EcoLog®
Forestry of tomorrow

EcoSim


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EcoSim

Eco Sim

– As close as you can get to the forest without actually being there!

Take the operator's seat in the Eco Log forestry machine simulator and be transported to the forest. Eco Sim offers a true-to-life experience, and is an efficient and effective solution for obtaining the best possible training before progressing to a real forestry machine.

Eco Sim is the optimal tool for training operators in competitive and efficient forestry. Eco Sim offers a safe and realistic forest environment for learning and skills development.

It has a broad range of exercises to develop the user's skills step by step. The user can track their learning progress with scoring and evaluation tools. Eco Sim is available with a motion base, equipped with actuators to simulate the machine's movements in different directions. To make the operational experience even more realistic, Eco Sim can also be supplied with VR glasses, providing a 360-degree view with depth perception.

Eco Sim allows operators to learn in a realistic, stress-free environment with low running costs. It is equipped with the same components as real machines, including a Forester measuring system, control buttons and up-to-date joysticks. The simulator provides a safe environment in which key skills can be acquired before moving on to a real forestry machine. It is a smart, realistic and effective learning tool.

The simulator also serves as an effective environment for testing new techniques and working methods, leading to increased efficiency and productivity.

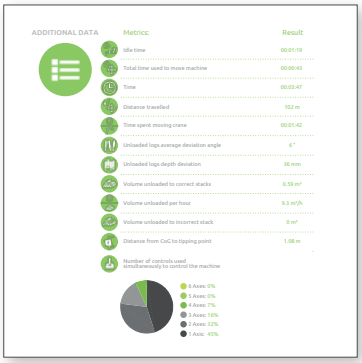
Eco Sim

– Welcome to the training environment of tomorrow, today!

Our simulator has extremely high-quality graphics and performance. Exercises are based on real-life machines and scenarios. Material behaviour and machine movements make our simulators a world-class, true-to-life and realistic training tool.

Assessment

Eco Sim includes an assessment tool that generates a score-card for all completed exercises. The scorecard shows how long the user took to complete the exercise and allows the user to see their learning progress and accuracy. This makes following the progress of each user very straight-forward.



Multi-machine environment

The simulator enables qualitative and quantitative training in an environment where students can access exercises individually or in groups, with interconnected simulators working in a mul-ti-machine environment (MME). Students can practise special manoeuvres and customise work scenarios individually or together.

Flexible

Eco Sim can be configured as either a harvester or a forwarder, meaning you can simulate both environments with just one machine. Eco Sim can be integrat-ed with a cross-cutting system and is equipped with professional steering.

Exercises

Eco Sim is a full-scale learning tool for training forestry machine operators, taking the user from novice to final logging using step-by-step exercises. The end user can adjust the scope of the exercises themselves without external tools. All exercises are based on real machines.

Forwarder

Exercise	Purpose	Description
Controls		
1.5 Driving controls	• Teach basic driving controls. • Get the user familiarized to the simulator.	Step by step the student will be introduced to all controls needed to drive the forwarder; gear selection, steering, acceleration and reversing.
1.6 Crane controls	• Teach basic crane controls. • Get the user familiarized to the simulator.	This exercise guides the student through all controls needed to operate the crane but also how to use the camera controls in the simulator.
Crane manouvering		
2.1 Handling a log	• Challenge the users ability to maneuver logs with the crane.	The student is tasked with moving and placing logs in spaces surrounded by obstacles. The student needs to prove that they can handle a log without unnecessary collisions.
2.2 Grip and move log	• Challenge the users ability to grip and move logs to a specific area.	This exercise focuses on gripping and moving multiple logs at various distances.
2.3 Load logs on forwarder	• Challenge the users ability to move logs from the ground to the forwarder.	The student practices moving and stacking logs on the forwarder.
Driving practice		
3.1 Driving	• Challenge the users ability to maneuver the machine in a efficient way.	The student is tasked with driving a course in the most efficient way possible. The student has to consider time and fuel spent while driving.
3.2 Loading and driving	• Challenge the users ability to maneuver the machine in the most efficient way possible and simultaneously using the crane.	The student gets to apply all they have learned so far by driving a track while simultaneously picking up and loading logs along the way.

