XVR

virtual reality training for public safety and security
Virtual Reality

Virtual Reality (VR) is the technique of simulating a three-dimensional world using computer technology. The computer is used to create a virtual 3D scenario of, for example, a highway, a tunnel, an industrial site or a city centre using a series of 3D objects (e.g. vehicles, houses, trees, human beings etc.). Using a joystick you can move a camera through this 3D scenario, which will give you the feeling that you are part of the scene. In this virtual world you can walk, drive or fly around, open doors, enter buildings and have a look in and under all kinds of objects.

VR simulation for incident response professionals

VR is a great tool for education, training and assessment of safety and security professionals because any accident or disaster scenario can be simulated. This professional use of computer gaming technology is also referred to as “Serious Gaming”. The student assesses the incident, communicates with other students and makes appropriate decisions for further assistance. The consequences of his decisions become directly visible in the virtual world and require new decisions. Since every dangerous situation can be simulated, the safe virtual exercises are very suitable to train deployment procedures, to plan incident management strategies and increase focus on the (personal) safety of incident response professionals.
Training observation skills
XVR is VR training software to educate and train operational and tactical (bronze and silver level) safety and security professionals. Using a joystick XVR (short for eXerciseVR and eXamVR) allows one or more incident response professionals to walk, drive or fly 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 and what procedures to apply, and report to the other rescue crew members. While the students are distracted by surrounding noise and confusion, they are expected to focus on their tasks and to set priorities.

The instructor is in charge
An essential feature of XVR is that the instructor can easily build an incident scenario and has full control over the course of events in the scenario during the exercise. After starting the exercise, the instructor presents the student with questions ("You are the first arriving unit, which other units will you deploy?") 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 virtual scenario (e.g. the deployed units arrive at the scene). The instructor may also decide to condense time and jump to a next phase in the incident (e.g. escalating the fire or changing the weather conditions). The instructor asks the student to assess the new situation and respond appropriately (e.g. give the rescue crew which just arrived instructions where to park their vehicles and which tasks to carry out). The instructor is not limited by a predetermined scenario, but can use his full experience and creativity to influence the scenario during an exercise to optimize his learning objectives.

Training for individuals and teams
XVR training under guidance of an instructor can be used to train one student (individual training) or a group of students (team training). In a team training (single disciplinary or multidisciplinary teams), every student has his own role in the incident. Each student uses his own joystick and screen to walk around in the scenario. The students also see each other moving around on the site of the incident. Team training exercises are very suitable to practice communication and reporting skills. During XVR training sessions, the students communicate through regular radio equipment or face to face in the training area.

Evaluation, feedback and analysis
The instructor can freeze the scenario at any moment to give individual feedback or to discuss alternative decisions in the group. The instructor can also make a screen dump of the situation at any point. Furthermore, the feedback functionality in XVR allows the instructor to save the decisions and actions of the students.
Learning objectives determine the realistic level of VR
Highly realistic VR is not a goal in itself, but a tool for an instructor to achieve his learning objectives. Although a perfect 3D environment with realistic 3D models may be an excellent simulation of real life, it doesn’t guarantee the quality of a training. VR is a powerful tool to visualize an incident and to trigger part of the threatening atmosphere and stress of such an incident. But it only offers an effective training if the incident scenario is based on clearly defined learning objectives and is managed by experienced instructors. XVR has not been designed to copy the real world or to replace field exercises, but to achieve the learning objectives of the instructor.

Training is much more than 3D simulation
The instructor builds the perfect scenario
XVR does not provide ready-made scenarios with predefined learning outcomes. Instead, the 3D library in XVR allows the instructor, based on his own experience and expertise, to build the perfect scenario to achieve his learning objectives.

‘Do it yourself’ principle
The instructor determines the scenario instead of the software
From an educational point of view, E-Semble has decided to let the course of the scenario fully depend on the choices of the instructor. Fully automatic simulation of physical processes, such as behavior of smoke and fire, is intentionally not part of the software. Since the instructor exactly determines what happens when, the scenario plays a supportive role in achieving the learning objectives instead of the student playing a supportive role in a prescribed scenario. Customer experiences show that the central role of the instructor accelerates the implementation of VR by the users and increases the effectiveness of the training.

