



## Automate and accelerate your Additive Manufacturing design process

### COGNITIVE DESIGN SYSTEMS

- We believe that the 20th century's idea of design for mass production is stifling the creativity of designers and engineers. CDS has harnessed **a solution to alleviate the limits set in place by the design process** that is often time consuming.
- We ensure that designers and engineers will focus on what matters the most: **boundless creativity**.
- In a world increasingly automated by AI and new technologies, we leave the tedious process of figuring out **optimal designs for manufacturing** to our machines. Spend time on what is important and conceive innovative designs and ideas that are worthy of the 21st century.
- Imagine all the possibilities that await, and make **your concept a reality** today.

## COGNITIVE ADDITIVE

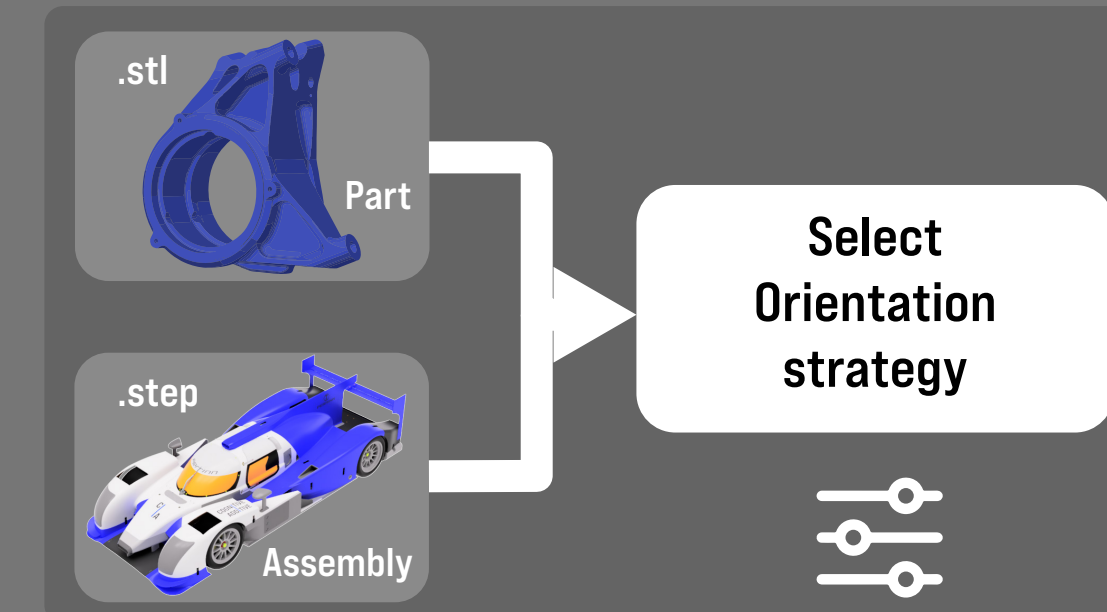
### Identify the **most suitable parts** for AM with Cognitive Additive

- Our automated manufacturing risk and cost analysis will save you time and money
- Perform manufacturing feasibility study and check economic viability for various AM processes for any part of your database
- Compare, explore and analyze your part inventory in no time with our on premise solution

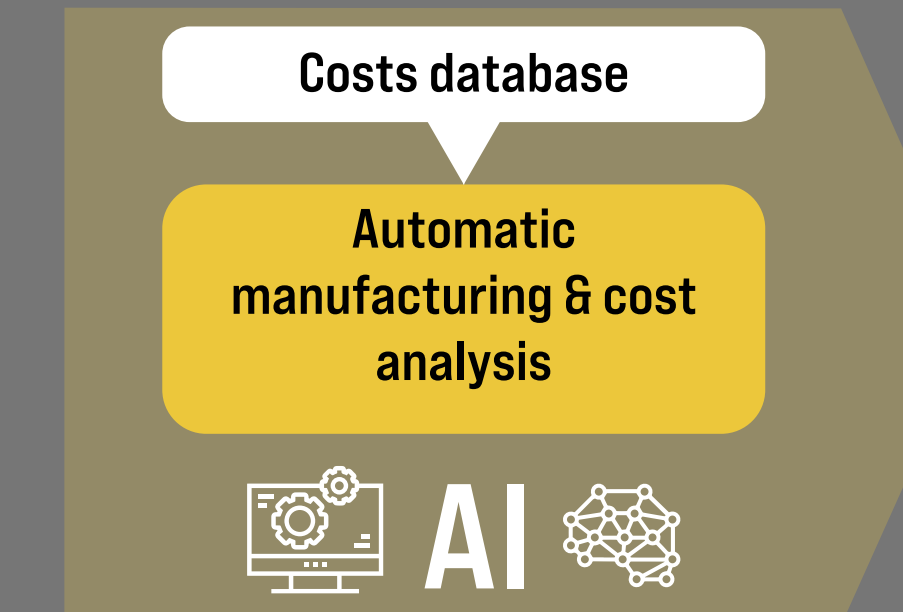
#### AM Processes:

