



Company Profile

January 2025

Who is MACHINA?



MACHINA is a SAHA member.

MACHINA is a next-generation engineering company making a difference in the industry through its capable team and highly qualified infrastructure.

1. ENGINEERING SERVICES

- a. Analysis (FEA, CFD, TO)
- b. Mechanical Design
- c. DfAM Design
- d. 3D Scanning

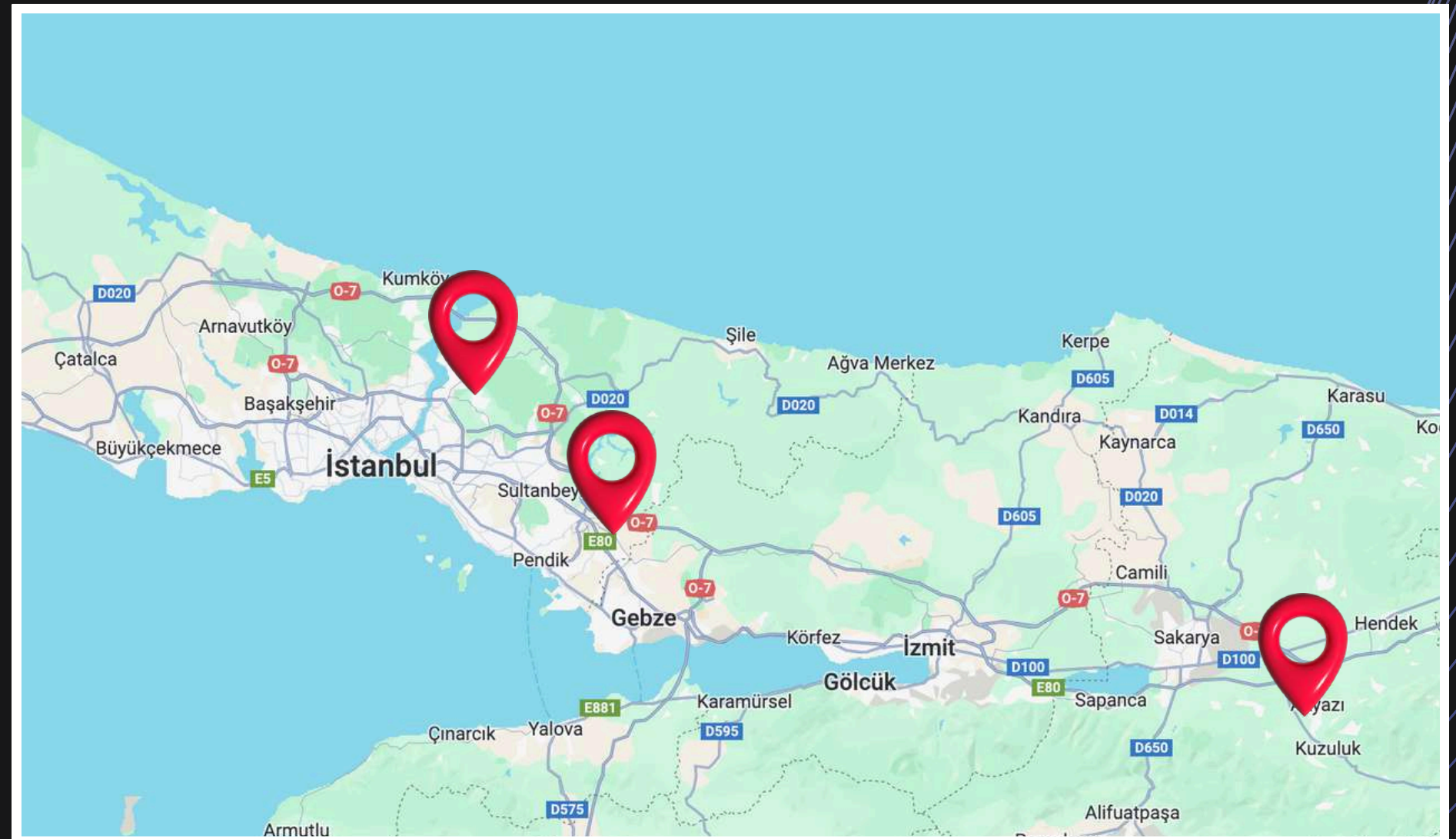
2. MANUFACTURING SERVICES

- a. Polymer 3D Printing
- b. Metal 3D Printing
- c. Sand 3D Printing
- d. Casting and CNC Services

3. END-TO-END SOLUTIONS

- a. Factory Solutions
- b. Architecture and Art
- c. Mold and Casting
- d. Reverse Engineering

Management: Kavacık, İstanbul | R&D Office: Pendik, İstanbul | Factory: Akyazı, Sakarya





