can be achieved.



Lattice structures

Simulation driven design

Thermal and flow opt.



AM proposition to High Tech

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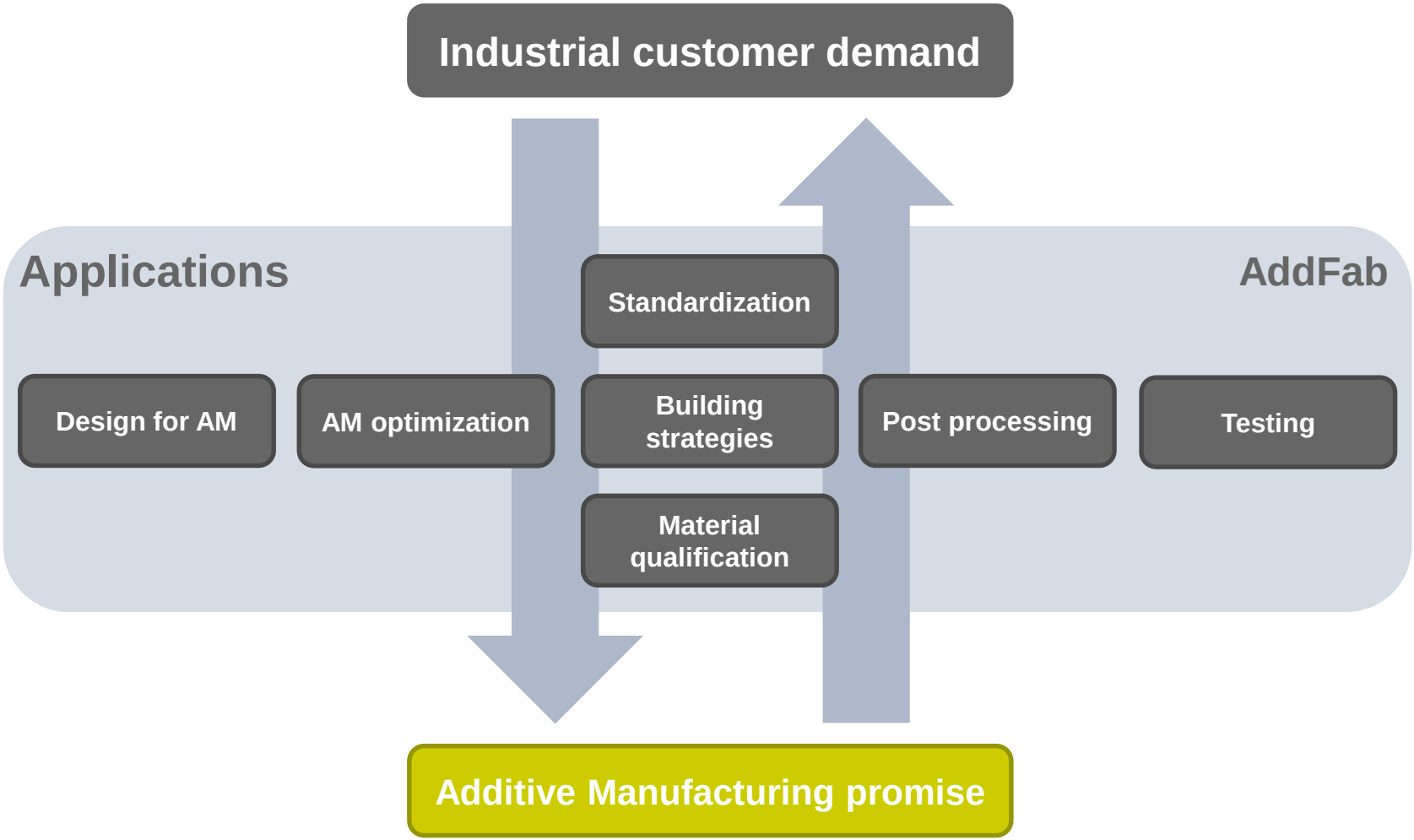
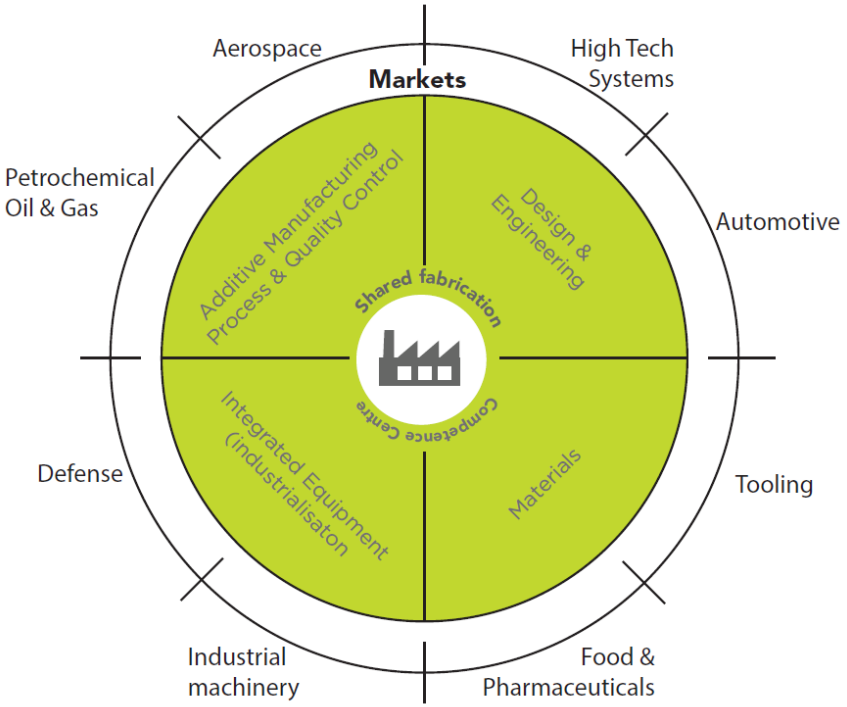
Light weight	Free form	Reliability through high integration level	Fast Design by lower NRE cost	Lean logistics
• Mass reduction • Design optimization	• Design for optimal function and performance (especially flow and thermal design)	• Fewer BOM parts • Fewer connections • Avoiding difficult manual integration	• First product fast concept design confirmation • Complexity at no additional cost • Small series at no additional cost	• Fewer parts • Less spare parts stock • Life cycle management • Less transportation cost

Market demand grows but many aspects of additive manufacturing need further refining for industrial use

