



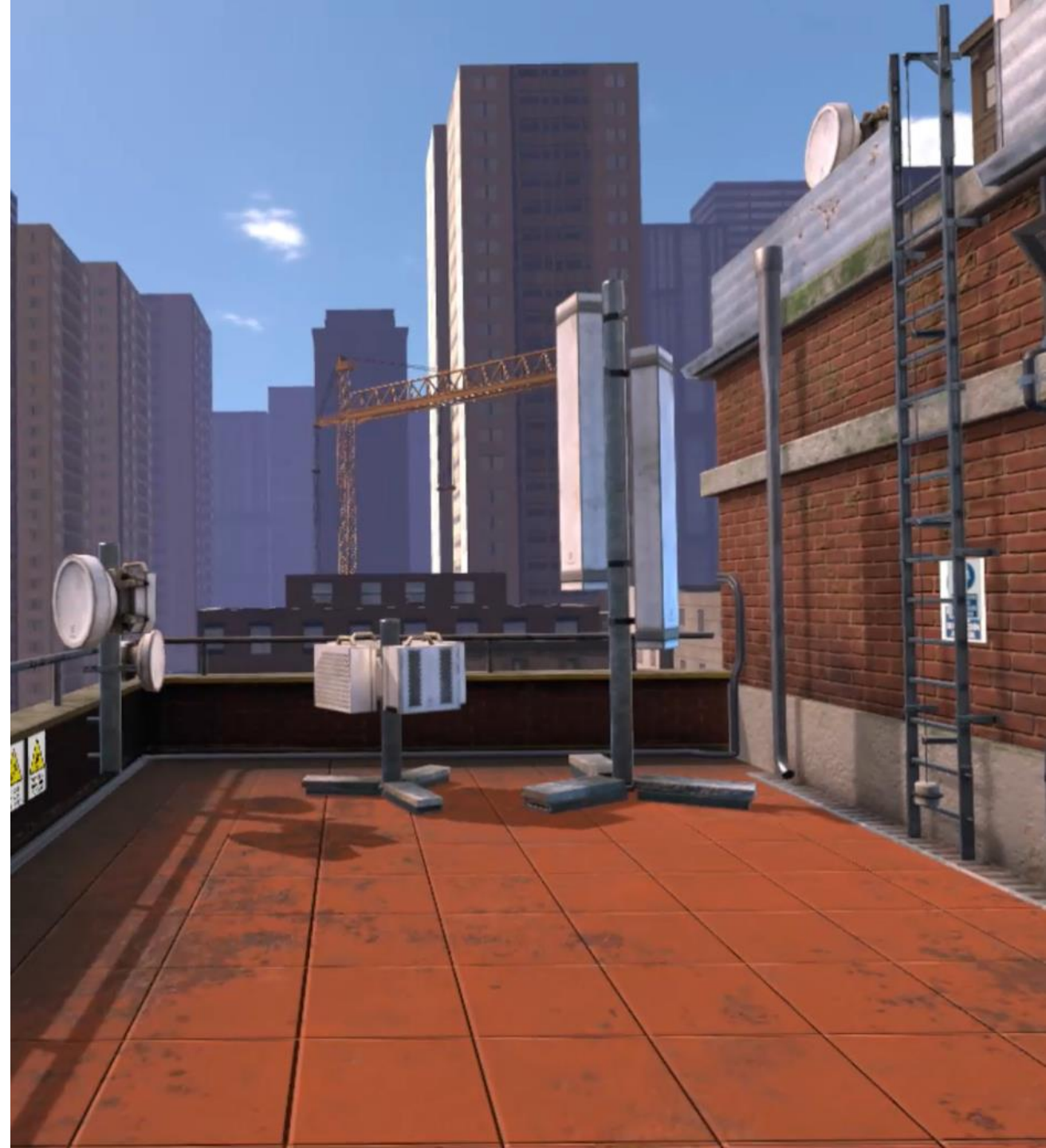
Ludus

VIRTUAL REALITY TRAINING FOR PREVENTION OFFICER FOR WORK AT HEIGHTS

L U D U S V R

LUDUS PRESENTS AN INNOVATIVE, 100% REALISTIC AND RISK-FREE TECHNOLOGY

- ▶ **Improves effectiveness** in the learning process of operators.
- ▶ **Reduces the costs associated** with training and travel.
- ▶ Reduces the number of **accidents and casualties**.