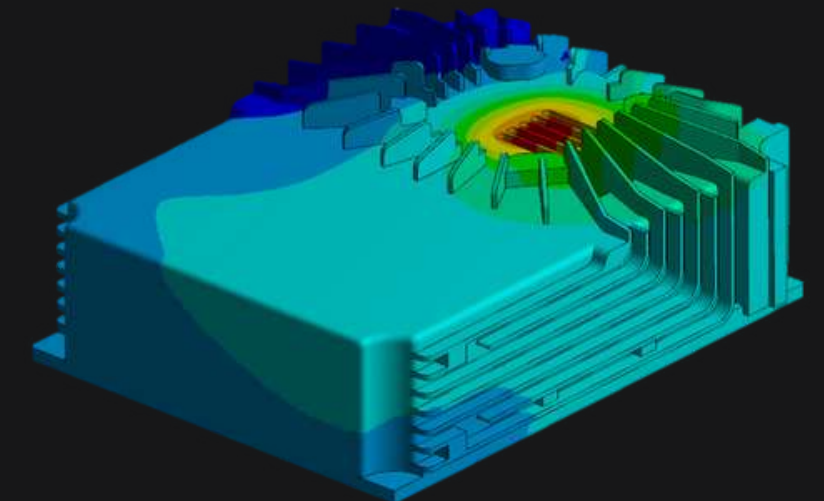
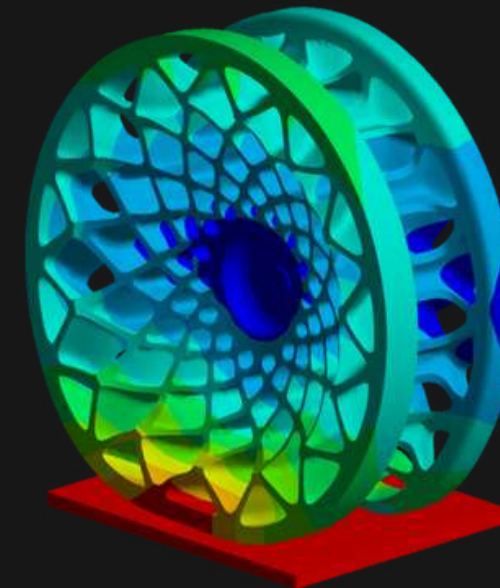
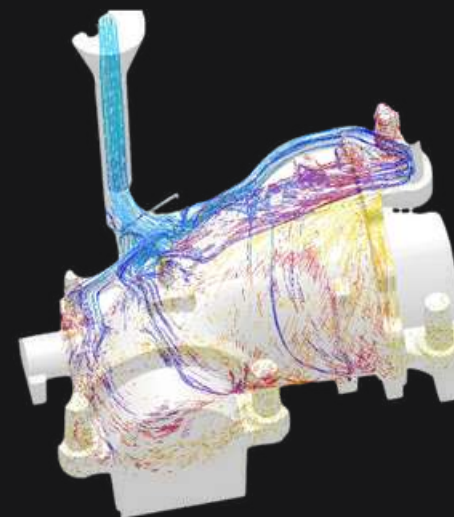
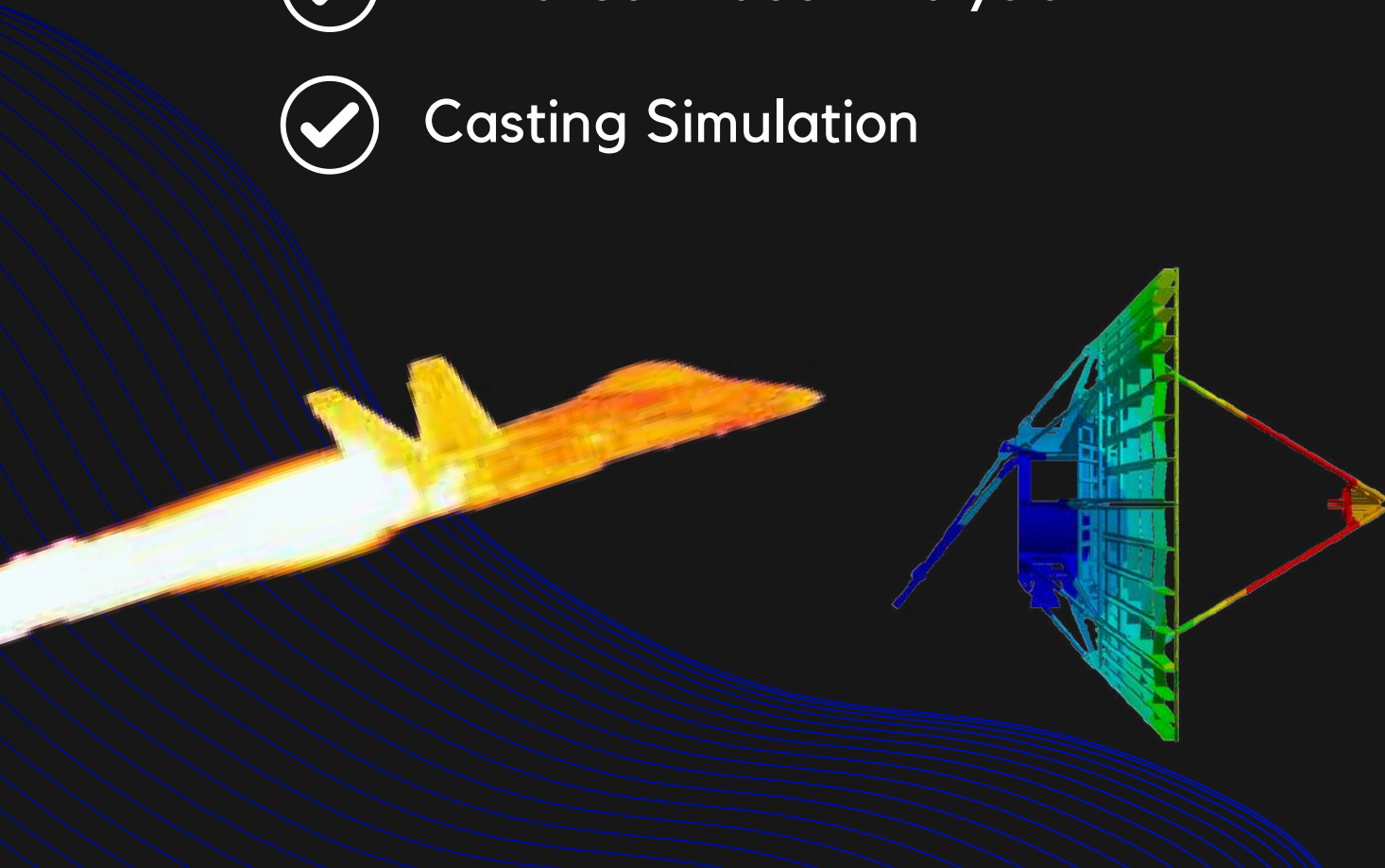
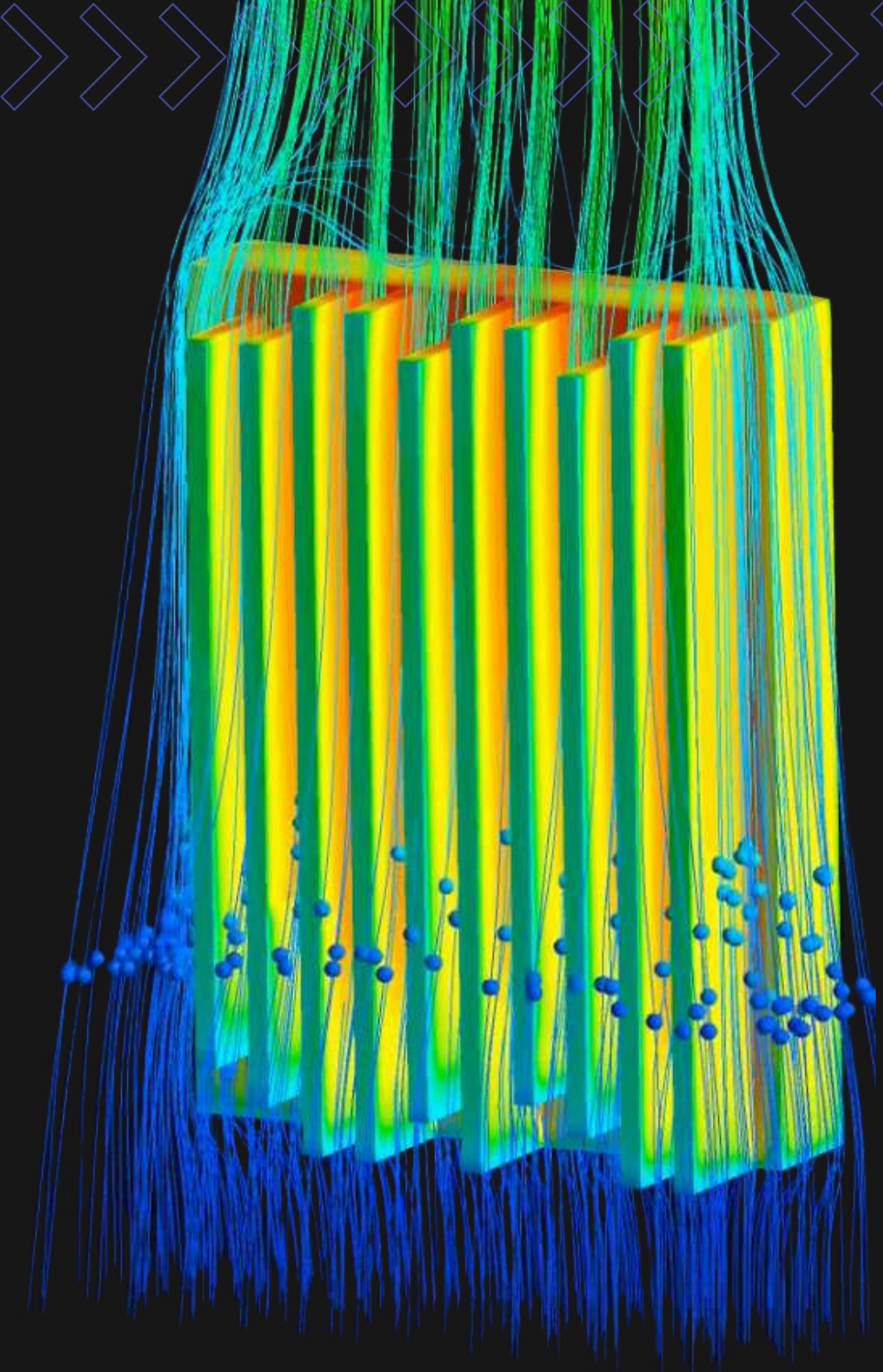
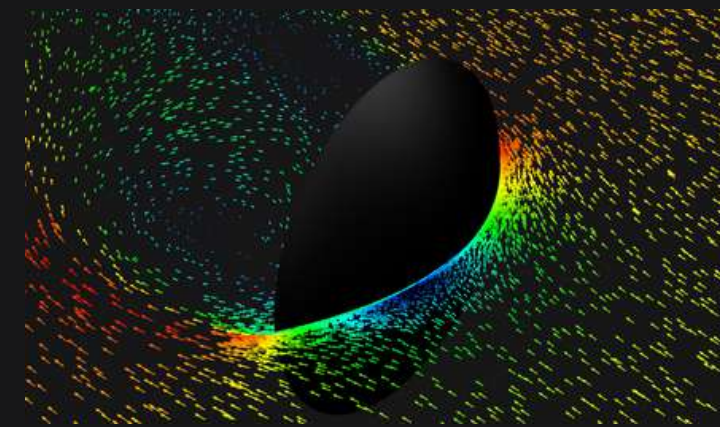
Engineering Services

