

**Intuitive Training for Incoming Goods** 

# Why serious gaming and virtual reality (VR)?

Serious gaming refers to training applications that contain playful elements that support sustainable, efficient and motivating learning. Studies show that increased immersion in the digital world sustainably increases the learning effect. With the help of virtual reality glasses, the real world is completely hidden and the user is fully immersed in the virtual world. This ensures the best possible immersion and thus improved, sustainable training.

## What is InGo?

InGo is a serious game in VR in which players learn and train the incoming goods process. The process can be trained independently of time or location restrictions, supported by feedback. The training allows the combination of practical training with theoretical background knowledge through additive insertions during the activity.

# Why InGo and VR?

In order to meet the rapidly changing demands of the industry on its logistics professionals, it needs efficient qualification methods. The partial digitalization of the measures through implementation in a training with VR offers several advantages. Among them the freedom from location, the more efficient training through individual learning speed and last but not least the positive influence on the learning experience and motivation, which could be shown in studies.

The program can be used to teach inexperienced students or employees how to receive goods and carry out quality control.

#### **Process**

During the training, the players go through the various steps of handling incoming goods. In the process, they find themselves in the digital image of a warehouse and need to interact with various objects such as a smartphone or waybill. The individual process steps are described below.

## 1. Checking the delivery address

A truck has pulled up to the open gate of the goods receiving department and a waybill is provided. The delivery address must now be checked. If the delivery address is incorrect, the responsible unit is consulted.

#### 2. Checking the delivery authorization

A purchase order is required to determine delivery authorization. By scanning a barcode on the waybill, the order is displayed on a screen in the Warehouse Management System (WMS), if available. Without delivery authorization, a supervisor needs to be consulted...

## 3. Checking the delivery time

The date needs to be checked. Here, the delivery date can be correct, too early or too late. Depending on this, work can either continue or consultation is required.

Afterwards the unloading is carried out by an autonomous transport vehicle.

## 4. Checking the state

The packages must be checked for external integrity. For this purpose, the player can control the automatic transport vehicles, which are used for unloading, via smartphone. The packages can be rotated so that they can be viewed from all sides. The consequences depending on the intactness correspond to those of the previous steps.

#### **Final action**

The waybill must have a corresponding entry in the event of a complaint.

This must then first be countersigned by the distributor (signature, name in clear script and license plate number of the tractor, simplified in the game by signature). Once this has been done, the player signs the waybill.

If there is no objection on any point, the player can sign the waybill.

Here the process of receiving the goods is completed and finalized with an assessment of the performance by indicating the errors.

#### **Purchase and license model**

The standard software is licensed on an annual basis. In addition, smaller adjustments and extensive individual developments can be ordered.

# Further information

#### Fraunhofer IML:

www.iml.fraunhofer.de/en.html

#### InGo VR

https://s.fhg.de/XR-en



# We look forward to working with you!

## **Contact**

Stella Kolarik **Team Digitization** Tel. +49 231 9743-229 stella.kolarik@ iml.fraunhofer.de

# **Arnd Ciprina Team Digitalisierung**

Tel. + 49 231 9743-243 arnd.ciprina@ iml.fraunhofer.de

Fraunhofer Institute for **Material Flow and Logistics** IML Joseph-von-Fraunhofer-Straße 2-4 44227 Dortmund