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L'aerodinamica attiva: stile e funzionalità oltre l'Hypercar

Active aerodynamics: style and functionality beyond the Hypercar

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BeonD is an **innovative SME**, founded in 2013 as Spin Off of Politecnico di Torino, with a smart structure, quick and proactive, that features a wide network of suppliers and highly skilled partners, able to meet our customer needs with a comprehensive and organized approach.

We offer **advanced engineering services**, a complete development of **Battery packs**, and customized Battery Management System **BMS**

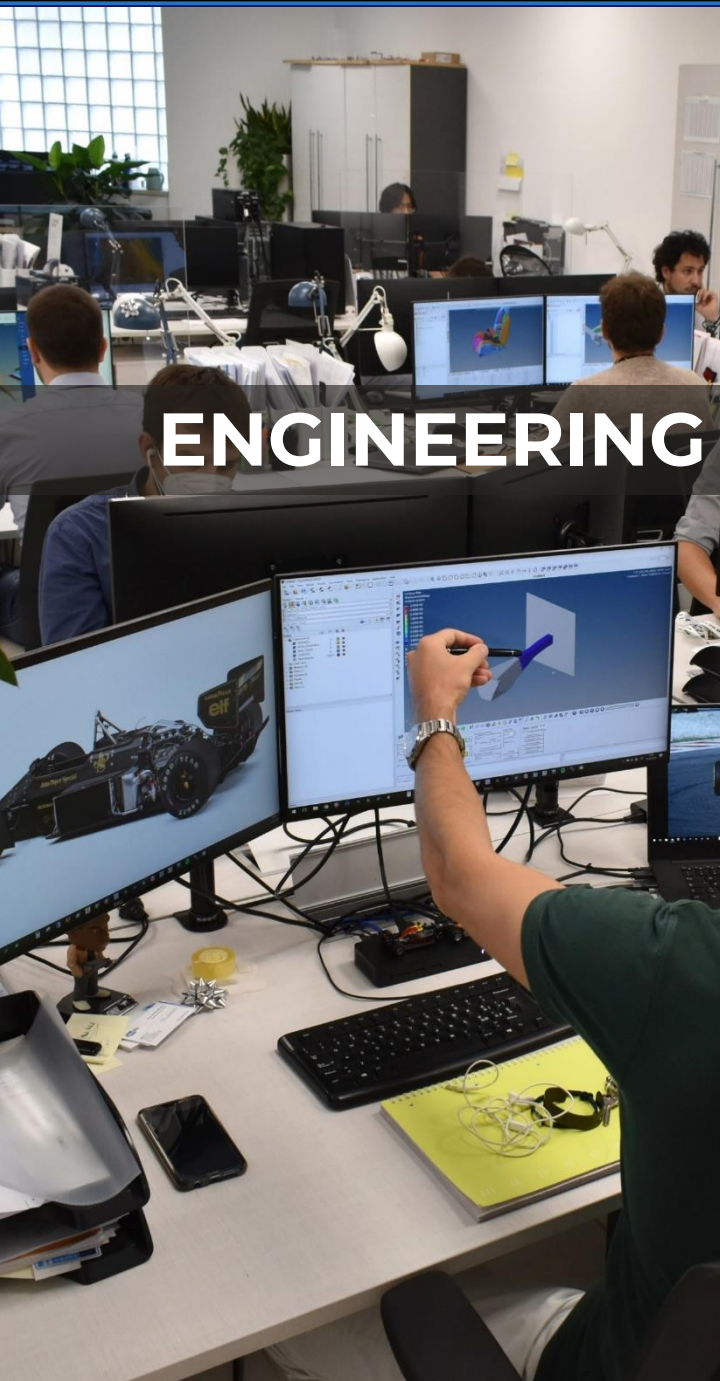


SIAMO ONORATI DI ESSERE STATI INCLUSI TRA I
"LEADER DELLA CRESCITA 2024" DA IL SOLE 24 ORE E STATISTA

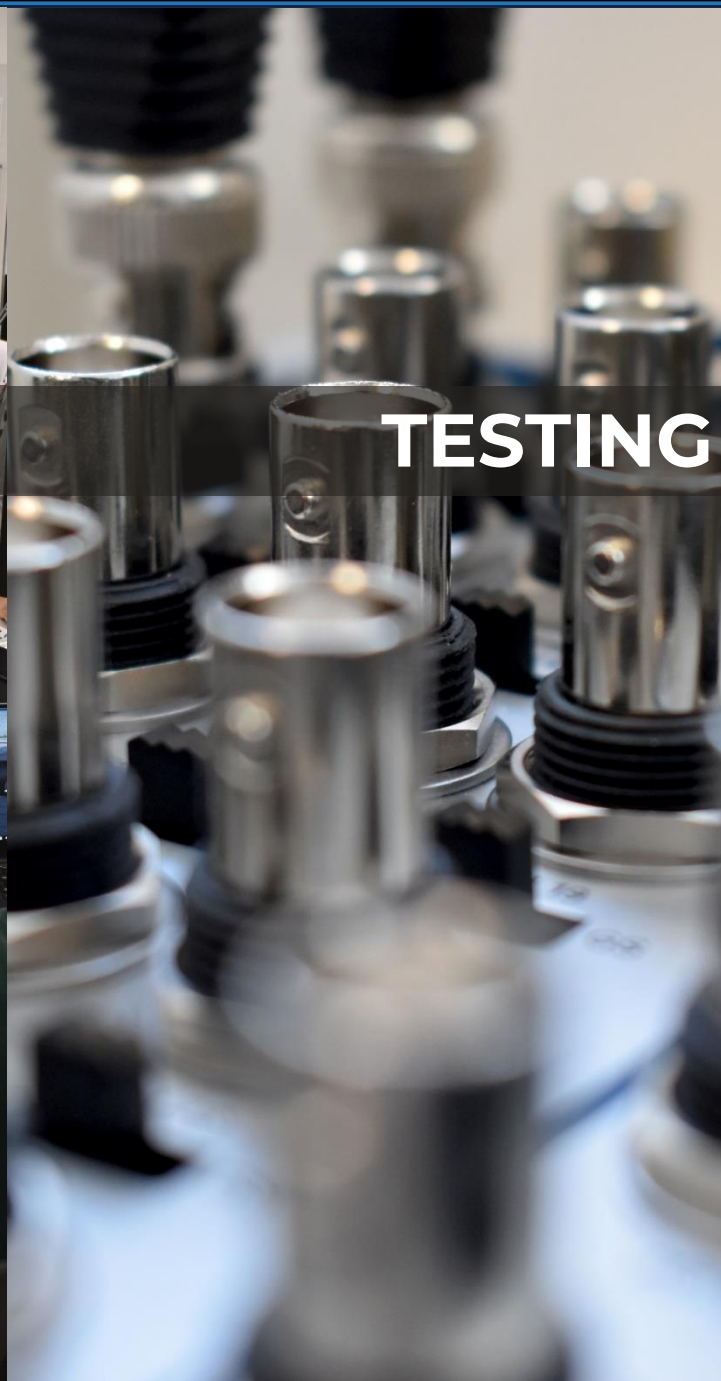


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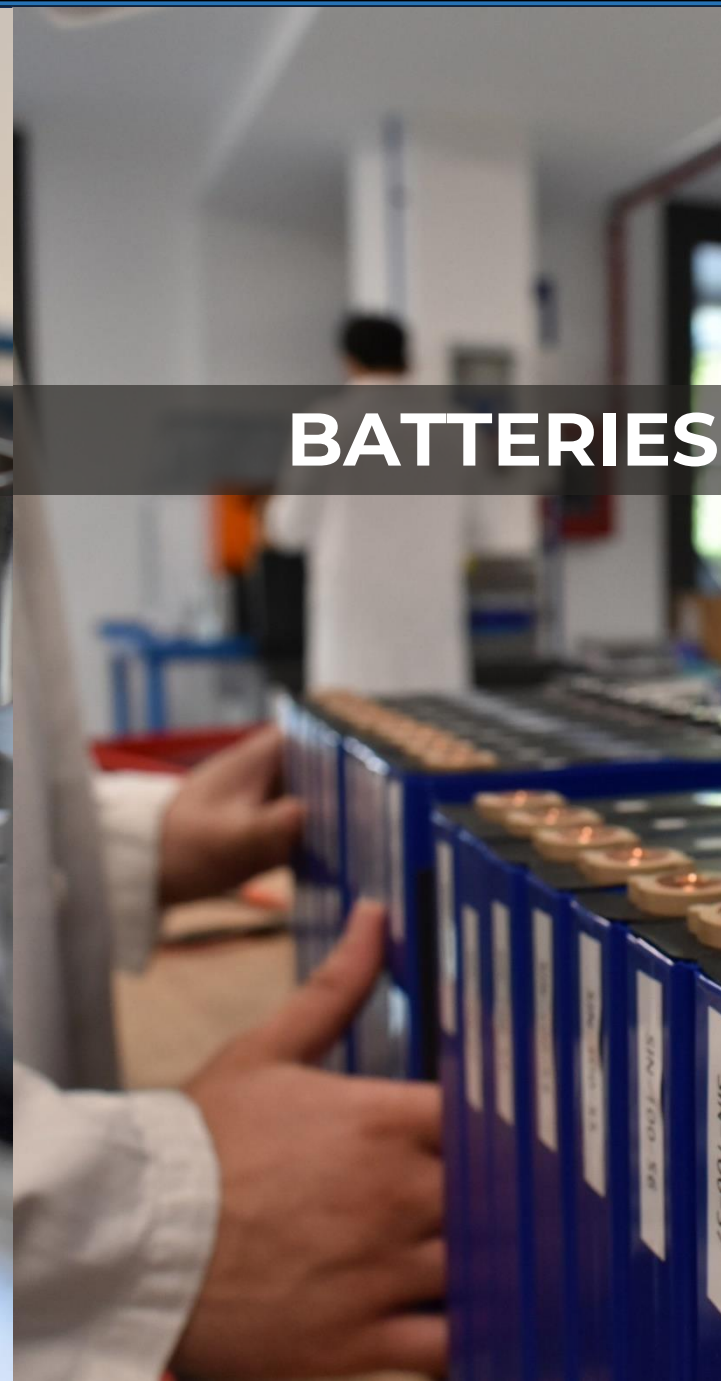
Services & Products