- Powder Bed Fusion
- Binder Jetting
- Fused Filament Fabrication\*  
\*Coming soon

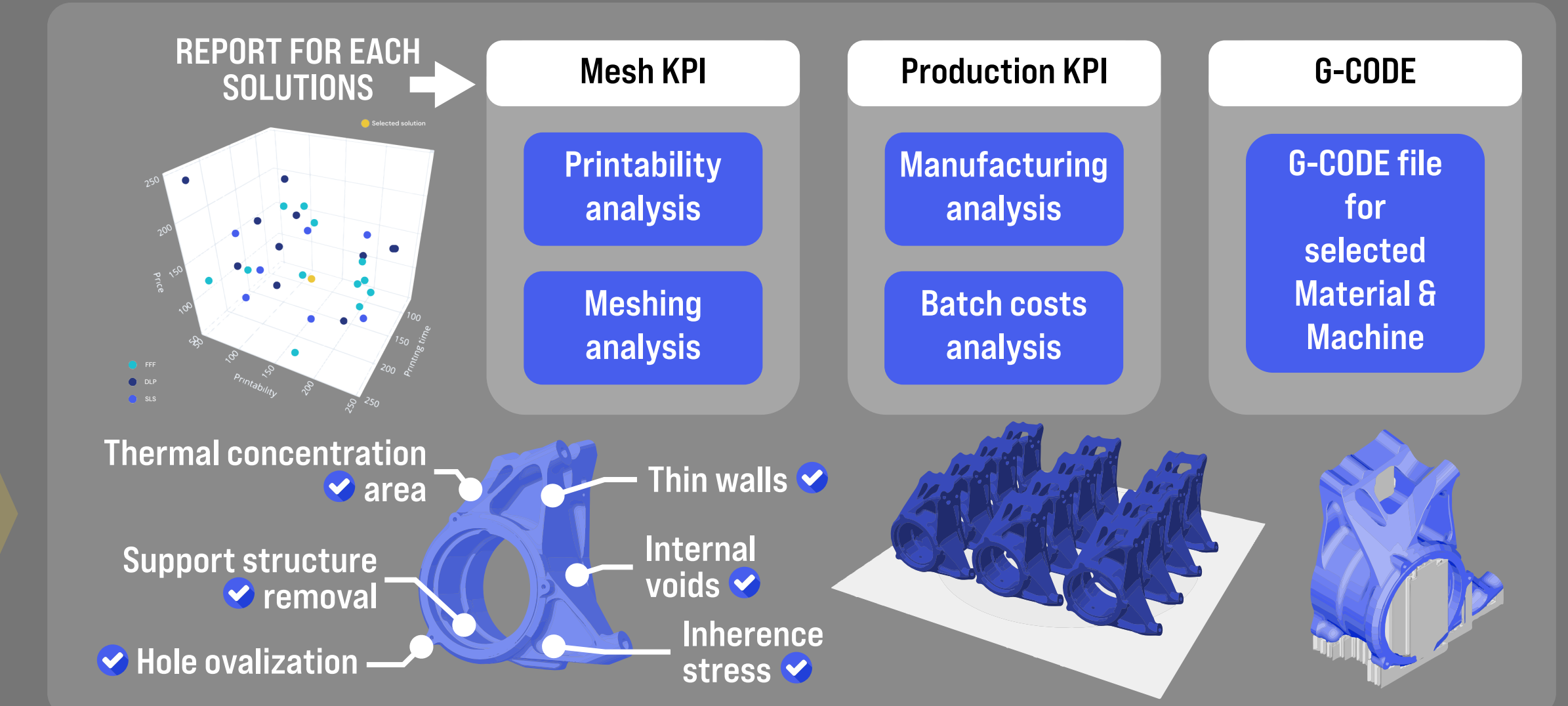
#### INPUTS



#### COMPUTING



#### OUTPUTS



## nTopology

### Generative design and Optimization.

nTopology is an engineering design software for advanced manufacturing.

