

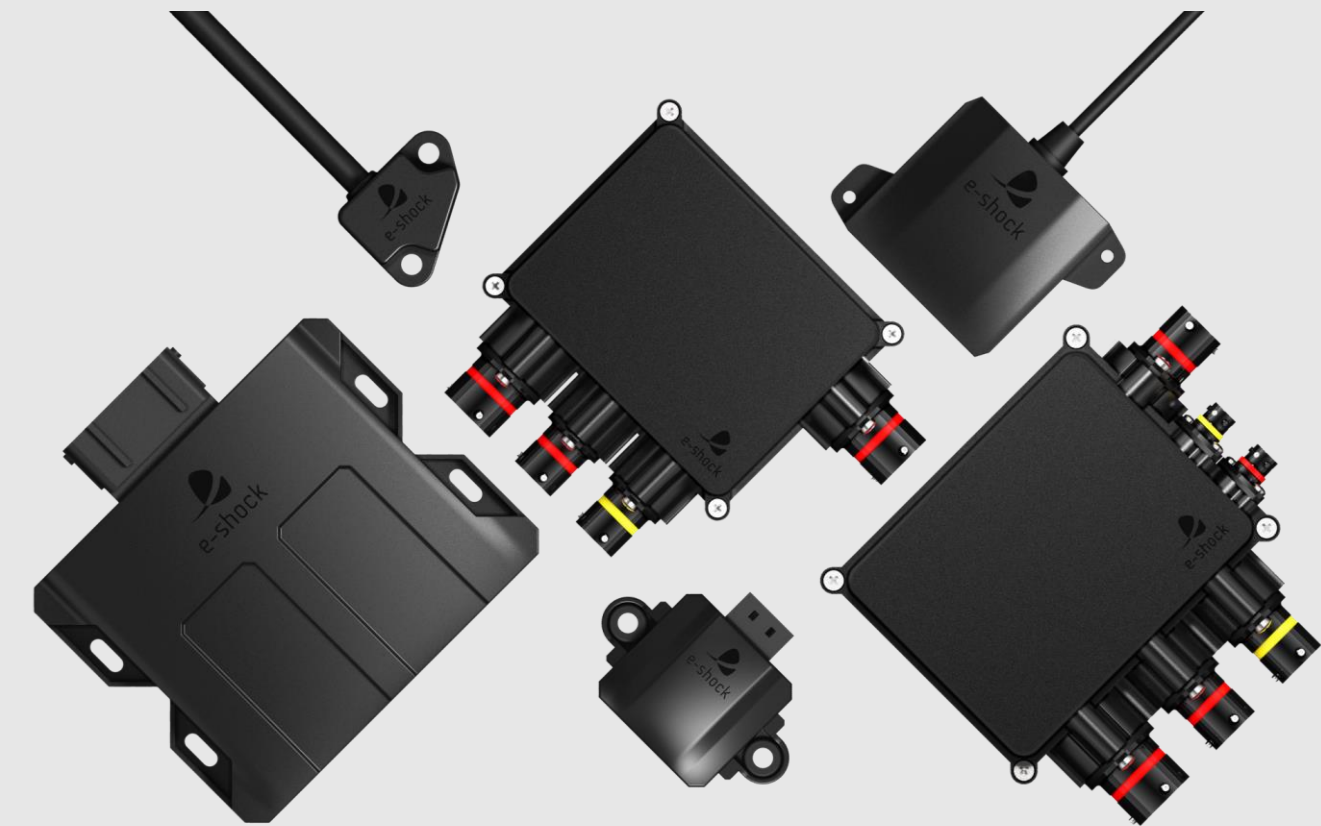


e-shock

COMPANY OVERVIEW & PRODUCTS PORTFOLIO

WHO WE ARE

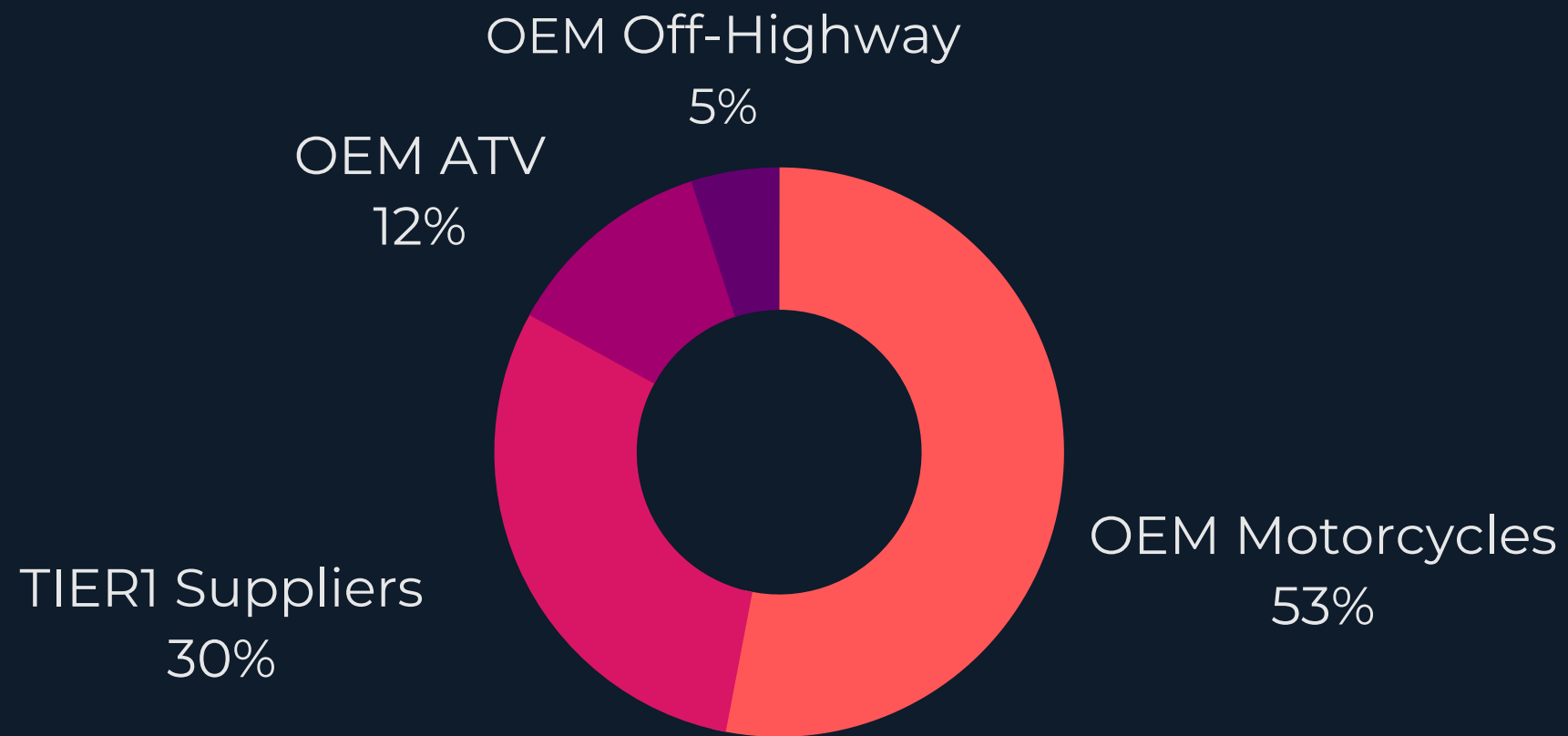
e-Shock provides the best and most flexible dynamics control systems and connectivity solutions for motorcycles, ATVs, utility vehicles, commercial and passenger cars, agricultural vehicles, droids and autonomous vehicles



E-SHOCK AT A GLANCE



MARKET SEGMENTATION



APPLICATIONS



Motorcycles & ATVs



Ag & Utility vehicles



Sports Cars

SERVED MARKETS



CUSTOMERS AND TECHNICAL PARTNERSHIPS

 **AGUSTA**

 **streparava**

 **SDF**

 **hiride**

 **yape**

 **bylogix**

 **e-novia**

 **sensible⁴**



KNOW HOW

Advanced Data Fusion

Proprietary technology to reconstruct vehicle dynamics information from heterogeneous sensors to deliver cost-effective and high performing sensing solutions.
Example: inertial measurement unit for roll and pitch estimation