VR SIMULATION

Realistic interaction with the environment:
body movement, VR headset, hand tracking,
surround audio.



SUPERVISOR

A supervisor monitors the simulation and can also perform the
exercise setup



STATISTICS

Simulations keep track of each user's
decision-making and performance so
that it can be studied later in the
classroom.

SAFETY AWARENESS

SIMULATOR IN VIRTUAL REALITY OF PREVENTION OFFICER FOR WORK AT HEIGHTS

- ▶ Prevention officer for work at heights is a LUDUS product oriented to the training of prevention officer when working at heights.
- ▶ The objective of the user is to monitor the correct compliance with preventive activities.
- ▶ The simulation presents different exercises to be performed at heights set on the roof of a building. The prevention officer should monitor the tasks performed by the worker.
- ▶ The user must also equip himself/herself with the correct PPEs, if he/she does not do so and puts himself/her at risk, he/she may experience an accident.



▶ INSTALLATION ANALYSIS/RETHINK EXERCISE

Approximate task duration: 10 minutes

- ▶ At the beginning, the user should review both his/her PPEs and those of the worker. If he/she feel that a PPE is missing or in poor condition, he/she may indicate it.
- ▶ Later, the user must perform an environment recognition.
- ▶ If during the inspection, the user does security errors he/she will be penalized:
 - ▶ Climb a vertical ladder without being tied to the lifeline
 - ▶ Respect safety distances from cornices
 - ▶ Stepping on a fibre cement roof
- ▶ First-person accidents
 - ▶ In case the user steps on a fibre cement roof or gets too close to a cornice, he or she suffers a first-person fall, stopping the exercise immediately.



▶ EXERCISE OF WORK IN AREAS WITH PROTECTIVE COVERALL

Approximate task duration: 20 minutes

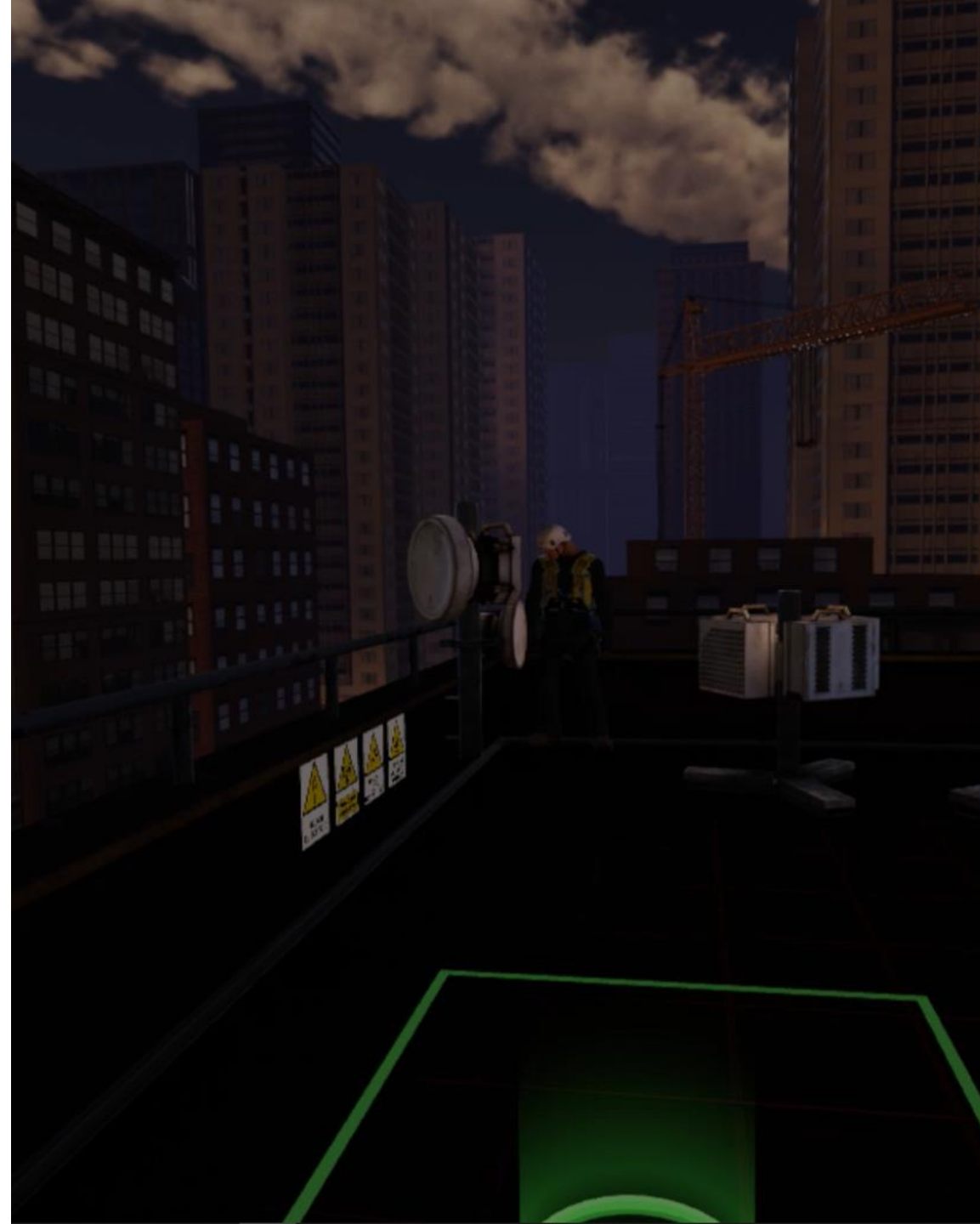
- ▶ At the beginning the user should review both his/her PPEs and those of the worker. If he/she feel that a PPE is missing or in poor condition, he/she can indicate it.
- ▶ The user must move with the worker to one of the antennas for a routine review.
- ▶ If during the inspection, the user does security errors he/she will be penalized:
 - ▶ Climb a vertical ladder without being tied to the lifeline
 - ▶ Respect safety distances from cornices
 - ▶ Stepping on a fibre cement roof
 - ▶ Allowing the worker to operate with PPEs in poor condition
- ▶ First-person accidents
 - ▶ In case the user steps on a fibre cement roof or gets too close to a cornice, he or she suffers a first-person fall, stopping the exercise immediately.



