

R3-A3. Definition and structuring of key VR scenarios.



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INTRODUCTION

The InclusiveStone project focuses on the labour inclusion of people with disabilities in the natural stone sector, an industry that presents unique challenges in terms of accessibility and understanding of the working environment. Task R3-A3, "Defining and structuring the key VR-scenarios", is a critical component of this project, as it lays the foundation for developing the virtual reality (VR) scenarios that will be crucial for user learning and training.

The selection of key situations for implementation in the VR application has been a meticulous and considered process, involving the previous work carried out in the project and various tests and consultations with people with disabilities who are the target audience of the tool. This process has ensured that the VR scenarios created are not only representative of actual work experiences within the sector, but are also tailored to address the specific learning and accessibility needs of users with disabilities.

The VR scenarios selected for InclusiveStone seek to illustrate in a clear and detailed way the different work areas, specific tasks, safety protocols and work interactions that characterize the natural stone sector. The structuring of these scenarios has been done with the aim of offering an immersive experience that is both educational and empowering, allowing users to navigate and participate in a virtual work environment that faithfully simulates the real world.

Each scenario has been designed to promote comprehension and learning through direct interaction with the virtual environment, thus fostering users' confidence in their ability to perform in a real job. In addition, these VR scenarios are intended to serve as an awareness-raising tool for employers and co-workers, highlighting adaptations that can be made to facilitate the labor integration of people with disabilities.

This report and all the information about the project are available on the InclusiveStone project website: <https://inclusivestone.eu/>

Content

INTRODUCTION	2
KEY SITUATIONS	4
SCENARIO 1. Forklift Operator - Freight Transport.....	4
SITUATION 2. Forklift Operator - Truck Loading	5
SITUATION 3. Overhead Crane Operator - Table Handling.....	5
SITUATION 4. Overhead Crane Operator - Block Handling	6
SCENARIO 5. Cleaning Operator.....	7
SCENARIO 6. Waste management.....	8

KEY SITUATIONS

The identification of optimal jobs in the natural stone industry for people with disabilities, which do not pose a risk to their integrity, was a meticulous task carried out in the R1 work package. This careful and considered process has laid a solid foundation for safe labor inclusion in the sector. Below is a brief overview of the carefully selected and developed work situations.

SCENARIO 1. Forklift Operator - Freight Transport

Description:

In this section, users will learn how to operate a forklift in the stone sector in a practical and safe way, as well as the rules of the road in a natural stone factory. With real-time feedback, this section aims to improve the skills and knowledge of operators, contributing to a more efficient and safe handling of heavy materials in the stone sector.

Objective:

This experience includes challenges such as loading and unloading pallets of natural stone that have already been handled, manoeuvring in confined spaces and stacking heavy loads.



SITUATION 2. Forklift Operator - Truck Loading

Description:

In this specific section, users will have the opportunity to learn in a practical and safe way the techniques of loading a truck using a forklift within the context of the natural stone sector. In addition, they will become familiar with the traffic and safety regulations applicable to the movement of loads in the facilities of a stone factory. Through instant feedback and detailed simulation, this section is designed to reinforce the skill and knowledge of operators, promoting more efficient and safer handling of forklifts and thus the heavy materials that are common in the stone industry.

Objective:

This experience includes challenges such as loading and unloading pallets of natural stone that have already been handled, manoeuvring in confined spaces and stacking heavy loads.



SITUATION 3. Overhead Crane Operator - Table Handling

Description:

In this part of the program, participants will be instructed in the proper and safe handling of marble slabs using the interior overhead crane of a natural stone factory. This module is designed to teach users the correct operating techniques as well as the critical safety measures for handling these heavy and valuable loads. Through an immersive experience, operators will practice precise control of the overhead crane, improving their skills in a virtual environment

that accurately simulates real working conditions, minimizing the risk of accidents and increasing efficiency in material handling.

Objective:

In this training, users will face challenges involving loading and unloading heavy materials, precisely manoeuvring in tight spaces, and stacking bulky loads using the overhead crane.



SITUATION 4. Overhead Crane Operator - Block Handling

Description:

This module is focused on the handling of stone blocks outside the factory, using the overhead crane. Designed to instruct users in the specific techniques and safety considerations necessary for the successful and risk-free handling of large blocks of large size and weight. Through a virtual environment that faithfully replicates outdoor conditions, operators will be able to acquire and hone skills critical to the safe operation of the overhead crane, ensuring material integrity and safety on the jobsite.

Objective:

During this training, participants will encounter challenges including loading and unloading heavy materials, performing precise maneuvers in limited areas, and stacking oversized loads through the use of the overhead crane.



SCENARIO 5. Cleaning Operator

Description:

This training module is designed as a set of hands-on simulations focused on cleaning, which will provide users with the opportunity to improve their working methods and procedures. The aim is to ensure a more hygienic and protected work space, while contributing to the reduction of the environmental impact generated by the natural stone factory.

Objective:

In this section, users will learn key concepts, such as identifying priority areas for cleaning, as well as selecting appropriate cleaning products and equipment.



SCENARIO 6. Waste management

Description:

Waste management in a natural rock plant is a key process that involves a series of detailed hands-on simulations. These simulations are designed to help users refine their techniques and processes, resulting in more efficient and effective waste management. Proper waste management not only ensures a cleaner and safer working environment for all employees, but also plays a crucial role in reducing the environmental impact of the natural stone factory. By applying effective and sustainable waste management techniques, users can make a significant contribution to the preservation of the environment.

Objective:

In this section, users will acquire essential knowledge about waste management, including the correct choice of methods and tools for recycling and waste disposal, as well as guidelines to ensure responsible and environmentally friendly waste management.