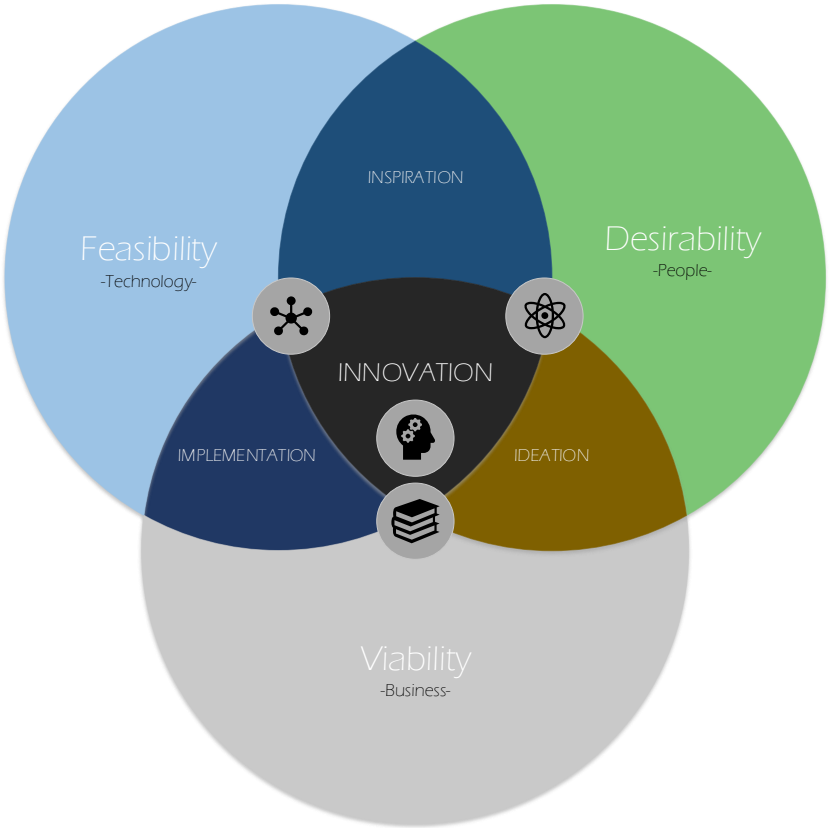


Proposition

- ADDFAB offers **engineering** and **3D metal printing services** and **supports** its customers in the technical and commercial trade-off between the **unique 3D printing feasibilities** and the established machining technologies.
- Together we research **state of the art additive manufacturing** solutions and create **Customer value** through new applications independent from OEM machine suppliers.
- Together we develop, prepare and implement additive **manufacturing solutions and applications** into industrialized production environments
- Together we attract, develop and retain **talent** through knowledge institutes and events. With social responsibility.



Proposition



World Class Infrastructure
Integrated AM Solutions
Latest AM Software
State of art Metal Printers

Shared Research
Applications
Materials
Parameters

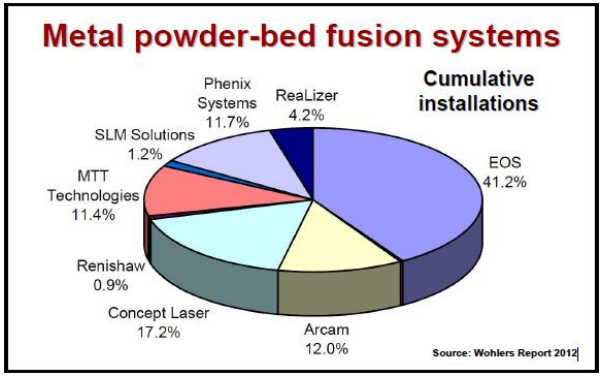
Educate Partners
Workshops
Demonstrators
Masterclasses

International Expertise Network
Brainport Industries
AM-platform
Research Institutes
Schools, Universities

Technology

Materials

Plastics
Ceramics
Metals
Composites/hybrid materials



Additive Manufacturing

Technologies

Material extrusion
Material/binder jetting
Sheet lamination
Vat photopolymerization (stereolithography, DLP)
Powder bed fusion (SLS, SLM, DMLS, EBM,..)
Directed energy deposition