Embedded AI for Real Time Control

We provide a set of proprietary and patented solutions for vehicle dynamics control in order to improve performance, comfort and stability

Hardware Design

Design of electronic smart devices for execution of real time embedded AI, even with customizations related to specific applications

System Engineering, Safety & Quality

Support to the customer since system definition phase. Design & validation according to ISO 26262 standards. Hardware parts manufactured in collaboration with certified partners

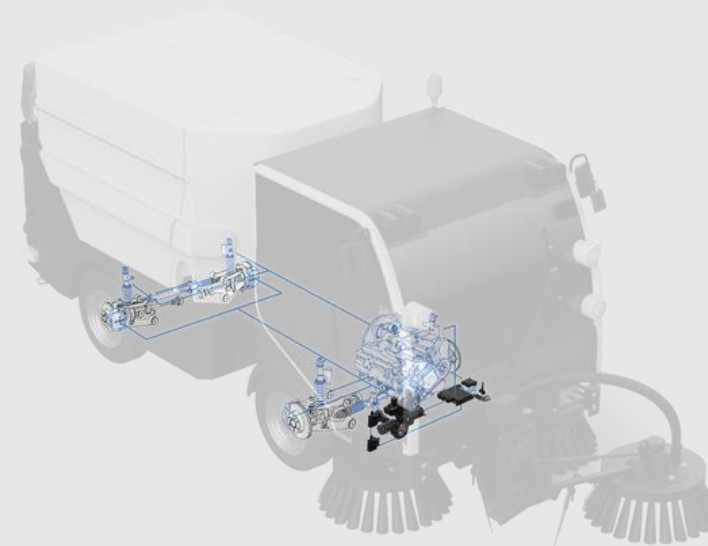
OUR PORTFOLIO

SMART SYSTEMS



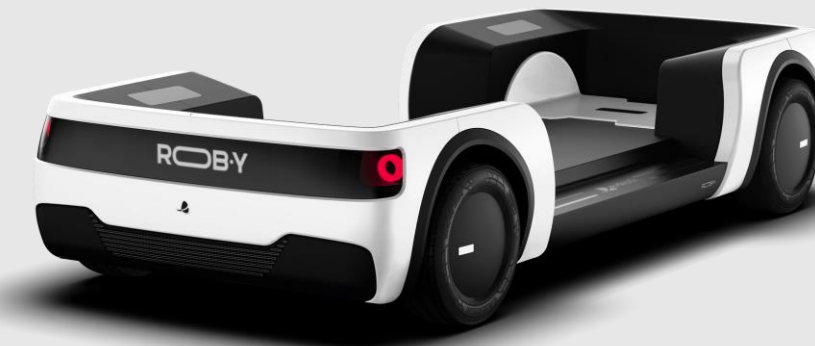
**Dynamic Control &
Connectivity Solutions**

DYNAMIC CORTEX



**Vehicle Robotization
Platform**

ROBY



**The Autonomous
Electric Vehicle**

Changing the way vehicles interact with people



SMART SYSTEMS

We design and develop smart sensors and control units aimed at electronic systems that can be easily integrated into any kind of vehicle

INERTIAL MEASUREMENT UNIT

DC_Perception - Lean is a full inertial measuring unit with 9 degrees of freedom and equipped with an Automotive 32bit Microcontroller, ASIL-B graded and ISO25119 compliant.

DC_Perception - Lean provides over CAN-bus estimation of vehicle attitude in terms of roll, pitch and side slip angles, based on a data fusion algorithm specifically tuned for each application. It is suitable for implementation of custom control strategies for complex systems.



**DC_PERCEPTION
LEAN**

ACCELEROMETERS

DC_Perception - Acceleration is a compact sensor specifically designed for semi-active suspension control systems and attitude monitoring applications.

Thanks to a configurable measurement range from 6 to 24 g, It can be installed both on chassis side and wheel side.



**DC_PERCEPTION
ACCELERATION**

SAS CONTROL

The **DC_Control - Suspension** is specifically designed to implement patented e-Shock solution to optimally manage the damping in two, three and four wheeled vehicles.

The device handles the inputs from external sensors used to monitor the vehicle attitude, the chassis and suspensions dynamics, and the driver maneuvers. Thanks to this set of information, processed by e-Shock algorithms, the device drives up to 8 electro-hydraulic valves or 4 magnetorheological dampers.



