

CFIP Technology

Innovating for business

What is CFIP?

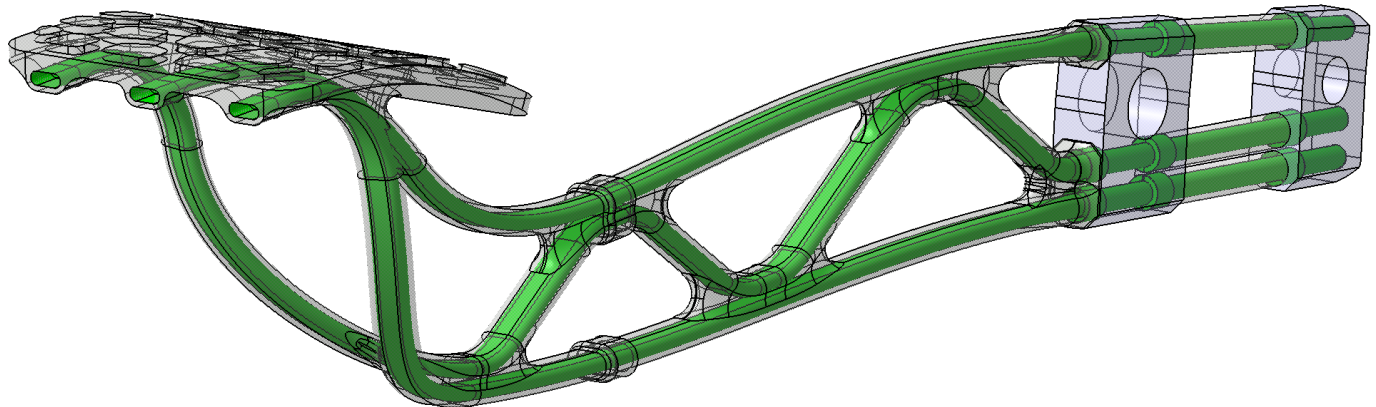
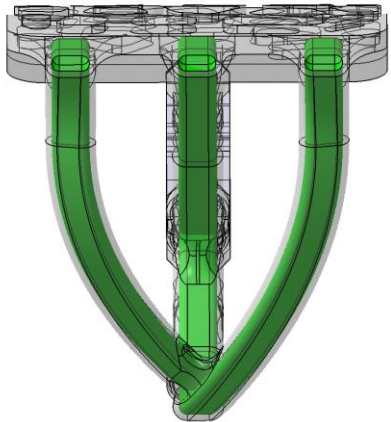
The Continuous Fibre Injection Process (CFIP) is a new post-process technology for reinforcing parts with continuous fibres such as carbon fibres.



A new post-process technology



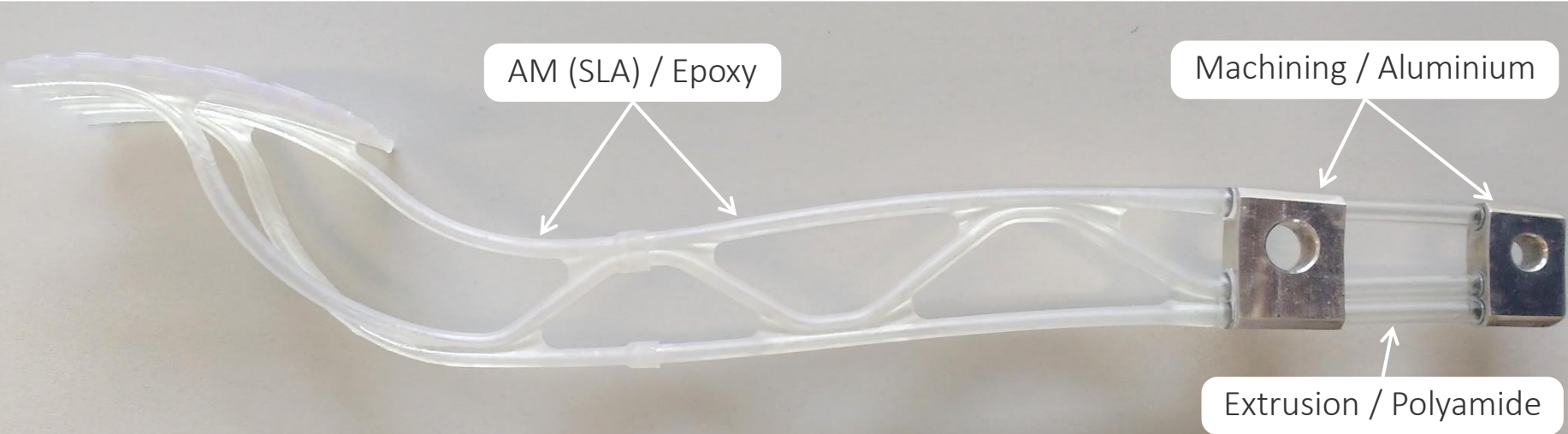
In CFIP, the fibres trajectories are defined by the trajectories of the tubular cavities. When combined with AM, CFIP enables to place the fibres in all directions following complex trajectories.



