LOGSIM AVR

FRONT FORKLIFT
AND SIDE RETRACTABLE FORKLIFT SIMULATOR

simumak

A COMPANY OF THE GROUP:

Aeroespacial
y Defensa

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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.

LOGSIM AVR

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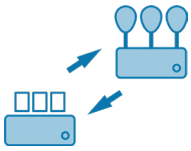
LOGSIM AVR SIMULATOR

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, higher productivity in the warehouse, more profitable work cycles, recruiting, creating and retaining talented operators through specific training programmes are just some of the examples where we can help you through our **virtual training tools.**



Simumak has developed **LOGSIM AVR, a multi-machine simulator** specially designed to meet the needs of companies in the logistics sector.
LOGSIM AVR can easily be configured as a **front forklift and side retractable forklift** from the same hardware. This will allow training to be given to different groups of professionals from a single simulation station, thus facilitating the rapid amortization of the investment made.

LOGSIM AVR incorporates a revolutionary **AVR (Augmented Virtual Reality) vision system** that immerses the operator in a completely virtual environment, in which he has absolute freedom to modify his perspective, also allowing him to see his own hands and the controls of the cabin that surround him and with which he has to interact. Never before has a machine simulator come so close to reality.

LOGSIM AVR 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, so we have developed a product range with different models to suit different scenarios. From the LOGSIM AVR PORTABLE, designed to be easily transported and deployed on the student's own table, to the LOGSIM AVR GOLD, which with its set of real controls and its 3DOF motion platform has been designed to meet the most demanding immersion needs.

LOGSIM AVR

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
- It may be located in another room.
- Learning extension
- It allows the 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: realistic HW and SW
- Customizable learning program
- 3DOF movement platform to guarantee a complete immersive feeling
- Several machines in one simulator

Available versions

This simulator is highly configurable, and able to be adjusted to client's needs. This simulator offers three kinds of versions.

LOGSIM OYD

The opction OYD (On Your Desktop) consists on one notebook, VR headset and controls (joysticks, steering wheel and pedals). It offers an immersive solution, creative and economic, designed to be easily portable.
The installation is very simple and takes up very little space, allowing its use in conventional training classroom that in a few minutes become advanced simulation centers where all students can practice on board a simulator.
When the VR headset is put on, the students sit on a machine thanks to the AVR system.

LOGSIM AVR SILVER

The **LOGSIM AVR Silver** offers a very realistic immersion thanks to the machine control system, which imitates the real controls. This system allows the configuration as a front forklift or as a side retractable forklift, by mean of a simple change of controls that can be carried out by the instructor himself.
Under the seat it is possible to install a 2DOF motion platform that will move the operator slightly, giving him a sensation of immersion and almost absolute realism.

LOGSIM AVR GOLD

The main difference between the LOGSIM AVR Silver and the **LOGSIM AVR Gold** is that the latter mounts under its cockpit (not just under the seat) a 3DOF platform (3 degrees of freedom: heave / roll / pitch) that represents with great fidelity the inertial experience on board the machine.
In a few seconds the operator will forget that he is on a simulator and will focus on carrying out the work or exercise that has been entrusted to him. The immersion is very complete and this allows students to spend a lot of time on board the simulator without feeling fatigue or discomfort.