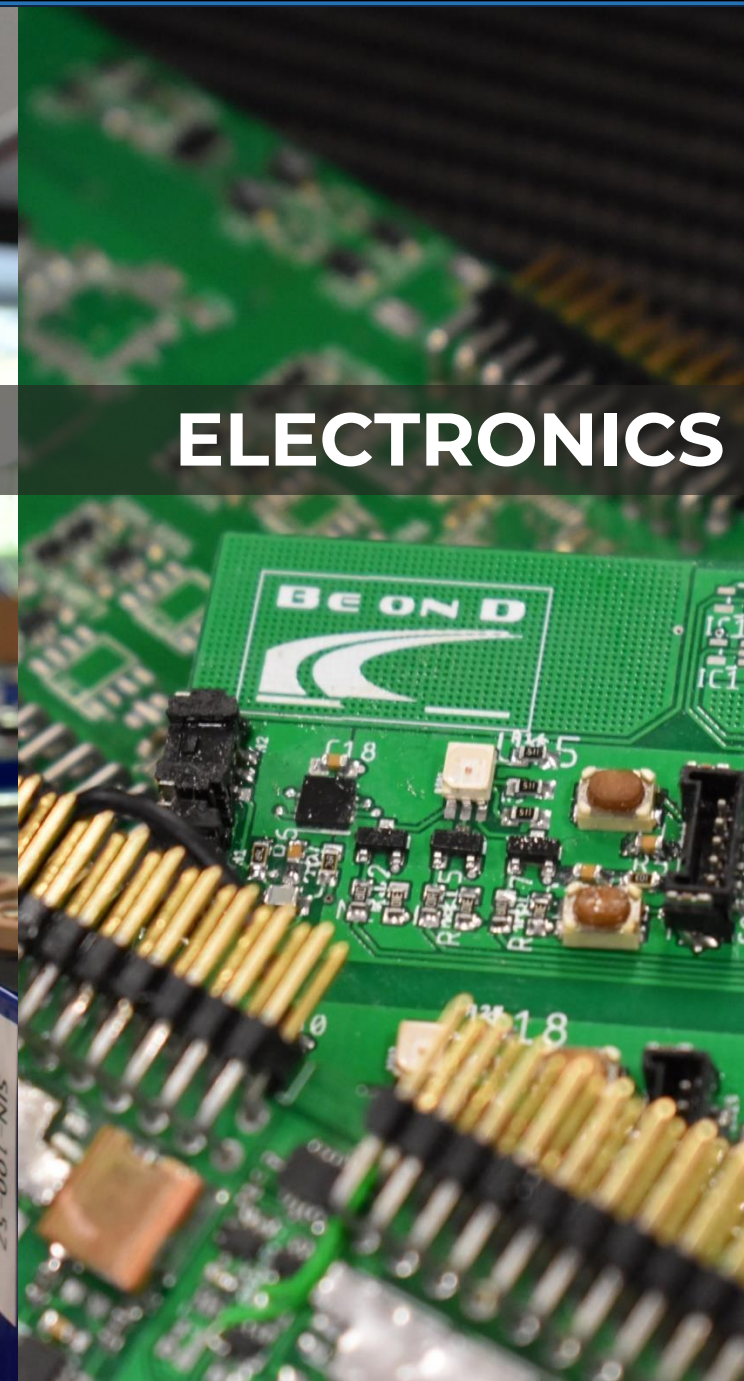
ENGINEERING



TESTING



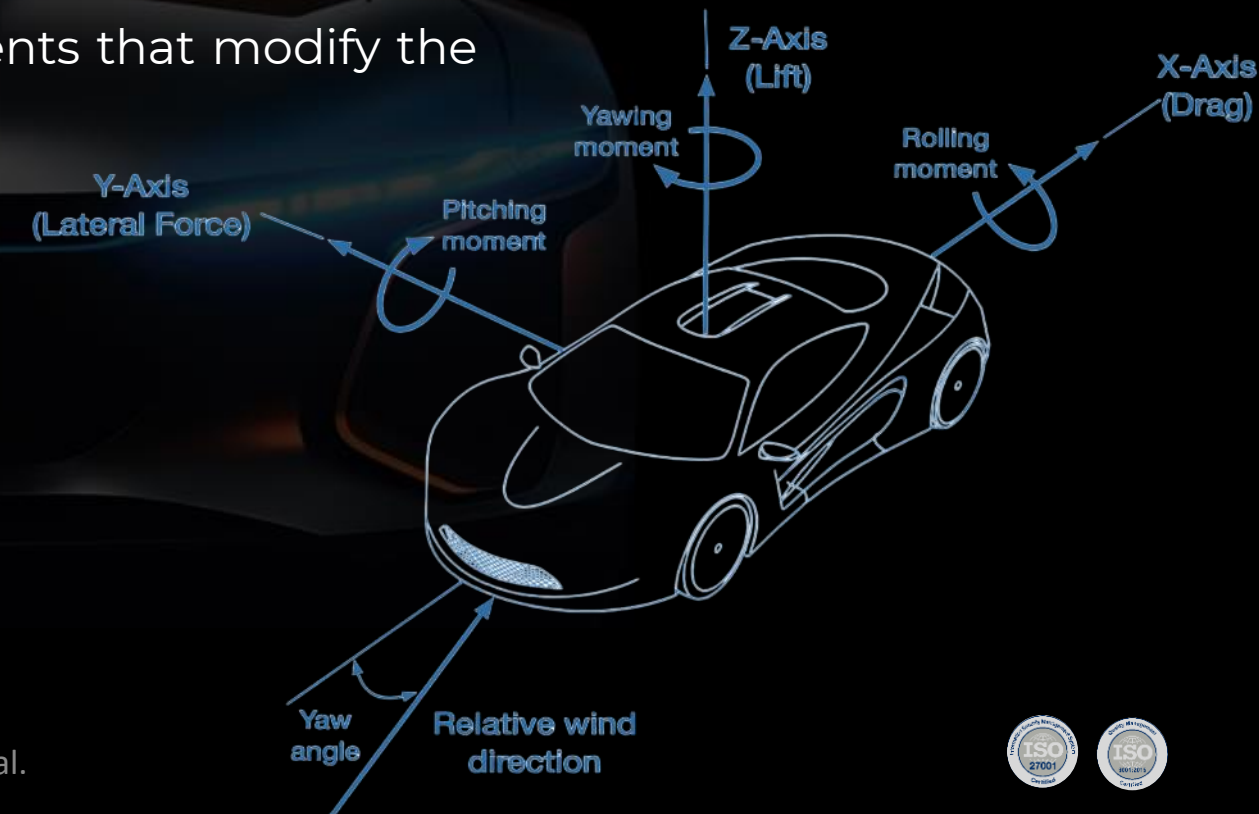
BATTERIES

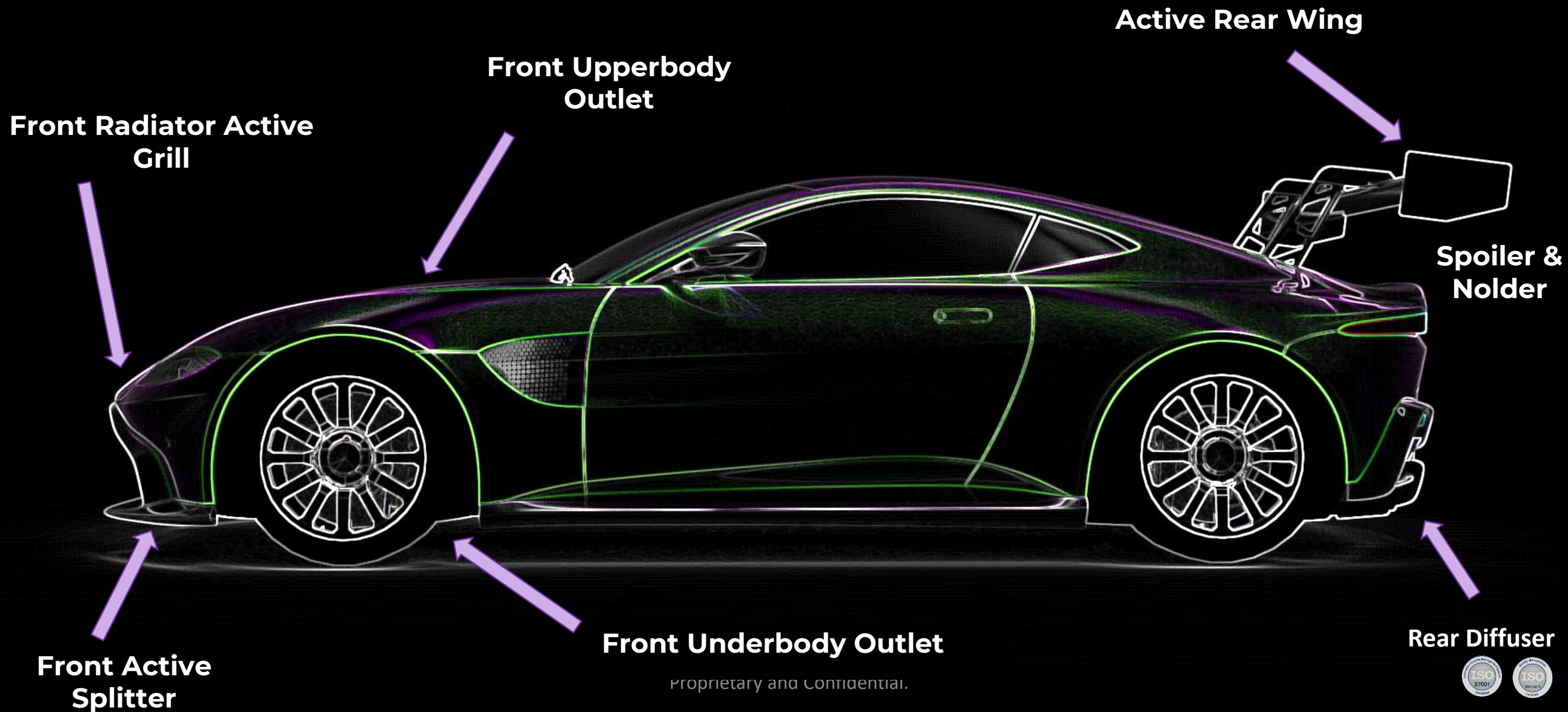


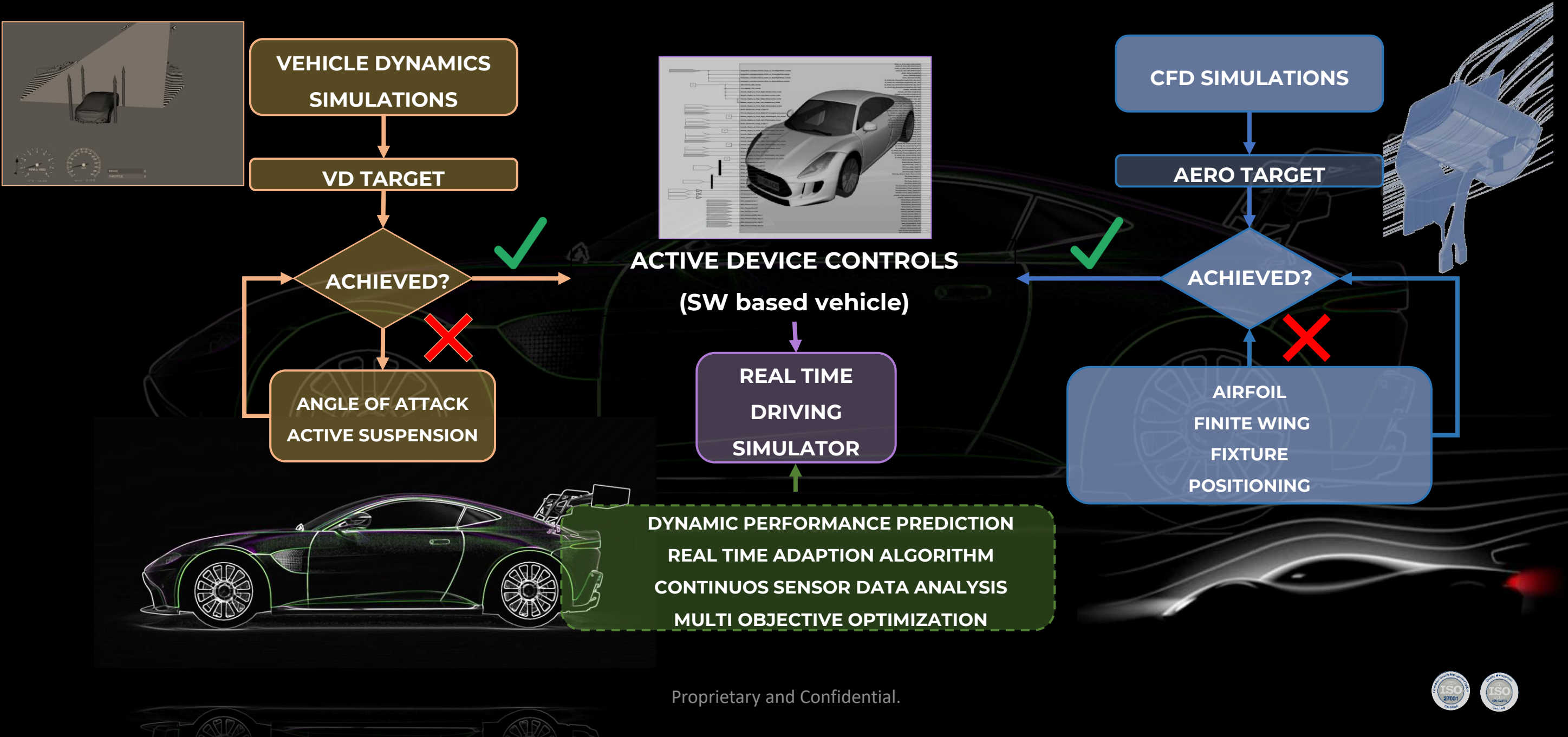
ELECTRONICS

“Aerodynamics is an opportunity to innovate and improve both style and performance”

- **Aerodynamics** is the study of the behavior of air and the interaction with solid objects that move through it
- **Aerodynamics analyzes forces** such as aerodynamic drag and lift
- **Active aerodynamics** introduces the use of movable components that modify the shape of the vehicle to optimize certain performances such as:
 - C_d , Drag, consequently power consumption
 - Increased stability and safety C_l , Eff, and CoP position
 - Thermal management performance
 - NVH and comfort