A new post-process technology



Different manufacturing technologies and materials can be combined for obtaining the part (multi-material and multi-process approach).



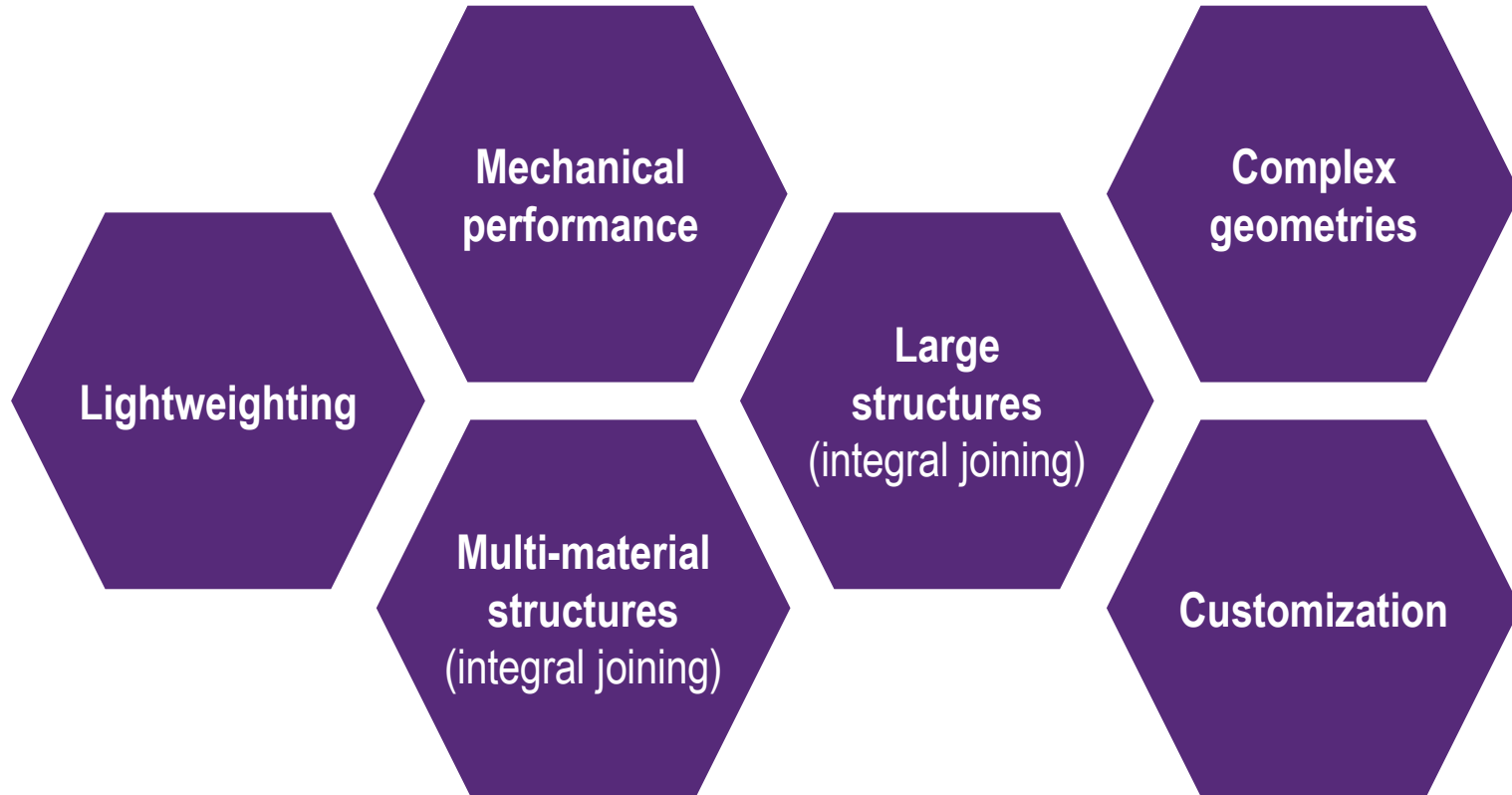
A new post-process technology



- The process is based on **injecting the fibres and the liquid resin simultaneously**, so that the resin drags the fibres along the tubular cavities.
- Fibre continuity along the different parts is achieved (**integral joining**), providing an ultra-high joining performance.
- An **automated injection machine** has been developed.