▶ EXERCISE TASKS WITH POOR VISIBILITY

Approximate task duration: 15 minutes

- ▶ At the beginning the user should review both his/her PPEs and those of the worker. If he/she feel that an PPE is missing or in poor condition, he/she can indicate it.
- ▶ The user must move with the worker to one of the antennas for a routine review.
- ▶ If during the inspection, the user does security errors he/she will be penalized:
 - ▶ Climb a vertical ladder without being tied to the lifeline
 - ▶ Respect safety distances from cornices
 - ▶ Stepping on a fibre cement roof
 - ▶ Allowing the worker to operate with PPEs in poor condition
 - ▶ Allowing the worker to operate with poor visibility
- ▶ First-person accidents
 - ▶ In case the user steps on a fibre cement roof or gets too close to a cornice, he or she suffers a first-person fall, stopping the exercise immediately.



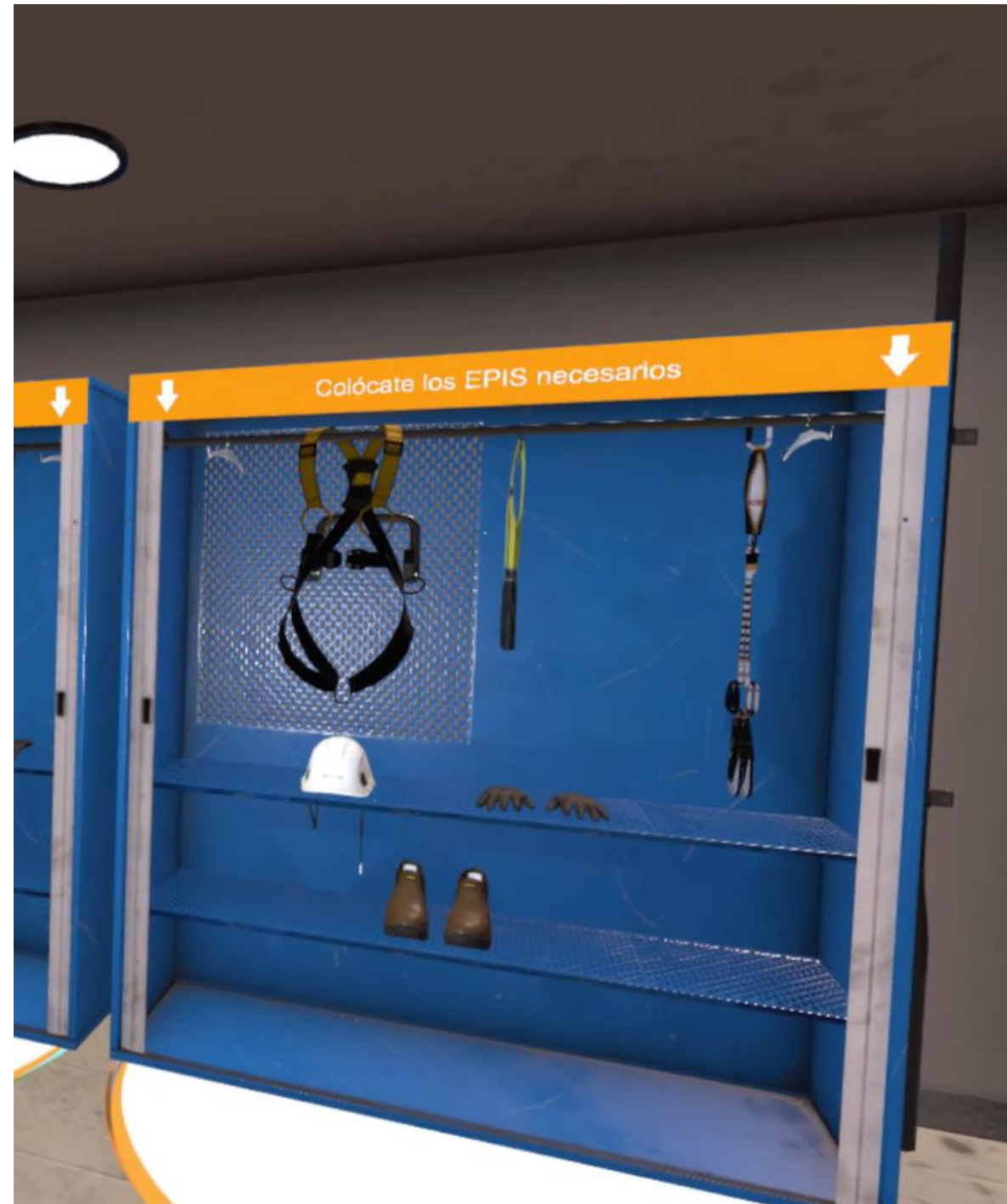
▶ PPES AND SAFETY ELEMENTS

▶ For all exercises, the following PPEs are included:

- ▶ Safety helmet with chin strap
- ▶ Safety boots
- ▶ Reflective vest
- ▶ Protective gloves
- ▶ Safety harness
- ▶ Safety Carabiner
- ▶ Game System Lifeline Trolley
- ▶ Dual connect adjust

▶ In addition, the following security elements can be found in the environment:

- ▶ Anchor points
- ▶ Vertical Lifeline Game System



