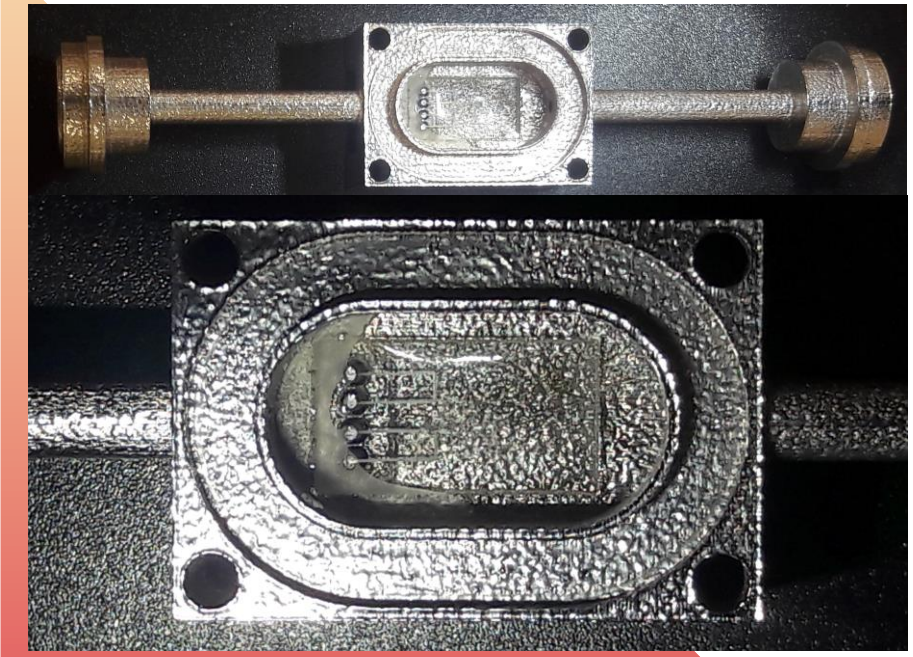
Smart Wall Pipes and ducts (SWaP)

This project combines 3D printing technologies to manufacture revolutionary components for next generation cooling systems by directly embedding sensors in a hydraulic circuit element.



Current status of progress:

% of deliverables completed so far: 75%

% of budget (100 kEUR) spent so far: 64%

Any remaining uncertainties w.r.t planned deliverables

- [ ] No
- [X] Yes; functional demonstrators are being produced, but we need additional results before the end of the ATTRACT project

Using students (PhD/MSc/BSc) in the project?

- [ ] No
- [X] Yes; MSc student: Chrysoula Manoli, as member of EP-DT-FS

Any interactions with other funded ATTRACT projects so far?

- [X] No
- [ ] Yes; (project names…)

If your project were to be selected for ATTRACT Phase 2:

How would your technology scale up to become an industrial product/system?

CSEM/CERN can cope with small-scale production runs targeting specific applications. Technology transfer to industrial partners will require identification of few clear use cases with clear specifications.

With who you would need to partner for this to happen?

Manufacturers of advanced components for hydraulic circuits

Industrial groups active in the field of advanced refrigeration systems

End user industries of pipelines and fluidic instrumentation

Have you already discussed this with KT Group?

Yes, we are currently in discussions with the KT group (Aurélie Pezous)

What applications will you demonstrate with value for science, industry and society? (Examples)

- More efficient cooling systems due to embedded sensors being placed closer to areas of interest
- Lighter components due to 3D printing which will reduce fuel consumption in the aerospace industry
- Smaller components due to high level integration
- Reduced number of parts leading to simpler and more cost-effective assembly

A group from Aalto University working on the societal impact of SWaP (environment, health)

Any comments, remarks or observations you would like to make to CERN?

IdeaSquare's support and guidance has contributed in various aspects of SWaP.