- **Different patents** have been submitted.



Added value

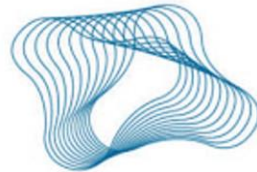


Awards



IASP

International Association of Science
Parks and Areas of Innovation
Best International Solution



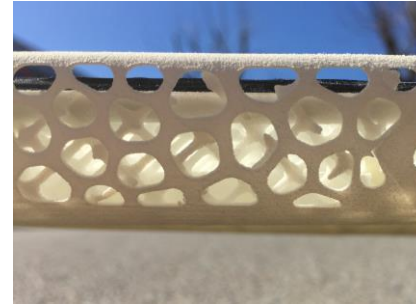
IN(3D)USTRY
FROM NEEDS TO SOLUTIONS

Best Solution in Advanced Materials

Case Studies

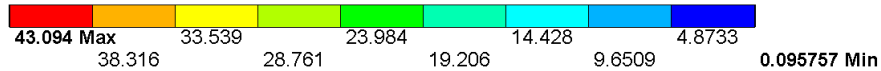
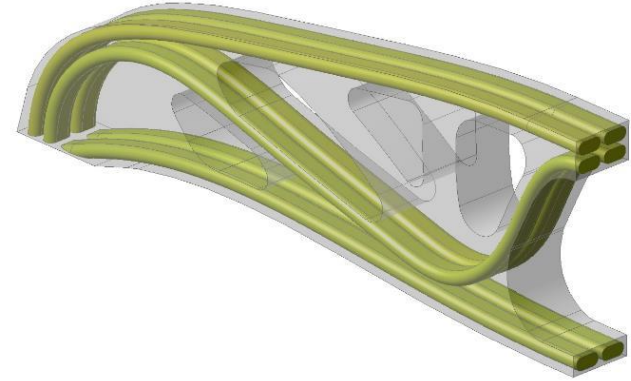
Longboard

- AM technology and materials: SLS / PA12
- CFIP materials: carbon fibres / epoxy
- Visual mock-up

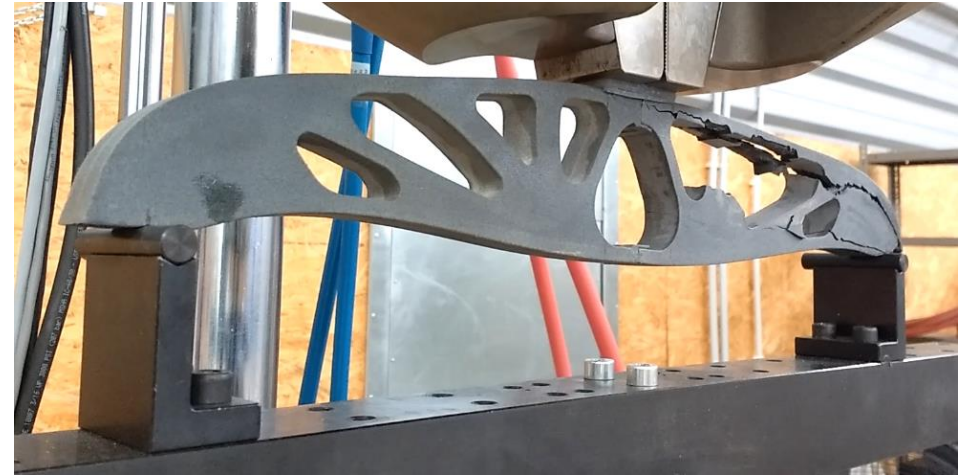
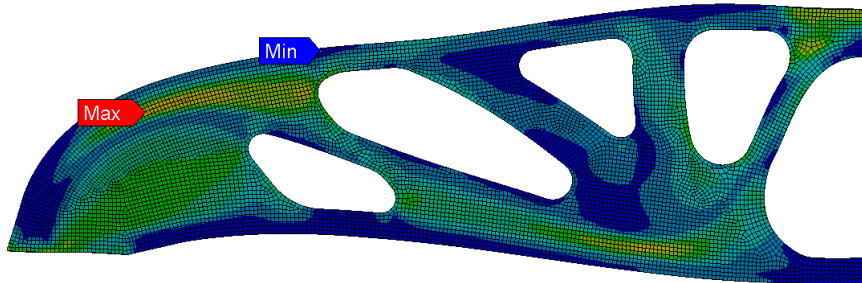


