

THE TRAINING COMPLEX

“SARMAT”

INTEGRATED WITH THE SIMULATOR “SKIF”

“SARMAT” complex is designed to train various tasks for the capturing and defending buildings and surrounding area.

The product is created according to the technical task of the customer.



What is the “SARMAT” complex?

What is included in the “SARMAT” complex?

- 1 The command post
- 2 The main training complex
- 3 Video surveillance system and controlled audio system
- 4 Electronic devices (targets, mines, etc.)
- 5 UAVs, quadrocopters
- 6 The system of personal control of the psycho-physiological state of the soldiers
- 7 Modular mobile shelter system
- 8 Paramedic training system

The training complex “SARMAT” is a comprehensive solution for training special units in order to develop their skills according to the norms of combat training, and for creating various situations.

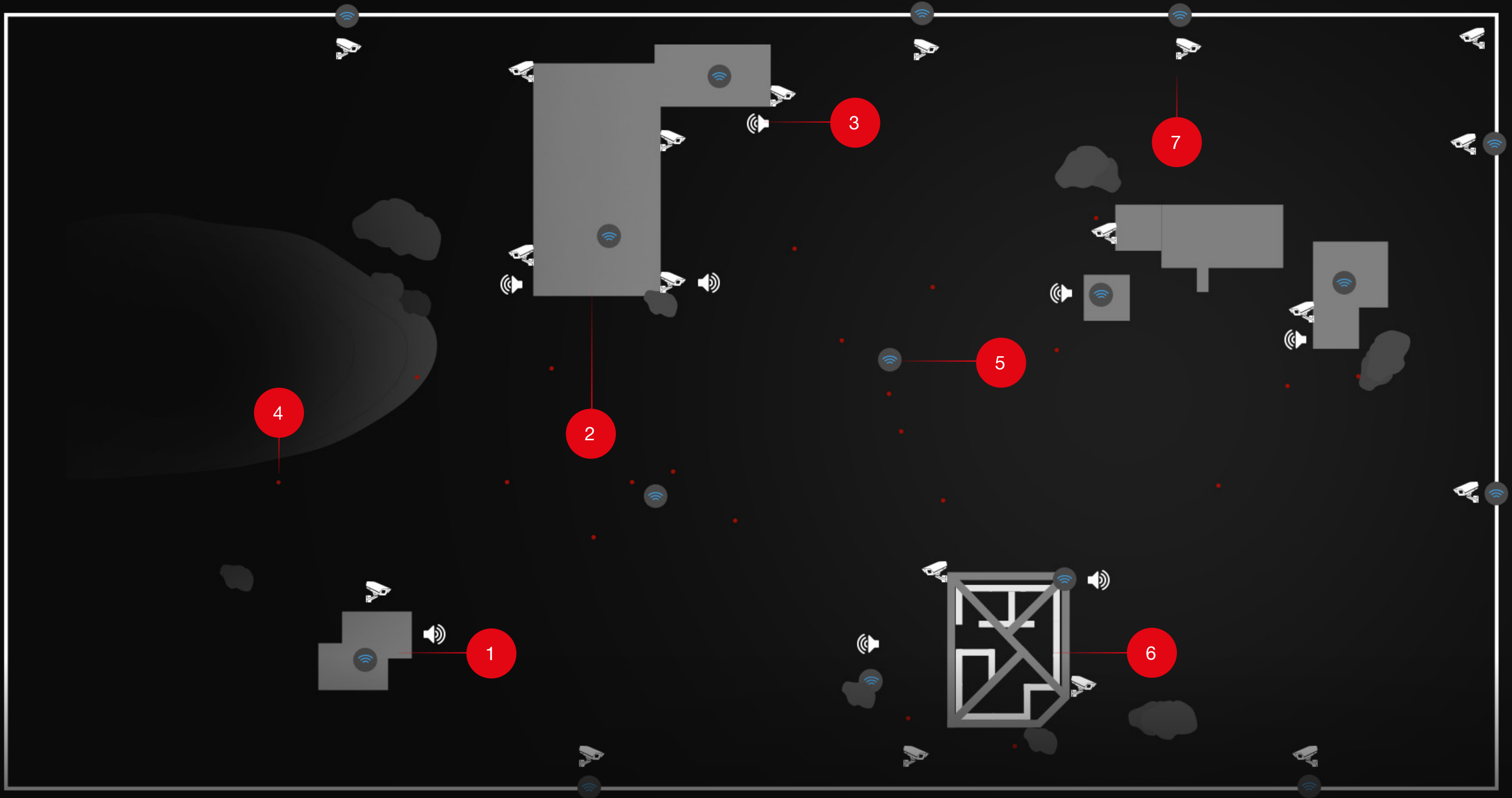
The main purpose is to sharpen the skills of commanders of various levels in the management of personnel in order to fulfill assigned tasks; and also to develop the ability among personnel.

