

# Advantages of Virtual Reality

The students are more eager to learn

1

## From a small incident to a big disaster

### Any incident scenario is possible

All incidents are possible, from a small accident to a large-scale disaster. The virtual incidents can even take place on company specific locations that are in real life difficult to enter, such as a tunnel or a building under construction.

2

## Consequences of decisions promptly visible

### Active, realistic and immersive training method

Students tend to experience a VR incident as very realistic. The stress and tension during an XVR exercise are quite serious, because the dilemmas and occurring problems closely resemble real life. Students receive instant feedback since the consequences of their decisions are visualized immediately in the VR world.



3

## Training risk and danger identification skills

### Seeking and recognizing visual signs

VR enables the students to train in recognizing visual signs and dangers. For instance a fire fighter who notices smoke development in a tunnel, a police officer who needs to find forensic traces of a crime, or a nurse who performs triage based on skin color and posture of the victims. VR can also be used to simulate the streams of CCTV cameras at a chemical installation, in a tunnel or stadium to train operators in recognizing risks and dangers. For example noticing a leaking installation or a suspicious individual in a crowd.

4

## Training tool with more output

### Unlimited practicing wherever you like

VR incident scenarios offer the opportunity to practice whenever and wherever you like. As soon as a scenario (including the script) is ready, you can use this time and again to train (other) students or more students per exercise. VR stands for practicing wherever, whenever and as often as you like with any possible learning objectives.



 e-semble

E-Semble develops simulation software - Serious Gaming - for the education, training and assessment of incident response and safety professionals, such as police, fire and medical services. E-Semble's mission is to increase the knowledge and expertise of these professionals resulting in a decrease of the number of victims and disasters. E-Semble combines an intrinsic knowledge of incident and disaster response with technical expertise on simulation software for educational and training purposes. E-Semble's two main products are the Virtual Reality training software XVR and the logistic chain simulator ISEE. E-Semble is European market leader in simulation software for the public safety and security sector. The simulation software is used by educators of police, fire and medical services, industry, traffic and tunnel operators in 14 countries (June 2009).

E-Semble bv is a privately held company in Delft based in the Netherlands with a team of 30 employees. E-Semble works in close association with academic and research organizations, such as Delft University, TNO, Free University of Brussels and Yale University. E-Semble has distribution partners in France, Germany and Italy.

<b>E-SEMBLE</b>
10 years of experience in Serious Gaming
Focus on improving skills of safety professionals
European market leader in simulation software for the safety and security sector

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# XVR

virtual reality training for public safety and security



## Virtual training at the site of an incident

XVR is VR training software to educate and train operational and tactical safety and security professionals. Using a joystick XVR allows one or more incident response professionals to walk around in the simulated reality of an incident. This gives them the opportunity to train in observing and assessing the environment. Furthermore they have to assess risks and dangers, decide which measures to take, what procedures to apply and report to other rescue crew members.

An essential feature of XVR is that the instructor can easily build a scenario and has full control over the course of events in the scenario. After starting the exercise, the instructor presents the student with questions and asks the student to motivate his decisions. He can also give feedback, for instance by role-playing the control room or other rescue staff. The instructor can respond to the student's decisions by activating events in the incident or jump to a next phase in the scenario.

# XVR Virtual Training

Build your own scenario for training, education and assessment

## 1 SCENARIO BASED ON LEARNING OBJECTIVES

Before starting the exercise, the instructor creates a scenario based on his learning objectives, which contains dilemmas he wishes to discuss with his students. The objective of the scenario that is shown, is to train ambulance crews in reconnaissance, assessment and decision making. The exercise is focused on reconnaissance, an initial triage of victims and planning the first deployment.

## 2 EMPTY ENVIRONMENT

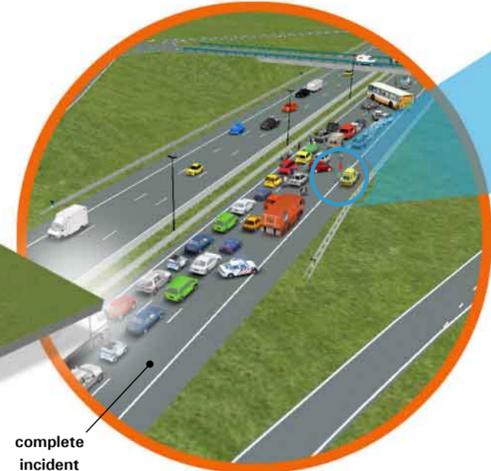
After starting up XVR, the instructor opens a 3D environment from the library (e.g. a railway crossing or industrial park). In this case the site of the incident is a highway. There are no objects in the environment. It is also possible to open a scenario which has been saved before and adjust this to match the learning objectives.