Beam

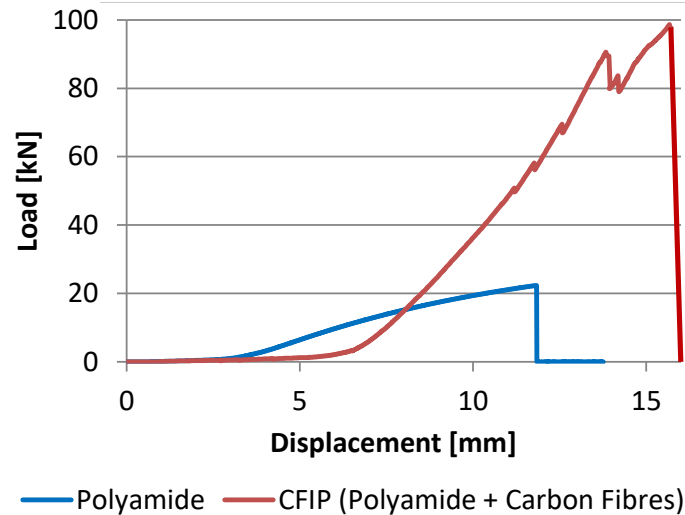
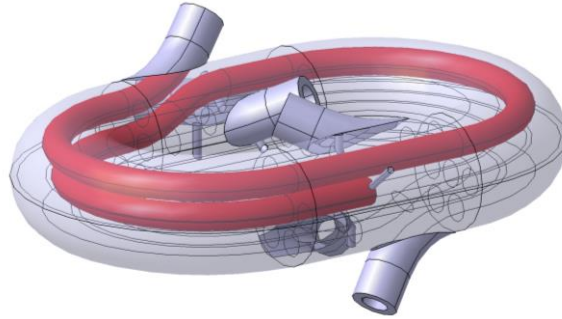
- AM technology and materials: MJF / PA12
- CFIP materials: carbon fibres / epoxy
- Objective: maximum strength