- 1.A. Analysis (FEA, CFD, TO)
- 1.B. Mechanical Design
- 1.C. DfAM Design
- 1.D. 3D Scanning



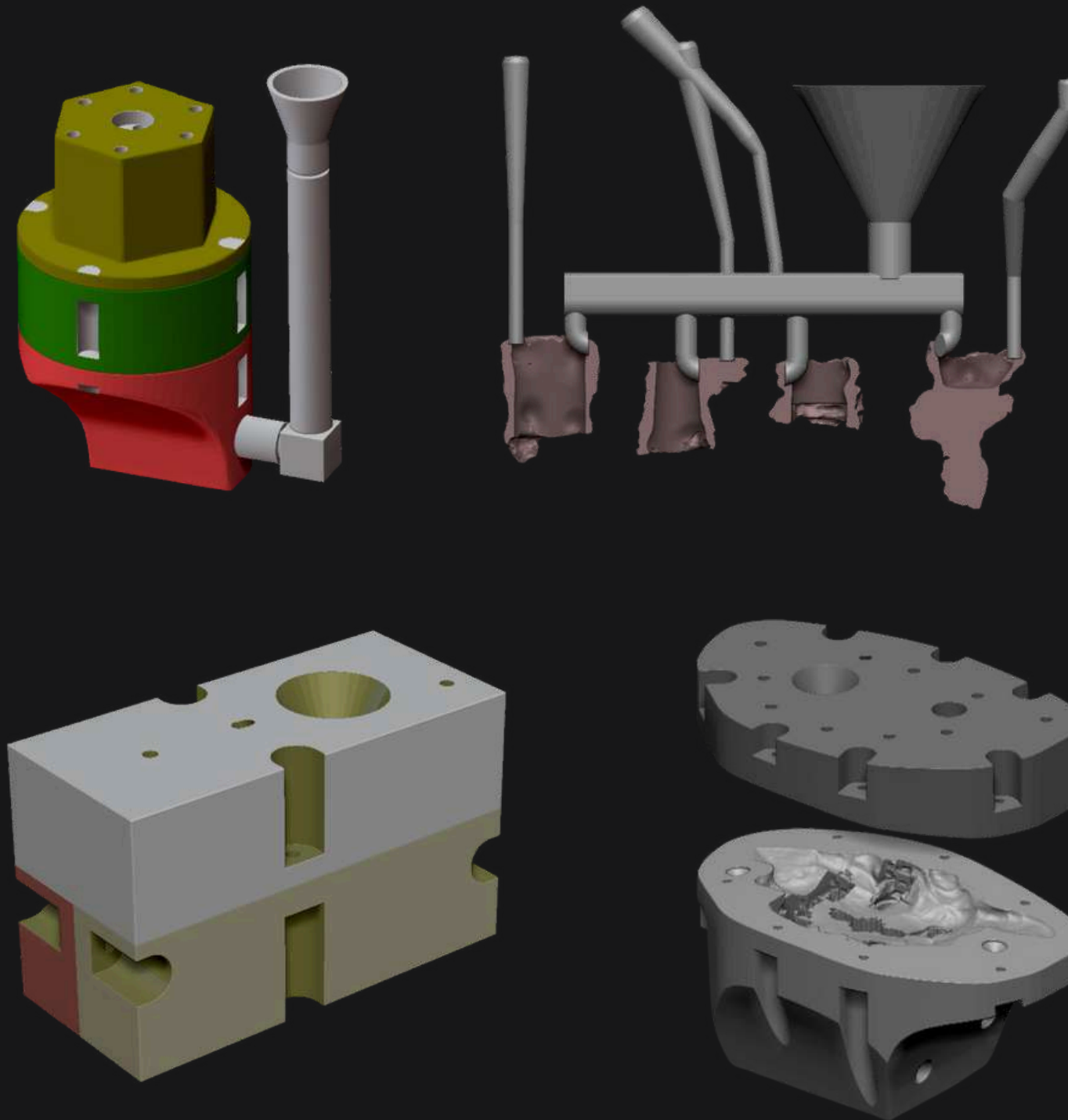
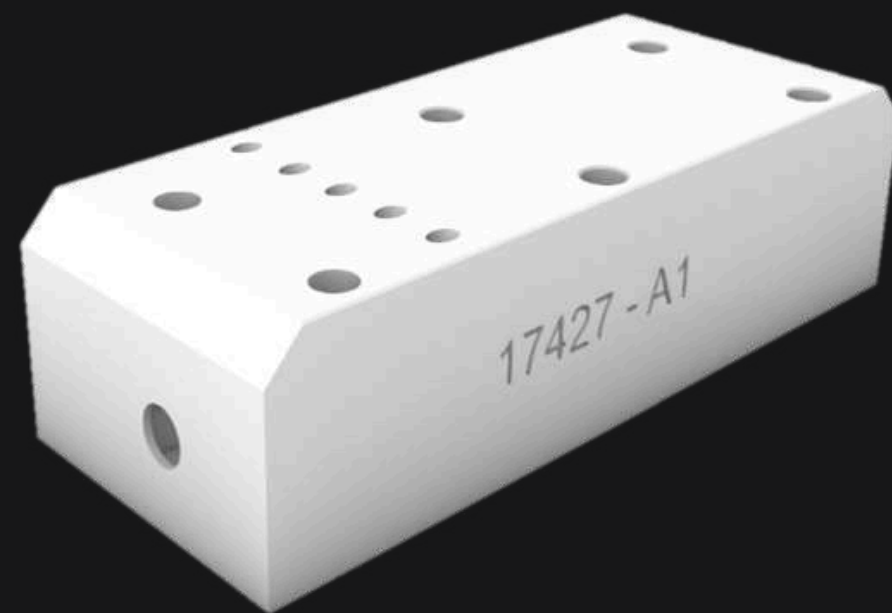
Analysis

