



## Contact

### Engineering Center Steyr GmbH & Co KG

Steyrer Straße 32  
4300 St. Valentin  
Austria

Office +43/7435/501-0

Email [info.valentin.mpt@magna.com](mailto:info.valentin.mpt@magna.com)

Web [engineering.mpt.magna.com](http://engineering.mpt.magna.com)

Disclaimer: Engineering Center Steyr GmbH & Co KG, Propulsion Engineering

## Software and Boardnet

### Software

Software development from concept phase to series production

- SW – Development and testing for e-drives/inverter, HV battery, charger, H2 systems, thermal management and more
- Vehicle controller development for prototype applications (BEV, hybrid, fuel cell, ...)



### Boardnet

The boardnet is the foundation for communication of all electric components installed in a vehicle.

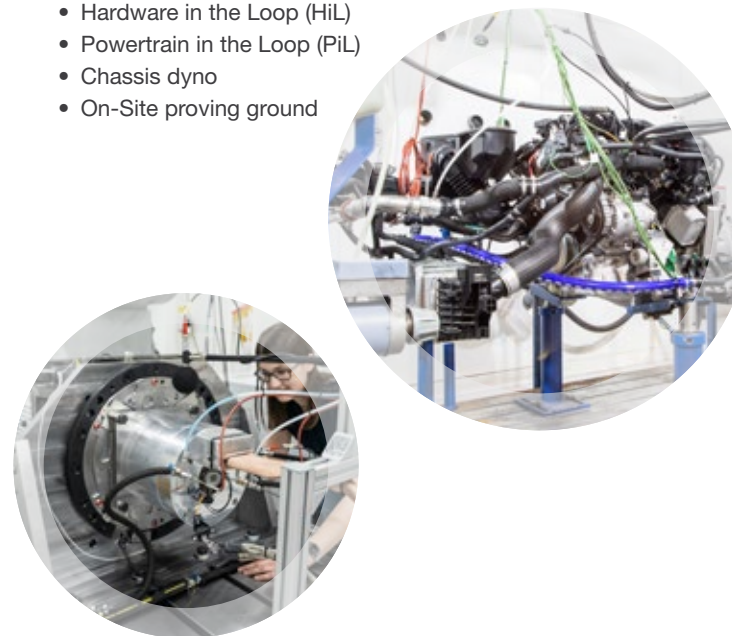
- Bus layout & control unit architecture
- Residual bus simulation
- LV energy management (wake up and shut down strategy)
- Function & gateway development
- Testing and validation

## Propulsion System Testing

Our state-of-the-art test facilities, HIL-systems and tool chains offer an effective way to calibrate and validate complete system, ensuring performance targets, robustness and reliability.

### Testing focus on component & system Level

- eDrive testing
- Engine test bench
- High altitude and climate test bench
- Thermal- /AC- System test benches
- Software in the loop (SiL)
- Hardware in the Loop (HiL)
- Powertrain in the Loop (PiL)
- Chassis dyno
- On-Site proving ground



## Propulsion Engineering



Propulsion Engineering  
from One Source by  
Magna Powertrain  
Engineering Center Steyr



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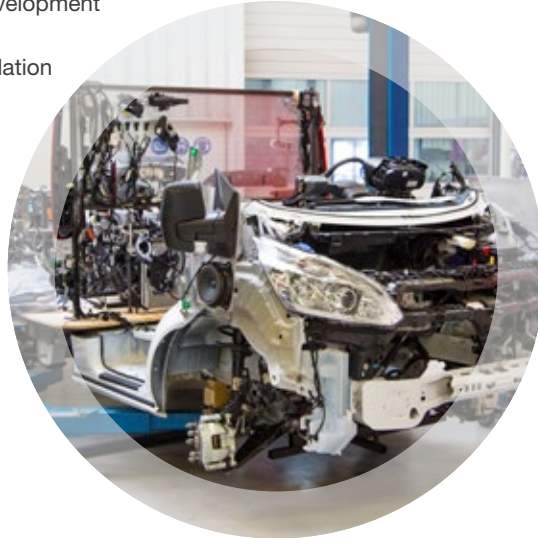


## Functional Integration Propulsion Systems

### System Integration

Integration know-how driven by electronic competencies and support by experienced mechanical engineers

- Requirements Engineering
- Functional safety
- Simulation
- Function development
- Software development
- Prototyping
- System Validation



### Applications

- E-drive / e-Axle / inverter
- HV battery
- Fuel cell systems
- H2 storage system
- Boardnet & communication

## Thermal and Energy Management

### Thermal & energy management

Development of thermal and energy management systems and controls with focus on improvement potentials under real world conditions

- Concept investigation
- Simulation and system development
- Vehicle Integration and CAD
- Control logic and software development
- Prototype build-up and measurement integration
- System test benches and vehicle testing



## Engine & H2 Systems

### Engine

We accompany our customers with our calibration and validation expertise from base calibration tasks to homologation

- Base calibration
- Emission
- Driveability
- OBD
- Homologation Support

### H2 Systems

Integration and development of fuel cell (FCS) and hydrogen storage systems (HSS)

- Concept development
- Refueling procedure
- Cooling system
- Safety concept
- Prototyping und testing



## Advanced Mobility Functions / ADAS

### Virtual Development

- Software Development for post-processing

### Hardware & Architecture

- Sensor Set-Up and Architectures



### Benchmarking

- Sensors
- E/E Architecture (CAN-Layout, Actuators, Communication Interface)
- Functionality
- Vehicle Testing on Proving Ground and Public Roads

