

FACTSHEET

Policy Considerations for VR training



**based on the D3.3 - European Framework for
Training and Assessment (using VR) of DMA-SR
Behaviour of Professionals**

TARGET GROUP: policy-makers and training coordinators

WHAT TO EXPECT: Recommendations for decisions that need to be considered regarding implementing police VR training into existing training structures.

SOURCES: based on empirical and experiential findings of the research studies and feedback meetings of the SHOTPROS project

Note: There are separate factsheets for implementation considerations for VR training (outlining guiding questions for policy makers, training coordinators, and police trainers for implementation of VR training) and for police trainers (summarising didactical guidelines for VR training).

1.1 Legal, ethical, privacy and safety considerations

Legal agreements between VR providers and end users must (at least) ensure that they:

- Protect **existing** rights (copyright of software, pictures of material, publishing data, dissemination)
- Allocate **future** rights of any new creation (duty of confidentiality, test options)
- Determine legal settlement in the event of **costumer failure** or abuse of VR system
- Determine legal settlement of VR **provider responsibility** in the event of (technological) failure of VR system
- Determine legal settlement in the event of **personal injury** (motion control, epileptic seizures) and product liability (copycat-violence, trauma)

Policy-makers, training coordinators and trainers should be alert to ethnic profiling: “intentionally or unintentionally stigmatising or stereotyping certain groups, based on their ethnicity, culture, religion, gender or appearance”. VR can contribute to train and reduce implicit biases of officers and raising awareness of ethnic profiling by rapid variation of environment, cultural perception, and changing appearances of bystanders.

Policy-makers, training coordinators and trainers should consider the normal safety precautions (as in real-life police training) and transfer these precautions to VR training. Previously established rules of conduct for real-life training, such as interaction with fellow trainees and "no-play" provisions can be applied to VR. Nevertheless, there are some VR-specific points:

- VR provides a **safe environment** to train high-risk situations with minimal risk of physical harm (injuries) to trainees (compared to FX training, for instance).
- **Motion sickness** can lead to dropout of trainees in training and negative experience with VR. Specific protocols should be developed, possibly in collaboration with the VR provider (technical requirements) to **reduce** motion sickness.
- **Hygiene** should be considered because trainees wear VR-suits while being physically active and possibly sweating a lot; specific protocols (such as using hygienic and odour-eliminating sprays like myrazine) should be developed to ensure proper hygiene measures
- When dressing or undressing **body sensors** with direct contact to the skin, an **area** should be provided to provide **privacy for trainees**.
- When using live monitoring of heart rate variability as an indicator of stress during a VR training session, a protocol should be in place that **addresses incidental medical findings** and how these will be handled.

VR systems offer great possibilities to store valuable training information as VR features (In Action Monitoring - IAM, After Action Monitoring - AAR) are able to monitor how trainees move around in the virtual environment, store training data and monitor progress and performance over time. These possibilities ask for proper policy development, particularly on data storage of VR training output. In particular:

- **Anonymity** of data
- Short vs. long-term
- **Accessibility** to stored data
- **Visibility** of individual data when team viewing in the AAR or IAM
- VR system use: **disconnect from public channels** (i.e., use of a free radio channel)

1.2 Logistics

Compared to real-life training, VR training allows for:

- Training **independent** of physical **location** availability
- Training independent of **weather**
- The use of **less trainers** per training
- The use of **less role-players** per training
- The use of **less additional staff** per training
- A **reduction in preparation time** for trainers
- A **reduction in material** for training preparation
- **Lower environmental footprint** due to less travel (back and forth), less consumables used (FX ammunition, fuel, etc.). Although this of course depends on where training takes place and what type of training VR replaces.
- **Replay** of a scenario **without investing** time and material in “re-building” the exact same situation (e.g.: put chairs on position again, replace broken glass, set all role players on the last position etc.)