The proposed system provides complete control over the course of training, management of systems, followed by an analysis of the recorded material. Observation and management of the trainings comes from the Central Control Panel, located off site. Implementation is based on the SKIF training complex.

The simultaneous operation of all the elements of the complex and specially developed software create opportunities for modeling and managing various situations. The whole process of conducting trainings takes place in real time, at any time of the day and weather conditions, with an extremely high degree of realism and accuracy.

An analysis of previous trainings makes it possible to improve the acquired knowledge and skills in managing the unit, see all the errors and take measures to eliminate them. The complex allows you to simulate real combat conditions, and develop skills among participants who in a real battle will contribute to the success of missions.

Notes



- A control panel of the training complex
- A demo screen
- Software
- A server for data storage
- An armory
- etc

- Electronic devices (see paragraph 4)
- Controlled audio system
- Internal CCTV cameras
- Controlled emergency lighting system
- A fog machine
- A device for creating flashes
- A sensor for an “unopened door”
- A device for igniting pyrotechnics
- Other devices for creating unforeseen stressful situations

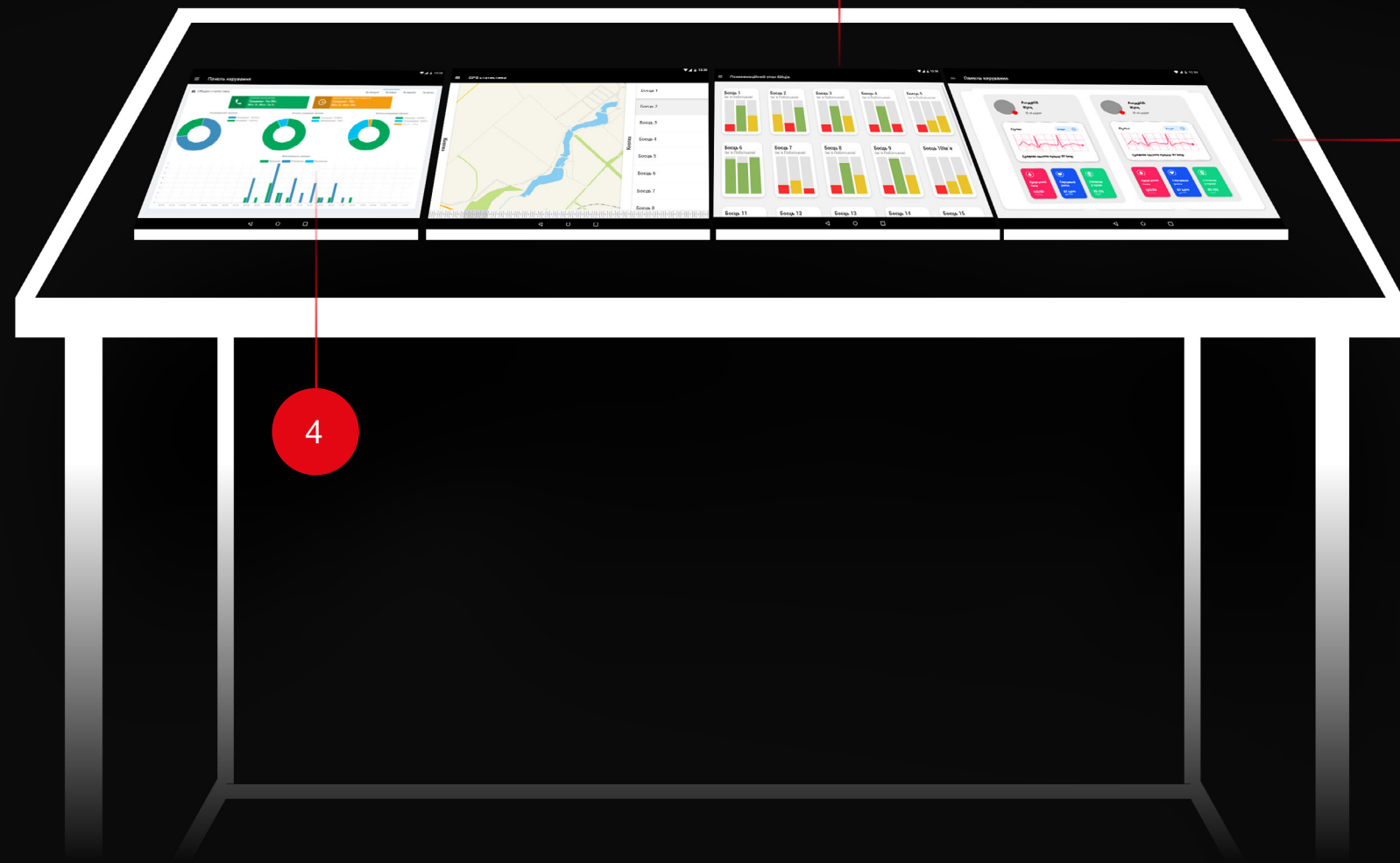
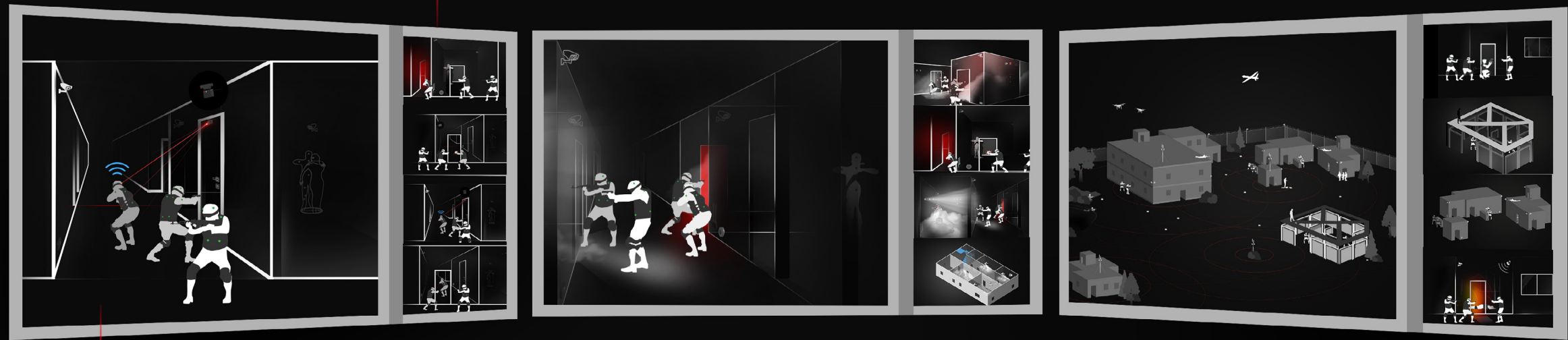
- Outdoor CCTV cameras
- Inside CCTV cameras
- An acoustic speaker system

- A shooting target with hit sensors
- Electronic device — a tripwire mine
- Electronic device — a pressure type mine
- A sensor for an “unopened door”

- Seamless coverage of the entire complex
- Coverage area of each relay is 150 m
- The number of relays depends on the area of the site

- Durable mobile shelters
- The modularity of the system allows you to change the field as desired

Notes



The screens of the command center displays all the information:

- 1 Video from fixed cameras
- 2 Video from personal cameras
- 3 Individual data from personal sets of Skif
- 4 Performance Statistics
- 5 Psycho-physiological indicators of each soldier

The command post is a separate area dedicated to the management of the “SARMAT” complex. The system includes computers and screens that can be located in a building, tent, or other structure.

Control panel is the operator’s workplace for managing the software and devices in the building. There are three monitors located on a vertical surface and one horizontally located, it is a panel with a touch screen.

DEMO screen is either a plasma or LCD panel with a size of at least 50 inches for an extended demonstration of training details. It is designed to display images that the operator of the remote chooses. It provides an opportunity to demonstrate the trainings for a group of observers. It is convenient to watch a live broadcast of trainings, as well as analyse archival records with a simultaneous demonstration of a map, graphs, indicators, statistics and video from cameras.

