RES 2.0 CAR
Robustness in the Field of Electromobility

# RESCAR - Robust Design of New Electronic Components for Electric Mobility Applications

The objective of RESCAR 2.0 is the development of a standard procedure which — for the first time — provides a convenient means to comprehend OEMs' robustness requirements, both prior to and throughout ECU component design, in a reliable and verifiable way. In order to account for the increasing sensitivity of new technologies to their operational environment, three especially robustness-critical issues are dealt with in depth: ageing effects and the influence of both temperature and voltage fluctuations.

Mission Profile
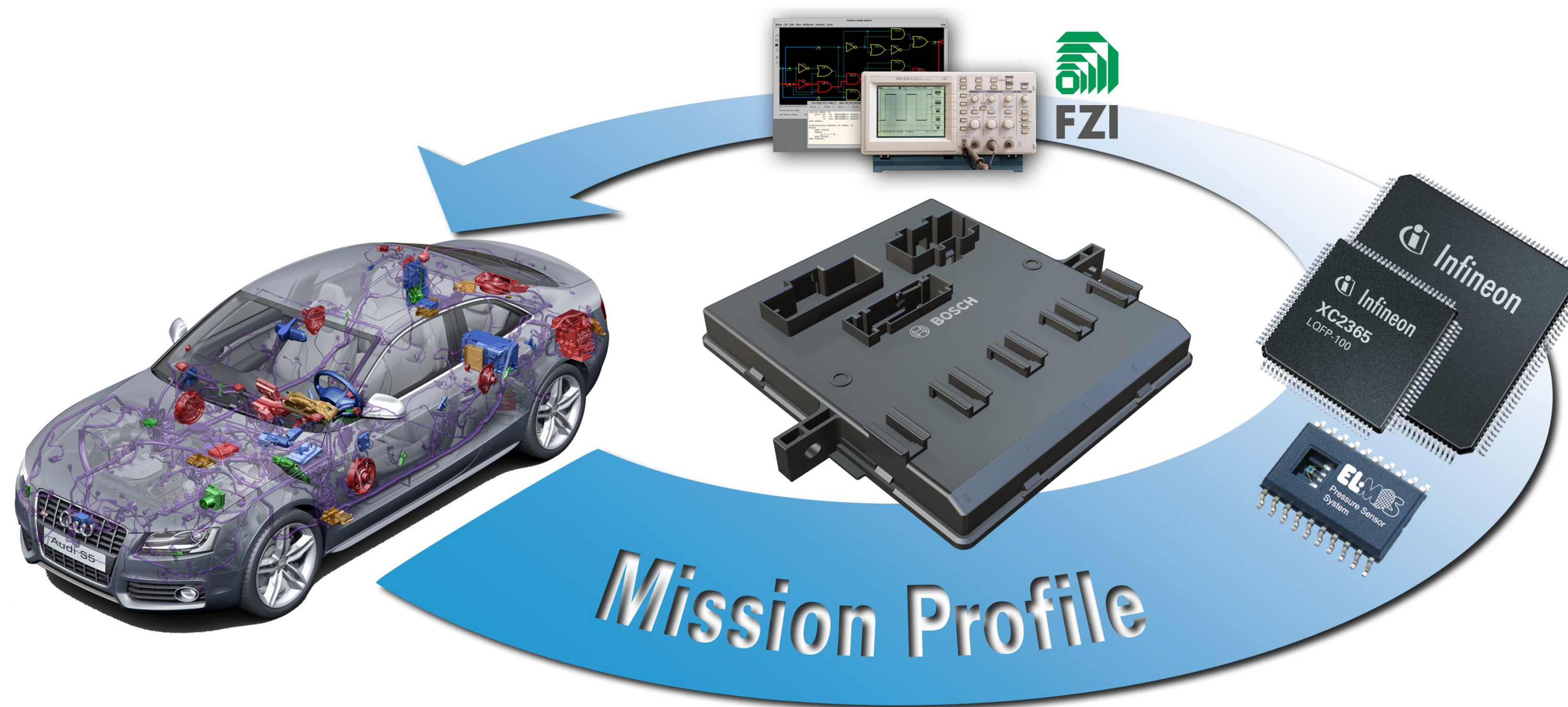
In RESCAR 2.0, robustness is precisely specified as a design command variable for the first time ever. It is taken into account throughout the entire development process, from project commencement to final verification. The procedure comprehends the whole value chain from the auto manufacturer (OEM) and the ECU producer (Tier 1), up to the semiconductor components provider (Tier 2).

