



EU Project Day 2nd December 2014

EEVC-2014

European Electric Vehicle Congress
Brussels, 2nd - 5th December 2014

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VEHICLE

Best-in-class vEHICLE:
Safe urban mobility in a sustainable transport
value-chain



OUTLINE

- Scope
- Objectives
- Development Areas
- Benchmarking & Info

PARTNERS

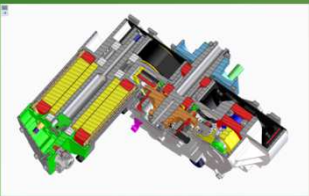




SCOPE

The main objective of BEHICLE is to demonstrate and validate a new integrated urban EV approach which combines power requirements and balanced energetic performance for urban environments and fulfils 100% safety assessment according to Euro NCAP crash tests.

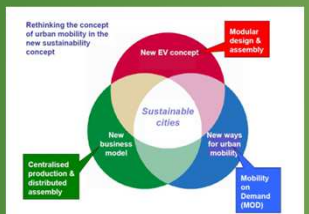
BEHICLE was born with the purpose to cover the existing gap between heavy quadricycles and conventional vehicles by developing **light, safe, energy efficient**, ergonomic and affordable electric vehicles, focusing on:



Pursuing low consumption with improved performance , optimizing the electric powertrain while maintaining a lightweight architecture with innovative materials



Achieving a safety level comparable to that of the Supermini class (M1)



Exploring new concepts for implementation of EV in urban areas, and specifically the requirements for deployment of a fleet of EV to improve sustainability, aiming to cover the needs under mobility-on-demand conditions



OBJECTIVES

- Optimized weight through innovative materials and system integration
- Safe and integrated chassis and body shell design to achieve similar occupant safety level than in normal passenger cars by using actuators (restraints and structures); high compatibility design
- Extremely low energy consumption
- Assembly line capable designs based on low energy consuming manufacturing processes
- New business approaches, based on reasonably low budgets and leading to novel supply chains

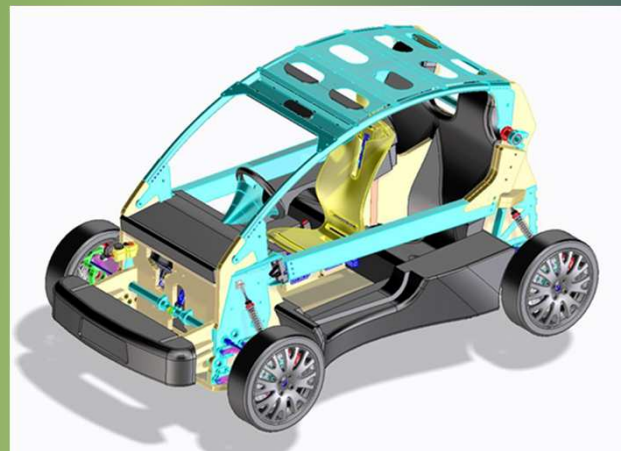
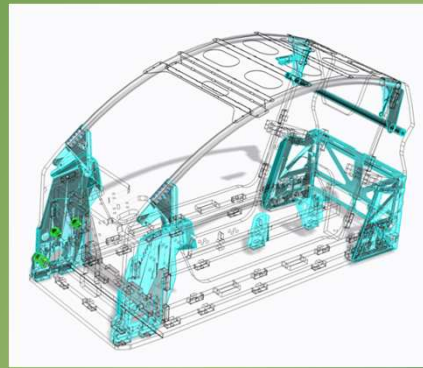
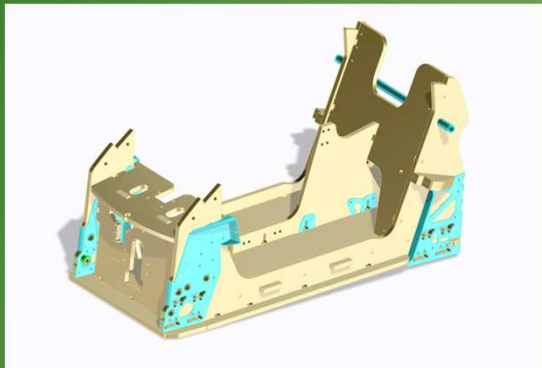
☰ VEHICLE SPECIFICATIONS

Length:	<3000 mm
Width:	<1800 mm
Vehicle weight:	550 kg (including battery and driver)
Top speed:	120 km/h
Acceleration 0-100 km/h:	<10 s
Range:	150 km (NEDC)
Consumption target:	40 - 80 Wh/km
Safety level:	Comparable to that of a contemporary super-mini M1 vehicle
Traction:	In-wheel drives in each rear wheel