- ✓ FEM Analysis (Static, Dynamic, Vibration, Fatigue)
- ✓ CFD Analysis (Fluid Dynamics and Heat Transfer)
- ✓ FSI Analysis (Fluid-Structure Interaction)
- ✓ Topology Optimization
- ✓ Infrared Trace Analysis
- ✓ Casting Simulation



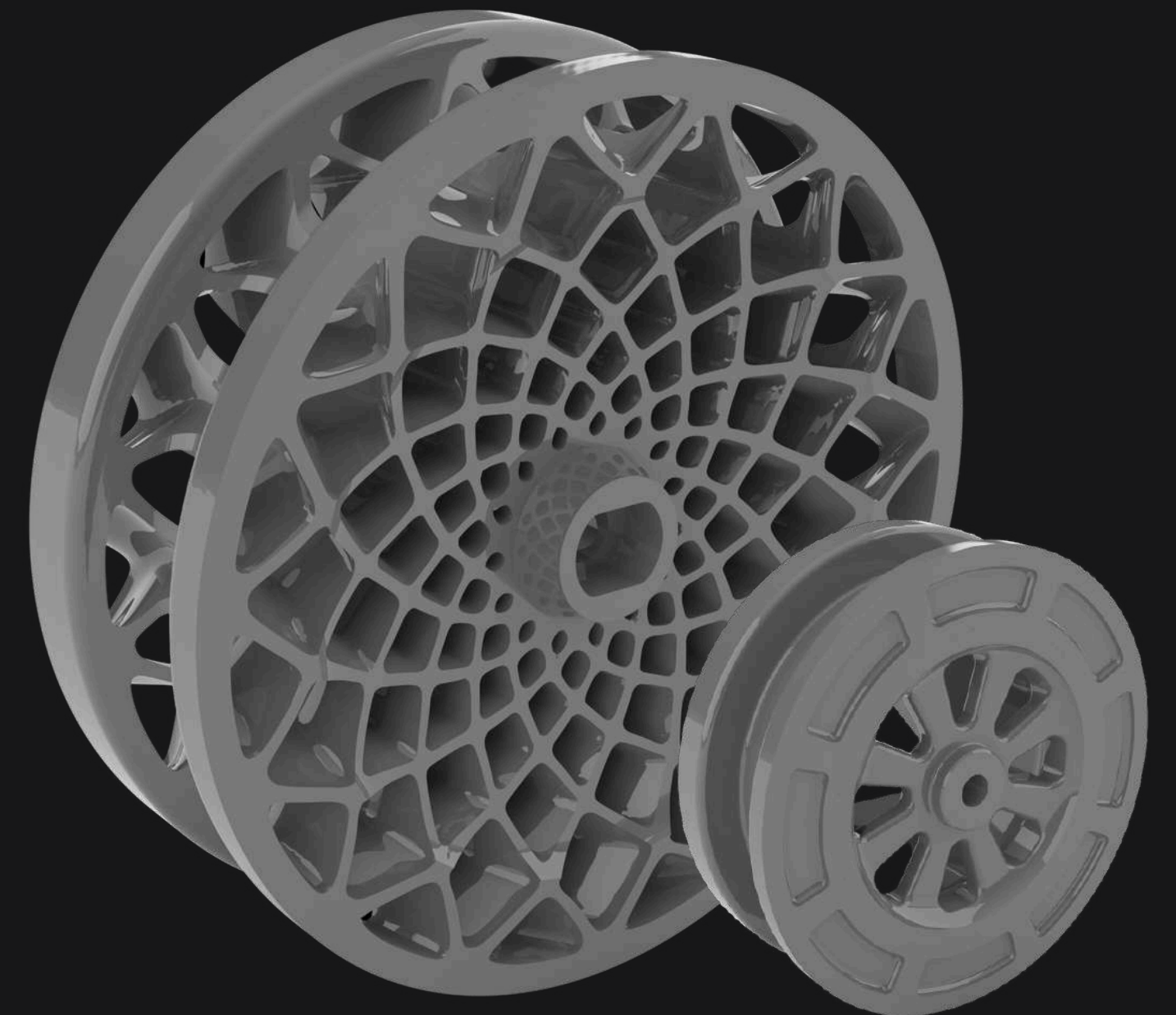
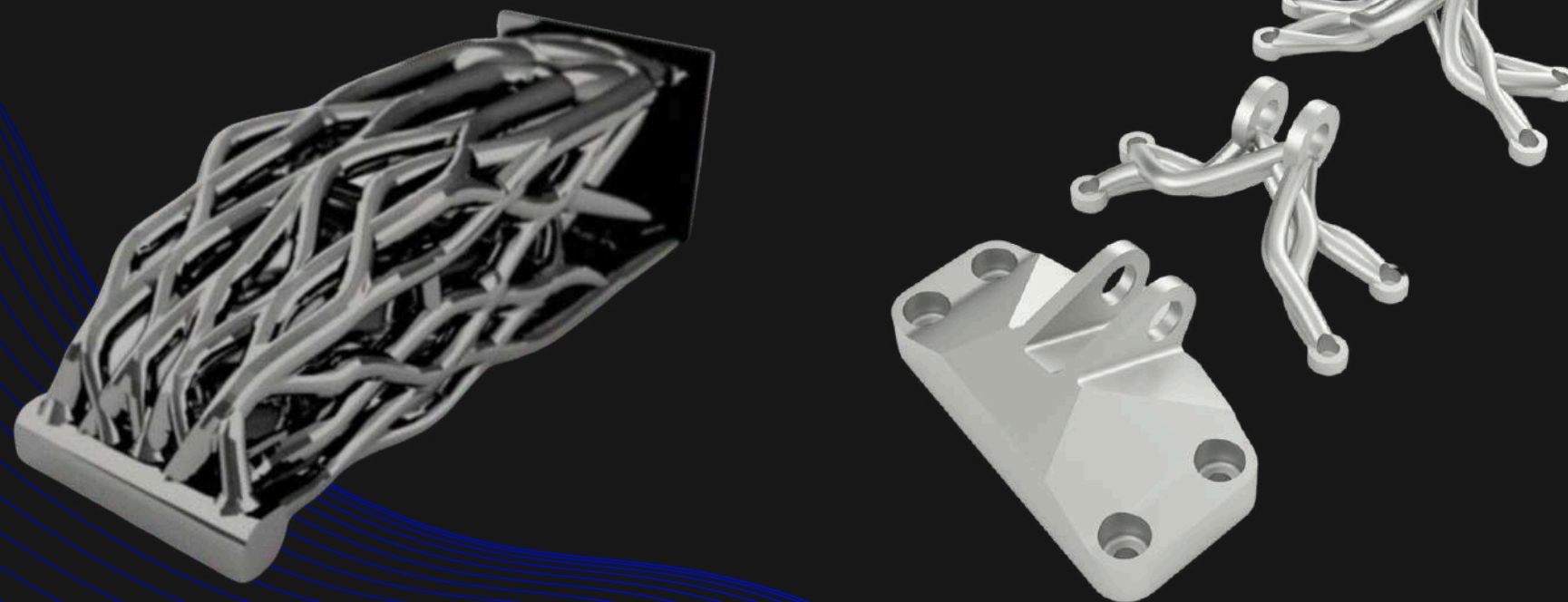
Mechanical Design