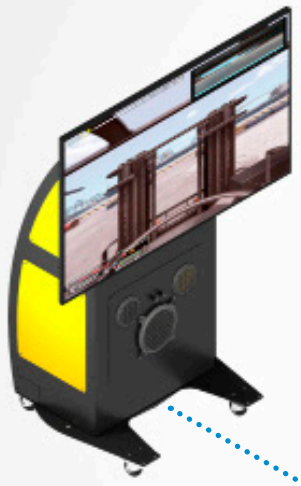
LOGSIM AVR

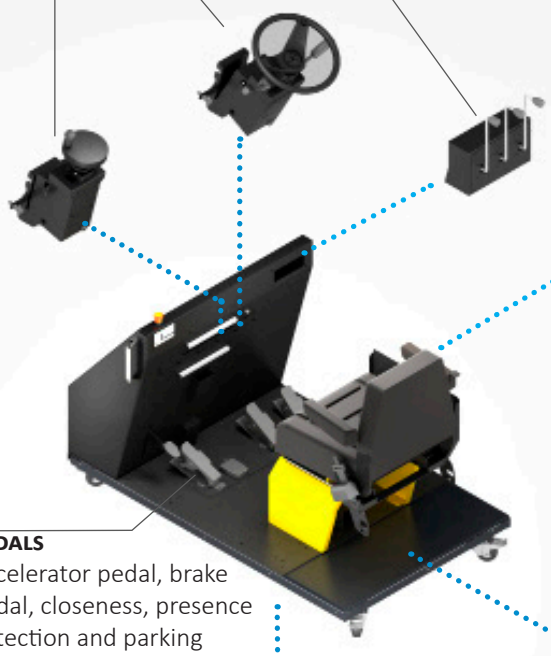
STEERING WHEEL COLUMN
25cm diameter and 1100° turning for front forklift.
18cm diameter steering wheel and infinite turning for side retractable forklift.

CONTROL LEVERS
Levers for the control of the fork and the mast of the front forklift.

MONO-CONTROL
Integrates all functions to operate with the side forklift. It is also possible to install control minijoysticks in this location.

CONTROL TOWER AND CONTROL SYSTEM SCREEN DISPLAY AND SOUND
This module contains the simulator computer as well as the main electronics. It also serves as a support system for the 50" main screen and the 2.1 sound system.

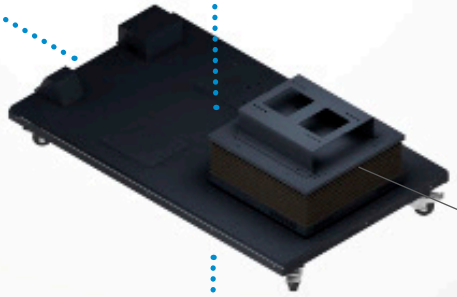




CONTROL PANEL AND NAVIGATION
Ignition key and main switches to control the machine.
The control panel allows the menu navigation, as well as the identification of the student through the biometric fingerprint system.

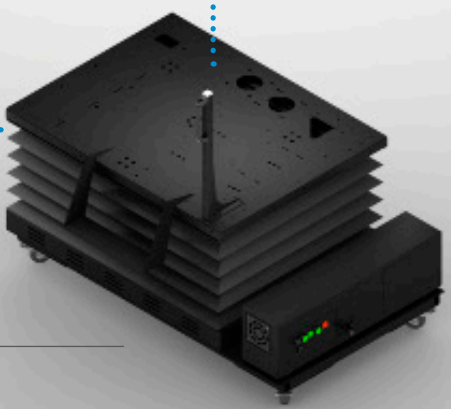
PEDALS
Accelerator pedal, brake pedal, closeness, presence detection and parking brake.

REAR SPEAKERS
Optional surround sound system.



2DOF MOTION PLATFORM
(TWO DEGREE OF FREEDOM)
Optional 2DOF platform under the seat.
Reinforces the immersion and realism of the simulation by recreating the accelerations and inclinations suffered on board the machine.

3DOF MOTION PLATFORM
(THREE DEGREES OF FREEDOM)
3DOF platform under the cockpit. Reinforces immersion and realism of the simulation by recreating the accelerations and inclinations suffered on board the machine. Thanks to its high-frequency movement system, it is capable of reproducing engine vibrations or terrain imperfections.



AVR HEADSET
System of visualization of augmented virtual reality with positioning system 6DOF.