AddFab is founded by 3 partners from the Dutch high tech supply chain

1. KMWE
2. NTS Group
3. Machinefabriek De Valk

Brainport Industries

Network partner of AddFab

Changing the Landscape of Design and Invention

Elimination of Constraints

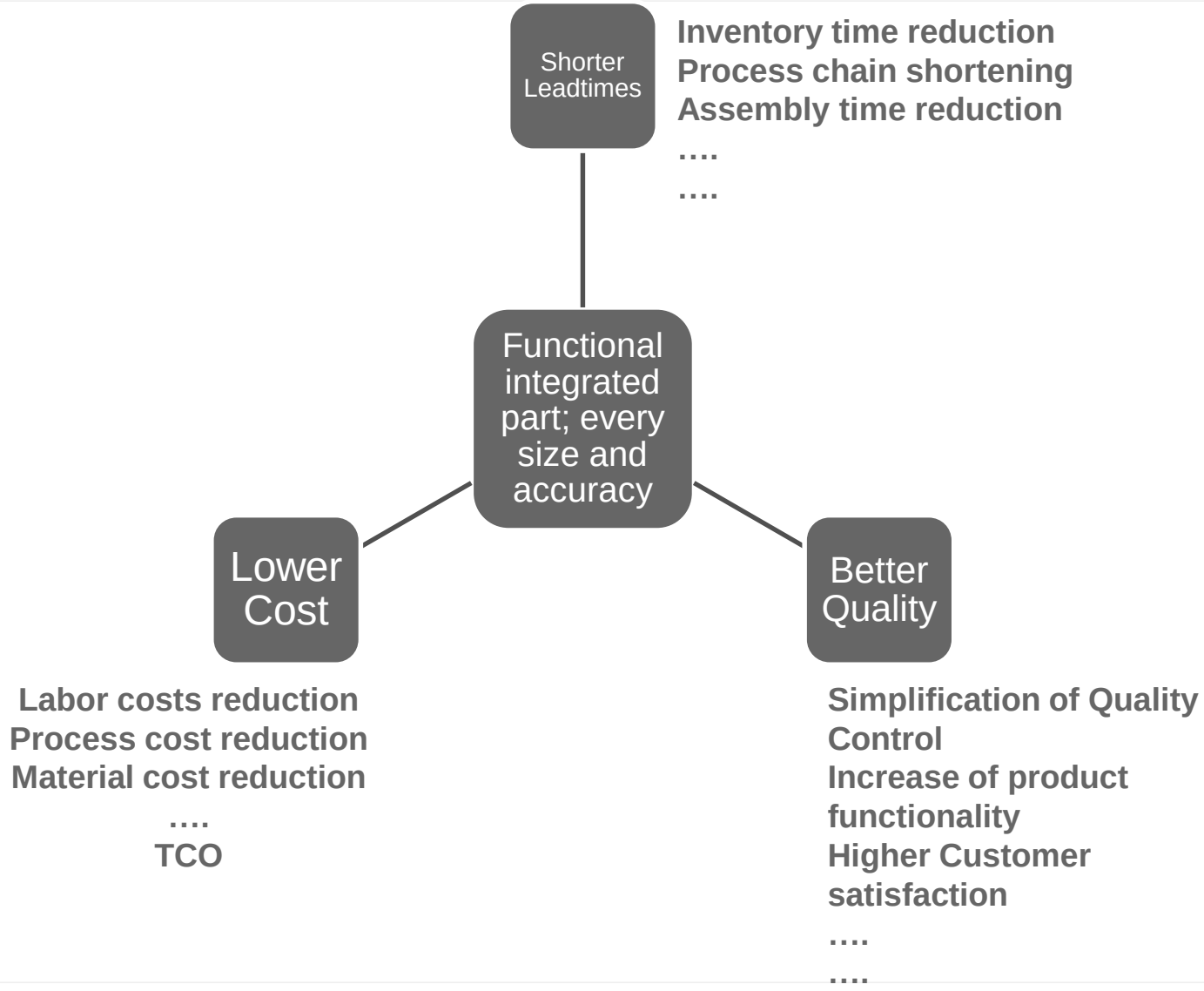
rather than

DFM Design for Manufacturing

Invert the process to

MFD Manufacture for Design

What does the Metal AM Customer want?

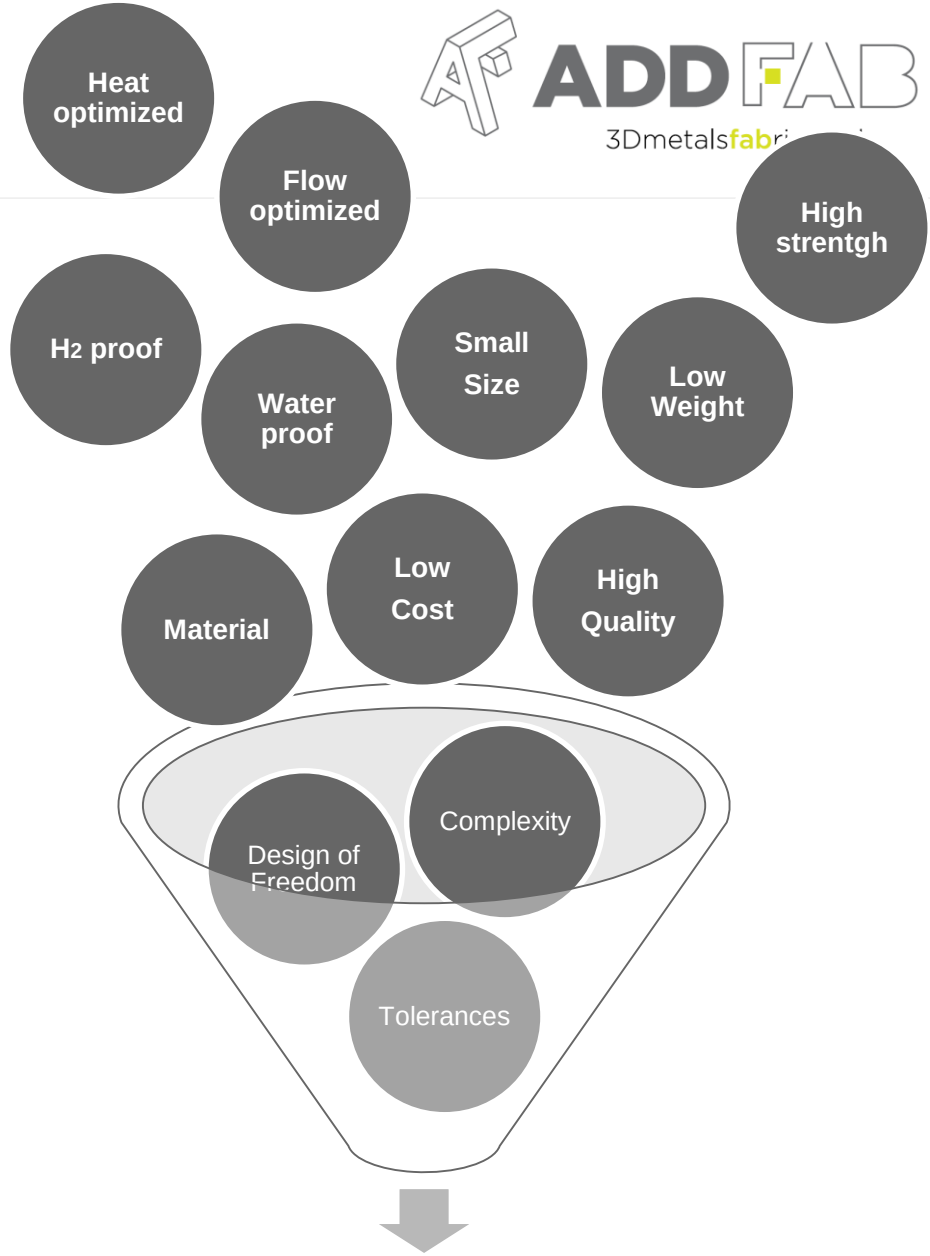


The Questions

Which function needs the product to have?