**DC_CONTROL
SUSPENSION**

CONNECTIVITY MODULES

DC_Connect is a family of products enabling the data logging and data exchange between the vehicle and external devices.

The most complete version embeds GPS, Bluetooth Low Energy module compatible with iOS and Android devices, internal memory for data logging and IMU.

4G and OTA available soon!



**DC_CONNECT
GPS**

BRAKE AND STEER BY WIRE

The **DC_Control - Brake** and the **DC_Control - Steer** are designed to address the safe control of brake or steering actuators based on brushless motors.

The high level of safety is achieved by a hardwired safety mechanism ensuring that an external supervisor can always disable the Control Unit and take the system to a safety state, e.g. by activating redundant systems or manual control.

Brake and Steer by wire developed together with Brembo are already applied in Formula E championship.



**DC_CONTROL
BRAKE**



**DC_CONTROL
STEER**



E-Shock OFFER FOR MOTORCYCLES & ATVs

Recap

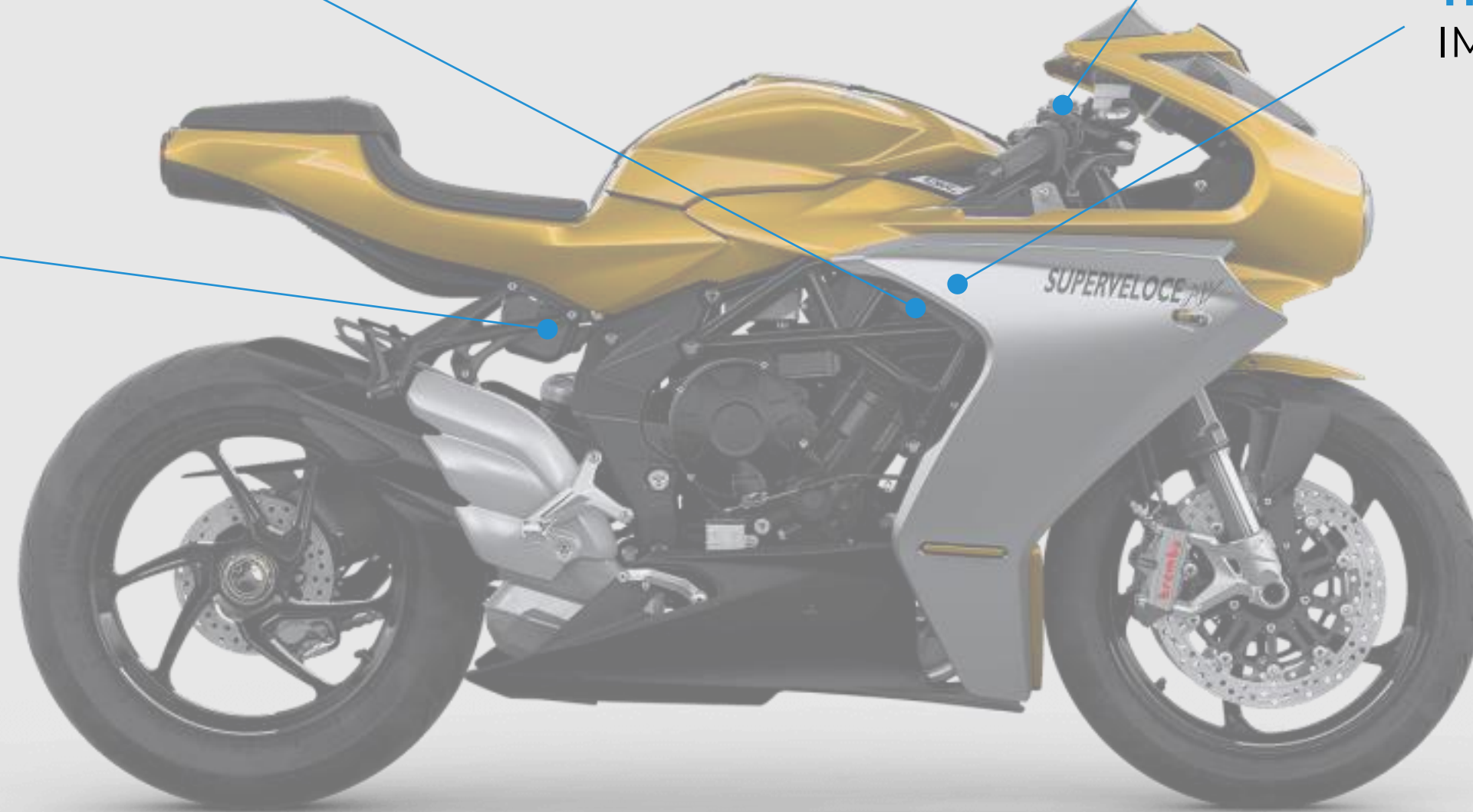


Attitude estimation (IMU Sensor) to enable advanced control functions: Traction Control, Suspension Control, Cornering ABS

GPS + connectivity for vehicle connectivity and tracking

Traction Control embedded in IMU sensor

Semi Active Suspension Control inclusive of pre-load adjustment



E-Shock OFFER FOR AGRICULTURAL & OFF HIGHWAYS VEHICLES

Recap



Attitude estimation to enable advanced control functions (roll-over prevention, ABS, suspension and autonomous driving)

Front axle active suspension for load leveling, self-balancing and increase of comfort and controllability

Brake and steer actuation to enable autonomous driving



GPS + 4G connectivity for vehicle tracking

Seat and cab semi-active suspensions control to enhance driver comfort

E-Shock OFFER FOR UTILITY VEHICLES

Recap



Attitude estimation to enable advanced control functions (roll-over prevention, ABS, suspension and autonomous driving)

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Brake and steer actuation to enable autonomous driving



