



Testing

- Fit and function test
- Misuse test
- Road load data acquisition
- Summer & winter test
- Safety
- Durability
- Tuning



Test Track

- Data acquisition
- Handling area
- Off road area
- NVH validation

Chassis Dyno

- 4 Single wheel drives
4 x 250KW
- Temperature: -20°C to 50°C
- NVH Test Cell



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Vehicle Integration and Electrification



Democar Development by Magna Powertrain

engineering.mpt.magna.com

DRIVEN BY EXPERIENCE. SYSTEM COMPETENCE FOR THE ELECTRICAL FUTURE.

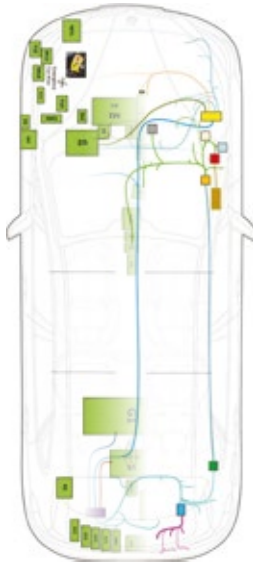
Specification/Definition

System specification

- Powertrain definition
- System / KPI specification
- Operating modes
- System function definition
- Component specification
- EE system architecture

Development of vehicle systems

- Powertrain electrification
- Vehicle systems
- ADAS systems
- Thermal- & energy management systems



Concept

Thermal- & Energy Management

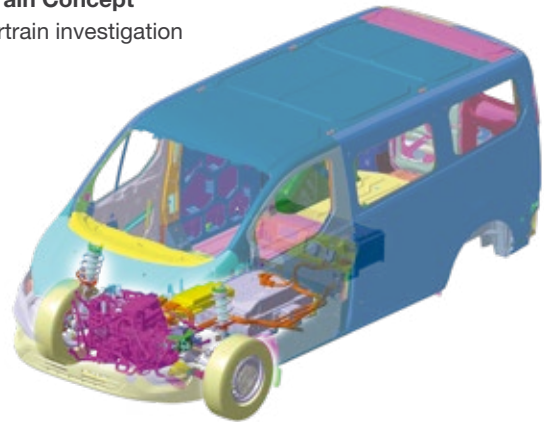
- Identification of powertrain components which needs active cooling or heating
- Definition of suitable cooling system concepts

Design Concept for Vehicle adaption

- Layout, calculation & design, DMU
- Styling

Powertrain Concept

- Powertrain investigation



Integration

Vehicle Integration of Subsystems and Components

- Integration of powertrain
- Integration of e-Components
- Wiring and pipe routing
- BOM and documentation



Build-up

Vehicle Demonstrator and PT Build

- Vehicle integration of subsystems and components
- Build up of mule vehicles
- Function and durability test of full vehicle
- Test track

SW Development

- Integration and control of subsystems (e-motor, HV-battery, thermal components, electric auxiliaries, ...)
- Cooling circuit control
- Hybrid manager
- Safety monitoring SW

HIL-Testing

- Build up of system-HIL (Lab-Car)
- Test of interaction between all subsystems