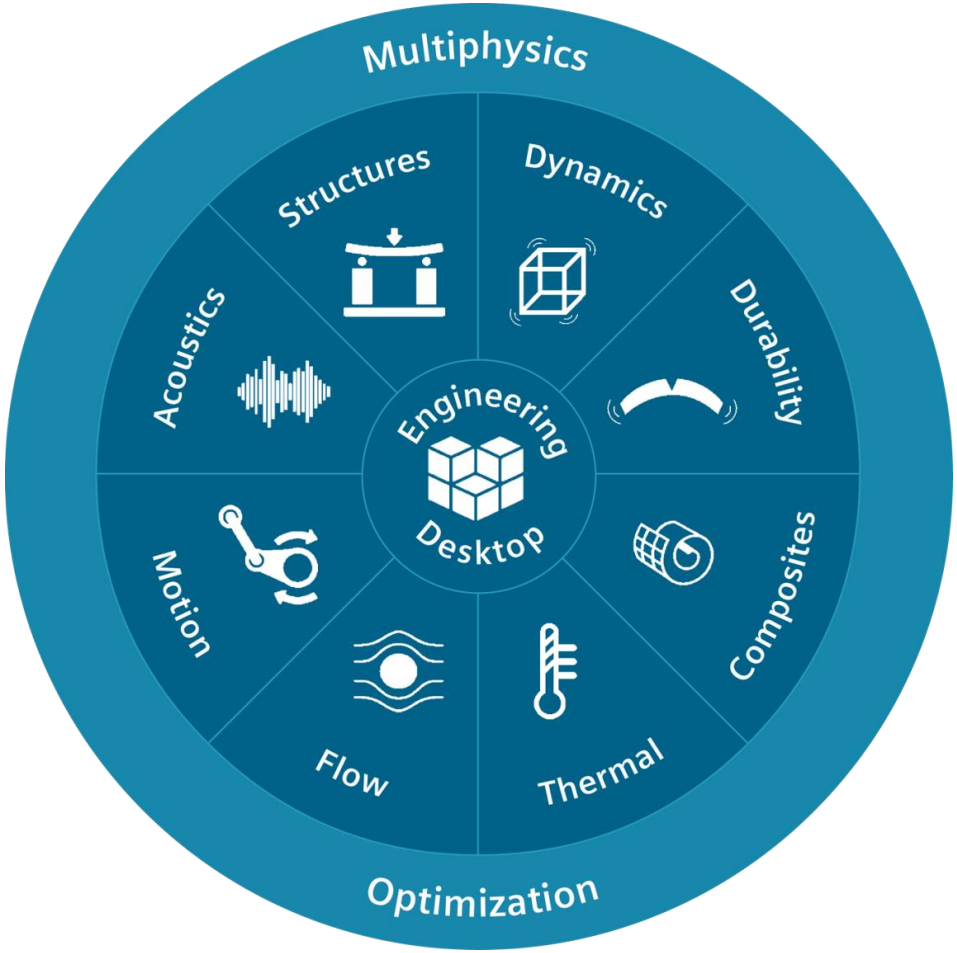
What do we find important?

What may the cost be?



