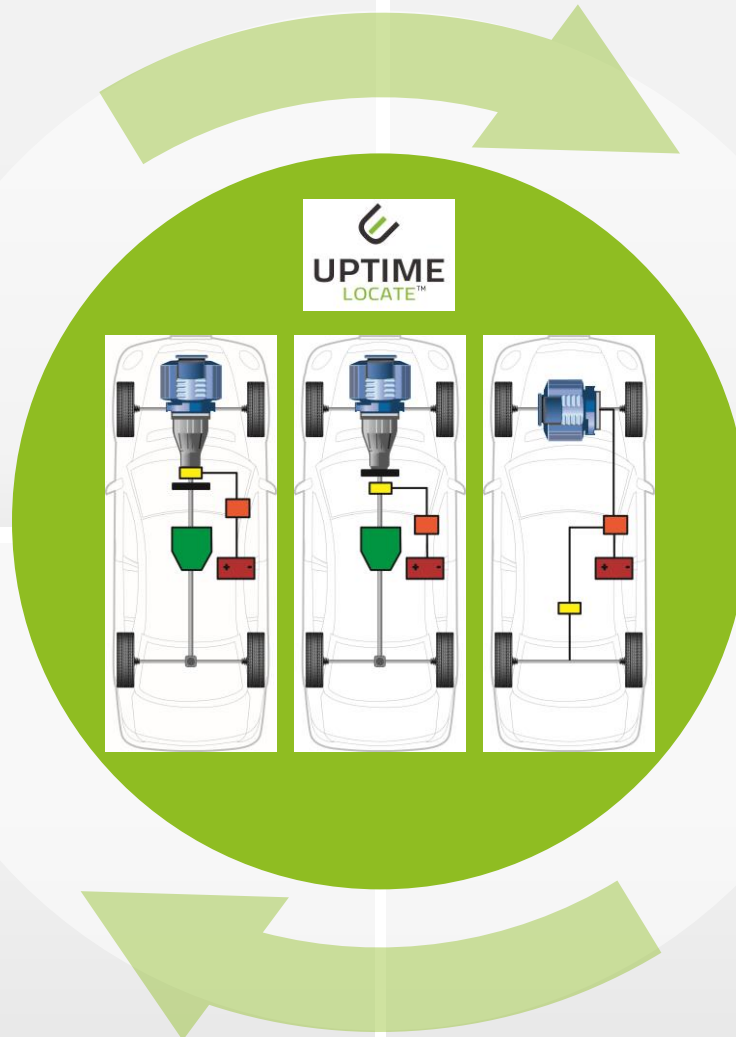


Background

- Hybrid drivetrains have two energy sources
- This makes validation quite complicated
 - Load is distributed by the controller according to several strategies
 - Component loads are no longer definite functions of the vehicle load
 - New types of load appear

Customer benefit

- Reduction of complexity
- Focus on innovation-induced risks and actual vehicle usage
- Simulation and testing in closed loop
- Comprehensive risk management
- Lifetime models from test monitoring



Requirement

- Develop a strategy for hybrid validation
- Take variable driving modes into account for references and for test procedures
- Consider driving and charging scenarios
- Maximize road to rig operation

Solution: Uptime LOCATE™

- Reliability Risk Assessment
- Identification of risk related operation with respect to hybrid modus and duty cycles
- Simulation of load spectra for drivetrain modules
- Setup of durability test hierarchy, SiL and HiL screening for drivetrain characterisation
- Vehicle tests focus on system response