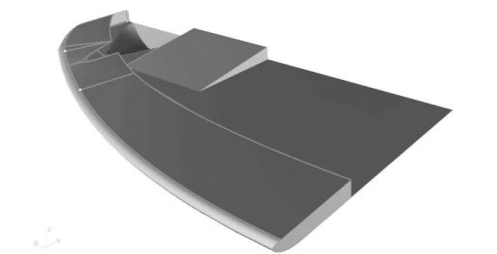


Vehicle improvement

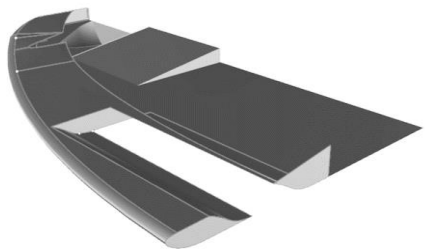
Active splitter

Active wing

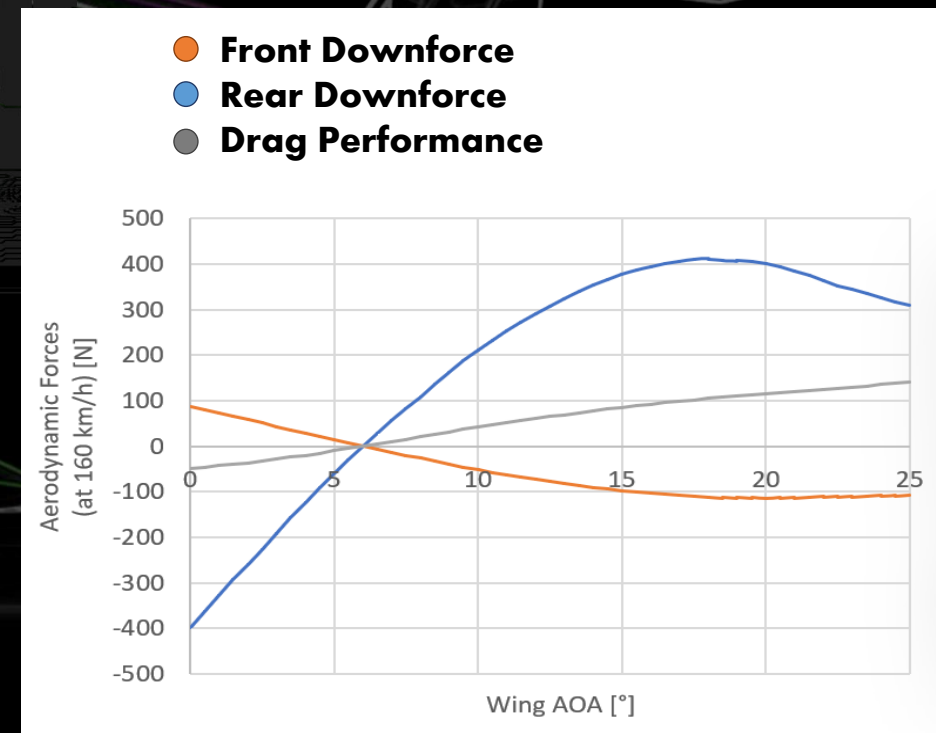
Active suspension system



Closed configuration (High downforce)



Open configuration (Low drag)



Lap time potential improvement

Active Suspensions:

-3.6s with NTK
(2,8%)

-6.2s with MaxP
(5,6%)

Active Aerodynamics:

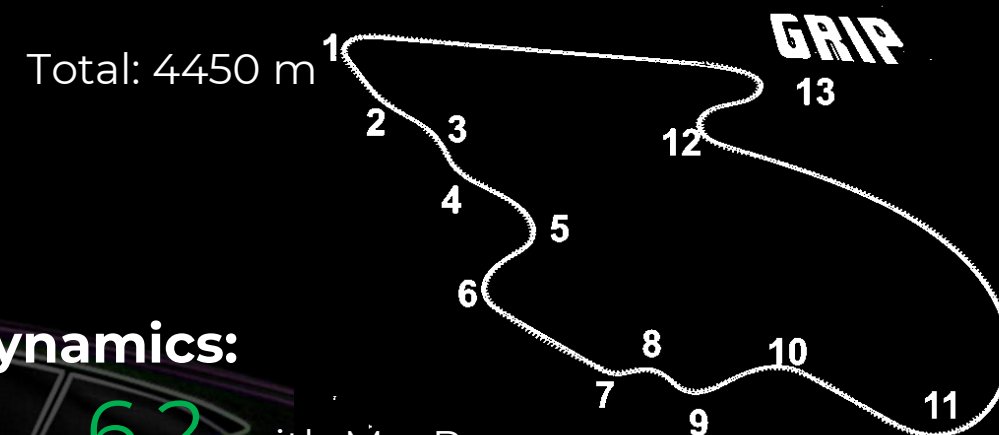
-3.2s with New Aero-pack
(2.8%)

-6.2s with MaxP
(5.6%)