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TECHNOLOGY AT YOUR SERVICE

HIGH IMMERSION AVR

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

AGX DYNAMICS PHYSICS SYSTEM

Thanks to this **advanced physics system,** the simulator can faithfully portray situations in case of not following the safety indications (rollover, cargo falls, ...) without the consecuences to be real or permanent.

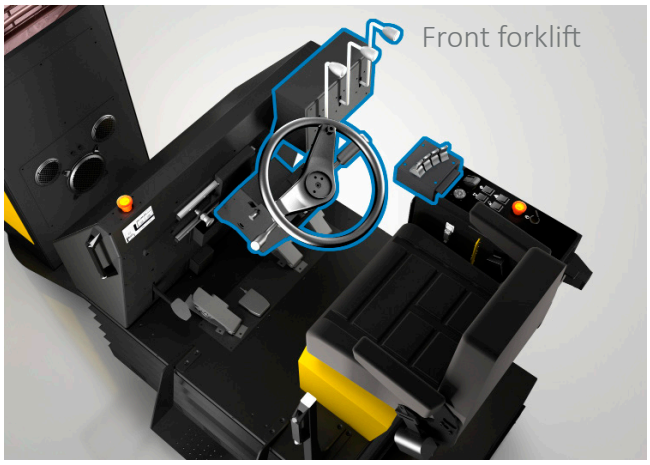
HARDWARE FEATURES

STRONG AND MODULAR HARDWARE

LOGSIM AVR has **interchangeable modules** that make it customizable and adaptable to the configuration needs of each customer to suit the work as front forklift or side retractable forklift.

In **front forklift mode** the steering wheel column is located in the middle with the bigger size steering wheel on. To operate with the fork, there are levers or minijoysticks.
In the **side retractable forklift**, the steering wheel of the steering wheel column is smaller and located to the left side of the operator. To use the retractable fork, there is a mono-control that intakes all the usual functions.

This multi-machine function makes the simulator a versatile tool that can be adapted to several types of simultaneous training on the same hardware, thanks to which space can be saved and the amortization of the simulation equipment maximized.



SIMUMAK emphasizes not only on the modularity of their designs, but also on their robustness. We guarantee the optimization of maintenance cycles.

SOFTWARE FEATURES

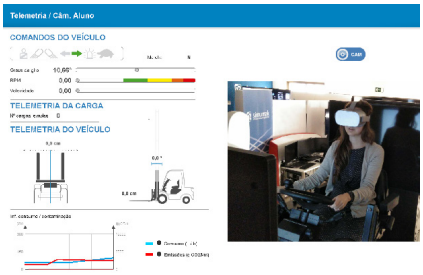
LOGSIM AVR allows the driving of **front forklift and side retractable forklift**. Each machine has a different setting and a specific pedagogical plan that helps the gradual assimilation of the student's knowledges.

- Work environments adapted to the operation with both types of forklift
- Driving circuit for maneuvering in a safe environment
- Work with loads of different weights and measures
- Loading and unloading practices on slopes, with unstable loads and other critical operations



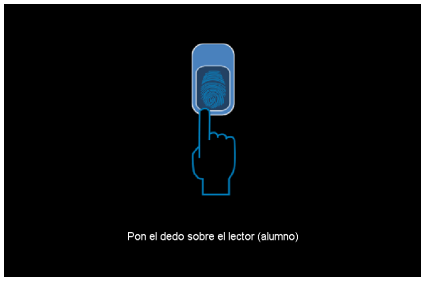
While the student is doing the practice, the instructor can observe him from different cameras, check the telemetry or interfere in it through the **Instructor station** command submission system.