- **Import:** Import CAD parts or other engineering data to feed your design process.
- **Generate:** Build reusable design workflows that generate high-performance geometry.
- **Export:** Convert your designs to B-reps, meshes, slice data, or other engineering formats.
- **Connect:** Integrate with your existing software stack to augment your processes.

Unbreakable Geometry - Field-Driven Design - Reusable Workflows

#### nTopology Licence Reseller

- nTopology account creation
- On-boarding training
- Online help desk and support
- Basic documentation and workflow
- Example files
- Requirement capture

#### Advanced Support & Training

- Custom compound block database
- Innovative workflow process mapping
- Hundreds of 3D printing Material Database
- Advanced 3D texturing
- Additive Material replicators (Anisotropic Materials)
- Topology optimization post processing
- Advanced Mesh preparation
- API integration

#### Custom AddOns

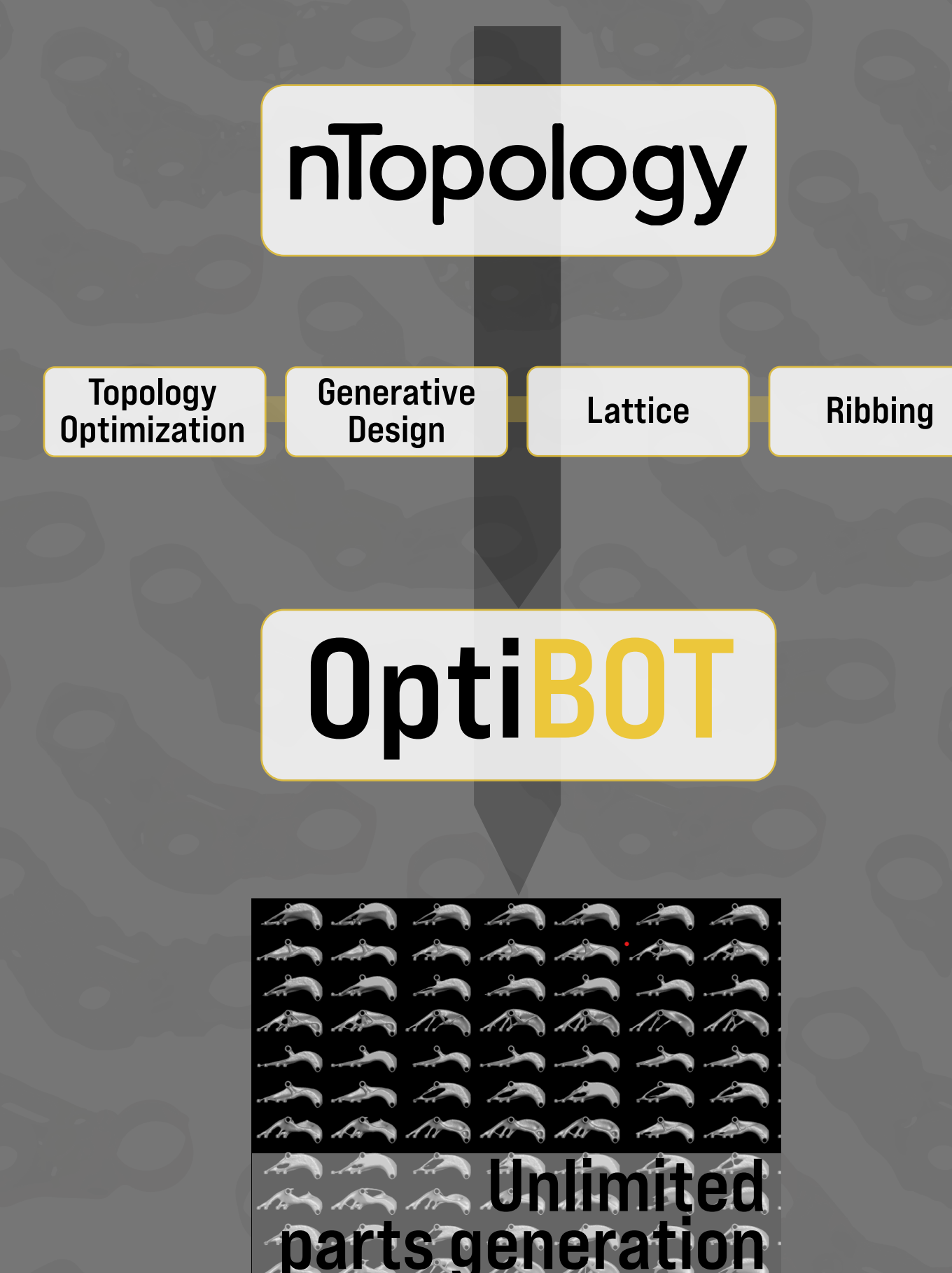
- OptiBot
- Genetical algorithm engine
- Injection plastic design Morpher\*
- Die Casting Morpher\*
- Meta Material generator
- Bionic optimizer
- Topology optimization post processor
- Infill optimizer

## OptiBOT

Optibot explores the full potential of the **design spectrum**.

