iRAP
Institute for Applied Plastics Research

Haute école d'ingénierie et d'architecture Fribourg
Hochschule für Technik und Architektur Freiburg

Projet NPR
nouvelle politique régionale

Institute for Applied Plastics Research (iRAP) | Haute Ecole d'Ingénierie et d'Architecture de Fribourg (HEIA-FR)

ASSCO - Application Study of Sensible Components Overmolding

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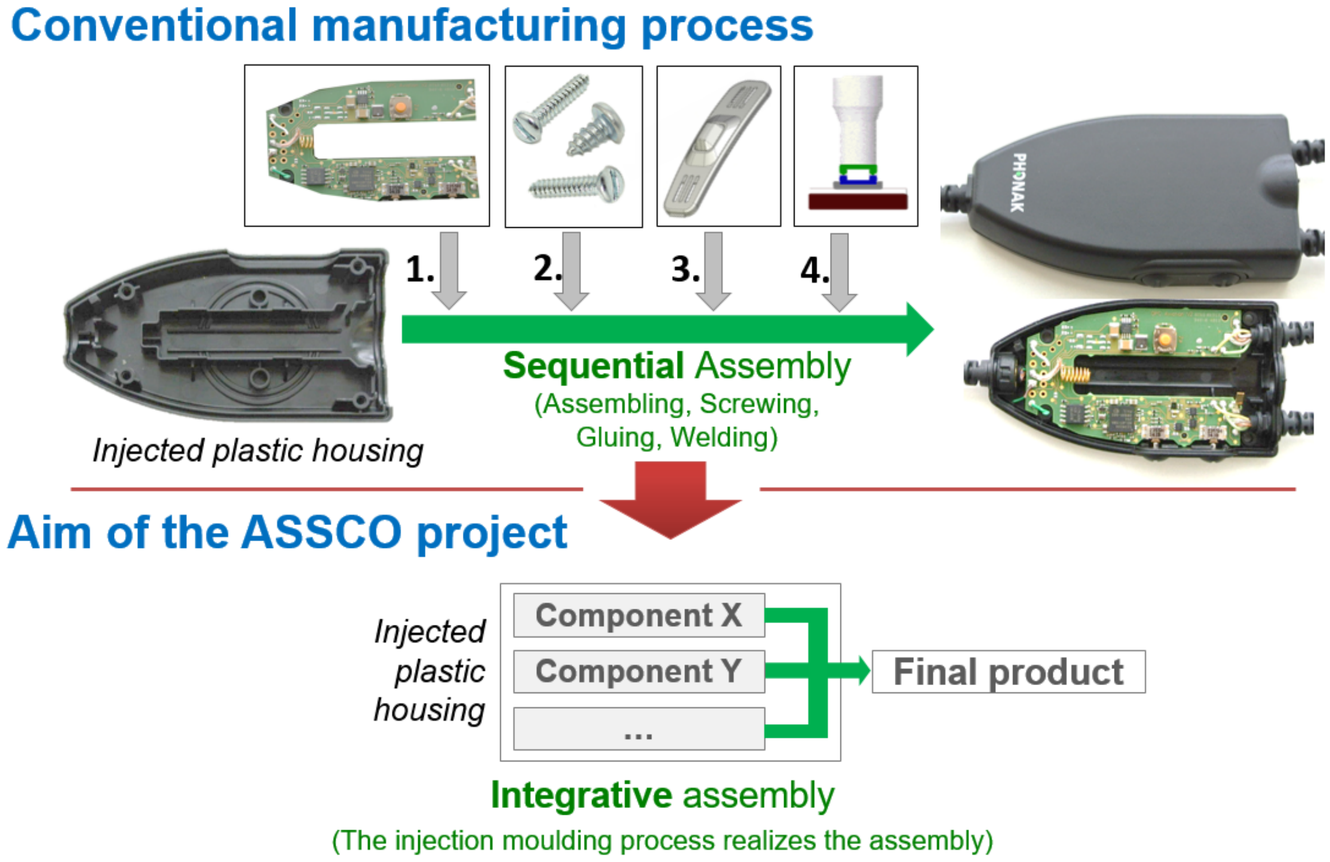
GOAL OF THE PROJET AND BACKGROUND

In industry, **function integration**, **miniaturization** and **modularity** are aspects of part design that become ever more important. It is part of a managing strategy to keep **production costs low** and remain **competitive** in a global market.