Computer as a tool, not a purpose
Hesitant in applying artificial intelligence
From a technical point of view it is tempting to develop VR training software that perfectly simulates reality: cars that determine their own destination, talking virtual victims, rescue professionals that work independently and fires that escalate automatically. It turns out that users don’t need prescribed scenarios in which all kinds of events happen automatically, because this doesn’t leave much flexibility to respond to the students’ decisions at your own time and manner. Besides, training is a human and social process, which is preferably carried out by experienced instructors. XVR is meant to support the instructor’s work, not replace it.

Pragmatic approach
Software should be simple and reliable
Many software products are technological ‘jack-of-all-trades’ with countless features and menus that can only be used by experts because they are so complicated. XVR is developed for educators, not for computer experts. XVR offers a limited but neatly arranged set of features that match very well with the educational needs of instructors. Thanks to this focus XVR is a solid and reliable software package with a user friendly interface, which can be used by any instructor or student. XVR has more educational value thanks to less complex technological solutions. This makes XVR also available to educators with a modest budget.
XVR Library

XVR users have access to an extensive 3D-model database, the XVR library. The XVR library contains dozens of 3D environments and hundreds of virtual objects such as rescue professionals, people, victims, vehicles, wrecks, fires, leaks and countless other objects. The library is updated with new environments and object on a regular basis. All the objects in ‘XVR Virtual Tabletop’ are static objects. These objects cannot be changed over time. In addition to these static objects offered by the basic module, the ‘XVR Instructor’ module offers a collection of dynamic objects such as adjustable fires or an adjustable explosion range as well as victims to which triage can be applied. These adjustable objects allow the instructor to make changes to the scenario (without the students noticing) so the scenario changes dynamically over time.

XVR Basic Module

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Basic Module

The XVR Basic Module is the core of the XVR Virtual Tabletop platform and provides the foundation for all other modules. It includes a comprehensive library of 3D environments and objects, allowing users to create realistic scenarios for training purposes. The basic module features include:

- Unlimited access to the XVR library, containing a vast array of 3D environments and objects.
- Static objects that remain unchanged over time, ensuring consistent training scenarios.
- A combination of virtual objects representing rescue professionals, people, victims, vehicles, wrecks, fires, leaks, and countless other objects.

Upgrade Module 1

The Upgrade Module 1, also known as the Instructor module, builds upon the Basic Module by introducing dynamic objects that can be manipulated in real-time. These dynamic objects enhance the training experience by allowing instructors to adjust scenarios on the fly, providing students with a more dynamic and realistic training environment. Key features include:

- Adjustable fires and explosions, offering realistic training for firefighting and emergency response.
- Adjustable victims that can be triaged, simulating real-life medical emergencies and decision-making.

Upgrade Module 2

The Upgrade Module 2, referred to as the Team Training module, further expands the training capabilities of XVR Virtual Tabletop. This module focuses on multi-disciplinary team training and includes features that enable instructors to manage scenarios involving multiple teams:

- Three or more computer systems can be connected to a network, facilitating multi-disciplinary exercises.
- Courses of action can be changed in real-time, allowing instructors to control the scenario dynamically.
- Virtual tabletop discussions can be conducted collectively, fostering collaborative decision-making and communication.

XVR Licenses

To use ‘XVR Virtual Tabletop’ you need a license which allows you unlimited use of the basic module on a single training computer. The basic module can be upgraded with the upgrade module ‘Instructor’. In the same way the ‘Instructor’ module can be upgraded with the ‘Team Training’ module. All XVR users have access to the Helpdesk (from 8:00 to 22:00 GMT+1) and have access to XVR CustomerWeb to share scenarios and experiences.

Virtual tabletop scenarios for classroom instruction

The XVR Virtual Tabletop is used on a single laptop or PC together with an LCD-projector to discuss the incident scenario in a class. This module offers unlimited access to the XVR library with dozens of 3D environments and a wide range of 3D incident objects, rescue professionals, vehicles and equipment of all disciplines. This module is very suitable for classroom instruction and discussing virtual tabletop scenarios (a static incident scenario), such as carrying out the first reconnaissance and making the first deployment decisions.

The XVR Virtual Tabletop module can be upgraded with two modules depending on the educational requirements and training needs.