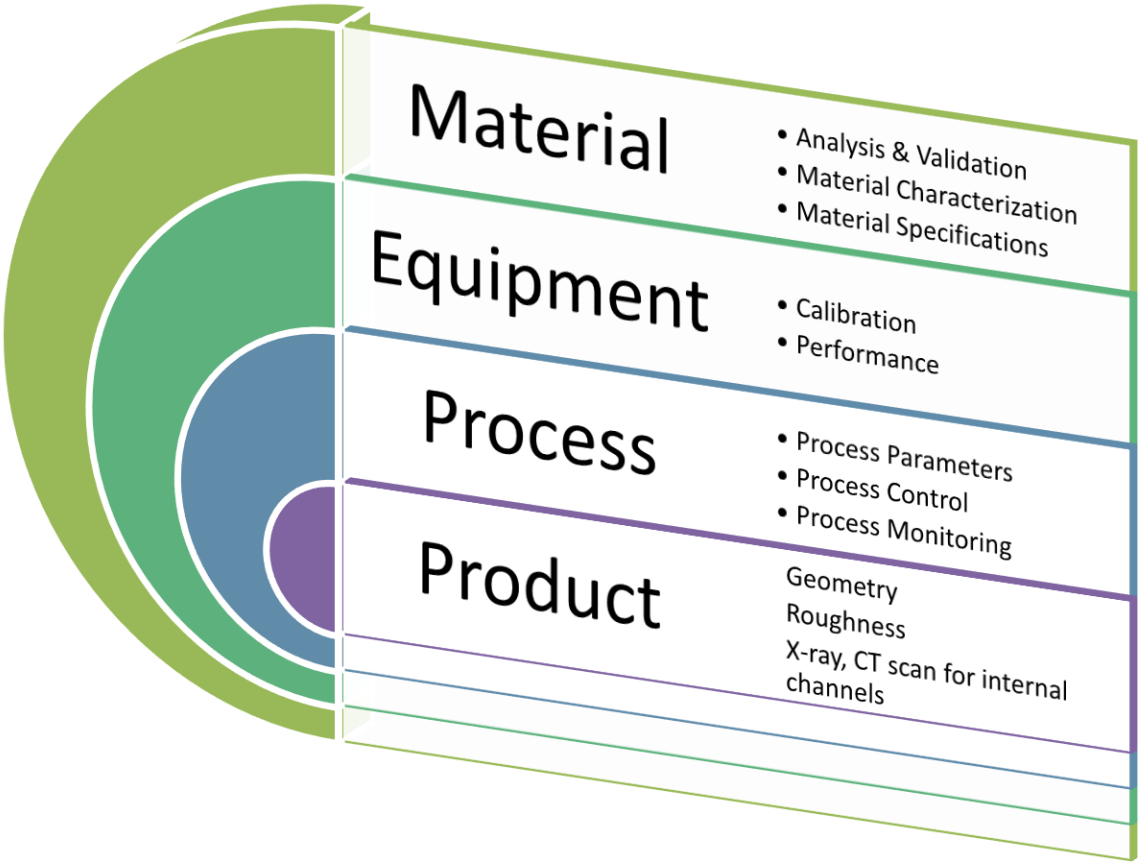
Metal Additive Manufacturing Design

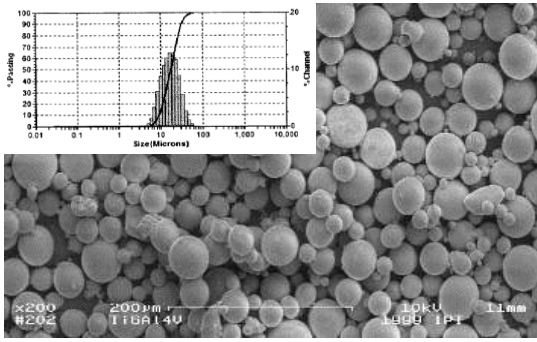
Design Dynamics

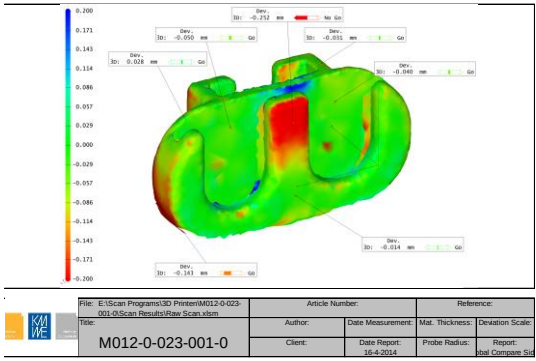


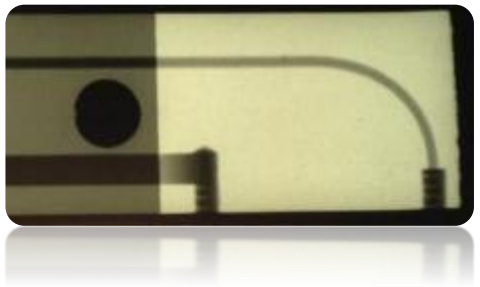
Post Processing

Quality Control









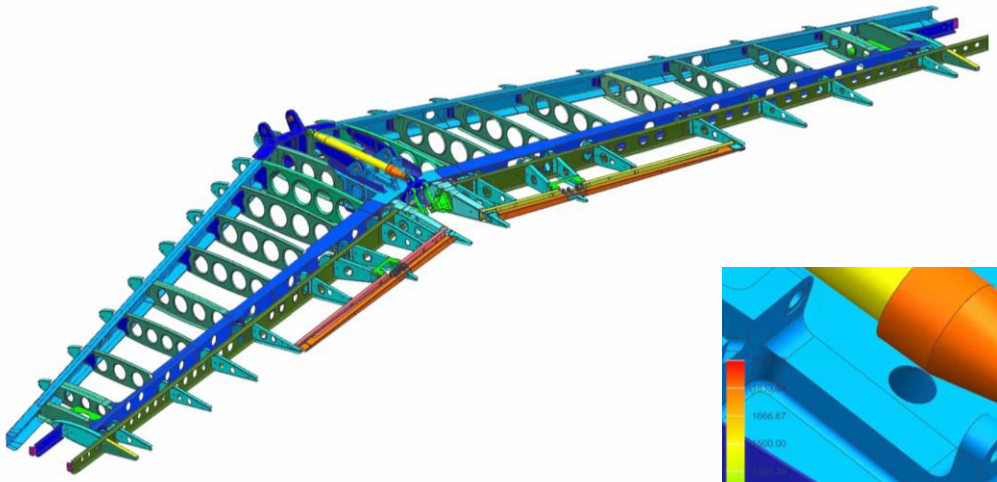
Motion Analysis

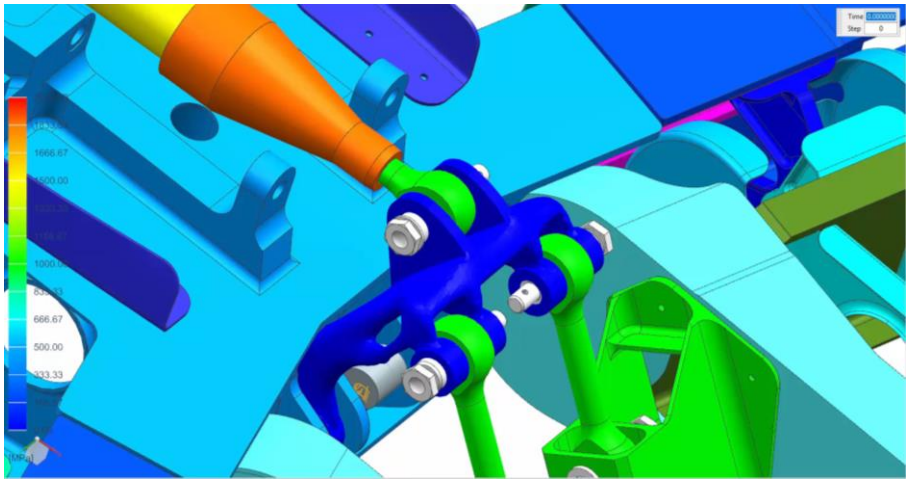
SIEMENS Ingenuity for life

cards PLM Solutions

In cooperation with

ADDFAB 3Dmetalsfabricated

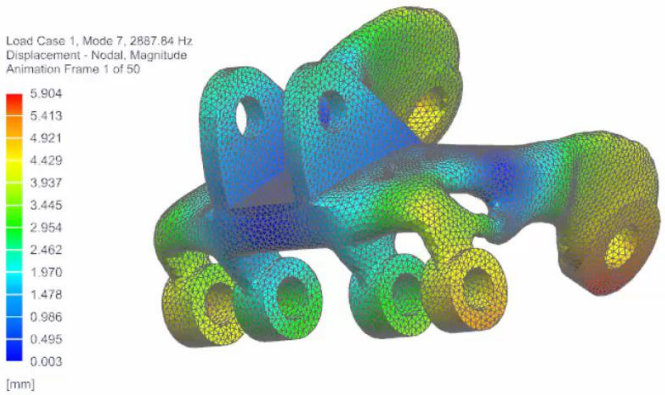


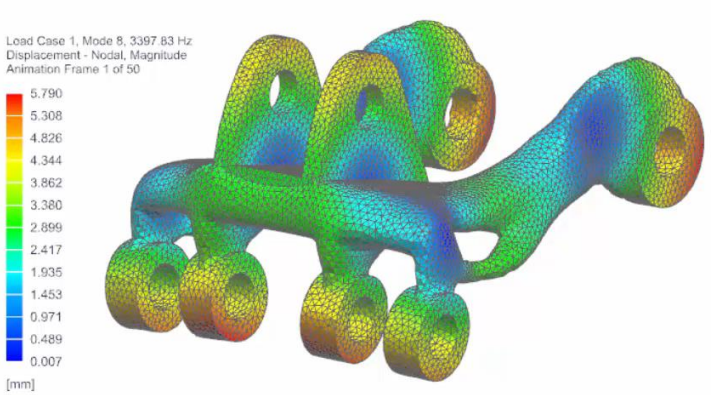


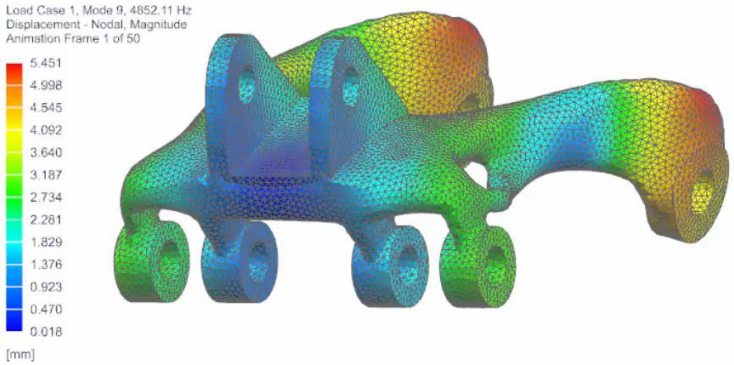
Analyze the system dynamics for accurate load prediction

