Modular Research Platform

DANISI GROUP

Products

Meccanica 42 provides:

- On-board devices that give you the power to interact with traditionally inaccessible systems, by enabling you to design every functional concept on actual vehicles.
- Simulation Station, that interconnects vehicle devices to a virtual simulation environment

Services & Integration

Every device under test has different requirements; hence why in addition to our standardized products, we offer a personalised service tailored to your needs and requests. Our service package includes hardware and assistance from our experienced and competent engineers.

Special projects

It's part of our mission, and it is also one of our core values to be a dynamic company, hence why if you need assistance on building a project from scratch, we can be your co-makers.
According to your requirements and working closely with you, we can find the optimal solution.

Products

Modular Research Platform

Modular Research Platform is a functional development tool that integrates the Meccanica 42's on-board devices on a chassis designed by Danisi Engineering.

It is an easily and largely configurable device, and, equipped with our onboard devices, it supports any research and development activities in the chassis, powertrain and ADAS domains.

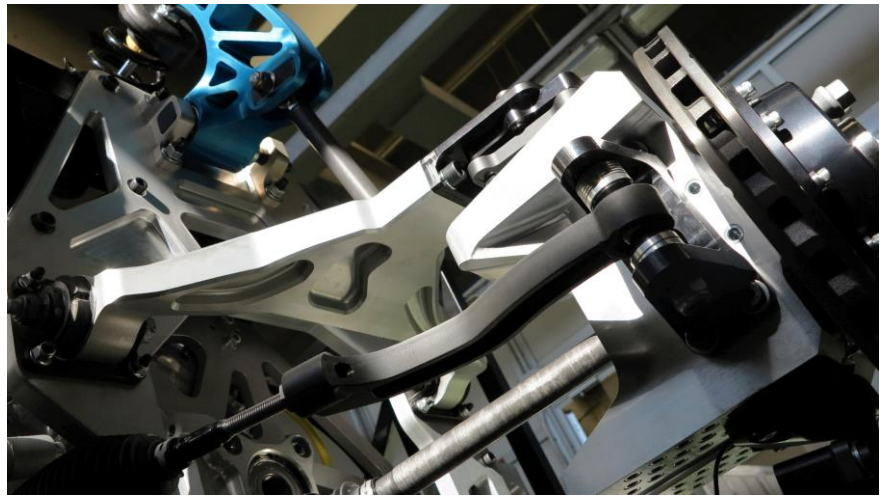
ViL SIMULATION

Exploiting virtual functions with open-access components on a real vehicle

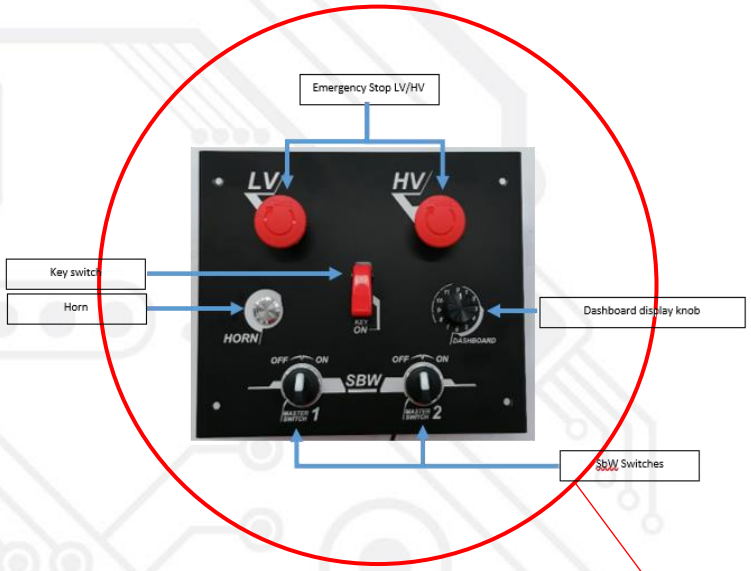
MRP can be used for developing new cross-domain functions for all present and future vehicle concepts.
As a completely open platform, it makes possible the integration of almost any user-specific hardware and software components.