Individual training for reconnaissance, assessment and decision making

XVR instructor uses two computers with 3 screens, 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 such as sizable leaks and fires.

This module is suitable for individual training focused on reconnaissance, assessment and decision making.

Mono- and multidisciplinary team training

This module enables you to connect three or more computers to a network for mono- and multidisciplinary exercises. By connecting extra computers to XVR Instructor a group of students can practice together in the same scenario. The students can see each other moving around in the scenario as a 3D object and communicate with each other through radio connection or face to face meetings in the training area. One or more instructors can be in charge of the learning objectives and they do role-playing towards their students. It is preferable to have a training assistant control the scenario by changing the course of events or entering the student’s decisions into the computer. Team training exercises are well suited to train communication and reporting skills.

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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.

For the first person character, the instructor chooses a specific role he wants to train, such as a fire fighter or police officer. In this case, the first person character is the head nurse of the first arriving ambulance. By moving his virtual character with his joystick, the student can see the incident in a first person perspective. The instructor can switch between the student perspective and the helicopter view.

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 this scenario 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.

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

Static objects
All objects in the XVR Virtual Tabletop are static. These objects can’t be changed during the exercise. For example, the instructor can choose from a small, medium or large leak but he can’t change the size of the puddle during the exercise. What he can do is replace a small puddle by a large one. These changes in the scenario are visible for all students, so they can’t be done unnoticed.

The nurse sees a police officer in the distance. The student may choose to ignore or address this police officer. The instructor plays the role of the police officer and provides the nurse with extra information on the accident. The nurse keeps walking and comes across victims on various locations.

Once the student is sure that he has a complete overview of the incident, he decides which assistance he wants to deploy.

In class the instructor evaluates and discusses the reconnaissance, triage of the various victims and the decision for assistance.
XVR Instructor

Individual training for reconnaissance and decision making

1 INITIAL SITUATION: ARRIVAL FIRST PERSON
This model scenario takes place on the grounds of a chemical plant. A control room operator has noticed a leaking pipe on one of the CCTV cameras. A field operator is lying on the ground next to the gas emission. The control room operator reports the incident to the fire brigade. In all scenarios the student drives up in his vehicle. The commander of the fire brigade (first person) and the safety officer of the plant arrive at the scene at the same time. The student (first person) uses the joystick to walk around the scene. He can walk everywhere, go up stairs and enter buildings. The student can only watch the scenario from the first person perspective.

2 RECONNAISSANCE: DANGEROUS SUBSTANCES
The instructor has defined an area around the gas leak with a higher gas concentration, resulting in a high explosion risk. He can change the center and radius of the danger zone any way he likes. The instructor can see this danger zone on his screen, but the student can’t. The student has to take into account the high explosion risk of the gas cloud and keep proper distance from the danger zone. Using a gas meter, the instructor can measure the explosive limits. The instructor decides which gas it is and asks the student how he wants to deal with the incident and which kind of further assistance he needs.

3 ESCALATING THE INCIDENT
The instructor can change the scenario at any point to achieve his learning objectives. For instance, he can ignite the gas leak to become a jet fire. The user-friendly checkboxes and slider bars allow the instructor to adapt the size, strength and direction of the jet fire. In this case, the instructor directs the fire to start heating an adjacent pipe rack.

4 NEW ASSESSMENT: REQUEST FOR EXTRA ASSISTANCE
The student tells the instructor which assistance he wants to call in. The number of vehicles that can be called in (medical, fire, police etc.) is determined by the instructor.

5 INCIDENT MANAGEMENT
The instructor asks the student where he chooses to position the vehicles and how he wants to use the extinguishing agents. Crew members (wearing protective gear) and equipment can be deployed at any point in the environment for assistance and fire fighting. Extinguishing can be done with water and/or foam. Water collection and hoses can be determined by the student. The first priority for the student is to assign the control room operator (played by the instructor) to close the leaking gas pipe. The response should be aimed at saving the victim next to the leaking pipe and cooling the adjacent structure and pipes. Using the checkboxes and slider bars the instructor can control the type of extinguishing agent, the width and the force of the jet.