Exercise	Purpose	Description
Operations		
4.1 Effective forwarding	• Teach methods and ways of planning that results in less time being used, less distance traveled and less fuel consumed.	The exercise teaches, step by step, different methods and things to think about during loading and offloading. It goes through how to lift as efficient as possible and safe, how a load should be placed on the cradle and how piles should be built when offloading. Everything with a focus on efficiency regarding fuel and time.
4.2 Free practice	• Practice loading and unloading.	This exercise has no ending. The student can keep practicing for as long as he or she likes. Different piles of timber has different difficulty.
Forwarder demo exercises		
Competition exercice	• Test your skills in a time trial	Load all the logs on the shortest time possible.
Demonstration exercise	• Quickly demonstrate the forwarders features.	A small forest area where the forwarder is set up and ready to work. Good for quick tests or demonstrations.

Harvester

Exercise	Purpose	Description
Service and maintenance		
1.2 Pre-start check	• Teach service points on the harvester • Rehears inspection routines	The student can move around the harvester and inspect it for faults. Each time the exercise is started the faults are randomized.
Control exercices		
1.5 Drive	• Teach basic driving controls • Get the user familiarized to the simulator	Step by step the student will be introduced to all controls needed to drive the harvester; gear selection, drive mode, steering, acceleration and reversing.
1.6 Level	• Teach leveling controls and their purpose	Step by step the student will be introduced to all leveling controls for the harvester while driving through obstacles.
1.7 Crane	• Teach crane controls • Rehears crane controls	Step by step the student will be introduced to all crane controls. The student also gets to practice positioning the harvester head using the crane.
Operation		
2.1 Basic driving - slalom & gates	• Rehears driving • Improve spatial awareness • Teach steering limits of the machine	The student navigates the harvester around obstacles and through gates. The course needs to be completed without colliding with anything.
2.2 Basic driving - hinning	• Practice positioning the harvester • Practice navigating cramped spaces	The student drives the harvester to different squares and reverses out again while surrounded by obstacles. The course needs to be completed without colliding with anything.
2.6 Driving while working	• Practice maneuvering in rough terrain • Practice leveling • Practice operating crane while driving • Improve spatial awareness, size and space occupation of crane and head	The student drives a track in rough terrain, positioning the machine and the harvester head along the way. The track is driven multiple times and each pass increases in difficulty.

Exercise	Purpose	Description
Working with the harvester		
3.1 Gripping and cutting	• Teach anatomy and kinetics of the harvester head • Teach how to grip and cut a tree	This exercise teaches the user how to grip and cut trees in a safe manner. Step-by-step instructions and images will teach the user the techniques required to grip and cut. Safety instructions and visualization of the center of gravity informs the user how the tree will fall and how to counter the falling trunk.
3.5 Optimizing route	• Gradually improve users efficiency • Provide an identical work scenario each training session	The user is tasked to cut down trees along a stroke in the forest and cut them to lengths. This exercise has identical conditions each time it is started so the user can measure and compare improvements in their results from their previous run.
Configurable scenarios		
4.1 Harvesting	• Allow user to customize an exercise	This is an open-ended exercise to simulate real working conditions. The conditions for the exercises can be configured before starting Forest density, tree type and length for example.
4.2 Thinning	• Allow user to customize an exercise	This is an open-ended exercise to simulate real working conditions. The conditions for the exercises can be configured before starting Forest density, tree type and length for example.
Configurable scenarios		
Demonstration scenario	• Quickly demonstrate the harvester features	A small forest area where the harvester is set up and ready to work. Good for quick tests or demonstrations.
Competition exercice	• Test your skills in a time trial	Fell and cut eight trees on the shortest time possible.

Equipment

Mobile unit with motion platform

Equipped with three freestanding 48" LED screens, one rear screen and motion platform. Option for multiple machine types in the same hardware.

Optional 360° VR compatibility

Virtual reality glasses allow you to look around the work area. This takes the feeling of reality to even higher levels.

Transport case

The specially designed case facilitates transport. EUR pallet size was selected for easier handling. The case is equipped with smart features to keep the contents secure.

Joysticks

Custom joysticks for harvester and forwarder features.

Equipment
Mobile Simulator Unit
Four screens: three front and one rear
Armrests by Sittab
Multi-joysticks, features for harvesters and forwarders on the same joystick
Pedals

Extras/options
Motion platform
Desktop
Real operator's seat
Cross-cutting computer
Head tracking

Dimensions
Installed: 2076×1677×2000 mm
Transport case: 1200×800×1570 mm


Fuel consumption
0.74 l
Ground area disturbed
8 m²
Average timber produced
0.00 m³/h
Timber produced
0.00 m³
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