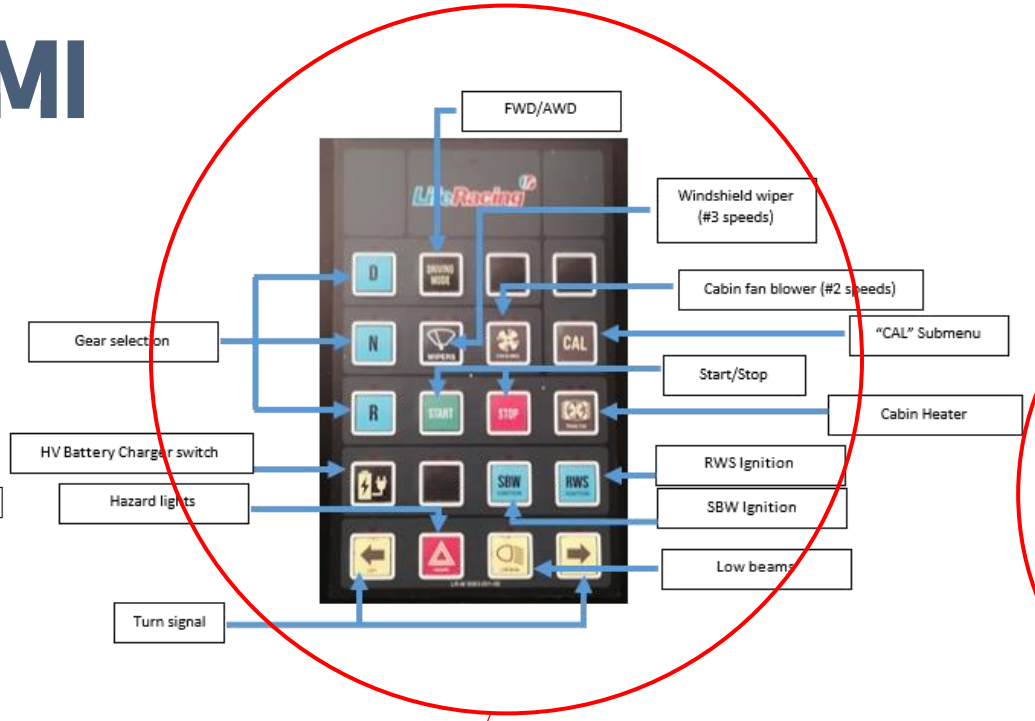
Specification Framework

Vehicle Dimensions				NOTE
	Wheelbase	mm	2800	Adj. +/-100
	Overall length	mm	4400	At nominal wheelbase
	Front overhang	mm	800	
	Rear overhang	mm	800	
	Overall width	mm	1870	At nominal track width
	Overall height	mm	1670	
	Track width	mm	1575-1600-1625	Adjustable
Aerodynamics				NOTE
	Cx*S	m^2	0.953	Estimated
Weight				NOTE
	Curb weight	kg	2100	
	Weight distribution Curb (Front)	%F	49	
	CoG Height	mm	500	
Stiffness				NOTE
	Torsional	Nm/deg	20000	At 2900 wheelbase
Powertrain Specification (To be confirmed with Huawei)				NOTE
Battery	Description	-	LiCoO2	
	Nominal Voltage (peak)	V	800	
	Battery total energy	kWh	38	
E-Motors	N° of e-motors	-	4	
	Total Peak Power	kW	600	
	Continuous Power	kW	400	
	Total Peak Torque Max (at each wheel)	Nm	2100	
	Time peak torque/power can be used	sec	5	
	Top speed (nominal)	km/h	160	