6 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.
XVR Team Training

Mono- and multidisciplinary team training

1 INITIAL SITUATION OF THE EXERCISE

In this model scenario a derailed train at a railway crossing creates the scene of the incident. The instructor can choose from a cargo train or passenger train colliding with a bus or a tank truck. All students arrive in their own vehicle at the scene and start their own reconnaissance.

2 EDUCATION AND TRAINING OF TEAMS

Learning objective of this scenario is to train the communication and coordination skills of incident response professionals of all disciplines. Other players can also participate, such as a civil servant for public safety and control, a control room operator or members of the Silver and Gold level teams. The exercise focuses on the first individual reconnaissance, followed by a discussion on further assistance. An essential feature of the VR scenario is that it starts off with giving the students the opportunity to get a clear picture of the incident. As soon as they have a good overview, they leave the VR environment and focus on face to face meetings and reporting in the training area. If the instructor decides to change the scenario, the students go back to the VR environment.

3 ROLE-PLAY DURING THE EXERCISE

One or more instructors provide coaching and role-play during the exercise. Decisions or scenario changes are entered into XVR by a separate training assistant. This allows the instructors to focus entirely on teaching and coaching the students.

4 CORDONING AND TRAFFIC MANAGEMENT

This scenario has a key learning objective in store for the police. Cordons need to be placed to divert traffic. But at the same time the site of the incident should be accessible for fire brigade equipment and transport of victims. Coordination with the other discipline crews (fire and ambulance) is essential.

5 FORENSIC INVESTIGATION

The police carry out a forensic investigation to get more information about the cause of the accident. In the traffic queue the police find a bus which was involved in a robbery. This bus is searched for evidence.

6 MAINTAINING PUBLIC SAFETY

CCTV cameras pick up signals that football supporters are causing damage at the station. The police commander needs to decide how many officers he will send away from the incident scene to the station to maintain public safety. Another option is to call in a riot police crew.

7 PARTICIPATION OF THE CONTROL ROOM

This scenario is also well suited to train communication with the control room operator or CCTV camera operator. The student operator is located in a separate training room and can only communicate with the other students through the walkie-talkie and based on what he sees on the cameras.

8 PARTICIPATION SILVER AND GOLD COMMAND

A team exercise can also be used to train Silver and Gold command teams. These teams receive their information through walkie-talkies from the officers on the scene, possibly added by helicopter images of the incident.

VR SHAPES PICTURE FOR COORDINATION MEETING

XVR Team Training offers the same training facilities as XVR Instructor. The major difference is that in XVR Team Training a group of students can work together in the exercise. Every student has his own computer with a joystick and screen and moves around in the virtual scenario in first person perspective. Because all the computers are linked together in a network, they all move around in the same scenario and are able to see each other in 3D. They communicate with walkie-talkies and face to face in the training area. All communication is recorded separately. Each decision made by any of the individual students has an effect on the course of the scenario.

INDIVIDUAL VIEW ON REALITY

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 insufficient 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.
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. Virtual training on company specific locations is also an option. The virtual incidents can even take place on 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 training method with high empathy level
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 in the VR world. Since the students are actually moving around on the scene (and don’t have a helicopter perspective to overlook the entire incident, like in a traditional tabletop exercise) the students experience stress and time pressure by lack of overview. Furthermore they experience the importance of choosing the right position on the incident location and the necessity to prioritize actions and maneuvers (where do you go first, what is the first thing you do). After a few minutes the students feel as if they are really involved in the problems they are facing in the scenario, which considerably increases their willingness and eagerness to learn.

3. Training risk and danger identification skills
Seeking and recognizing visual signs
During a traditional exercise the students are sitting in a classroom. They are presented with a scenario on paper on which they have to respond. There is a total lack of perception of the incident environment while it is actually one of the vital tasks to assess the situation. 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. Students can practice at their own workstation on a standard multimedia computer with a good graphics card on their own or together with an instructor. This makes the VR scenarios also suitable for refresher courses and training nights, for instance on an ambulance post. Since XVR can be used for small and large incidents, from commander to operational level, and from operational trainings to tactical exercises, the output and performance of VR as training tool are considerably higher compared to other educational tools.

Advantages Virtual Reality

The students are more eager to learn
XVR adds to educational value

VR offers specific opportunities to train reconnaissance, assessment and decision making skills which are difficult to train with traditional education methods.