As generative design is highly sensitive to input parameters, Optibot generates hundreds of different designs by creating combinations of these parameters.

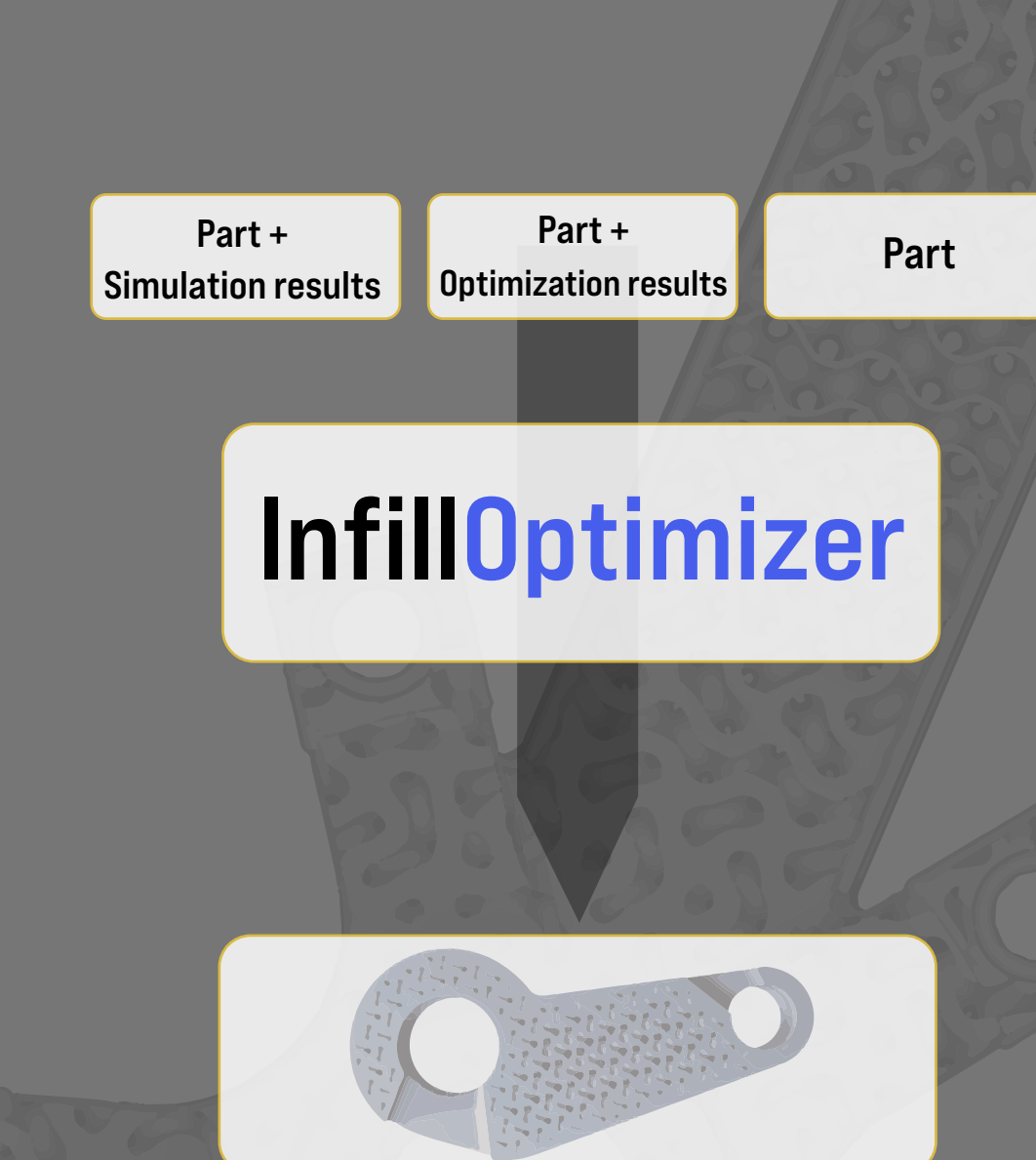
Each design can be validated through numerical simulation as well as cost and feasibility analysis with Cognitive Additive.