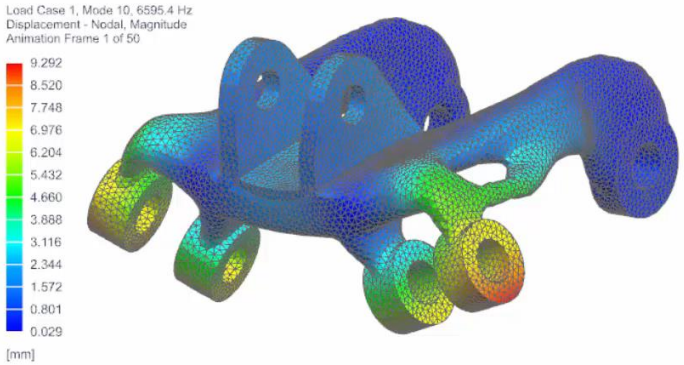
Own frequencies

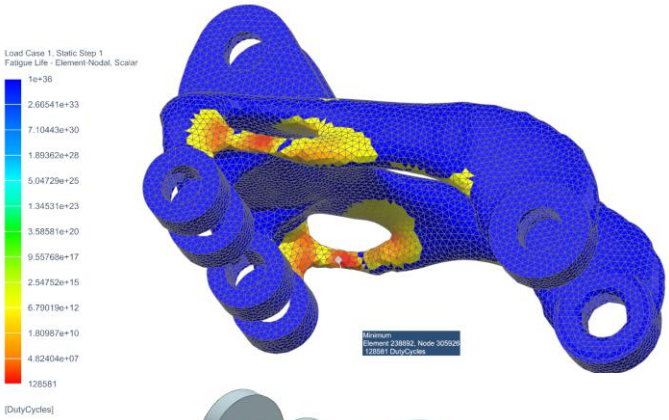
In cooperation with

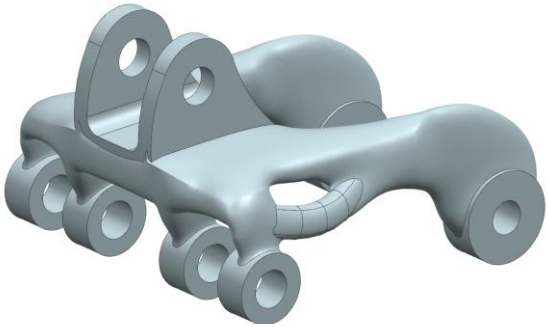


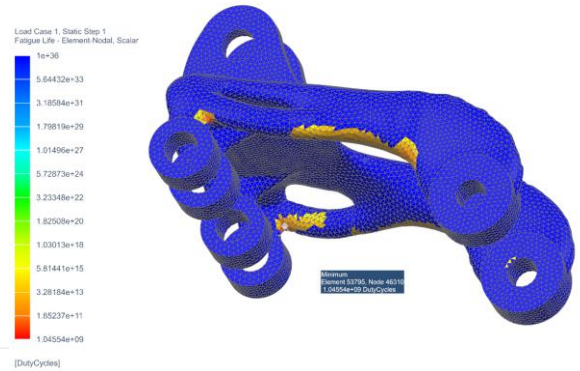












Predict when Fatigue will occur due to stress variations

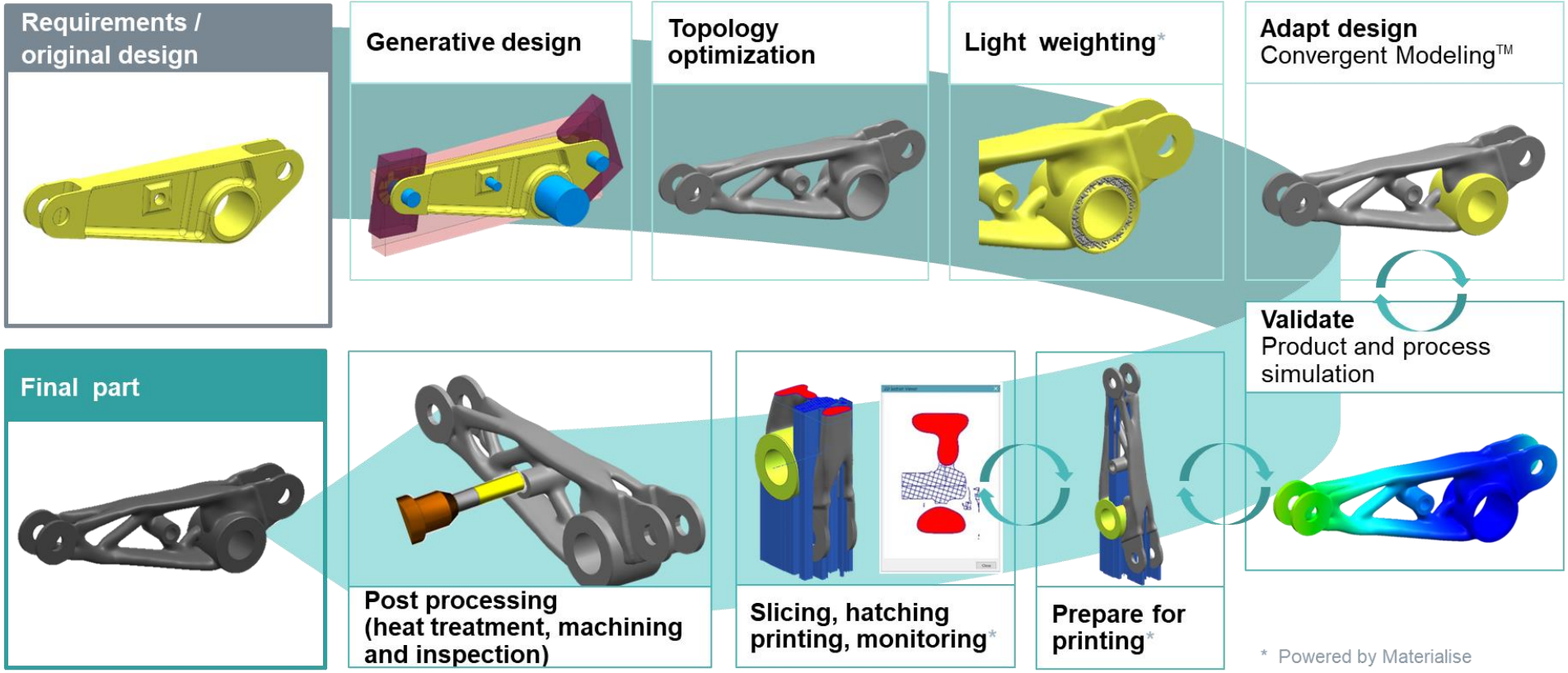
Design change

Durability

Easily validate design iterations for further optimization

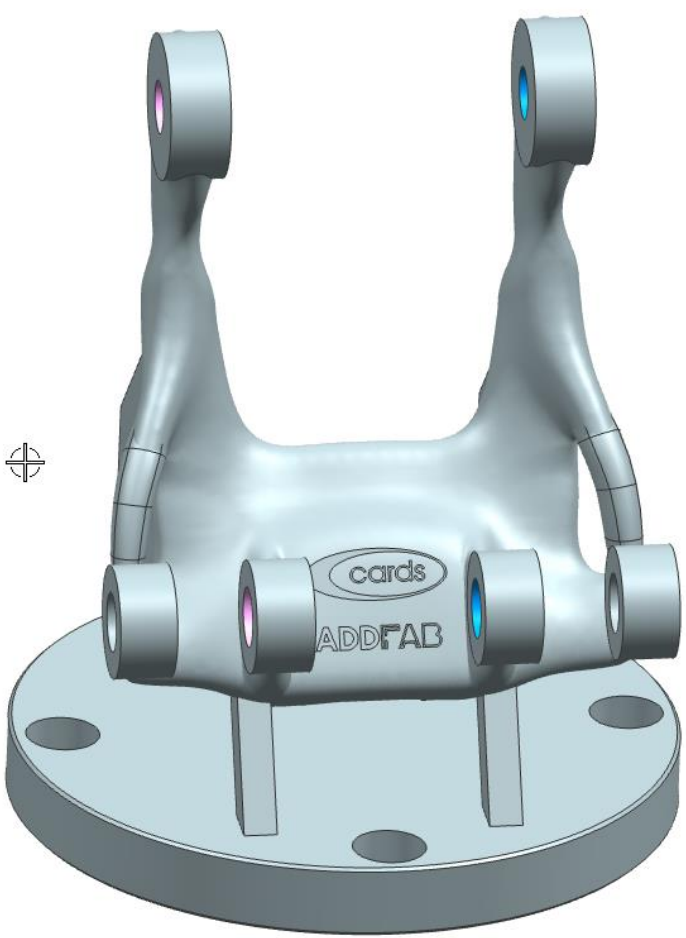
Machining via NX

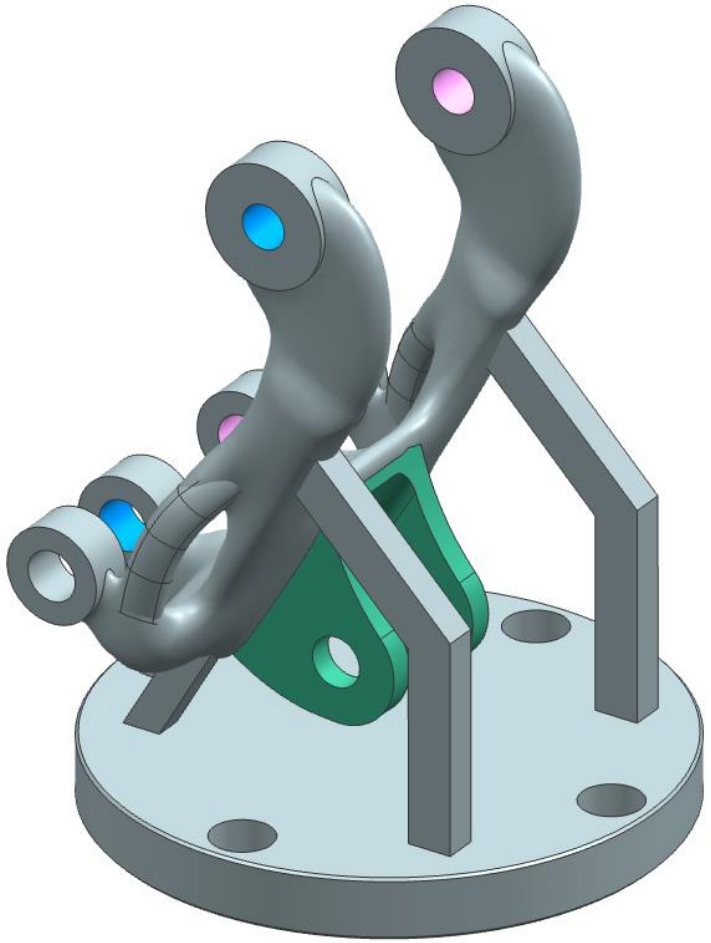
In cooperation with



Fixture Design

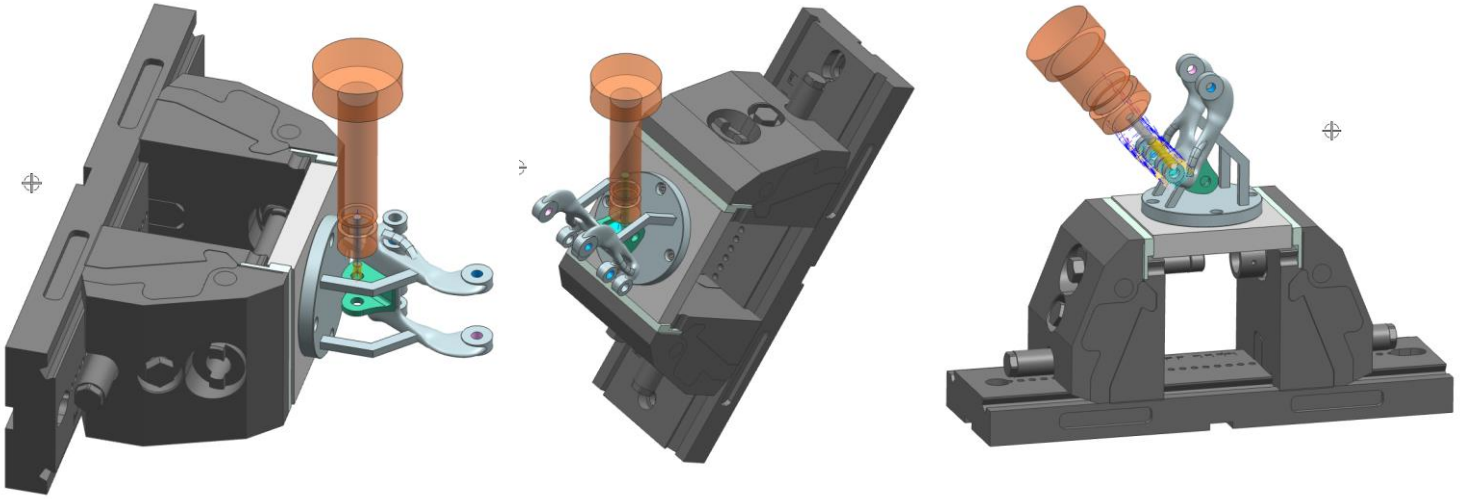
In cooperation with

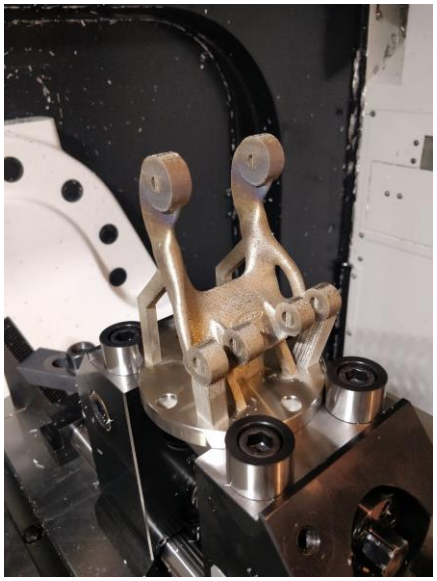


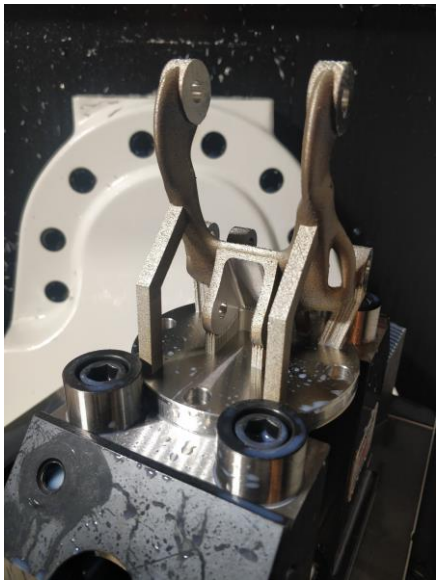


Postprocessing

In cooperation with







High mix, low volume, high complexity markets

AddFab partners will focus on fixed goods*/functional parts for high tech (equipment) markets like:

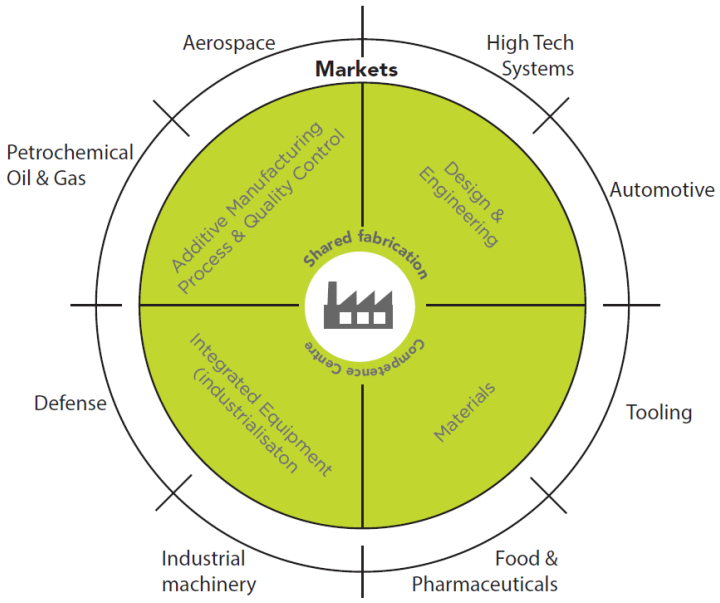
