SIMESBIKE VR

MOTORBIKE SIMULATOR

simumak

simulation as a service

Simumak is a Spanish company with an international presence belonging to *everis Aerospace and Defense*, which, in turn, is part of the NTT DATA group. Simumak has a long experience developing didactic simulation solutions for the Automotive, Construction, Mining, Logistics and Defense sectors.

Simumak develops 100% of its solutions in an affordable way, focusing on the specific needs of customers, combining the use of new technologies with the real needs of its customers.

How to operate it?

Simumak Immersive Simulators is the division from which we develop the software and hardware of cockpit simulators specifically designed for students to learn how to operate vehicles or machines. Boost the performance of your operators or qualify more prepared students thanks to our training plans on board Simumak simulators.

How does it work?

From the **Simumak VR Training** division, we design training plans adapted to the needs of the client, with the aim that the students are able to assimilate theoretical-practical knowledge, functions, or processes, using, as hardware, high quality and very low cost commercial products (Oculus Go). Optimize the assimilation of your processes or improve the understanding of your students through our immersive training tools.

SIMESBIKE VR SIMULATOR

Our goal is to maximize your profit by increasing the safety and productivity of your equipment.

After **more than 15 years of designing virtual trainings tools**, we have developed a product adapted to your needs with which you will be able to achieve real, measurable results that will optimize the operation of your company.

Fewer accidents, less fuel use, more profitable work cycles, recruiting, creating and retaining talented drivers through specific training programmes are just some of the examples where we can help you through our **virtual training tools.**

SIMESBIKE VR incorporates a revolutionary **VR (Virtual Reality) vision system** that immerses the operator in a completely virtual environment, in which he has absolute freedom to modify his perspective, and the controls of the vehicle with which he has to interact. Never has a simulator come so close to reality.

SIMESBIKE VR can operate stand-alone, but it can also be integrated with the **INSTRUCTOR STATION**, the student and exercise management platform **(SOCRATES)** and the exercises generator **(Training Manager)**, which will allow you to create training plans very quickly and at a very low cost.

We know that there are many different needs, even within the same company, that is why we have developed a product range with different models that adapt to different scenarios. SIMESBIKE VR has been designed to be easily transported and built in a small room, and at the same time, it has been developed with real controls and a movement platform to satisfy the most demanding immersion demands.

SIMUMAK SIMULATION ECOSYSTEM

SOCRATES
- Students and instructors management
- Exercises settings
- Sessions scheduling
- Results displaying

TRAINING MANAGER
- Exercises creation and edition
- Generation of specific situations
- Guided learning plan

SIMFLEET MANAGER
- Simulators management
- HW and SW updates
- Maintenance
- Remote issues management

OBSERVER STATION
- Formed by an elevated screen
- It can be located in other room
- Extension of learning
- It allows other students to observe the development of the practice carried out in the simulator

INSTRUCTOR STATION
- Formed by three screens, a computer and a printer
- Telemetry application
- Visualization and communication with the student
- Modification of simulation conditions in real time (events, breakdowns, modification of weather conditions...)
- Interaction in real time with another vehicle thanks to the cooperative driving mode

SIMULATION STATION
- High immersion: Virtual Reality
- Customizable learning program
- Realistic HW
- 2DOF movement platform to guarantee a complete immersive feeling.
- Different types of motorbike in the same simulator

TECHNOLOGY AT YOUR SERVICE

SIMESBIKE VR is equipped with the most cutting-edge technologies that turn this simulation experience into realistic and useful learning, making this product an essential tool for training.

VR HIGH IMMERSION

No more seeing reality through a screen. Thanks to **Virtual Reality (VR)**, looking in any direction, changing the perspective and being able to interact with the cockpit that surrounds us is possible. The feeling of immersion cannot be greater.

MODULAR AND COMPACT HARDWARE

Thanks to the efficient **compact architecture** of the simulator, it is very easy to transport and position easily in a room.

DRIVER'S RECOGNITION SYSTEM

Thanks to our driver recognition system, the simulator can accurately represent the user's inclinations, creating a great dive without the consequences (for example of a fall) being real.

SCREEN MODE AND VR MODE

The simulator can be used in two modes. With VR glasses for maximum immersion, and with a screen, for those people who feel more comfortable with this type of display.

HARDWARE FEATURES

SIMESBIKE VR Silver offers a **very realistic immersion solution** thanks to the motorbike control system, the user's movement recognition, and the VR glasses display system.

It has a structure with a screen for external visualization of the student's operations and speakers for sound.

On the other hand, it has a 2DOF (2 degrees of freedom) movement platform that simulates the movements of the motorbike and a system that allows the user to recognize the lateral tilt movement.

The motorbike is located on this platform, which is formed by a real seat, a system of controls that imitates the real controls of a motorbike, from the handlebar with a hardening of the direction, through the accelerator and clutch.

In addition, it has a kickstand, a rear brake and gear shifter pedals with realistic feel to increase driving immersion.