Dashboard and HMI



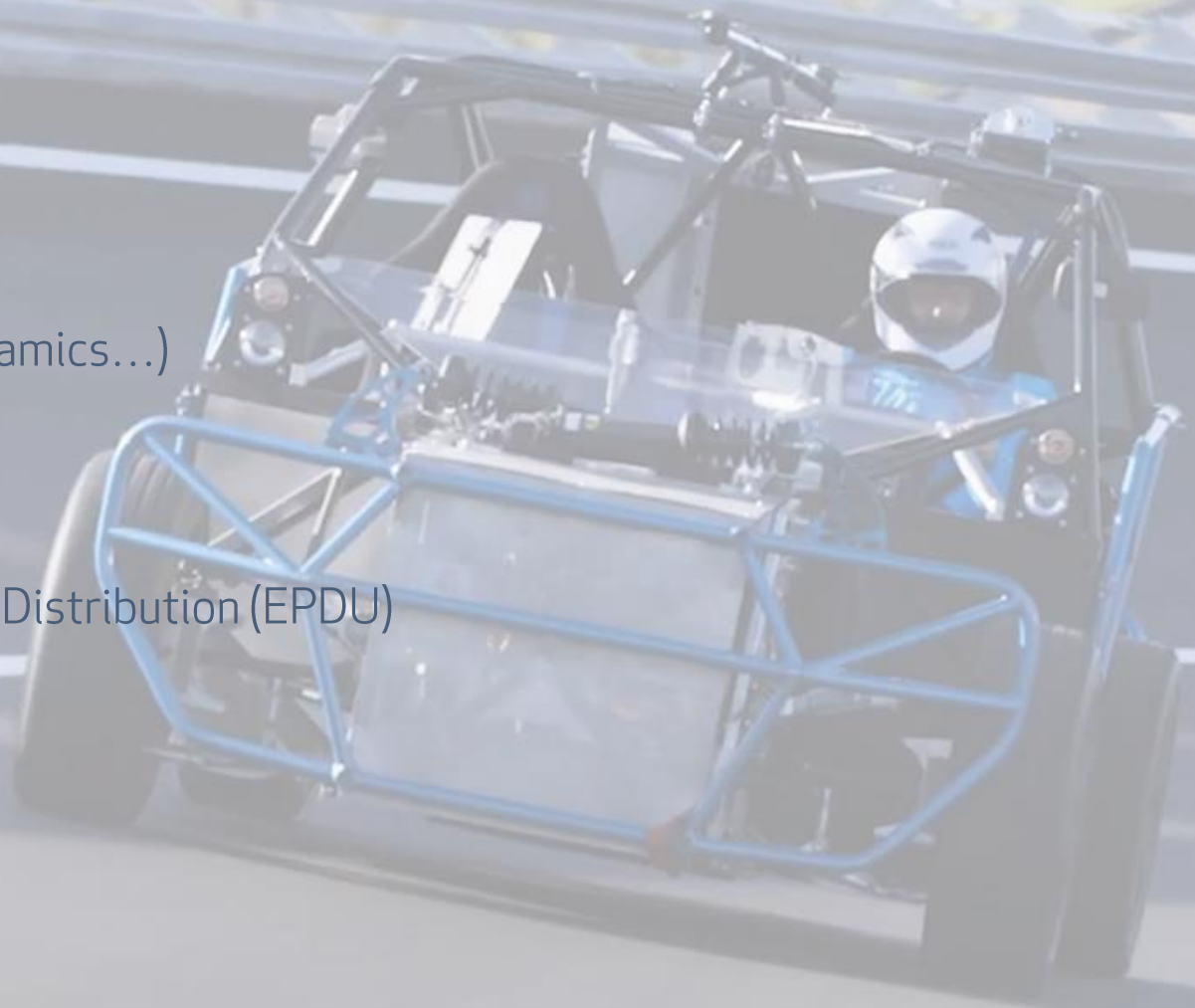


Features (MRPx example):

- Power box control panel
- 10x CAN lines
- Bosch Display
- HV certified circuit

Areas of possible customization

- Powertrain (inverters, motors, gearboxes…)
- Steering System (EPS, SbW, 4WS)
- Brake-by-Wire System
- Vehicle Control Unit (cooling, ventilation, vehicle dynamics…)
- Battery Management System
- Battery Charging Management
- LV System (single / redundant) and Electronic Power Distribution (EPDU)
- HV System plus safety measures (Interlock, IMD…)
- HMI
- Data Logging System



Main Requested Characteristic from different Customers

- E-PWT:
  - N° & type of motors (single / dual / four, in wheel…)
  - N° and type of wheel drive (FWD, RWD, AWD)
  - Gearbox (Y/N)
  - Customized battery
- Open/Closed cockpit, cabin heater/ventilation
- CAN/Flexray
- Hydraulic braking system / Performance braking system / in board brakes / Brake by Wire / Electro-mechanical Brake
- RWS option (rear wheel steering through single corner actuation / rear steering rack)
- Steer by Wire
- Torque Vectoring
- Regen Management
- Dedicated battery development (400-600-800V) / Customer battery integration
- Active dampers
- Active anti-rollbar
- Specific Customer's ECU integration
- Specific cooling system development
- Control logics development (on dedicated HW in vehicle, i.e. dSPACE)
- Validated digital twin for real time simulations, ADAS integration

Meccanica 42 S.r.l.

Legal Office
Via XX Settembre, 50
50129 Firenze
Italy

Operational Headquarters
Via Ezio Tarantelli, 15
50019 Sesto Fiorentino (FI)
Italy