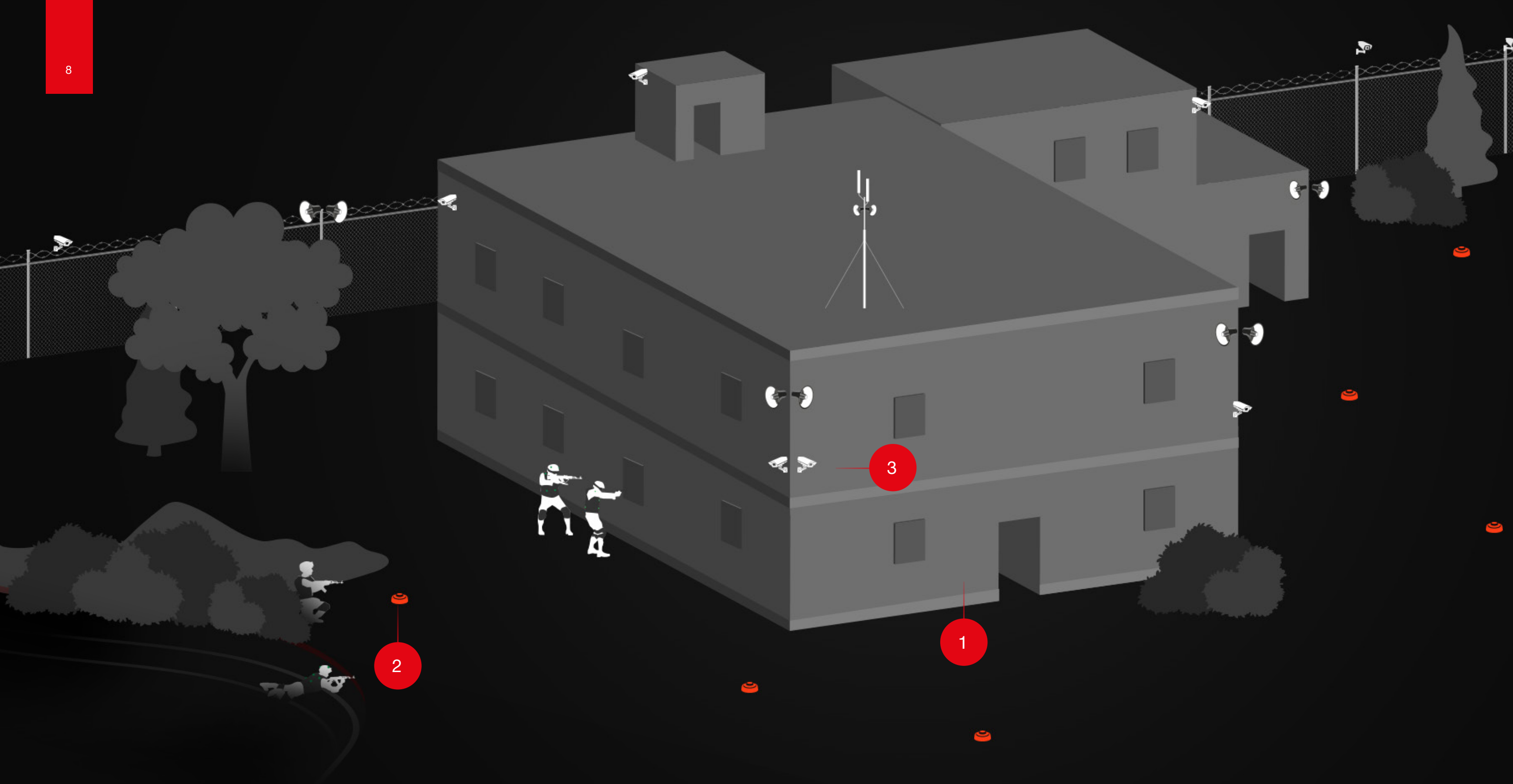
Building Monitoring System

Personal kits are equipped, not only with GPS modules for displaying geo-location on the ground, but also with a system of sensors that continue to locate the position of objects indoors where there is no reliable GPS signal reception. Analysis of the movement of subjects is necessary to control the skills and rules of tactical training. It also contributes to more efficient management of SARMAT systems (such as the System for Creating Stressful Situations, etc.)

The software for managing the entire “SARMAT” system. In order to combine the management of the SKIF system, and monitoring systems controlled by devices.

A server for storing data, an archive of trainings, makes it possible to analyze previous trainings capturing critical errors in training and other factors.