GPS + 4G connectivity for vehicle tracking

Seat and cab semi-active suspensions control to enhance driver comfort

E-Shock OFFER FOR SPORTS CARS

Recap



DC_Connect - GPS



DC_Perception - acceleration



DC_Control - Suspension

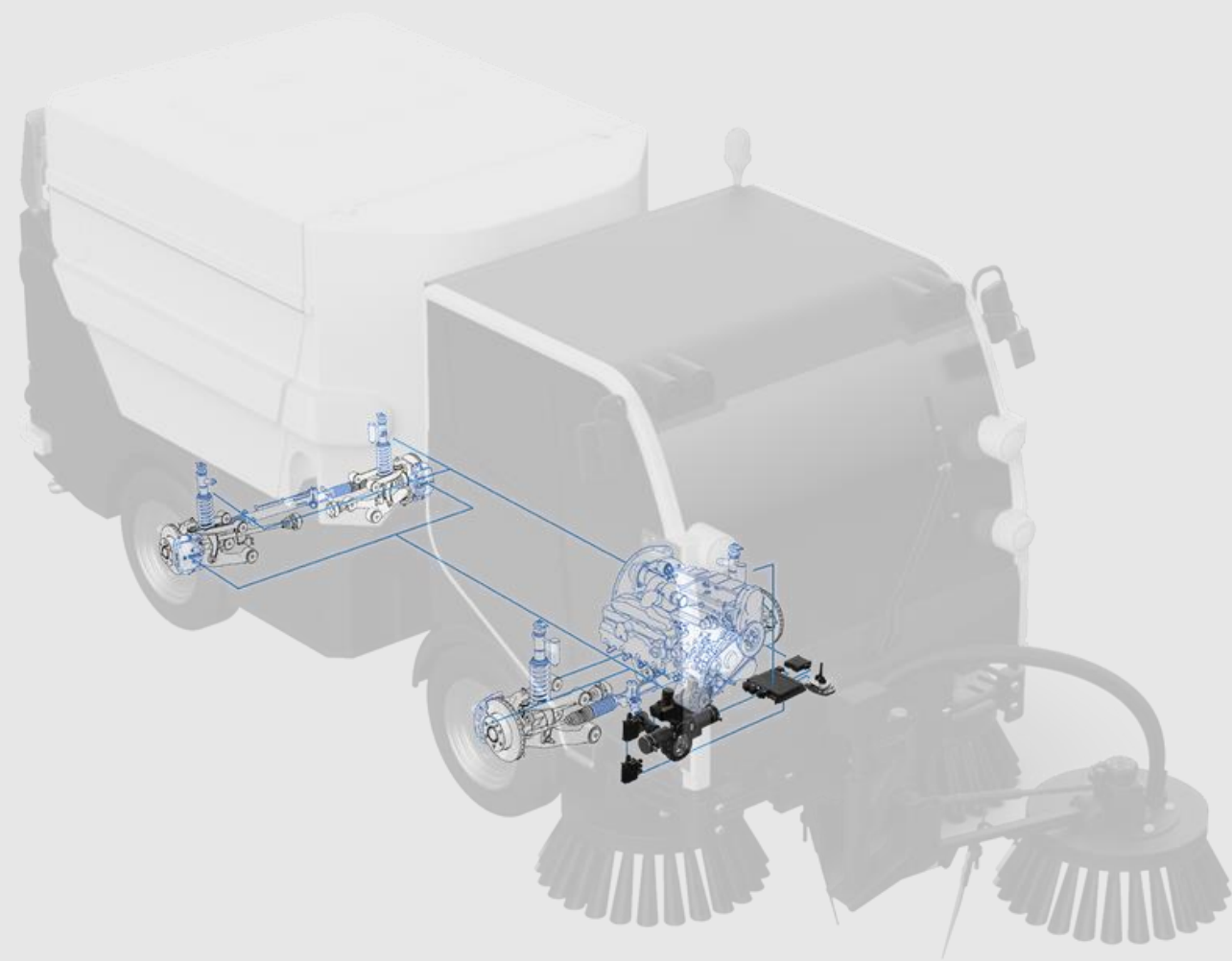


DC_Control - Brake



DC_Control - Steer





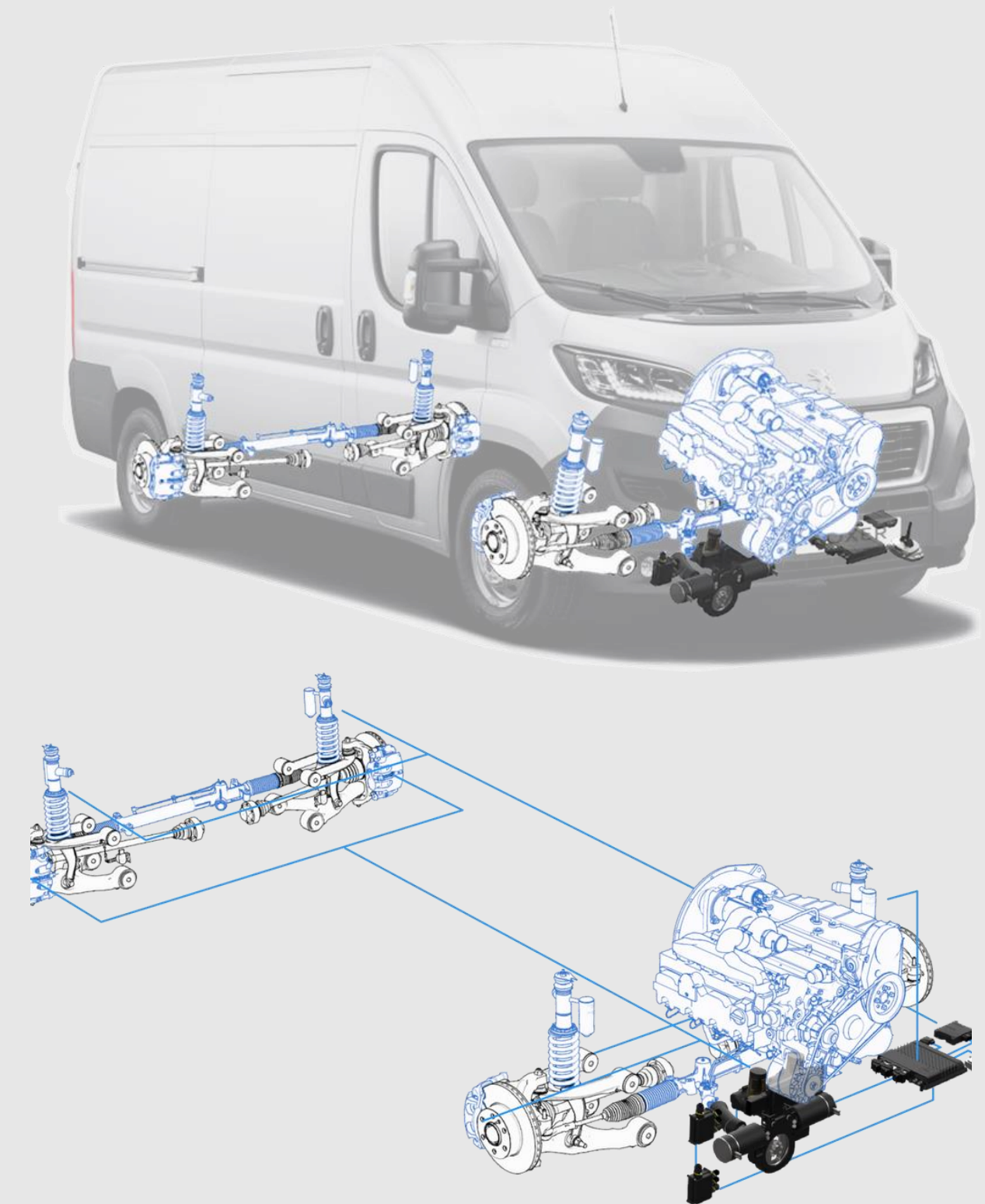
DYNAMIC CORTEX