RESCAR 2.0 Subprojects of the Project Partners

Audi
„Methodologies for the creation and preparation of specifications to develop and validate robust automotive semiconductor components„

BOSCH
„Vertical requirements management for electric vehicle design with a verification flow between OEMs and ASIC development„

elmos
„Robust design for highly integrated More-than-Moore systems — high-voltage mixed-signal ICs and sensor systems — for electric mobility applications„
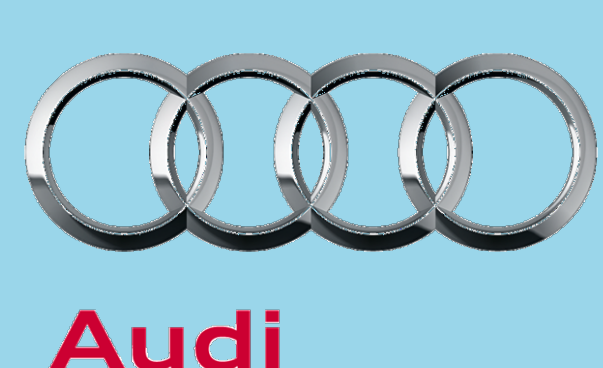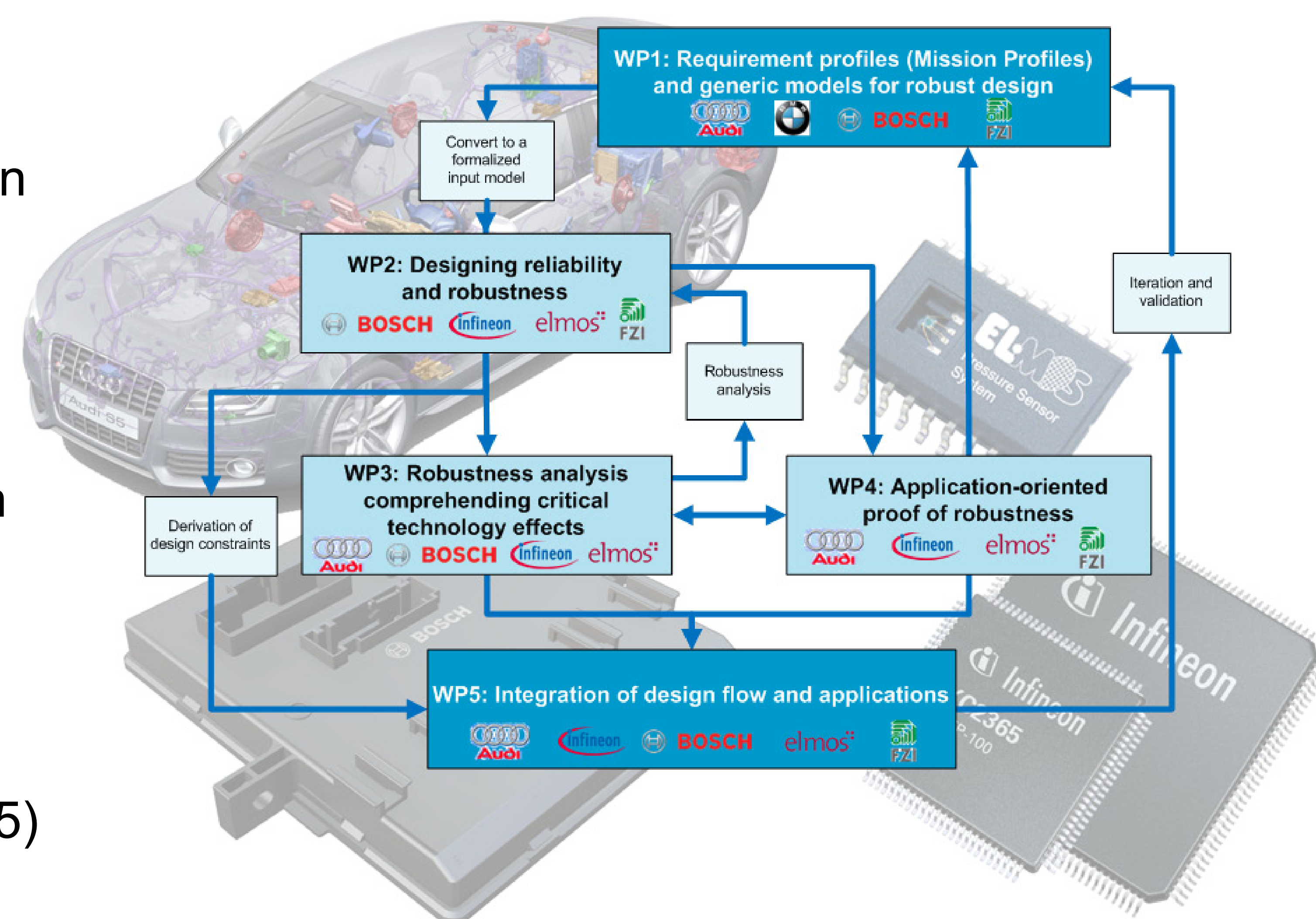
FZI
„Application-specific robustness analysis with propagated requirements profiles„

Infineon
„Design and verification measures to ensure the robustness of microelectronic components for future electric vehicles applications"

➤ Systematization and classification of system and design requirements (mission profiles) and preparation for design and validation (WP1).

➤ Conversion of the requirements into actionable design constraints; development of methods for consistent consideration in the design process (WP2).

➤ Research of analysis methods for comprehending design robustness before silicon production (WP3).

➤ Simulative and measured verification (proof) of the robustness of applications (WP4).

➤ Development of demonstrators to illustrate the possible integration of results into an automotive design flow (WP5)