The **injection molding** process offers an efficient, flexible and economical approach enabling function integration. In fact, the number of production and assembly operations can be significantly reduced. The ASSCO project aims to accomplish exactly that through a **plastic overmoulding process**.

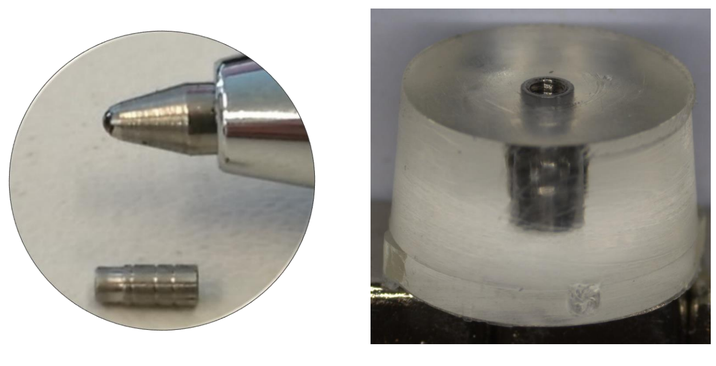


Overmolding of a sensible magnet

- **Tasks:** 3 injection concepts and many different materials have been tested.
- **Key results:** The feasibility has been validated. The binding force also depends on the injection concept. A correlation has been found with an interference fit.

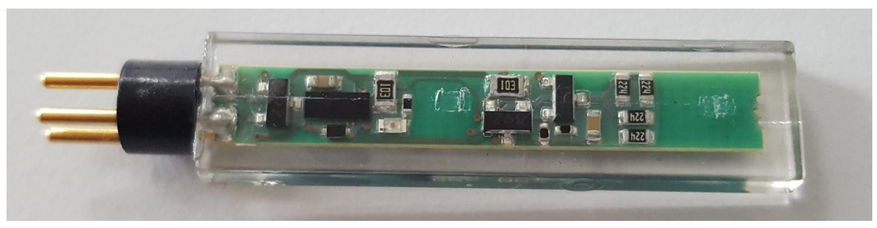
Overmoulding of a watchmaking insert

- **Aim:** To demonstrate the feasibility of overmoulding a watchmaking insert (Ø1.4mm and length 3.5mm).
- **Tasks:** 3 injection concepts and many different materials have been tested.
- **Key results:** The feasibility and the transmissible torque have been validated.



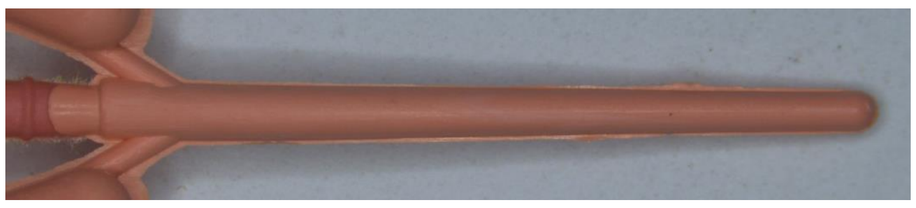
Overmolding of a PCB

- **Tasks:** Many mold concepts and 7 materials have been tested.
- **Key results:** We can guarantee a functional overmoulded PCB if the influencing parameters are well-run. An overmoulded PCB is fully resistant to mechanical, thermal or chemical loads.



Overmoulding of a dental insert

- **Aim:** To demonstrate the feasibility of overmoulding a dental insert with Gutta Percha.
- **Tasks:** Many mold concepts and mold improvements have been tested.
- **Key results:** The feasibility has been partially validated and a few promising methods have been found.



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