

Open ECU for Engines Prototyping Platform for ICE Control

To develop and test EMS Functions

Open ECU:

- To calibrate & drive any Internal Combustion Engine
- Automotive, motorcycle, marine, recreational, industrial

Comprehensive platform:

- Compact and robust hardware
- Direct access to calibration
- Automatic software code generation
- Easy prototyping (Matlab® & Simulink®)

Configurable Hardware and Software:

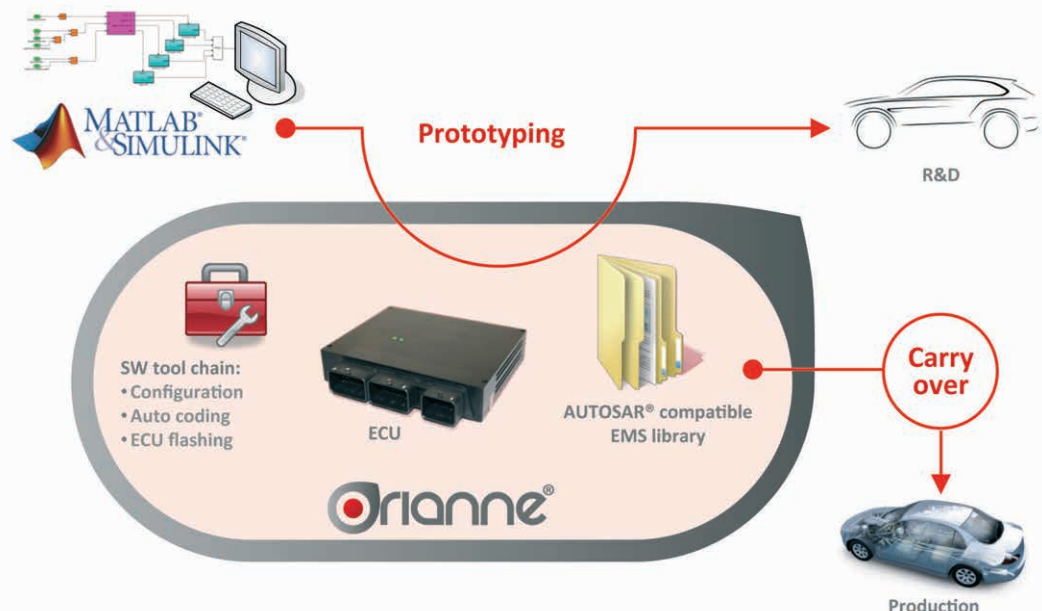
- Diesel / Gasoline
- 2-Stroke / 4-Stroke
- 1- to 8-cylinder
- Direct or port injection
- Piezo or solenoid injectors

EMS Library:

State of the art Engine Management System Functions

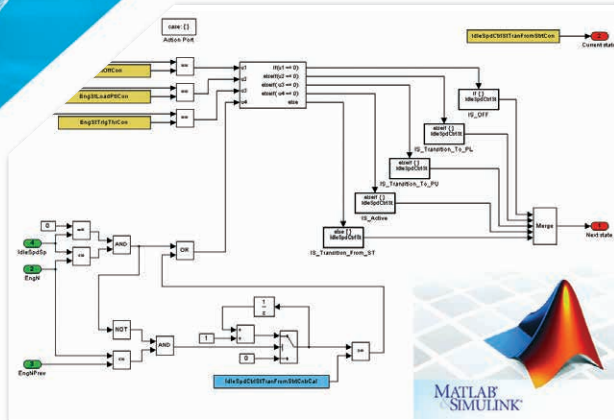
Autosar® Compatible Software Architecture:

Carry over from ORIANNE to production ECU



Platform Features:

- Matlab-Simulink developed Models
- Automatic code generation (C & executable)
- Integrated flashing tool
- Generation of A2L files, compatible with standard calibration tools (INCA, Control Desk, ...)
- CAN communication: auto coding from DBC files



EMS Function Library:

- Torque structure
- Injection up to 7 pulses per stroke
- Ignition
- HP fuel pump management
- Airpath
- Turbocharging
- VVT
- EGR
- Canister purge
- Cooling fan management
- CAN communication
- XCP for engine tuning with calibration tool
- Other functions developed on request

Hardware Features:

Hitachi SH 32 bit microcontroller
16 Mb FLASH memory

Inputs:

- 1 crankshaft (Inductive or Hall)
- 2 camshaft (Inductive or Hall)
- 2 binary lambda sensor
- 2 proportional lambda sensor
- 22 analog inputs (14 configurable)
- 4 frequency inputs (8 optional)
- 2 knock sensors
- 2 K thermocouple sensors

Outputs:

- 8 injectors
- 8 ignition
- 2 H-bridges
- 6 PWM
- 10 Digital

Communication:

- 2 CAN 2.0B
- 1 Ethernet



Scalable Levels According to Customer Needs :

OPEN ECU

Ready for calibration and use

Flashed EMS software

CONFIGURABLE ECU

Configure I/O and software according to engine features

Configuration Tools

EMS Function Library

PROTOTYPING ECU

Develop & integrate new algorithms

Simulink Components

Development Tools

Configuration Tools

EMS Function Library

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