FEV Signature Solutions

Powertrain control SW for BEVs

Our solution enables new players (e.g., Start-ups, Tier x, OEMs) to quickly enter the BEV market

FEV offers

- Powertrain control software for BEVs
- Customization services for prototypes or series applications
- Additional services as modification/extension, integration, commissioning and calibration

Why FEV

- Proven functions applied to various vehicle applications and continuously optimized throughout the last 20 years (see reference slide)
- White box option to enable customer to use FEV's solution as basis for its own development
- Customization by FEV to exactly address customers' needs
- Customer friendly license model, as one time license fee and tailored license scope

Reference projects

FEV E-POWERTRAIN DOMAIN CONTROL

EV Light Duty

(Series development)

2WD EV L4 AD Robo-Taxi

(Series development)

P2P3 HEV

(Concept car)

2WD EV Passenger Car

(Series development)

Series Hybrid Off-Highway

(Series development)

P0P4 Sports Car

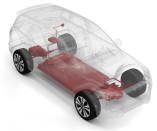
(Series development)

EV Tractor Off-Highway

(Prototype)

P2P4 PHEV

(Concept car)



2/4WD EV Passenger Car

(Series development)

EV Passenger Car

(Series development)

EV Passenger Car

(Series development)

P0P2 Passenger Car

(Series development)

4WD EV Passenger Car

(Series development)

P1P4 Super Sports Car

(Concept car)

eTC Hybrid Mini-Bus

(Concept car)

P0 E-Charger 48V Sports Car

(Concept car)

EV Passenger Car

(Series development)

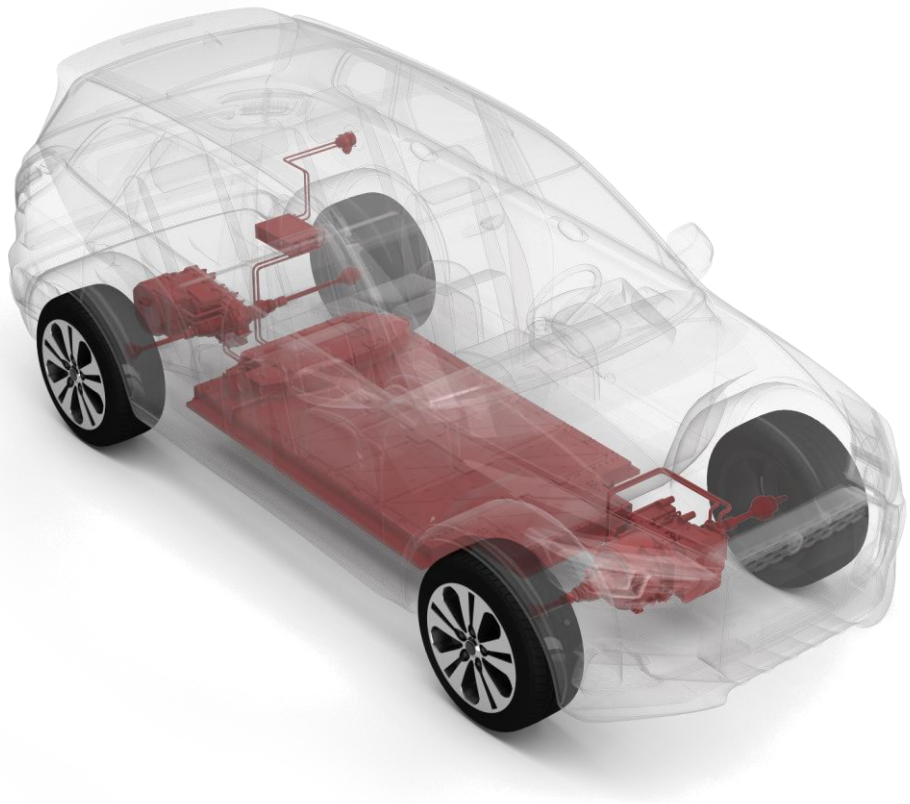
P2 Mini-Van

(Series development)

- Battery electric vehicle
- Hybrid electric vehicle
- Concept vehicle

FEV's control functions
Developed, defined and approved in FEV's software landscape

SERIES SOFTWARE AS PART OF FEV'S POWERTRAIN CONTROL SOFTWARE



Thermal Management	Coordination and control of the thermal system and its components to achieve maximum powertrain performance and thermal comfort.
Energy & Charge Management	Energy management, power distribution and charging control for the electric vehicle high voltage system.
Torque Management	Determination and arbitration of driver and AD system torque requests. Drivability filtering and torque distribution for enhanced performance, efficiency and comfort.
Vehicle Coordination	Coordination of vehicle sub-systems and states, such as the low voltage, high voltage and powertrain activation states.
Diagnostics	Monitoring of the system state and detection of possible faults. Coordination of the system reaction for maximum system availability.

Solution scope

VCU APPLICATION SOFTWARE

Vehicle coordination	Energy & charge management	Torque management	Thermal management	Diagnostics
Low voltage power-up/down	System constraints determination & Monitoring	Closed-loop creep control	Thermal system coordination	Communication monitoring
Network management	AC & DC charging	Driver torque request determination	Component temperature monitoring	Component & system error monitoring
Driver presence detection	Range estimation	Multi-motor power & torque distribution	Pump, fan, valve & compressor control	System error level determination
HV system power-up/down	Charge scheduling	Vehicle stabilization interface	(Predictive) pre-conditioning	System remedial action determination
Drive readiness evaluation	Vehicle-2-load/ home/grid	ADAS/AD interface		Driver information

Get in touch with us for further information

www.fev.com/en/signature-solutions