



EMsafety



FP7-SST: 265772 EM-safety and Hazards Mitigation by proper EV Design

Project Goal: Improve ElectroMagnetic Safety of hybrid/electric vehicles

- Electromagnetic safety includes two important aspects. It concern both product exposure and human exposure.
- Depending on the magnitude and frequency of the EM field, the impact by an EM field may affect both electronic (EMC) and biological systems (EMF: General Public + Occupational Exposure).
- International standards exist to ensure that the products placed on the market are safe.

The EM-safety project aims at increasing public confidence in the safety of fully electric vehicles (FEV) regarding EM field exposure (EMF).

Project details and objectives:

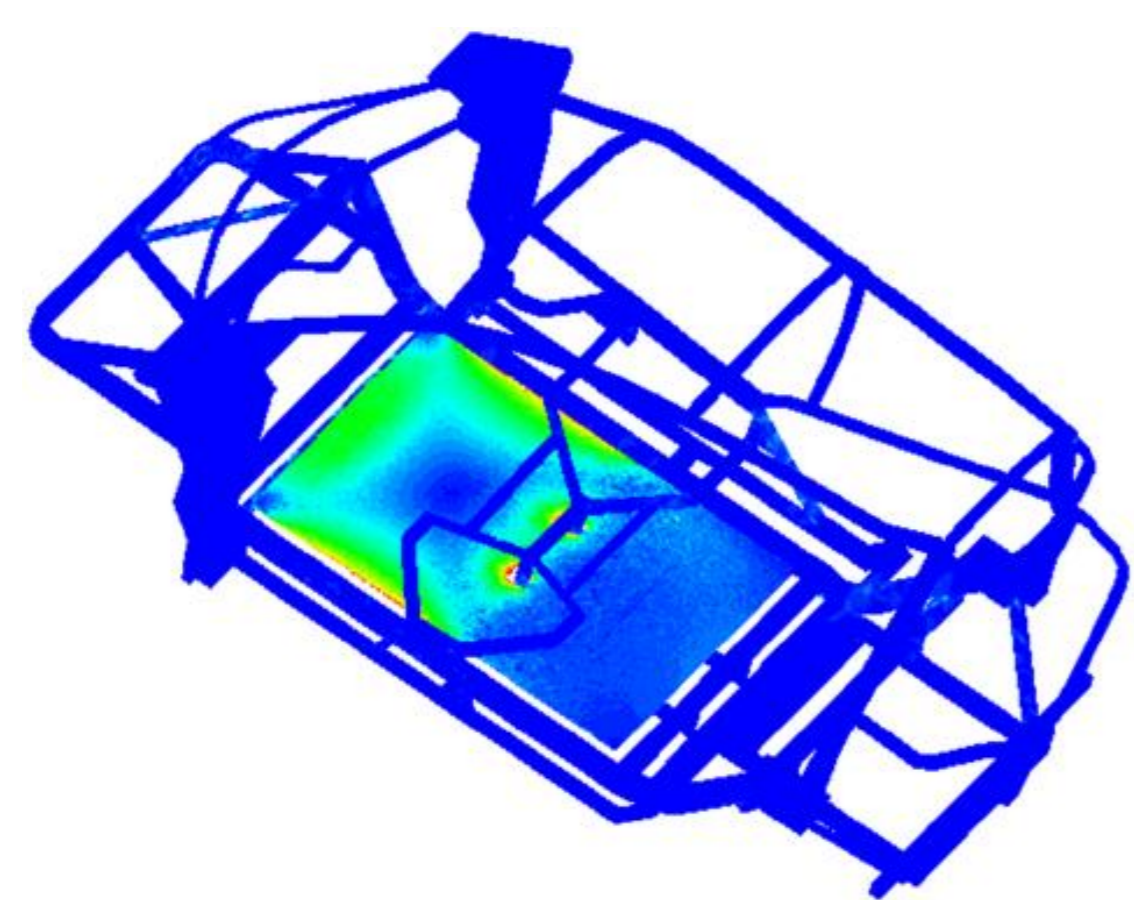
Project duration: 33 months
(Start: 1st May 2011)

Total budget ~ 3.1 M€ (Funding: ~ 2.25 M€)

The general objectives of the project are the implementation of:

- *Prudent Avoidance Practices* based on design guidelines for field mitigation
- Monitoring platform to measure field emissions or leakages and magnetic field levels in critical locations of the vehicle.
- Cooperation with the PMOB/WIDEMOB & HEMIS projects for implementing improved EMF design

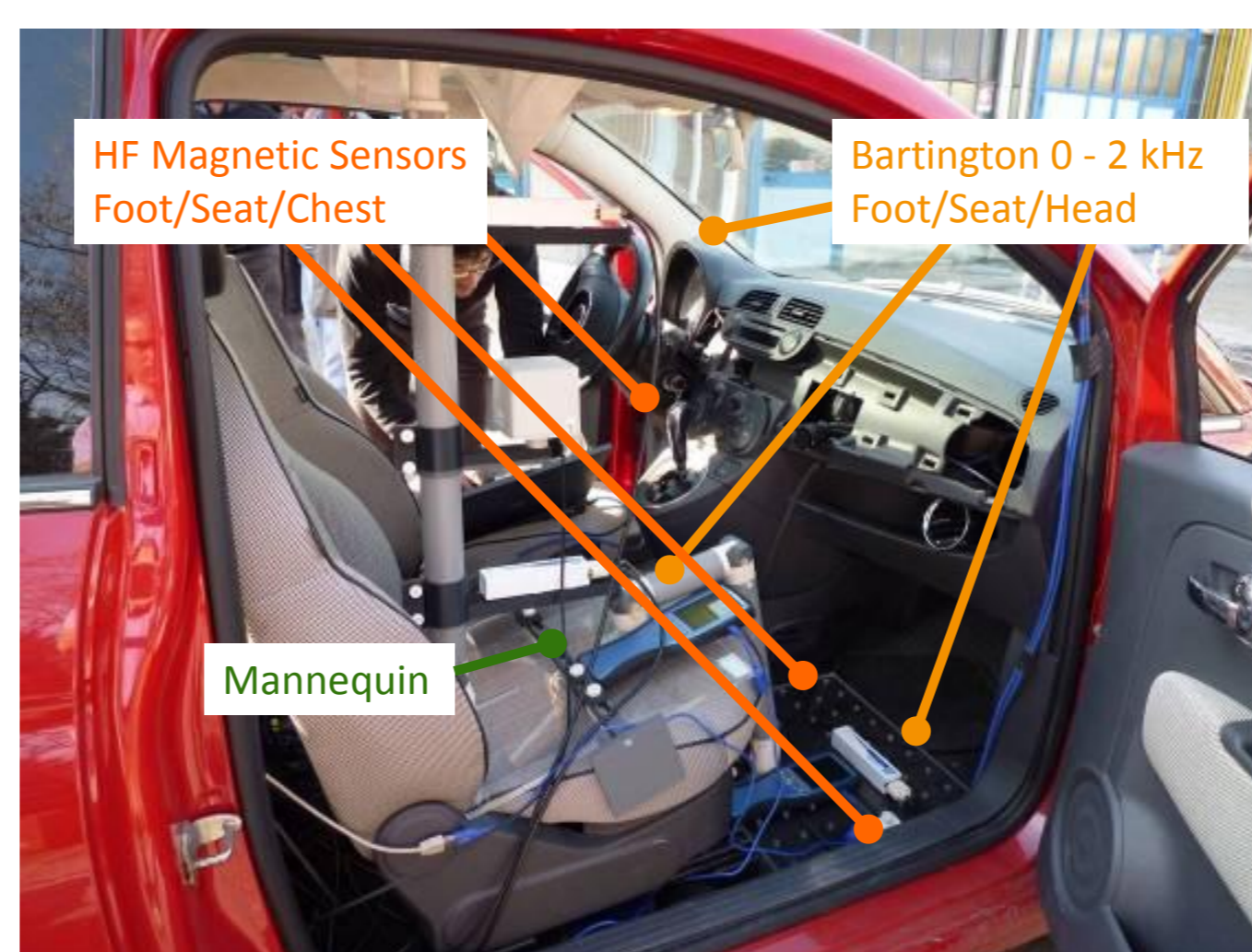
Main project results:



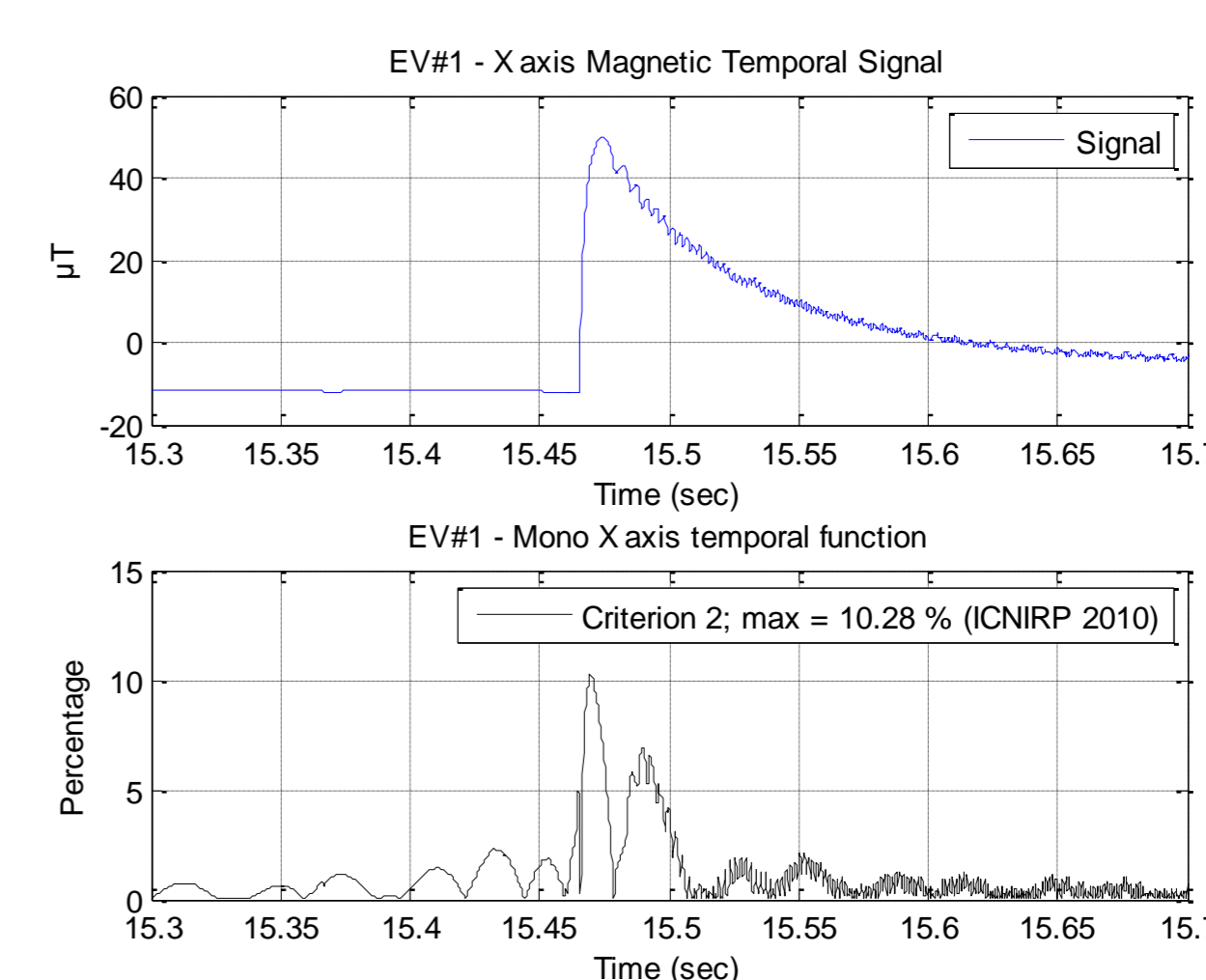
Numerical field calculation and modelling



Low magnetic field emission power cables / optimized cable laying



Study of the magnetic field exposure inside 11 different cars (8 electrical and 3 conventional) with a standardised measurement setup



The maximum magnetic field measured is two decades lower than reference levels given by ICNIRP for pure sinusoidal sources. Exposure calculations using the "Weighted Peak Approach for Non-sinusoidal Exposures" from ICNIRP indicate max. 20% of the recommended ICNIRP level (at start-up).

Design guidelines for improved EMF exposure and implementation in the new PMOB vehicle

Partners:



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IPM