- ✓ Mechanical Design
- ✓ Casting Design
- ✓ Design Improvements
- ✓ Design Optimization



DfAM Design

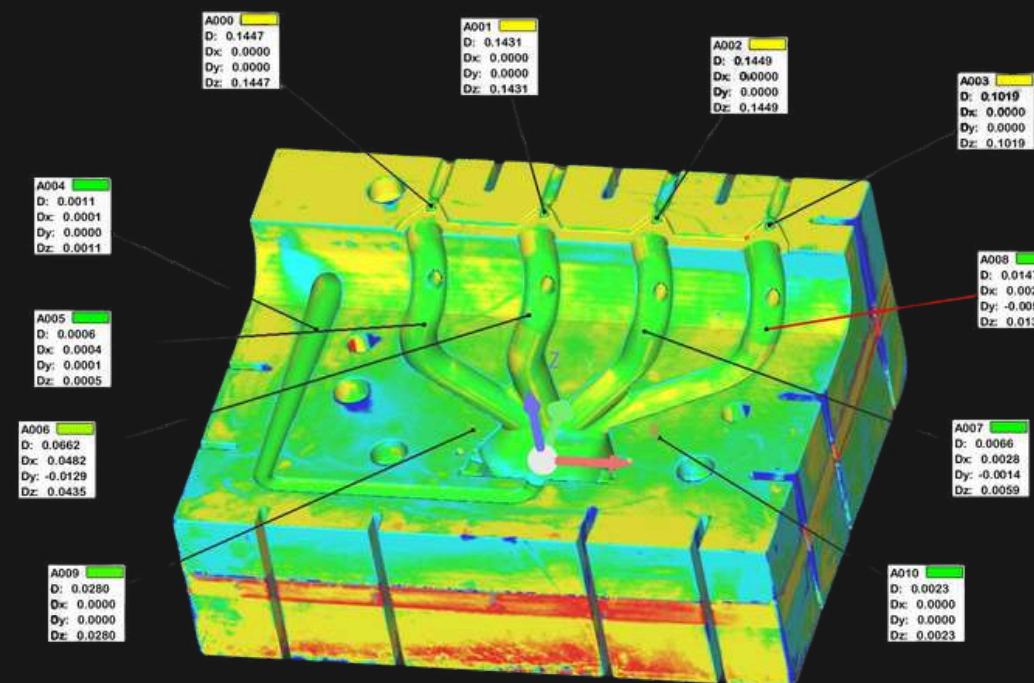
- ✓ Design for Additive Manufacturing
- ✓ Weight Reduction and Strength Enhancement Studies
- ✓ Generative Design Studies
- ✓ Algorithmic and Parametric Design
- ✓ Topology Optimization



TPU | 40% Weight Reduction | 12% Strength Increase

3D Scanning

- ✓ Model/Artifact Scanning (mold production without models)
- ✓ Quality Control
- ✓ Rapid Spare Parts Production
- ✓ CAD Data Preparation / Digital Sculpting
- ✓ Reverse Engineering
- ✓ Digital Archiving