- Semicon
- Analytical & laboratory
- Medical technology
- PV and solar
- Printing
- Food & pharmaceutical processing
- General machine building/industrial machinery
- Aerospace
- Defence
- (Petro)chemical, oil & gas




In addition applications will be developed for high end professional markets where personalisation or customization is key:

- High performance automotive/motorsports
- Rapid product development, prototyping & modeling /visualisation (R&D support)
- Precision mechanics
- Implants and surgical instruments
- Tooling (manufacturing & assembly jigs, fixtures, guides, etc) and moulds (performance improving)

Brainport Industrie Campus
Innovation Project AddFab



BIC Innovation Project

P1 Industrialisation
Robotintegration post processing: milling, measuring

P2 Quality Management
Proof of Quality procesflow

P3 Industrial applications
Workshops, demonstrators

Precision Systems · KMWE · Precision Components
NTS GROUP
machinefabriek DE VALK
teclab TECHNOLOGY & EDUCATION LAB
Brainport Industries

Why work with us

- Get access to our state of the art infrastructure
- Benefit from our large international network of expertise
- Lower your research costs and risks through pre-competitive collaboration
- Enhance compettiveness with our in-depth technological knowledge
- Accelerate your product roadmap
- Reduce your time to market (TTM)

AddFab on Brainport Industries Campus

AddFab on Brainport Industries Campus

Concluding remarks

AddFab offers:

- State of the art Additive Manufacturing facility
- Education to strengthen AM knowledge infrastructure

Additive Manufacturing is important for competitive position **Brabant** & **NL**

For additional partners
who share our ambition to deliver
worldclass Additive Manufacturing

ADDFAB

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