XVR can be used in all phases of the education cycle of schooling, training, practising and examining. Virtual incident scenario’s can be used for class teaching, individual exercises and team trainings.

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A SCHOOLING
- Classroom instruction tabletop scenarios
- Preliminary review of field exercise
- Evaluation field exercise/real incident

B TRAINING
- Individual training: Reconnaissance, assessment and decision making
- Team training: Communication and reporting

C EXERCISE

D ASSESSMENT
- Since the VR incident scenarios are always the same, constant and objective assessment is possible.

APPLICATION AREAS XVR

PUBLIC SAFETY SERVICES
- Fire Department
- Police Department
- Medical services
- Multidisciplinary trainings
- Petrochemical industry
- Storage and tranship
- Vital infrastructure

TRAFFIC & TRANSPORT - SAFETY AND SECURITY
- Tunnel and traffic safety
- Airport fire department and security
- Harbour and offshore industry

All bronze and silver level incident commanders
Safety managers, field operators
Security and CCTV camera operators
Controllers, operators
Road inspectors, traffic controllers
Airport fire crews, CCTV camera operators
Health and safety managers, operators
FIRE FIGHTING

Fire in an apartment building
In a three level apartment building with an underground parking garage in a residential area there is an outbreak of fire. Victims are enclosed on various locations in the building; on the balcony, the staircase and near several windows. They are moving and cry for help.

The instructor chooses the location of the seat of the fire, the number of victims and he decides if the windows/doors are open or closed. The smoke spreads through the building (area related smoke logic). There are bystanders who give information about the situation and cause of the fire. Points of interest are for instance the driving directions for the fire department and other rescue vehicles, and the availability of staff and equipment.

ASSISTANCE / COMMANDING STRUCTURES

Accident on a highway
There has been an accident on a highway. The accident can vary from a simple rear-end collision to a complex accident with dangerous substances involved. Multiple units of various disciplines are needed to rescue the trapped victims from the vehicles. Close team work between the assisting disciplines is crucial to bring the incident to a satisfactory conclusion.

The instructor determines the number of victims, the type of dangerous substance in the tank truck, the presence of bystanders, the availability of staff and equipment, the weather conditions and the development of smoke and fire.

ASSISTANCE / COMMANDING STRUCTURES

Accident on a railway crossing
On a railway crossing a train has crashed into car traffic. Victims are trapped in the train, but also in several vehicles. Because of the incident the footbridge over the railway has collapsed. Teamwork between all disciplines is required to rescue the victims and to prevent the impact of the incident to get any larger. The instructor chooses the train type (for example a passenger train or cargo train), the vehicles that were involved in the crash (for example a passenger bus, tank truck or money transport vehicle) and the directions of arrival of the assistance vehicles.

WARNING

EXERCISE SETTING

Model Scenarios

Dozens of virtual incident scenarios available
Industrial incident scenarios

For international petroleum and chemical industries E-Semble has developed special industrial VR scenarios. The incident environments contain (parts of) petroleum and chemical plants, LPG storage tanks and pipeline routes. Using state of the art laser scan technology, it is possible to make a detailed 3D replica of a plant. But we can also build a virtual training site based on existing 3D-CAD models.

The virtual plants are used to educate and train appointed safety persons and the industrial fire department. But also for testing and simulating escape routes and carrying out a safety analysis or evaluating real safety audits. Security managers can use the 3D environment to design and test a new security infrastructure, for example to determine the reach/visual field of CCTV cameras. For these particular design purposes the 3D model of a new plant doesn’t need much detail.

PETROLEUM AND CHEMICAL INDUSTRY

Accident in a tunnel

In a tunnel several vehicles are involved in a collision. In a number of vehicles victims are trapped and one or more vehicles are on fire. In front of the tunnel is a long traffic queue. The instructor can choose the type of vehicles involved in the crash (passenger cars, passenger bus, cargo transport, tank truck with dangerous substances), the number of victims and the availability of staff and equipment.