## InfillOptimizer

InfillOptimizer generates optimized **infill structure** for Additive Manufacturing parts.

- Inputs: STL, OBJ, STEP, any legacy software format & load cases or simulation results
- Outputs: Automated selection of suitable metamaterial based on simulation results & manufacturing process
- Powder Bed Fusion, SLS, FDM, DLP, SLA processes supported



## BionicOptimizer

The BionicOptimizer is part of CDS research.

The aim of BionicOptimizer is to **overcome the flaws of topology optimized results** with regards to vibration, fatigue and manufacturability.

The BionicOptimizer uses field driven design and manufacturability guidelines to orient and thicken lattice structures. With excellent performances with regards to parasite loads mostly due to assembly defects, heavy vibration environment or unknown load case scenario.





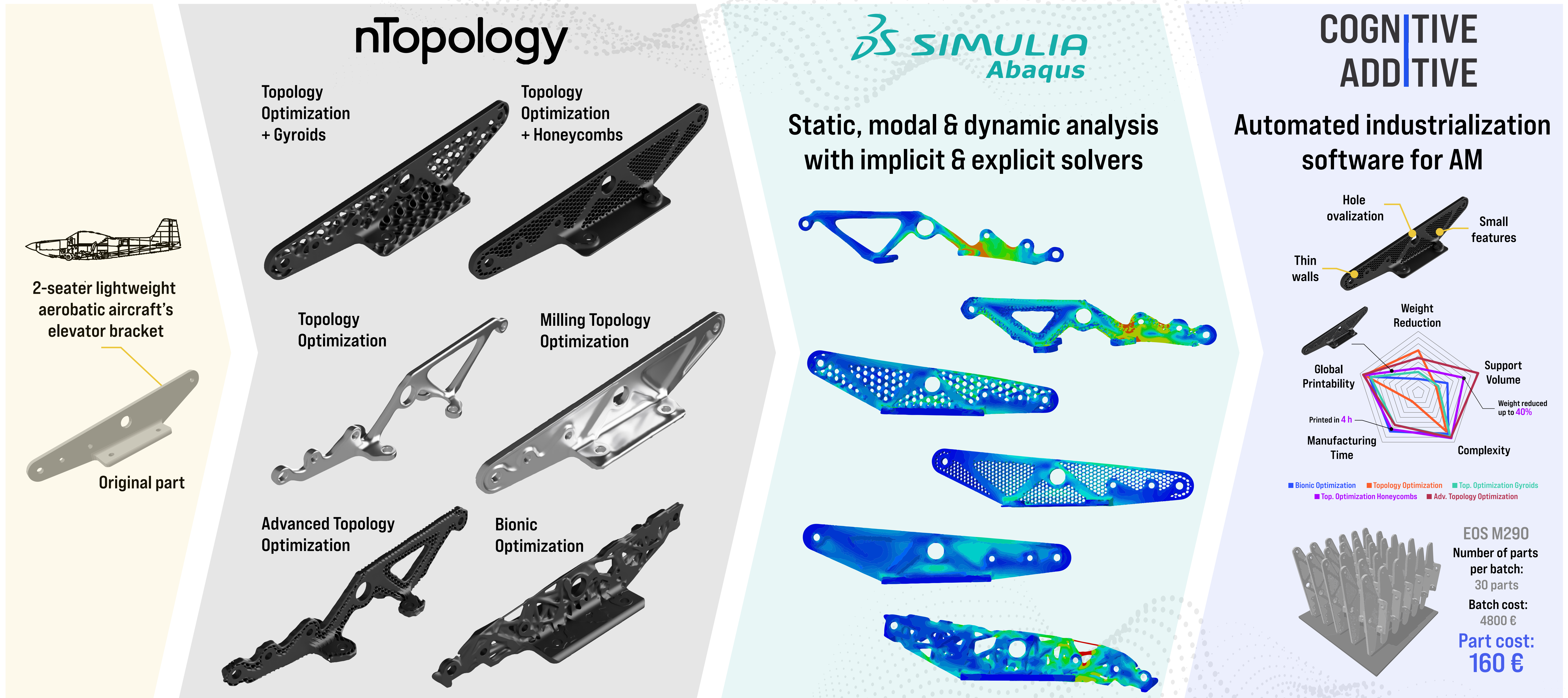


COGNITIVE DESIGN SYSTEMS

# Create manufacturable designs



## EXPLORE DESIGN OPTIMIZATION SPECTRUM.



## INSTANT INDUSTRIALIZATION STUDY.