ROADMAP

PREVENTION OFFICER DEVELOPMENT ROADMAP FOR WORKING AT HEIGHTS

V1 BASIC EXERCISES



NOW AVAILABLE

V1.2 WORKER ERRORS AND ACCIDENTS



Q3 2020
Pres. Approval

V1.2 CONTINUOUS IMPROVEMENT



Q3 2020
Pres. Approval

- ▶ Our goal is to grow together with our customers, collecting information about the future exercises of each product.
- ▶ Your feedback is extremely valuable to us. Our approach is to have living products, which improve by, and, thanks to our customers.

▶ V1.2 WORKER ERRORS AND ACCIDENTS

- ▶ This set of exercises will cover other tasks in which the worker can make security mistakes.
- ▶ During the course of the exercise, the worker may make several mistakes for which the user must alert him/her before he/she suffers an accident.
- ▶ Worker's accidents
 - ▶ The worker may fall through fiber cement roofs
 - ▶ The worker will suffer a fall by not anchoring himself/herself to a vertical lifeline
 - ▶ The worker will fall off the cornice as he/she does not anchor during an operation



BASIC STATISTICS

STATISTICS SYSTEM

- ▶ **Deployed to the user** at the end of the simulation.
- ▶ **Save individual reports** for later consultation.
- ▶ The following data is displayed and saved:
 - ✓ Exercise time
 - ✓ Total session time
 - ✓ Mistakes
 - ✓ Approved/Not Approved