The Mont Blanc Tunnel is one of the tunnel operators in Europe that uses VR technology to train control room operators and rescue professionals in incident management skills in a tunnel. E-Semble has built a detailed 3D model of the entire Mont Blanc tunnel including toll booths, information screens, the ventilation system and all escape routes and locations for shelter. The tunnel operators watch the incident through CCTV cameras and in case of an incident they need to manage the ventilation system, information screens, barriers and traffic lights. The security staff deploys crews in the tunnel to fight fires and to rescue passengers.

Examples environments

We can design any location, a street, a building, a tunnel, a train or plant into a 3D model. We can develop such a 3D model based on a map and photos of the location, CAD models (these models are often already made by architects or technical consultancy firms) or with innovative technologies such as laser scan technology. For a large number of clients we have designed specific virtual environments such as city parts of several cities in the Netherlands, a chemical plant of ExxonMobil in Rotterdam-Botlek, the Mont Blanc Tunnel and Aircraft Fuel Services at Schiphol Airport.
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Petroleum and Chemical Industry
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Assistance / Commanding Structures
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Educational support and implementation plan

Service & support

1. Software, instructions and implementation
   The success of educating, training and practicing with XVR strongly depends on the quality of the educational plan, qualified instructors and appropriate training areas. This is why E-Scemble doesn’t only deliver the software package XVR, but also takes care of educating the instructors (‘train the trainer’) and supports the organisational implementation (e.g. the set-up of the training area). In close consultation with a contact person from E-Scemble each client composes a tailor-made implementation plan and service & support package.

2. Helpdesk and hardware support
   E-Scemble’s support staff is keen on supporting and optimizing your trainings and exercises. From 8:00 to 22:00 GMT+1 all XVR users can call the helpdesk of E-Scemble with questions about XVR. If the training computer is connected to the internet we can also provide ‘remote assistance’. This means that E-Scemble temporarily takes over the control of the computer to solve any problems. In case an XVR user can’t continue the training, despite of phone support or remote assistance, E-Scemble makes sure that training can continue by arranging a complete set up computer from E-Scemble.

3. Train the trainer
   E-Scemble offers specific training for XVR instructors and training assistants. During the training sessions they learn skills that are necessary for an optimal output from XVR. In the basic training an instructor is acquainted with the educational and technological potential of XVR (setting up training objectives, developing incident scenarios and training XVR interactivity). And he learns how to set up and use VR training on his own. In the training ‘Coaching on the job’ the E-Scemble trainer attends one or more training sessions on site and coaches the instructor(s) on the job. The coaching focuses on (a.o.) a (new) education plan, introducing VR into parts of the organisation or the implementation of examining with VR. The training ‘Team Training’ focuses on the design, set up and management of a single disciplinary or multidisciplinary team training.

4. Exchanging knowledge and experience
   On a regular basis E-Scemble organises scenario workshops. During these workshops instructors get to know the potential of (new) scenarios and they can exchange lessons learned and best practices with each other. They can also exchange knowledge and experiences on the ‘CustomerWeb’, a special website for XVR users all XVR instructors have access to. This contains a scenario library where instructors can publish scenarios and supporting teaching material such as teaching maps. Each year E-Scemble organises several user conferences for its international user group. During this event we present our new software development plans and users show each other how they train, teach and practice.

International user group

E-Scemble’s XVR users are organizations responsible for the education, training and assessment of incident response professionals. These include governmental agencies as well as corporate teams of appointed safety persons, for instance in the petrochemical industry.

E-Scemble’s simulation software XVR is being used in 14 countries and over 60 educational facilities, for example governmental and commercial training centers, universities, vocational training institutes and in company training centers.

The Dutch fire service exam board and the Dutch Traffic Authority use XVR to assess incident response professionals. XVR is also used by the petrochemical industry like ExxonMobil and BASF and by operators of (vital) infrastructure like the Mont Blanc Tunnel.

60 facilities in 14 countries

XVR Users

- Over 60 educational facilities in 14 countries
- Dutch Fire & Rescue Regions
- Dutch Police Academy
- Nbbe - Dutch fire service exam board
- Dutch Traffic Authority
- Fire & rescue academies in UK, Germany, Austria, Estonia and Belgium
- Industrial fire brigades, among which ExxonMobil, BASF and Aircraft Fuel Supply (Schiphol Airport)
- Tunnel authorities, among which the Mont Blanc Tunnel
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.

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