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D4.1 – Design Review Report

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1 Publishable summary

This document is intended to provide a selection of:

- Seat perimeter: solutions selected mostly on structure to decrease the weight and improve the thermal efficiency
- Instrument Panel and Door Panel perimeter: definition of architecture and solutions to decrease the weight.

Based on the vehicle level requirement and specifications, based on technologies in development inside FAURCEIA, FAS and FIS have identified specific solutions to be implemented in both virtual and physical prototypes:

- Optimized structure frame (T4.1.1) and mechanism/rails (T4.1.2) for both front and rear seats.
- Implementation of heating/cooling solutions and strategy (T4.1.4) for thermal balance management: specific material properties in seat, heating mat integrated in the foam, the climate bubble (OPTIVENT) but also his set of sensing parameters.
- Integration of microcellular injection structural material (T4.2.2) for Instrument Panel weight optimization, associated with optimization of process parameters and foaming agent (LBF).
- Definition of a new hybrid structure of Instrument Panel (T4.2.4) and improvement of the raw material itself (LBF)
- Optimized air ducts system (T4.2.5), based on twinsheet technology (HUT).
- Integration of radiant panel (IEE) linked with thermal bridges (LIST) at interface of selected parts (T4.2.6).
- Evaluating and improving thermal and mechanical properties of NFPP parts (T4.3.1) (LBF).

Mainly two types of actions and directions are taken in this work package:

- A reduction of weight in order to improve the driving range: T4.1.1, T4.1.2, T4.2.2, T4.2.4, T4.2.5.
- An improvement of thermal behaviour in order to optimize energy devoted to reach thermal comfort: T4.1.4, T4.2.6 and T4.3.1.

This deliverable is preliminary, as it will be supplemented by a detailed report (D4.2, D4.3 and D4.4) in M34 on the test, validation and integration of all these components.