Thanks to the visualization system with virtual reality glasses, a total immersion of the user in the simulation is achieved, encompassing 360 degrees of vision and a positioning of 6DOF (6 degrees of freedom)

SIMUMAK emphasizes not only in maximizing the feeling of realism and immersion in its designs, but also in their robustness. We guarantee the optimization of maintenance cycles.

LEFT HANDLE
It contains the clutch, lights, turning lights and horn.

HANDLEBAR
700mm wide and 54º turn.

RIGHT HANDLE
It contains the accelerator, front brake, power cut and start button.

FRONT DASHBOARD
It includes the ignition key, navigation cross, emergency stop button and biometric identification reader.

CONTROL TOWER, SCREEN VISUALIZATION AND SOUND SYSTEM
This module contains the simulator's computer as well as the main electronics. It also serves as a support system for the 65" main screen and the 2.1 sound system.

PEDALS
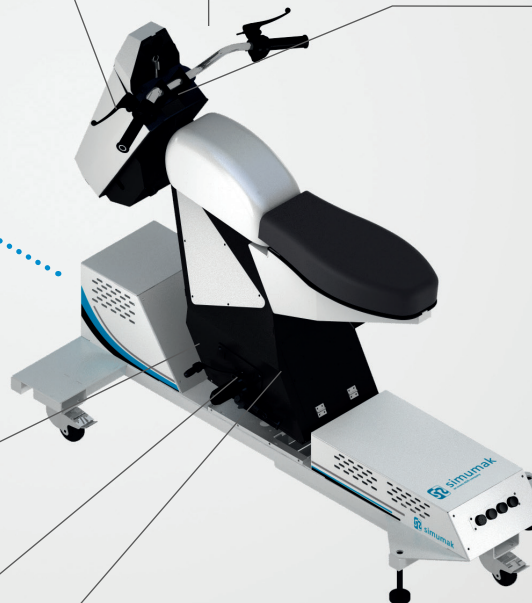Rear brake and gear shifter pedal with realistic feel

KICKSTAND
With activation sensor to cut the ignition.

2DOF MOVEMENT PLATFORM (TWO DEGREES OF FREEDOM)
2DOF platform under the motorbike.
It reinforces the immersion and the realism of the simulation by recreating the accelerations and inclinations suffered on board.

GAFAS VR
Virtual reality visualization system with 6DOF positioning system.

SOFTWARE FEATURES

SIMESBIKE VR allows riding a motorbike. It has an adapted pedagogical plan, which enables the gradual assimilation of knowledge by the student, carrying out many exercises:

• Urban environment settingEscenario en entorno urbano
• Weather
• Wind
• Time of day
• Level of traffic
• Activation / deactivation of embedded technologies and security systems.

TRAINING MANAGER

By using an application called "Training Manager" we can create exercises for the simulator in a simple way, being able to upload these exercises to the cloud (socrates), include them in a student's training plan, and run them in the simulator when that student is connected. The TM has the following functionalities:

- To set up the initial configuration as in the simulator configuration menu. Choosing the setting and the setting's features, choosing the vehicle, and the vehicle's features, etc. among the available options.
- To add objectives to achieve, for example "complete the following circuit".
- To add driving points and to choose what infractions and driving errors take them out.
- To create user's routes and traffic to guide the student or to generate specific situations with other vehicles.
- To generate events in specific places (all the ones contained in the Instructor Station)
- To create situations / circuits with elements such as cones, fences, stopped vehicles, signs, pedestrians, animals.
- To include instructions to the student, written and in recorded voice.

With the training manager we can do exercises such as the following:

EMERGENCY BRAKING
Emergency braking on dry and wet asphalt to improve user control of the front and rear brakes and increase their responsiveness.

SLALOM WITH CONES
With this exercise, the student will improve their mastery of the motorbike, when making turns and controlling their speed.

GEAR SHIFTING EXERCISE
Gear shifting exercise with a circuit in which it is requested to control the vehicle by changing gears depending on the section.

INSTRUCTOR STATION AND SOCRATES

While the student is doing the practice, the instructor can observe him from different cameras, check the telemetry or interfere with it through the command sending system of the **instructor station**.

- Breakingdowns, malfunctions
- Modification of time of day / weather conditions
- Inclusion of risk situations or special conditions (traffic / pedestrians)
- Co-operative driving...

The simulator recognizes the student through a biometric identification system and stores its results in **SOCRATES**, generating a report of each practice carried out for later analysis.

At all times, the simulator supervises the student's practice, monitoring the correct handling of the machine and sending messages when it detects that incorrect maneuvers are being carried out. This automatic supervision system can be used to compute the note of the exercise, indicating in the design of the exercise which infraction or errors will subtract points from the student's grade.

125CC MOTORBIKE

SIMESBIKE VR simulates a 125cc naked gasoline motorbike with manual transmission, it is a common type of motorbike used in many countries for different types of activity, from private use, through messaging to the military sector.

