

# Virtual Prototyping helps Gazelle Tech Develop an Innovative Vehicle that Reduces Energy Consumption by Half



## Challenge

With the car market expected to double in the next 20 years, and fossil fuels becoming scarcer, disruptive and innovative green, light cars must be developed. Developing these types of vehicles, which can be produced close to the ultimate customer, presents an interesting opportunity to reduce the total CO2 footprint. With cutting-edge technology, that is exactly what Gazelle Tech is working to do to decrease our carbon footprint yet still offer mobility to all

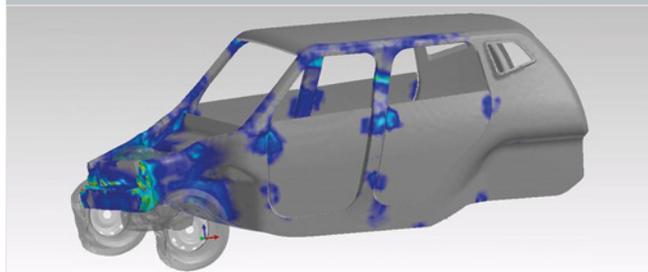
## Benefits

Gazelle Tech is developing a new production method for an innovative, low carbon impact vehicle, with the objective of offering sustainable transportation to all. Using ESI Virtual Performance Solution, they're able to:

- Reduce time to market by eliminating physical prototypes
- Ensure a safe, lightweight vehicle design
- Realize the necessary design adjustments for an overall optimal design

*"ESI Virtual Performance Solution saves us time and money. We are able to validate the performance of our innovative composite vehicle virtually before even manufacturing the first real prototype".*

**Gaël LAVAUD**  
CEO  
Gazelle Tech



A Gazelle at the end of a frontal crash using ESI Virtual Performance Solution

## Story

Gazelle Tech, a French startup company created in 2014, is the first peri-urban composite vehicle manufacturer of its kind. Their vehicle is currently under development and the industrial version is expected to be released in 2018. It features a composite chassis and body technology that makes it one third the weight of its competition and reduces energy consumption by half. The model will be offered in both gas and electric versions for a B2B market in France, as well as emerging countries in Africa and Asia.

Gazelle Tech offers disruptive innovations, both in their car concept technology and its production model. The chassis, composed of 10 pieces (vs. 300 on a standard vehicle), can be assembled without the need of special tools within an hour in micro-factories supplied in containers. Additionally, modular production units can be installed quickly and closest to where the customer is. For example, if the customer is in South Africa, the vehicle will be produced in South Africa. This reduces energy consumption linked to the transportation of vehicles.

Based on their new design and car concept, Gazelle Tech created a virtual prototype of their car in order to test safety and comfort virtually and to anticipate any issue before building the first real prototype. For several months, using ESI Virtual Performance Solution (VPS), they subjected the composite vehicle to rigorous crash and structural rigidity simulations and carried out vibration analysis to refine passenger comfort levels until an optimum design was achieved. In their next phase, Gazelle Tech plans to focus on the optimization of the manufacturing processes of the car's composite parts.

All vehicle manufacturers must present a prototype before commercialization so that the competent authorities can carry out tests. Gazelle Tech is finalizing their first prototype and they will present it at the end of 2017. Once they obtain certification, production of the first Gazelles is expected at the end of 2018.



for more information  
[www.gazelle-tech.com](http://www.gazelle-tech.com)

