

AUTOMOTIVE CASE STUDY MODULAR SKATEBOARD CHASSIS FOR LAST MILE DELIVERY



Scalable electric skateboard for zero-emissions commercial delivery vehicles

CHALLENGE

VIA Motors (VIA) is developing a scalable, modular platform on which multiple classes of vehicles can be built and configured for specific end user needs.

They require engineering solutions that meet commonality and reliability for large payload ranges.

This was to include vehicles across classes 2-5.

The primary focus of the project was to achieve low cost of ownership, low CapEX design for manufacturing and FMVSS crash acceptance.

VIA wanted to create a sustainable last mile delivery vehicle that maximizes fleets up-time while reducing their overall cost of ownership.

APPROACH

Partnering with VIA, Ricardo will engineer for production design and development of the Chassis Subsystems for Class 2 – 5 variants, including the chassis frame, suspension, steering, foundation brakes, wheels and tires, powertrain mounting and CV half shafts to enable delivery of goods in cities with zero tailpipe emissions.

Ricardo has been integral to the design, analysis, integration, build and testing, and proof of concept builds of the skateboard for this project.

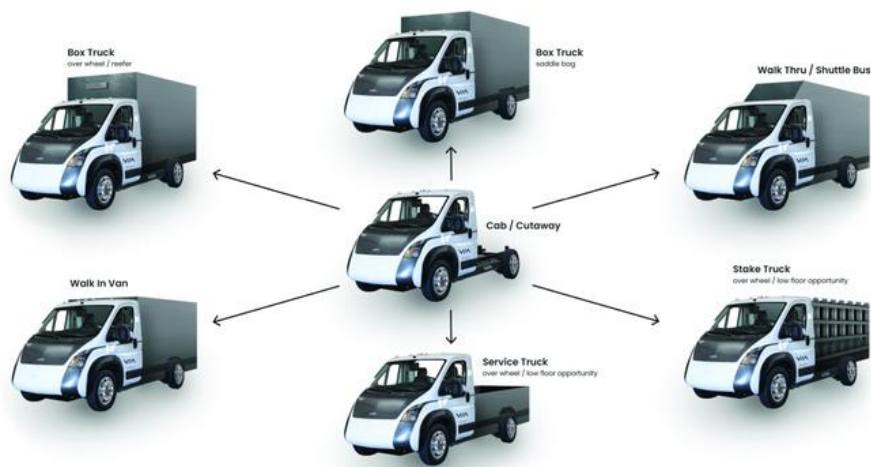
We have provided class-leading performance with regards to low load floor height, giving more cargo capacity on a smaller, nimbler platform and minimal turn circle which means increases VIA's unique selling proposition.

A modular design utilising off the shelf components, which reduces time to production, validation testing and overhead costs. This means that the different vehicle variants and classes can be customised to different cab and body configurations ranging from 400 to 816 cu.ft., as well as both AWD and FWD configurations.

Our integration task required us to incorporate VIA's supplied HV batteries and Electric Drive Motors.

RESULTS

- Ricardo successfully completed a static demonstrator and various proof-of-concept vehicles to really show the benefits of the product in real-time
- VIA will offer multi-sized electric delivery vehicles to commercial customers with zero emissions by 2023
- VIA has been awarded a purchase order for 2,000 units of their class 3, Cab-chassis variant.





SKATEBOARD PLATFORM

Skateboard platform scheduled for 2023 and 2024

Class	Classes 2-5
Payload	2800 - 11000 lbs.
Wheelbase	108 - 200 inches
Range	62 - 124 miles
Cargo Capacity	360 - 1280 cu.ft.

FIND OUT MORE

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