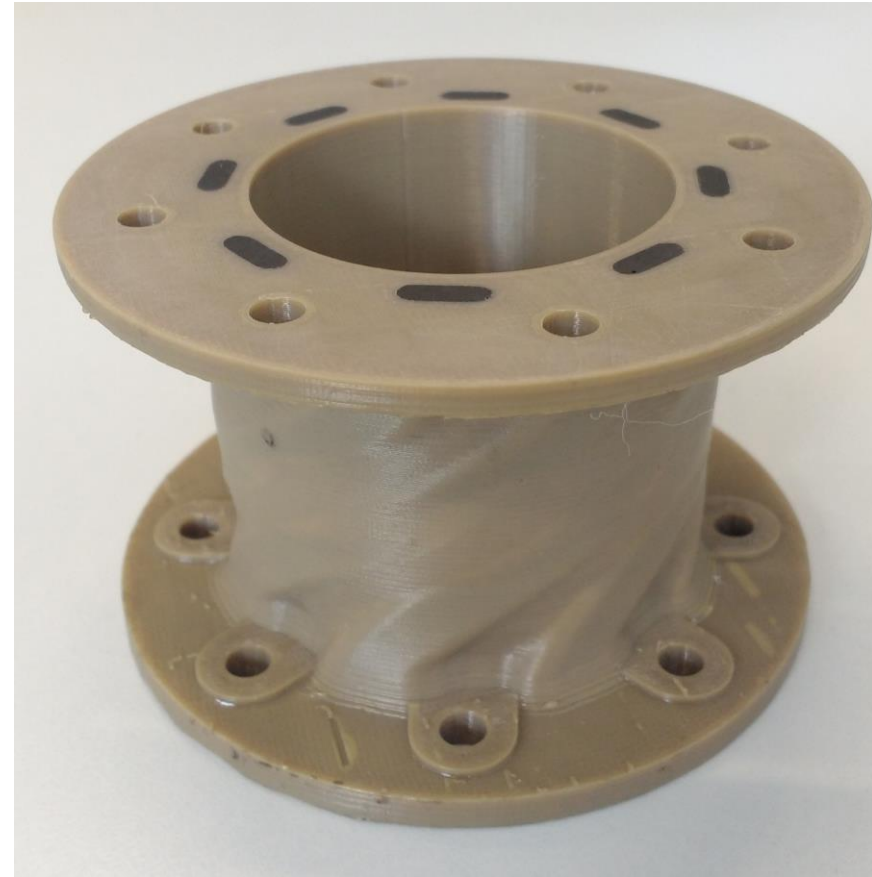
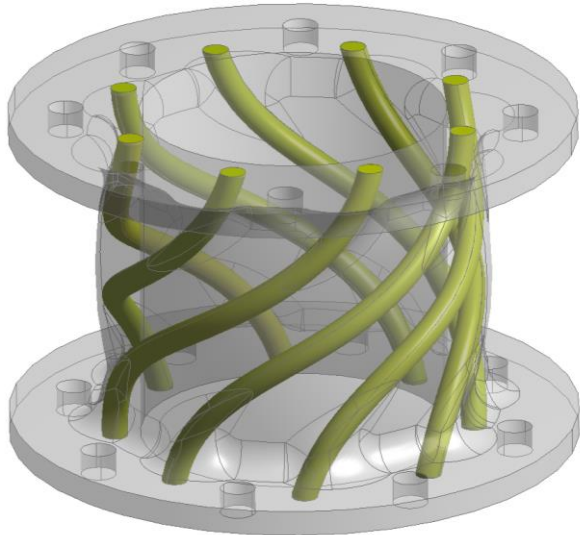
C: CFIP Detail 2n loop
Equivalent Stress
Type: Equivalent (von-Mises) Stress
Unit: MPa
Time: 0.6



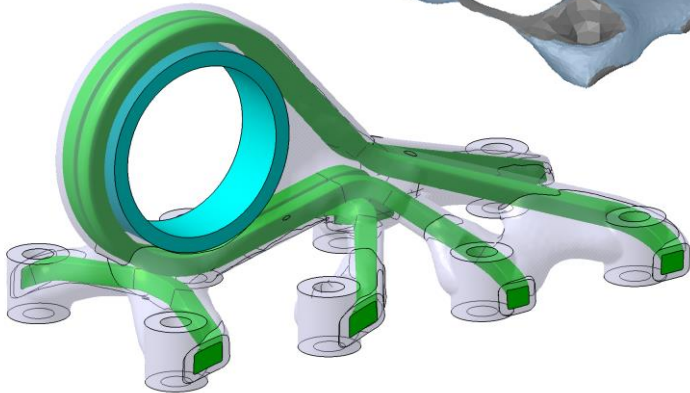
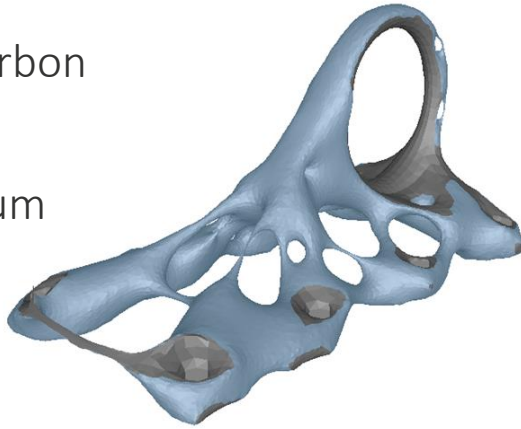
- AM technology and materials: MJF / PA12
- CFIP materials: carbon fibres / epoxy
- Objective: maximum strength