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Manufacturing Services

2.A. Polymer 3D Printing

2.B. Metal 3D Printing

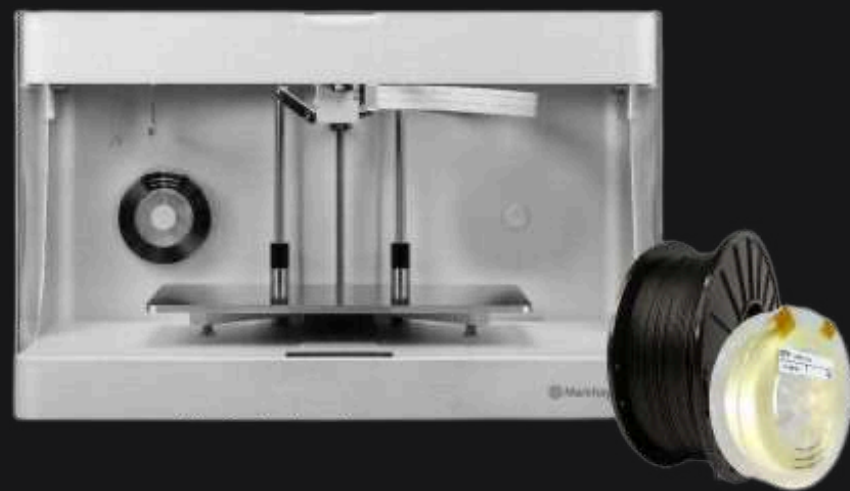
2.C. Sand 3D Printing

2.D. Casting and CNC

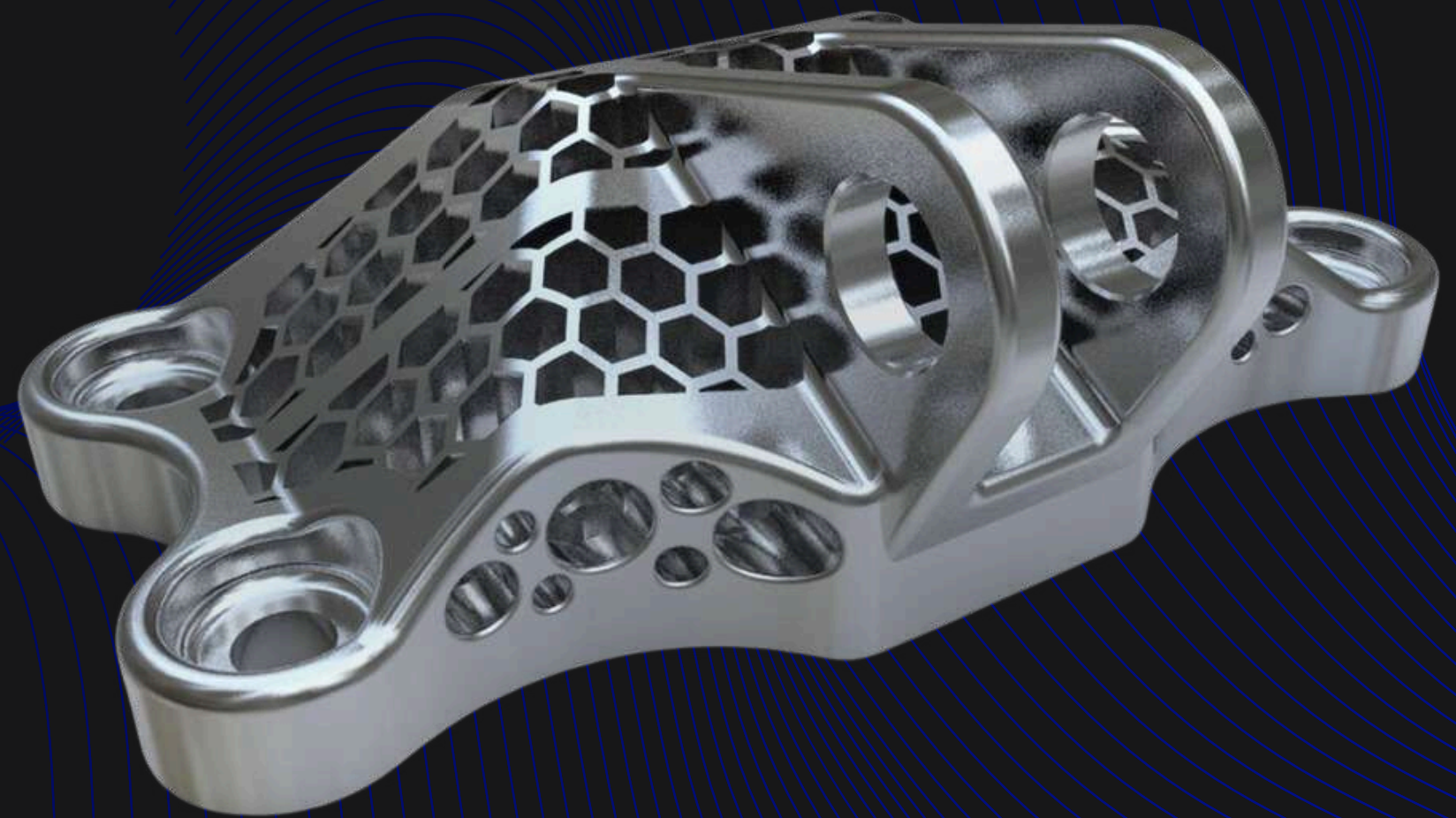
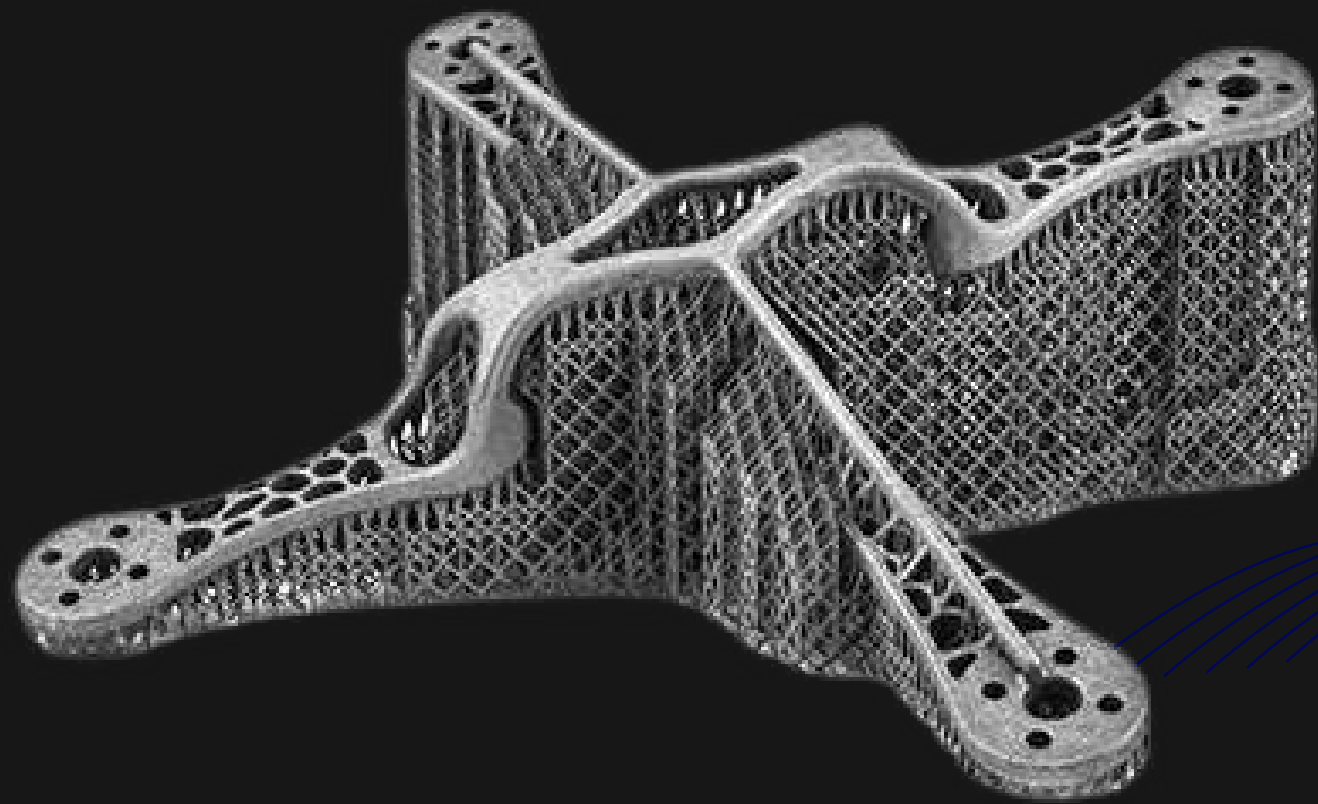