A layer containing a set of mechatronic and software solutions that offer the possibility of robotizing existing and circulating vehicles.

DYNAMIC CORTEX

Dynamic Cortex is the most sophisticated solution for robotization of professional and recreational vehicles. An intelligent system that acts with smart actuators, makes current special vehicles smarter supporting incremental levels of ROBOTIZATION and AUTONOMOUS DRIVING.

Adopting Dynamic Cortex to robotized special vehicles reduces: **TIME TO MARKET | R&D | INVESTED CAPITAL**





ROB·Y

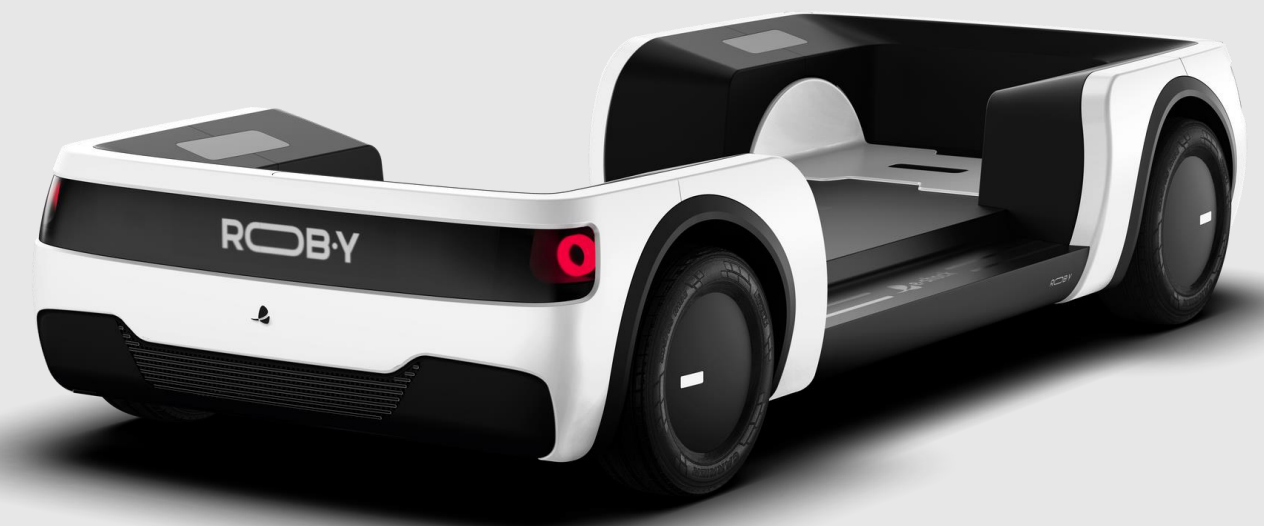
Rob.Y is the first digital chassis that offers the user the best possible experience with the highest standards of autonomous driving and robotization available today.