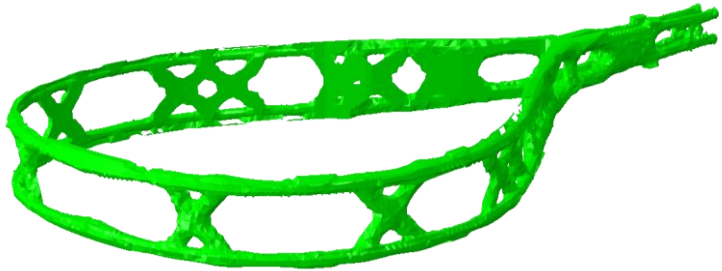
- AM technology and materials: FFF / PEEK
- CFIP materials: carbon fibres / epoxy
- Objective: minimum weight



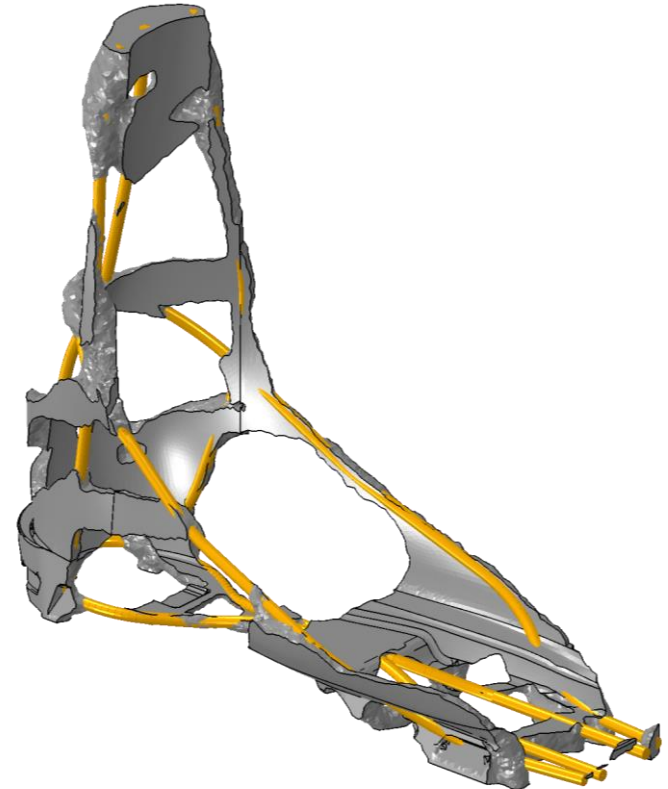
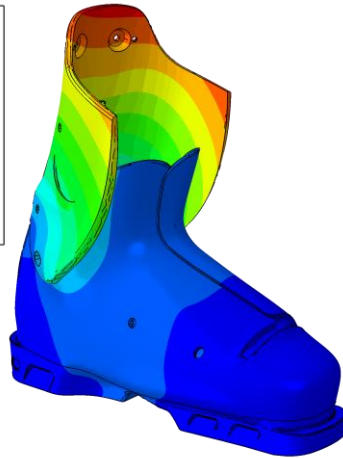
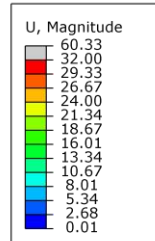
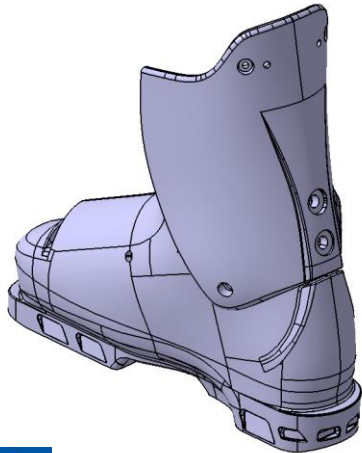
- AM technology and materials: FFF / PEEK
- CFIP materials: carbon fibres / epoxy
- Objective: minimum weight



- AM technology and materials: MJF / PA12
- CFIP materials: carbon fibres / epoxy
- Objective: minimum weight and maximum stiffness



- H2020 Repair 3D project (ongoing)
- Development of an ski boot by AM and CFIP
- Use of recycled and functionalized AM materials
- Recycling of the new CFIP ski boot



Thank you!