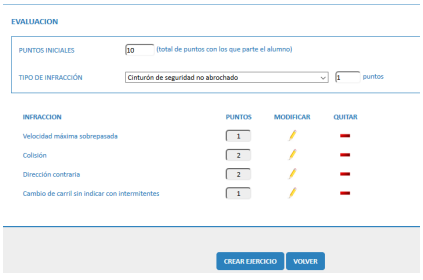
- Breakdowns
- Time of day / weather modification
- Inclusion of risk situations or special conditions (traffic / pedestrians)
- Cooperative driving

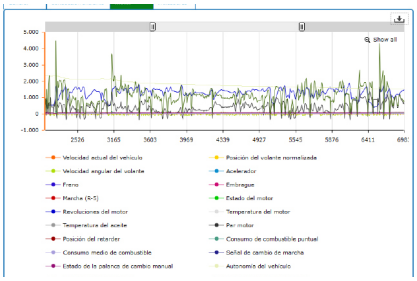



The simulator recognizes the student through a biometric identification system and stores its result in **SOCRATES**, generating a report of each practice carried out for later analysis.

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.







SIMULATED MACHINES

FRONT FORKLIFT

LOGSIM AVR front forklift is an internal combustion machine that allows you to work both outdoors and indoors. Its hydraulic fork allows to lift palletized loads weighing up to 3,000 kg to more than 4 meters, offering various solutions to work at logistics centers.

HARDWARE FEATURES	
STEERING WHEEL COLUMN	steering wheel 1100° turning
	left lever direction
	right lever indicators and horn
PEDALS	aproximation pedal
	accelerator pedal
	hydraulic service brake pedal
	service brake pedal
CONTROL	lift fork / lower fork
	mast tilt lever
	fork side shift lever
CONTROL THRONE	navigation arrows
	biometric identification system
	ignition key
	emergency stop control
	beacon light
	hare / turtle mode
	working lights
	warning

DYNAMIC FEATURES			
	GENERIC	model	TOYOTA TONERO 8FGCU
		fuel	GLP
		loading capacity	3000kg
		axis distance	1700mm
		wheels (x=drive)	2x/2
	DIMENSIONS	track width front- rear	1010mm- 965mm
		height with mast lowered	2020mm
		maximum elevation	2955mm
		height with extended mast	4260mm
		canopy height	2170mm
		length- overall width	3800mm - 1240mm
		length- fork width	1000mm - 1010mm
	PERFORMANCE	maximum speed	19 km/h
		elevation speed- maximum decline	0,5 m/s - 0,5 m/s
		maximum pulling force	18000 N
		maximum ramp	23%
		motor power	44 kw

LOGSIM AVR

SIDE RETRACTABLE FORKLIFT

The LOGSIM AVR side forklift is an electric machine with a retractable truck, specifically for indoor operation, especially in tight spaces, which a front forklift could not access. It is used to work with loads on specific racks.

HARDWARE FEATURES	
STEERING WHEEL COLUMN	left steering wheel. Configurable infinite spin 180/360°
PEDALS	presence detection pedal
	pedal brake service
	accelerator pedal
MONO-CONTROL	raise / lower fork
	side shift fork
	fork tilt
	retraction / extension carriage
	direction of travel switching
CONTROL THRONE	navigation arrows
	biometrical identification system
	ignition key
	emergency stop control
	beacon light
	hare / turtle mode
	working lights
	warning

DYNAMIC FEATURES			
	GENERIC	model	JUNGHEINRICH, ETV 216
		fuel	electrical
		loading capacity	1600kg
		axis distance	1460mm
		wheels (x=drive)	1x/2
	DIMENSIONS	track width front	1136mm
		height with mast lowered	2400mm
		maximum elevation	5600mm
		height with extended mast	6244mm
		canopy height	2190mm
		length- overall width	2408mm- 1270mm
		length- fork width	1150mm- 730mm
	PERFORMANCE	maximum speed	14 km/h
		elevation speed- maximum decline	0,48 m/s / 0,7 m/s - 0,55 m/s
		V / Ah	48V / 465 V/Ah
		maximum ramp	10% / 15%
		motor power	15,5/ 8,5 kW