Development Area: OPTIMIZED WEIGHT

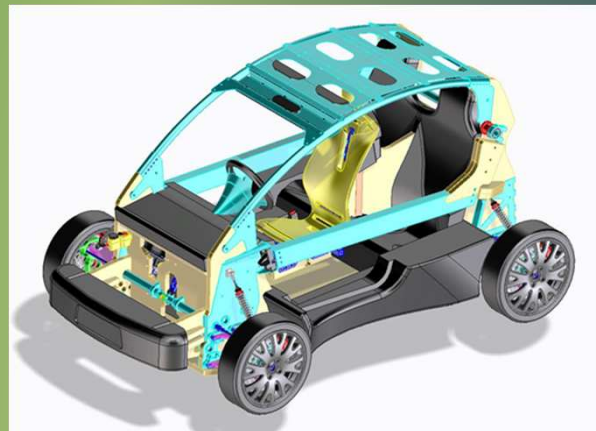
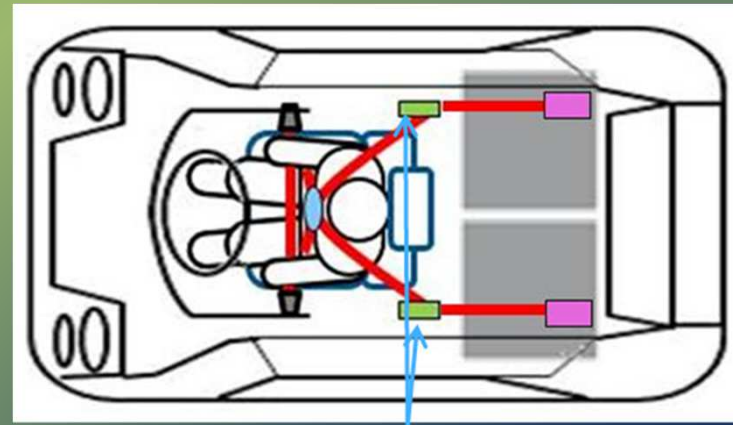
Materials: Qstrung® Composite Panels + Aluminium rooftop and reinforcements + EPP





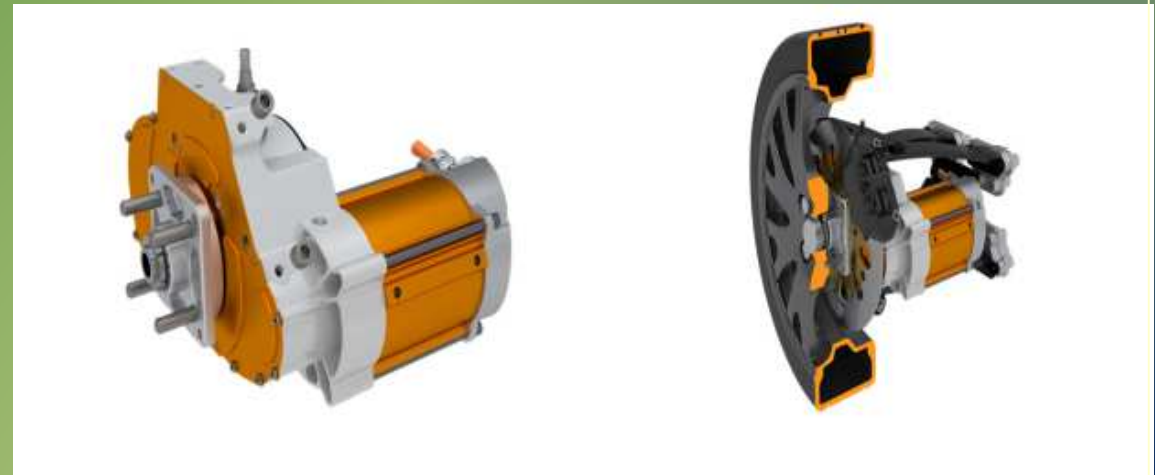
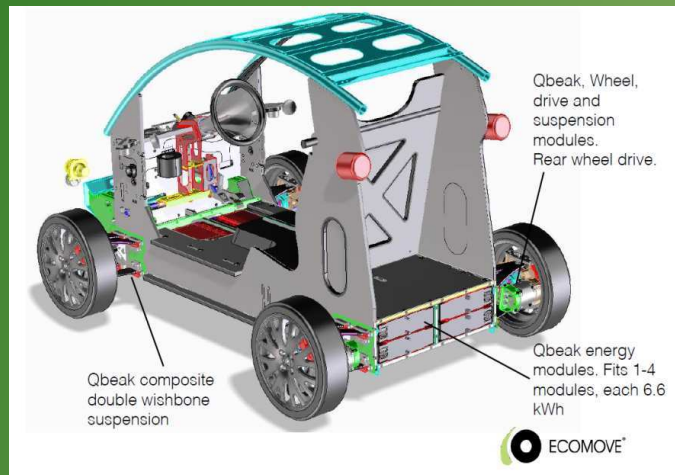
Development Area: SAFETY

Concept: Development of Composite Crash Box+ Implementation of Restraint Systems+ Airbag





Development Area: PERFORMANCE



TARGET PERFORMANCE	UNIT	VALUE
Maximum speed	km/h	120
Cruise speed	km/h	100
Acceleration time 0-50 km/h	s	< 5
Acceleration time 0-100 km/h	s	< 10
Acceleration time 0-400 m	s	< 18
Acceleration time 0-1000 m	s	< 37
Energy consumption (real driving conditions)	Wh/km	80
Range	km	150
Maximum road slope from standstill	-	> 23% at 1 m/s ²



Current Status: Benchmarking and Redesign Cycle



<http://behicle.eu>



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 605292.