Polymer 3D Printing

- ✓ 5x Semi-Industrial Polymer 3D Printers
- ✓ 1x Semi-Industrial SLA 3D Printer
- ✓ Production with Carbon-Enriched Materials
- ✓ Final Product Manufacturing
- ✓ Prototype Manufacturing
- ✓ Insert Applications



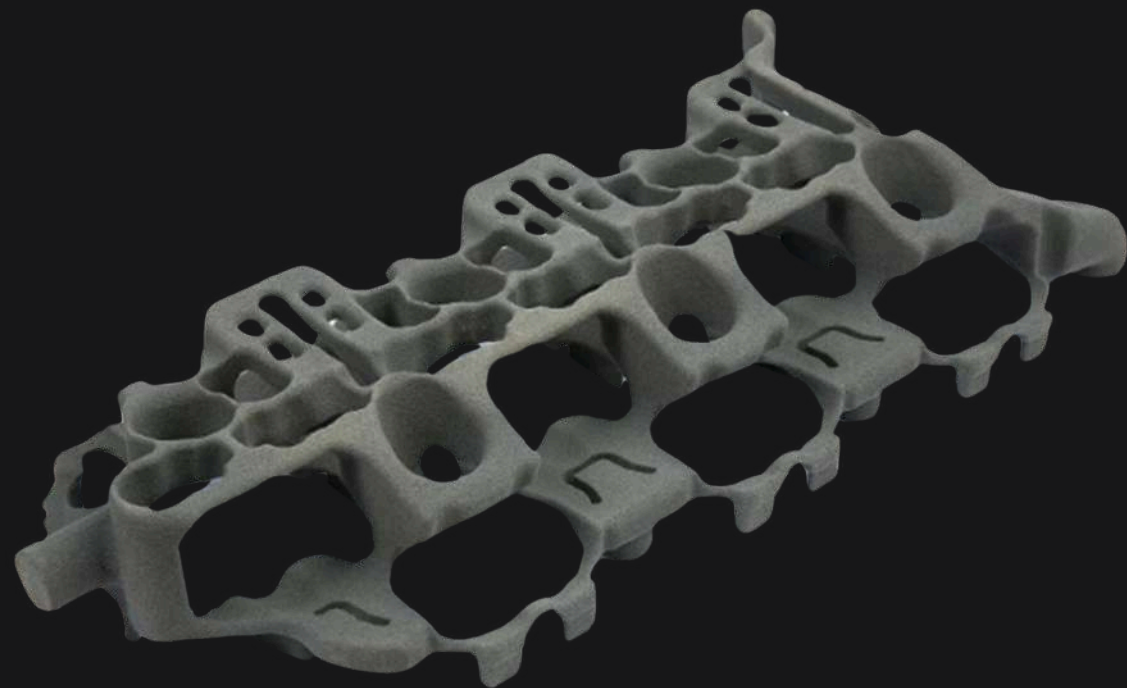
Metal 3D Printing



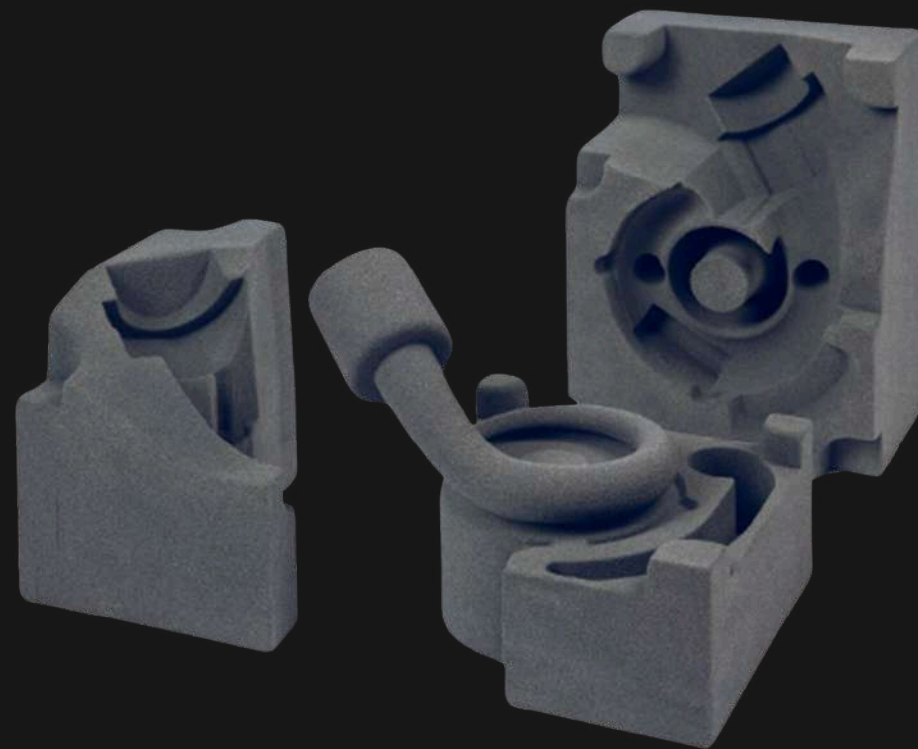
Our metal 3D printing infrastructure will be completed by Q1 2025.

Sand 3D Printing

- ✓ 70% Faster Sand Mold Production
- ✓ Mold Production Without Models or Foam
- ✓ Suitable for Precise and Complex Geometries
- ✓ Internal and External Sand Core Production
- ✓ Prototype Casting
- ✓ Low Carbon Emission



