VALUE PROPOSITION

VEHICLE BUILD FACILITY
Build fully integrated vehicle systems including Mechanical, Electrical, Thermal, Controls and Software under one roof

MODULAR PRODUCTS
Plug & play solutions for body controls, EV propulsion, Autonomous driving scenarios and CANbus display

SMART VCU
Easily integrable automotive-grade VCU for electric vehicle supervisory controls with extended engineering support

BESPOKE CONTROLS & SOFTWARE
Customized hardware and software solutions for development and production vehicles

STRATEGIC LOCATIONS
Strategic locations in the USA, Canada, and India to cater to customers around the clock with easy onsite, nearshore and offshore facilities

VIRTUAL & IN-VEHICLE ENGINEERING
Equipped to engineer vehicle systems in virtual/simulated environments and to perform validation engineering on physical systems/vehicles

LIVE TRAINING
Approved provider of IEEE certificates for our live hands-on training programs globally on eMobility & Autonomous vehicle controls & software

DIVERSE APPLICATIONS
Commercial, passenger, farm, defense, marine, UAVs, 2/3 wheeler, micromobility and more

Delivery Models

- Delivered Projects
- T&M Engineering
- Consulting Services
- EV/AV Training
- MSP Services

Turnkey Products
- Smart EVCU & ASW
- Full EV Simulator
- Autonomous Driving Scenario Simulator
- Modular BCM Software
- CANbus Display

IEEE Training Programs
- Computer Vision & Sensor Fusion
- Machine/Deep/Reinforcement Learning
- Python, Matlab, Simulink, Stateflow
- 2-speed Transmission Controls
- Control Prototyping on Raptor/Bosch ECU
- Vehicle Network Architecture-CAN
- EV Torque & Thermal Controls
- Drive by Wire Systems & Controls
- Systems Engineering & SYSML

Data Engineering
- CAN Reverse Engineering
- Data Logging
- Data Processing
- Data Analysis
- Algorithm design

Vehicle Integration
- Transmission system design
- Fuse box & PDU design
- Wiring harness & connectors
- Thermal systems integration
- High volt system integration
- Prototype build

Locations
- USA
- CANADA
- INDIA

DORLECO
INNOVATIONS FOR SUSTAINABLE MOBILITY

ABOUT
We develop intelligent eMobility & Autonomous solutions by seamlessly integrating bespoke controls, software, mechanical & E/E systems for sustainable transportation.

SOLUTIONS

Systems & Software
- Systems Engineering
- Requirements Engineering
- Modeling and Simulation
- Control System Design
- Algorithm development
- Autocode / Hand Code
- ASW & BSW development
- AUTOSAR architecture
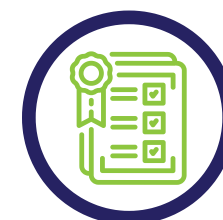- Driver Software Development

Controls Integration
- Feature Software Integration
- Application Software Integration
- Complex Device Drivers Integration
- CAN/LIN/ETHERNET Stack Integration
- ASW & BSW Integration
- Controller Architecture Integration VCU, MCU, BMS, ADCU, BCM

Verification & Validation
- Model in Loop (MIL)
- Software in Loop (SIL)
- Processor in Loop (PIL)
- Hardware in Loop (HIL)
- In-vehicle Validation
- Test Automation
- FMEA, RCA, FTA, Pareto
- Code Debugging
- Unit/Regression/Integration/ Acceptance Testing
- Rapid Control Prototyping

Standards & Compliances
- Functional Safety (ISO 26262)
- Cybersecurity (ISO 21434)
- ASPICE
- SOTIF
- MISRA
- AUTOSAR 4.X

DORLECO
INNOVATIONS FOR SUSTAINABLE MOBILITY

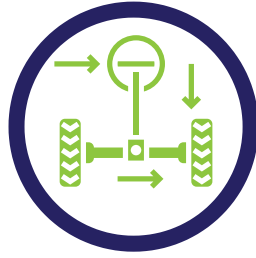## PRODUCTS

DRIVER MONITOR

Inward facing mono camera based solution to perform facial landmark tracking of all occupants in the vehicle.

Detects head orientation, gaze orientation, tracks eyes, mouth and nose to monitor the driver activity including but not limited to alertness, wakefulness, distractedness, texting, calling, operating on dashboard, shifting gear, looking left, looking right etc.

VEHICLE SIMULATOR

Full vehicle plug and play simulation for performance and energy estimation, management and controls development in Simulink.
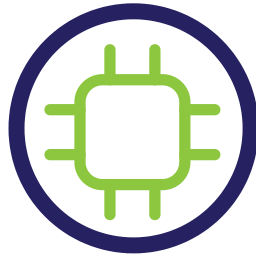
Provides lateral and longitudinal behavior of all 4-wheel vehicles for system sizing, performance estimation, control design and analysis. Simulates sensors and actuators for drive by wire vehicles. Great for MIL and real time driver-in-loop simulation and testing.

DRIVE-BY-WIRE CONTROLS

Plug and play software stack for drive by wire functions including Throttle, Brake, Shift and Steer.

Reads driver inputs, processes the sensor signals, calibrates the actuator force/torque signals and sends outputs in the form of CAN signals, PWM outputs or direct commands.

EVCU & ASW

Plug and play hardware and full master level controller software for electric and hybrid vehicle supervisory function.
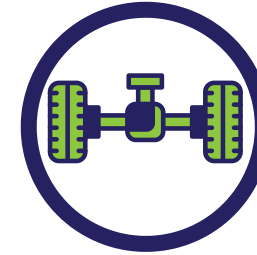
Supports torque estimation, arbitration and actuation, provides optimal control logic for energy management and performance, communication stack for exchange between BMS, MCU, HVAC, ABS and HMI functions.

ROAD TEXTURE CLASSIFIER

Front facing stereo camera-based solution to monitor and track the road metrics and assist the driver avoid safety incidents due to road surface irregularities.

Identifies paved, unpaved road, classifies texture of the road, identifies bumps & potholes, calculates risks and warns the driver or takes corrective action if necessary.

TWO SPEED E-AXLE CONTROLS

Torque path and energy management software for e-axle units with single motor two speed configuration and twin motor single speed configuration.

Plug and play software that gets flashed on the inverter and manages control functions like torque control, speed control, active safety, thermal control, current limiting, diagnostics and sensor and actuator communication over CAN and analog channels.

E/E INTEGRATION

Prebuilt customizable electric vehicle architecture in SYSML that includes wiring details of high voltage systems and low voltage systems.

Architecture includes wiring and communication network for supervisory VCU, ABS, MCU, TCU, OBC, BMS, junction box, power distribution unit, HMI display, BCU, ADCU(if ADAS vehicle).

In vehicle integration and testing service available for all classes of passenger, special purpose and commercial vehicles.