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+ 5000

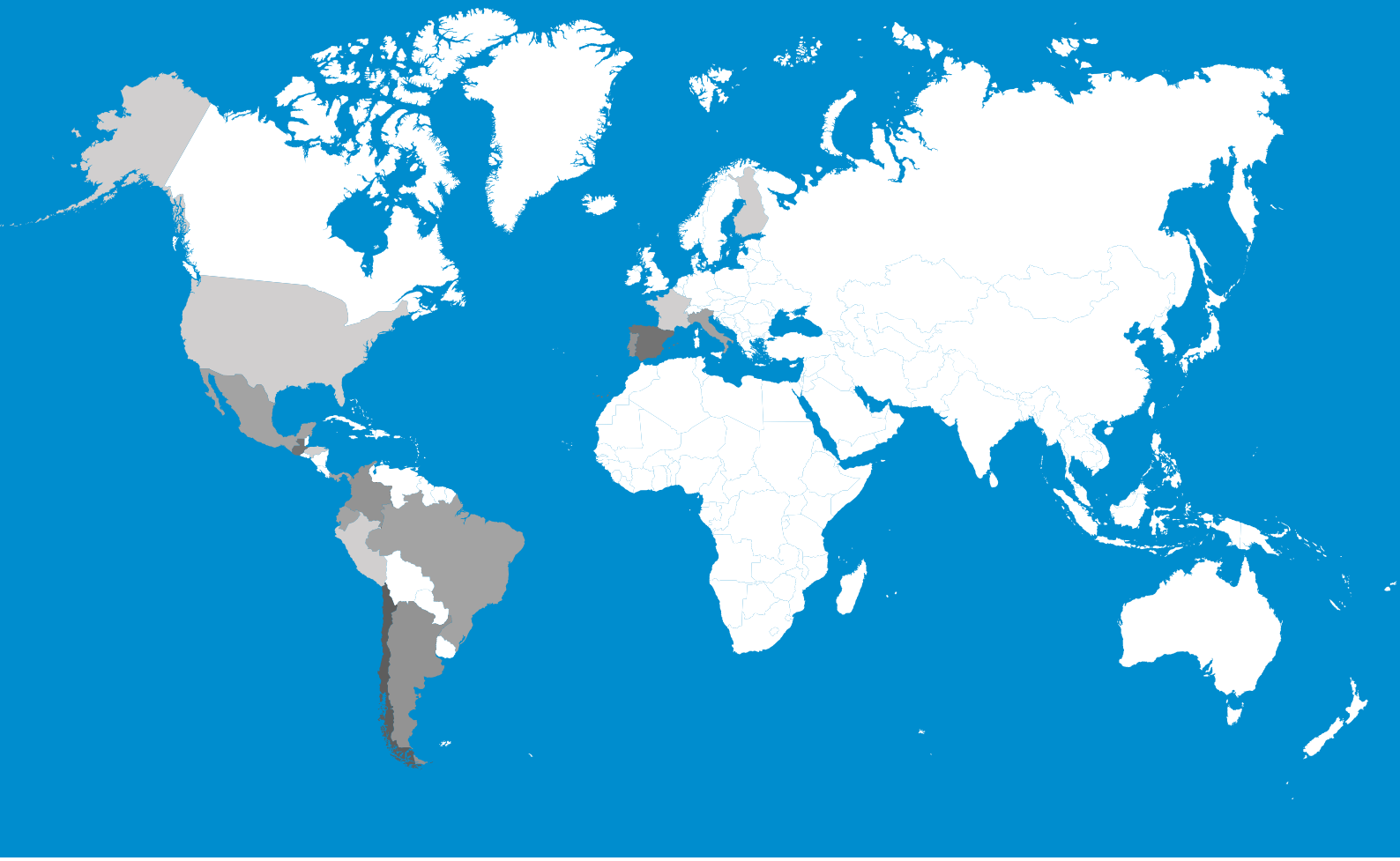
simulators manufactured

+ 15

countries with installed base

+ 20.000.000

performed sessions



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