ROBY

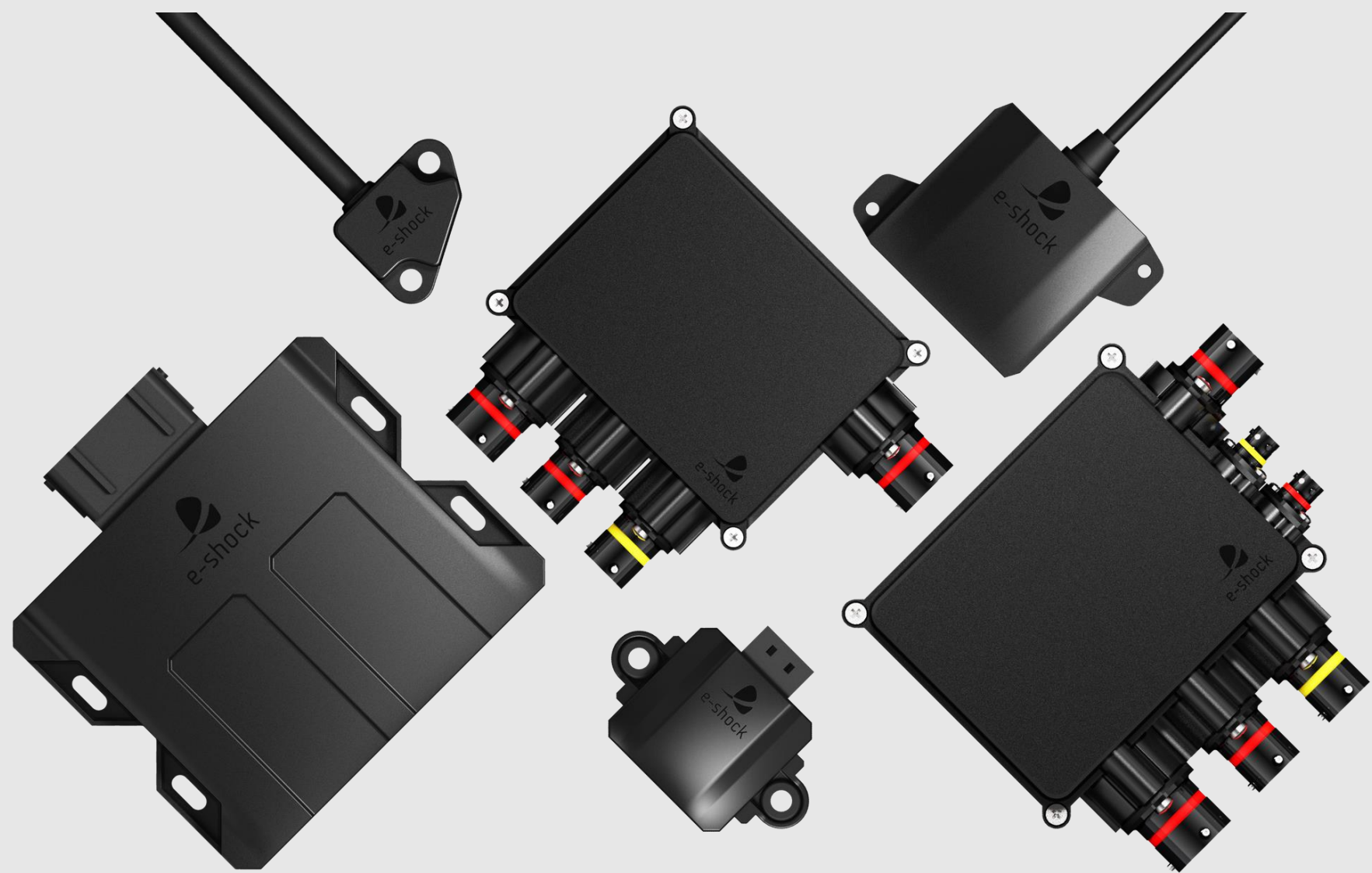
Rob.Y, based on **Dynamic Cortex**, is the most complete robotic platform for vehicles designed for professional services and advanced mobility solutions.

Rob.Y is the first Digital Chassis given the user the best experience possible with the highest standards of **Autonomous Driving and Robotization** available nowadays.

It represents the ideal platform to design and realize new fully-robotized and autonomous vehicles.



The Autonomous Electric Vehicle



Contact us

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