1.2.1 Set-up

Set-up and organisation	
Location	<p>To ensure efficiency, the VR training location should be separated into three distinct areas:</p> <p>Preparation: This area should contain the VR suits and equipment (like tactical belt, power stations for gear, etc.) and is solely dedicated to preparing the trainees for VR. If certain body sensors (as used in the SHOTPROS VR solution) are part of the training, a mobile wall has the advantage to provide a more private area to get the sensors attached to the trainee's body, as the sensors need to be worn on bare skin and thus putting them on involves undressing.</p> <p>Execution: This area should contain the floor space suitable to the scenarios planned and meet the technical requirements to accommodate the VR system. This area is dedicated to the calibration of the VR system and execution of the training scenarios. This also includes space for the operating station for a technical operator of the system (exercise control station)</p> <p>In- and After-Action monitoring: This area should contain the AAR station and sufficient space for the trainer to monitor the scenario during action (IAM) and also for trainees to view the screen after the execution and is solely dedicated to viewing scenarios.</p>
Group size	<p>In general, the number of people in the training must fit:</p> <ul style="list-style-type: none"> • Number of available smart vests • Computer power to track the smart vests. In SHOTPROS we experimented with up to 6 vests. Number of trainees in the VR should resemble with the number of the real-life duty on patrol. Should the number of trainees exceed, trainers can decide to assign trainees with role-player tasks (see information on role-players below). <p>If professional/trainer role-players are needed for the scenario, trainers can provide the additional trainees (those that do not have an active role as an officer) specific viewing assignments using the AAR trainer station. To ensure sufficient active training time for trainees and avoid waiting time of trainees in larger training groups, trainees that have not been assigned with an active officer role in the scenario can act as role-players. Ideally it is determined</p>

	<p>before the training which numbers of trainees execute, act as role-players and observe the scenario at a given time (to avoid waiting time).</p>
Trainees	<p>To take advantage of the VR features efficiently, training groups can be split into subgroups, for example one subgroup can execute the training scenario, while the other subgroup receives feedback with the AAR tool.</p> <p>Depending on the goal of the training, trainees can take on various roles in VR: the officer, the suspect, bystanders, “ghost” observing the scenario. Trainers should ensure that trainees have an active role in the scenario and avoid waiting times of trainees without any tasks. Therefore, the attending groups and the planned scenarios should match and be planned properly in advance. A training schedule considering group size and roles is important to be prepared in advance by the trainer and provided to the trainees.</p> <p>As VR training can be as exhausting as physical training, trainees should be prepared to bring enough water and clothes to change into after training like they are used to when doing physical trainings.</p>
Trainers	<p>More technical knowledge (such as basic knowledge of computer controls) and skills (such as handling of the controllers of the VR AAR) are needed from trainers, compared to real-life training. Trainers need to be prepared and trained to master the (technological) skills for VR training.</p> <p>The roles of the trainer are to supervise and direct the preparation and execution and then supervise and execute the AAR feedback phase. Ideally, both is done by the same trainer for the same group of trainees as the trainer will already be familiar with the individual trainees and their performance within the training and is aware of what needs to be addressed in the AAR after the execution.</p> <p>For further information on the tasks of trainers see FACTSHEET “Implementation Considerations for VR training”.</p>
Role-Players	<p>Interaction with so called non-playing characters (NPCs), these are pre-programmed or automated characters in the VR environment) is limited and not all training can be effectively done with limited options for interaction.</p> <p>Depending on the learning objectives and the selected scenario, a role-player might be necessary to enrich the realism of a scenario.</p>

	<p>Multiple options for role-players exist:</p> <ol style="list-style-type: none"> 1) Trainers act as role-player 2) Trainees act as role-player 3) (Professional) actors act as role-players <p>Role-players need detailed instruction and options to react on certain trainee actions. This suggests the use of a trainer or at least an experienced officer for role-playing as this person can – in real time and on the fly - change the interaction with a trainee and react on their behaviour to increase the learning effect.</p> <p>Using trainees as role-players allows trainees to experience a scenario and officer behaviour from a different perspective. This perspective allows the trainee role-player to provide specific feedback to the trainee that played the officer based on their experience of the officers’ actions.</p> <p>When using role-players only for this purpose and throughout multiple training sessions on the same day, it needs to be considered that acting as a role-player in VR requires a large amount of cognitive effort. Thus, when setting up a VR training with role-players (other than trainees of the same session), it should be ensured that role-players have a sufficient break between sessions and/or multiple role-players are available to take turns.</p> <p>Depending on the need for and extent of dispatcher communication the trainer can fulfil dispatcher communication, or another role-player is needed for this purpose.</p>
<p>Operators</p>	<p>The operator of a VR system is responsible for the technical guidance of the VR set-up and the scenario. In general, the operator of the VR system is provided by the VR system provider. Alternatively, an experienced trainer can act as an operator after receiving sufficient training in using the software and managing the course of the scenarios.</p>