SPECIFICATIONS HARDWARE AND SOFTWARE
CARNETSOFT DRIVING SIMULATOR

SPECIFICATIONS DRIVER TRAINING SOFTWARE

It is very important to realize that the driving simulator software is not like a game. In a game, the forward field of view is typically around 60 degrees. In the simulator, there's a forward view, a view to left and to right and each view has a rearview mirror. So, that's 6 channels in total, opposed to 1 channel is a typical computer game. Effectively these 6 channels give a 360 degrees surround view. Modern graphics boards (GPU's) are very fast but they all are still limited in the number of drawing primitives that can be transferred between the CPU and the GPU per second, or the band width. That's why most computers and their GPU and not suitable for use as a driving simulator, because band width is simply too low. Especially, laptops or computers with integrated graphics are always unsuitable.

That's why the highest possible band width is needed. The **NVidia GTX1080** is HIGHLY recommended.

Characteristic	Value
Rendering displays	3 (+ 1 for userinterface).
Display resolution	Max. 1920x1080 per display.
Horizontal field of view	210 degrees.
Number of lessons	Around 50
Check where driver is looking at	Optical headtracking via TrackIR 5. Used by virtual instructor and student assessment system.
Graphical databases	15, rural environments, town, highway, motorways, roundabouts etc.
Virtual instructor	Yes, gives instructions and feedback o driving behaviour. Large number of tasks monitored automatically, for example, headway, driving speed, (speed limits), lane following (steering and use of lane), lane changing, overtaking, priority rules, approaching and driving on roundabouts etc.
Traffic model	Advanced autonomous traffic that behaves very natural. High traffic

	density.
Scenario generation	Via (binary compiled) fast scripts.
Student assessment system	Every student has an excel sheet with detailed data per lesson, a strength-weakness analysis, a printpage with summary info.
Rendering surfaces	Left, center and right out-of-the window views, rearview mirrors left, center and right, top view to assess vehicle position on the road.
Sound generation	3D sound generation.
Special circumstances	Night driving, fog, rain and snow.
Gear shifting	Both manual and automatic (selected via user interface).
Configurability	Via configuration tool. To configure display resolutions, input devices (easy to add different gear shifter, pedals, buttons etc), rendering (shadow generation, glow mapping for night driving) etc.
Series of lessons	Create complete packages via chaining a series of lessons.
Type of training	Automation training of separate driving tasks (steering, gear changing, driving off, lane changing etc), vehicle handling, traffic participation in complex traffic scenarion (enter highways, roundabouts etc), and special circumstances.
Multiprocessing	Three rendering processes (left, middle, right) on separate processors, traffic generation, scenario control, user interfacing and head tracking on separate processor. Total use of 4 processors.
Vehicle model	Advanced mathematical vehicle- and engine model, for realistic driving. Graphical models to drive in include Toyota prius, Tata Nano, Articulated truck and city bus.
Countries	Versions available for the Netherlands, India, Australia, UK. Software can be translated into other languages (at present Dutch and English) and for different traffic rules and road signs as found in other countries.
Side of the road	Both left-lane and right-lane driving versions available.

SPECIFICATIONS HARDWARE

Component	**Type**
Computer	
PSU	600 Watt
Processor (CPU)	**Intel Core i7-7700, 3.6 GHz. IMPORTANT!**
Motherboard	MSI B150M or similar
Memory	24 GB DDR4
Harddisk	**SSD 240GB. SSD is IMPORTANT!**
Graphics board (GPU)	**NVidia GTX1080 IMPORTANT!**
Operating system	Windows 7 Pro 64 bit or Windows 10 Pro 64 bit
Ethernetcard	1Gbit
DVD player	any
Steering console	Logitech G29 Driving Force + Driving Force shifter (includes clutch, brake and accelerator pedals
Monitors	4 x 23 inch monitors widescreen (16:9).
Headtracking	TrackIR 5
Soundsystem	2.1 or 5.1 soundsystem