

# Renewal of the Renault Ultimate Simulator

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The well-known Ultimate Driving Simulator has been refurbished. The initial design used an open cabin. The new simulator uses a Renault Twingo cabin.



Fig. 1. Ultimate simulator initial design

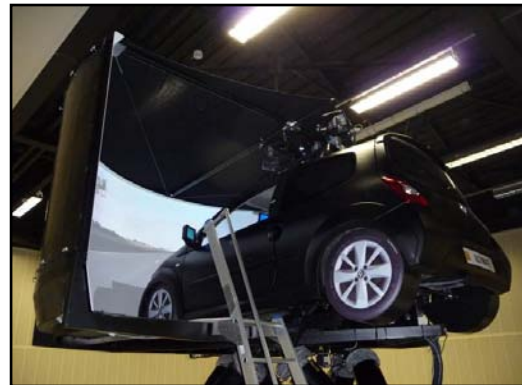


Fig. 2. Ultimate simulator new design

The renewal has been performed by the three German based companies IMTEC, VSimulation and Hahlbrock.

The new cabin sits on a special designed base frame. The screen, build from fiber plastic, is mounted on that frame as well. Five projectors are mounted on top of a standard car rack with an innovative support frame. The alignment of the projectors is adjusted by an auto calibration system.

A new steering system with better performance is integrated in the cabin. The new interface is based on the existing interface from Renault.

The new system is up and running since December 2011. The installation took five weeks.

Some technical details:

The total weight of the newly installed parts base frame, screen, cabin and projection system is below 850kg. That allows the operation of the simulator with two people despite its small 1000kg payload.

The first Eigenfrequencies are at 8.7Hz.

Two projectors are mounted in portrait orientation; the other three are mounted in landscape orientation. The horizontal field of view is 200°, the vertical field of view varies from 25° to 46°.

Image quality has been improved drastically. That includes resolution and brightness, quality of the edge blending, mechanical stability of projectors and screen and the auto alignment feature.

The immersion of the simulation is much better. This is caused by the real cabin, a better steering system, a better sound system, a much higher coverage from outside noises and a better quality of the visual system.

The new system is in operation and gets approval from its users.