Strict two way link between aerodynamics and vehicle dynamics

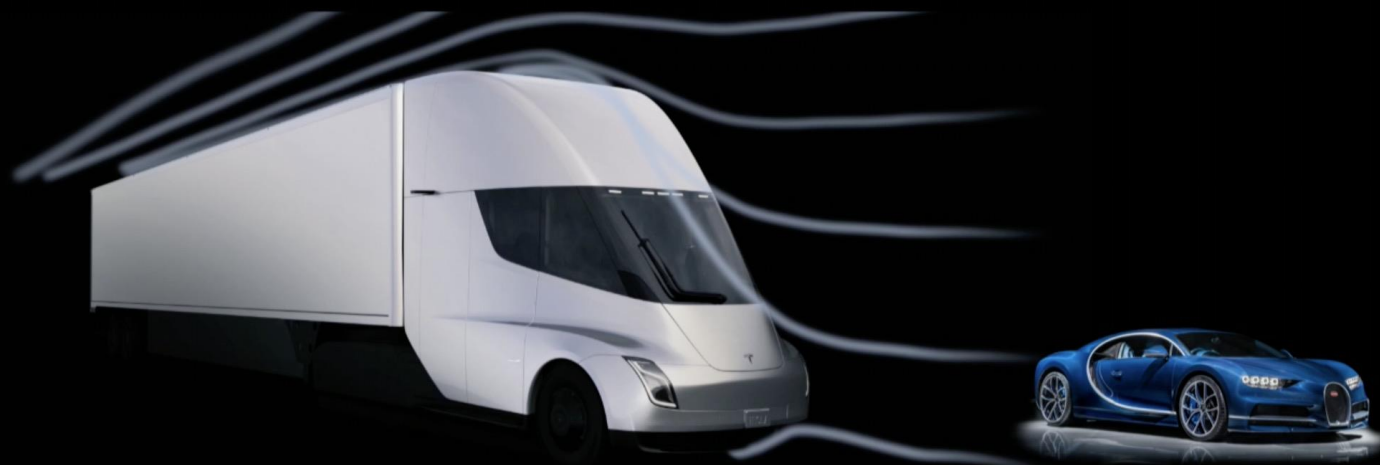
Properly tuned helps the driver to achieve

- **Higher fun** to drive
- **Better performance**
- More **consistent performance** due to cooling and thermal management



Macro trends

- Increased Demand for Fuel Efficient , environmentally friendly vehicles
- **Software based platforms**
- Growing demand for high performance vehicles
- Adoption of new architectures in different markets

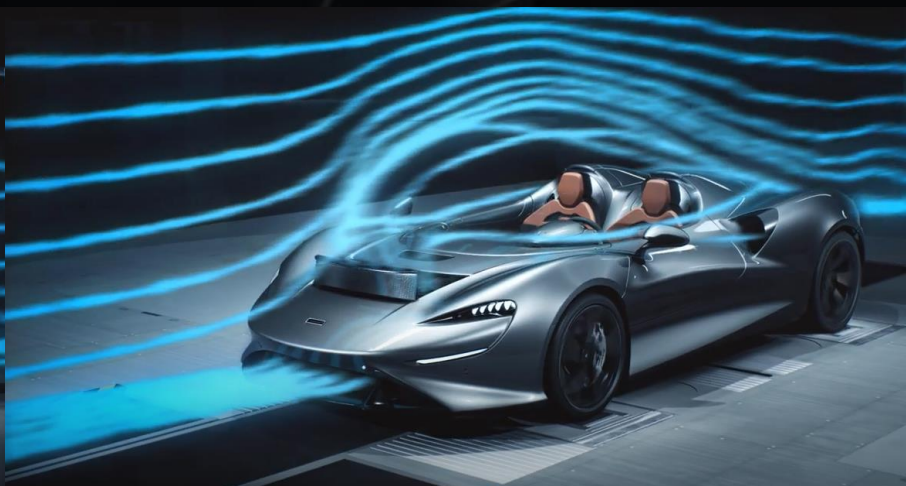


Cd	Vehicle
0.36	Tesla Semi
0.65 - 0.70	Conventional truck
0.38	Bugatti Chiron

The Global Active Aerodynamic Market size is expected to be worth around **\$ 41.00 Billion by 2032** from **\$ 28.0 Billion** in 2022, CAGR of 4.5[♦]

[♦] Based on 2016 2022 data analysis

- **Active aerodynamics** represents a direction towards more efficient and integrated design
- **Tangible Impacts are many:** Enhanced performance, increased safety, and optimized energy efficiency are direct benefits
- **It's a business opportunity** due to its integration in the vehicle design and applicable to various mobility sectors
- **It's a business opportunity** for companies, enabling interactions and open to innovations





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