## 3 BUILDING A SCENARIO

Building an XVR scenario is simple. By clicking on an object in the 3D library (e.g. a bus **1**), rescue professional or victim) this object appears in the environment. By constantly clicking on new objects the instructor can build a basic scenario in less than 20 minutes.

## 3D OBJECT LIBRARY

The extensive 3D object library contains dozens of virtual environments and hundreds of rescue professionals, victims, vehicles, wrecks, fires, leaks and many more objects. These virtual objects enable the instructor to build any incident he can think of. By using his mouse and keyboard, he can put, move and rotate every object into place.



## 4 FIRST PERSON CHARACTER

For the first person character the instructor chooses a specific role he wants to train **2**, such as a fire fighter or police officer. By moving his virtual character with his joystick, the student can see the incident in a first person perspective. If multiple students are participating in a team training they are able to see each other as virtual characters walking around in the incident.

## 5 RECONNAISSANCE, TRIAGE AND ASSISTANCE

The student walks around in the scenario to get an overview of the situation. In a team training the students will have to communicate with each other **3** to get a good overview of the situation. The student can ask the dispatch centre for assistance.

## 6 INCIDENT MANAGEMENT

The student tells the instructor where he chooses to position the vehicles and how he wants to use the extinguishing agents. Using the checkboxes and slider bars the instructor can control the type of agent, the width and the force of the jet **4**.

## 7 EVALUATION AND FEEDBACK

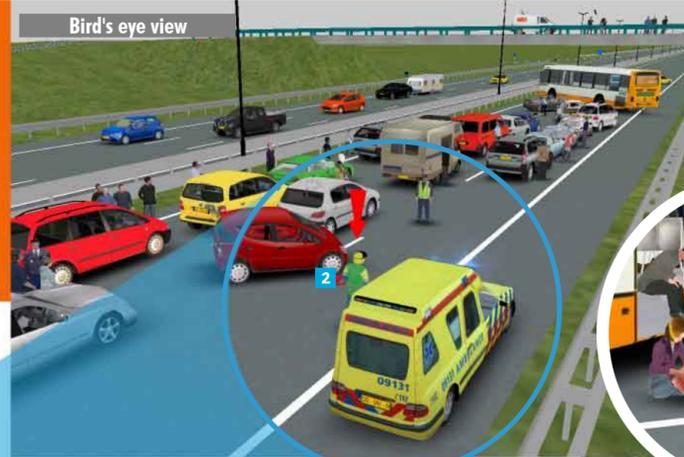
When the exercise is finished, the instructor reviews the actions and decisions with the student. The instructor can jump back to any moment in the scenario to have a close look at a specific situation.

## MODULAR XVR FIT FOR PURPOSE

XVR is delivered in 3 modules. De basic module 'XVR Virtual Tabletop' is very suitable for classroom instruction. The basic module can be upgraded with two modules; XVR Instructor and XVR Teamtraining.

## FEATURES OF XVR

- Class teaching - individual training - team training
- Modular structure, basic module with optional upgrades
- Software including implementation, service & support
- Instructor builds his own scenarios
- Realistic, safe learning environment
- Off-the-shelf VR simulation software



## XVR INSTRUCTOR

XVR instructor uses two computers with one screen or LCD-projector for the student computer and two for the instructor computer. While the student looks at the scenario from the perspective of the main character, the instructor can adjust the scenario on his computer without the student seeing the changes. In addition to the 3D library of the basic module, this module offers a large variety of dynamic objects. This module is suitable for individual training focused on reconnaissance, assessment and decision making.

Police crew

Fire brigade crew

Ambulance crew

## XVR TEAM TRAINING

XVR Team Training offers every student the opportunity to watch the scenario from his own point of view. As a result every student creates a personal view on the situation. It turns out that these views can be quite different from each other, resulting in inefficient team coordination and lack of an overall picture of the incident. XVR is a very powerful tool to train a team of incident response professionals in creating an overall picture that is shared by the entire crew, including all related processes and issues. If all team members share the same picture, they can coordinate their actions more efficiently and make effective team decisions.