Internal Core Production



Rapid and Accurate Mold Production



ExOne S-Max | Pro

- ✓ 1800 x 1000 x 700mm (1260 litre)
- ✓ 125 liter/hour
- ✓ 0.28mm Precision



End-To-End Solutions

3.A. Factory Solutions

3.B. Architecture and Art

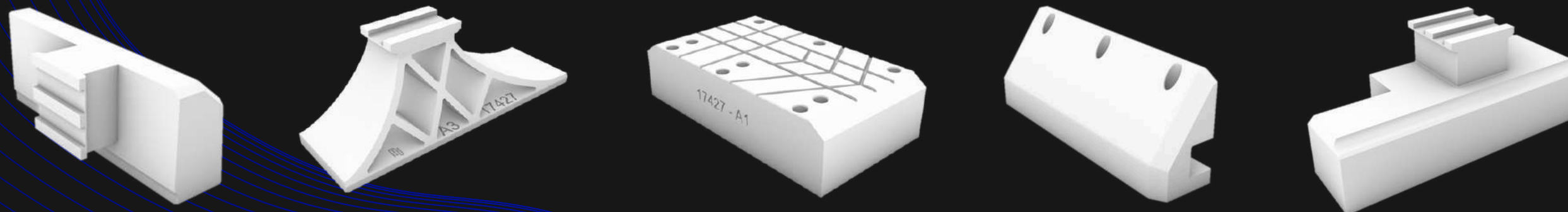
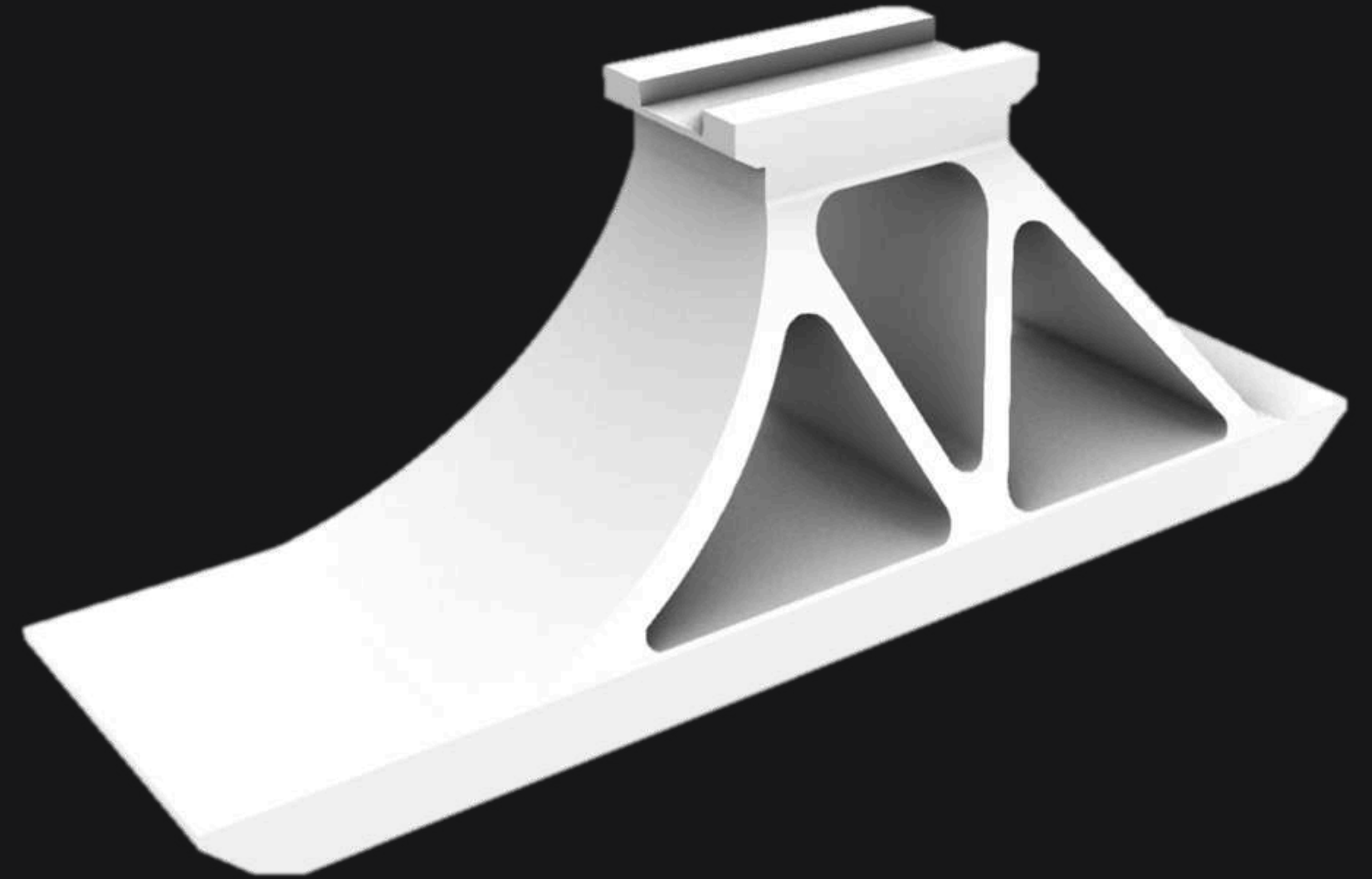
3.C. Mold and Casting

3.D. Reverse Engineering



Factory Solutions

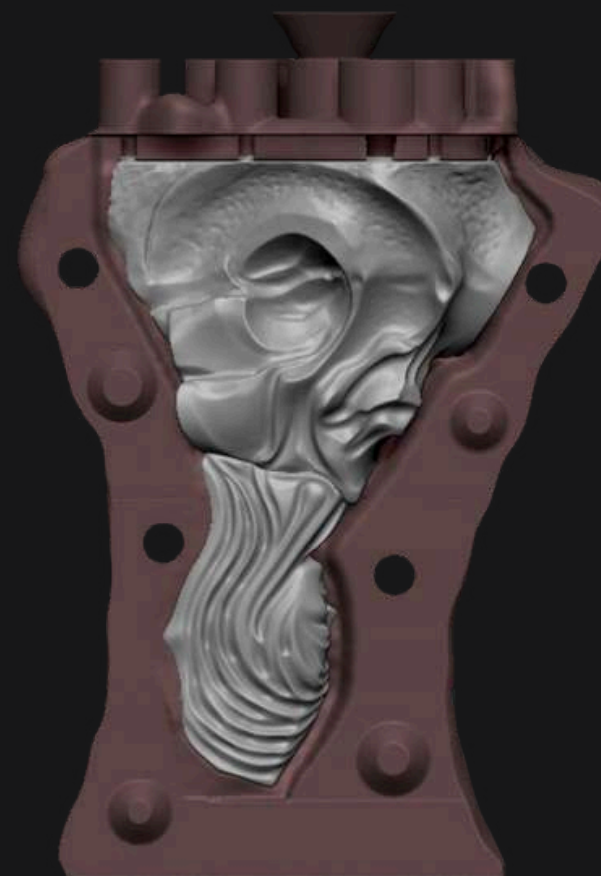
- ✓ Jaws for Machining Equipment
- ✓ Grippers for Robotic Arms
- ✓ Assembly, Inspection, and Welding Fixtures
- ✓ Manufacturing Fixtures
- ✓ Rapid Solutions for Broken Parts
- ✓ Efficiency Solutions for Mass Production Lines



Examples of fixtures and apparatus designs we've printed so far

Mold and Casting

- ✓ CAD Data Extraction with 3D Scanners
- ✓ 3D Mold Design Services
- ✓ Sand Mold Production
- ✓ Aluminum and Steel Casting Services (process planning, external supplier organization)
- ✓ Casting Analyses and Quality Control
- ✓ Post-Processing Services



Thank You!



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