HARDWARE FEATURES	
dimensions	*mm*
Legth of simulator with screen tower	804
Width of simulatior with screen tower	758
Height of simulator with screen tower	1615
weights	*kg*
Total simulator weight	250
Maximum weight of user	160

2DOF SILVER cabin	
Level of immersion	total
Capacity	1 user
Electric specifications	
Type of electrical supply	220 VAC (Monofase)
Power	Nominal / Max: 1500W / 2000W

Movement platform	
Name	SMBSLV01
Type of platform	Electromechanical 2DOF
Degrees of freedom	2
Maximun endured weight	150 kg
Dynamic specifications	
Roll	7,7º
Pitch	6º
Angular speed	30º/s
Angular acceleration	300º/s2
Max. oscillation frequency	50Hz

Visualization system	
Visualization	VR
Alternative visualization screens	1 LED 65" screen
Visualization field	360º horizontal / 360º vertical
Total resolution	2160 x 1200

Sound system	
Number of channels	2.1
Loudspeakers power	14W (2x7W)
Subwofer power	50W

Other data of interest	
Simulator construction material	Steel Structure
Normative	CE certificate
Weighted consumption of the simulator	1200Wh

simumak
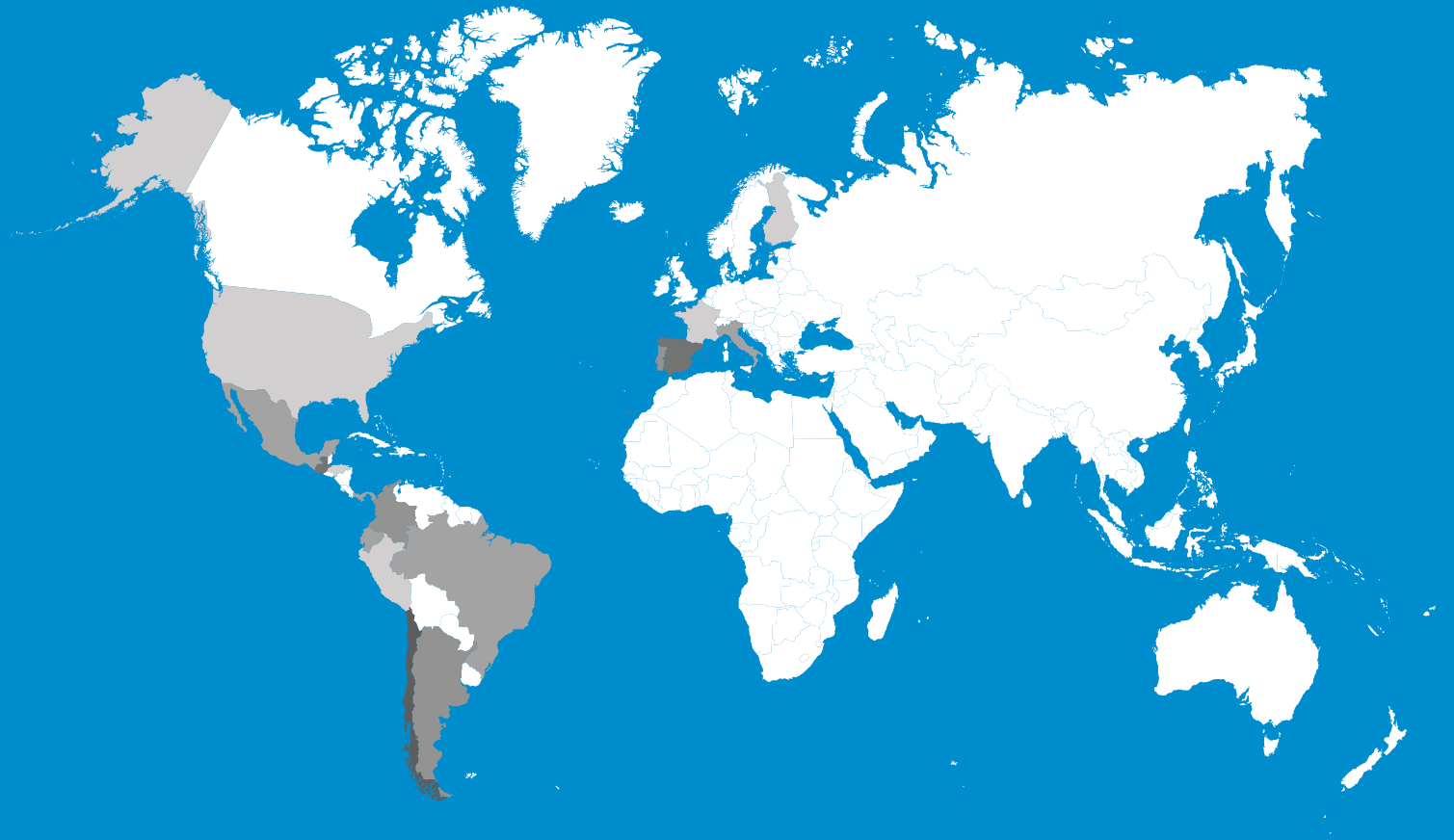## simulation as a service

+ 5000
simulators manufactured

+ 15
countries with installed base

+ 20.000.000
performed sessions

You may contact us at:

☎ +34 91 234 60 19

✉ info@simumak.com