A storage for SKIF electronic devices. An equipped storage space for the entire range of devices. Storage locations are closed, providing access to authorized personnel only. The storage location is equipped with chargers. The charging and storage procedures are combined, which reduces maintenance time and optimizes the working time of instructors.



1

Lesson Objective — Captured Building

2

Electronic mine

3

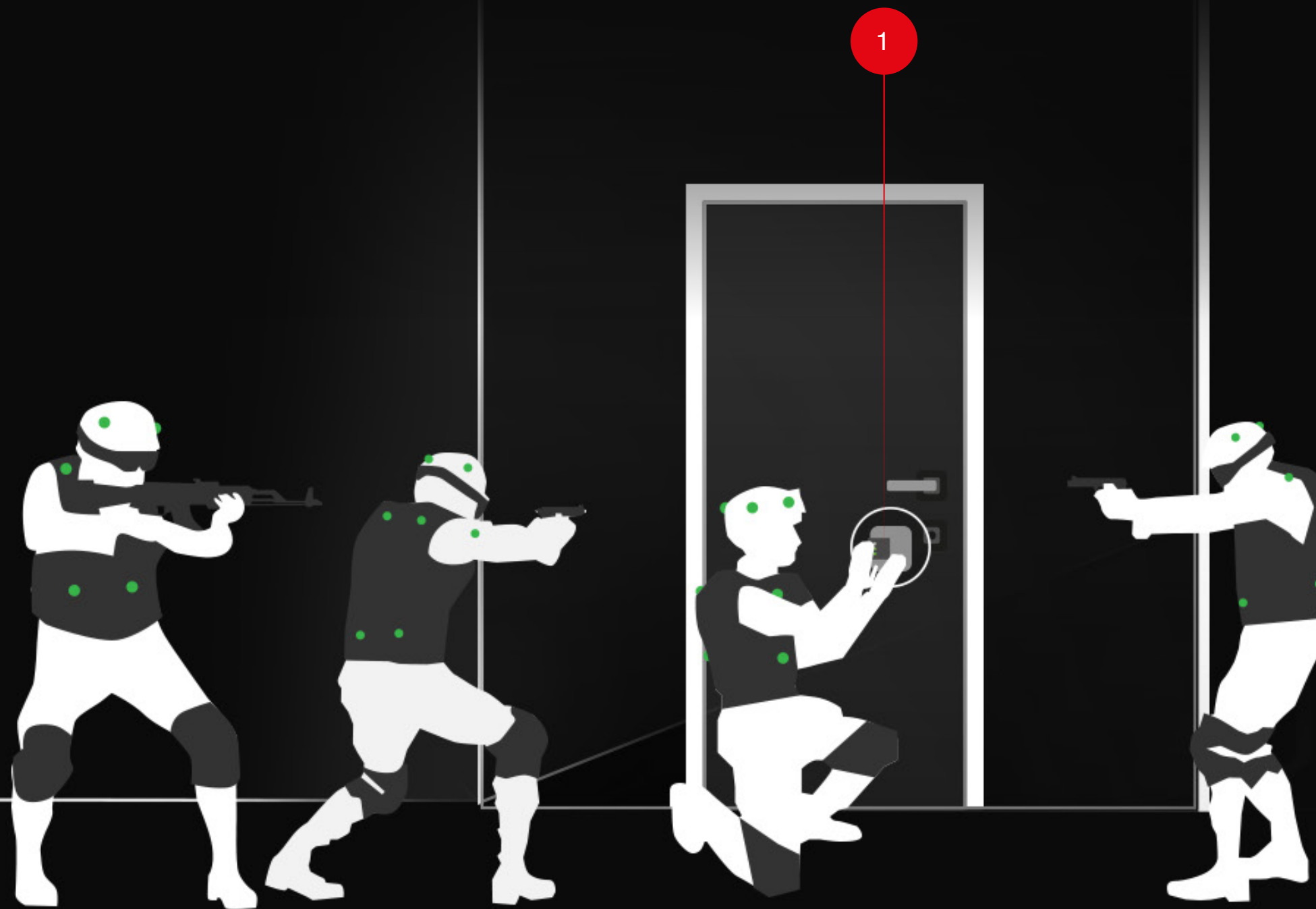
External cameras of video surveillance and visual control system

Training preparation

Before the start of the training, the soldiers get all the necessary equipment. At this stage it is recommended to check the battery level of electronic devices, connect Wi-Fi communication systems, surveillance cameras and other elements of the complex.

Training start

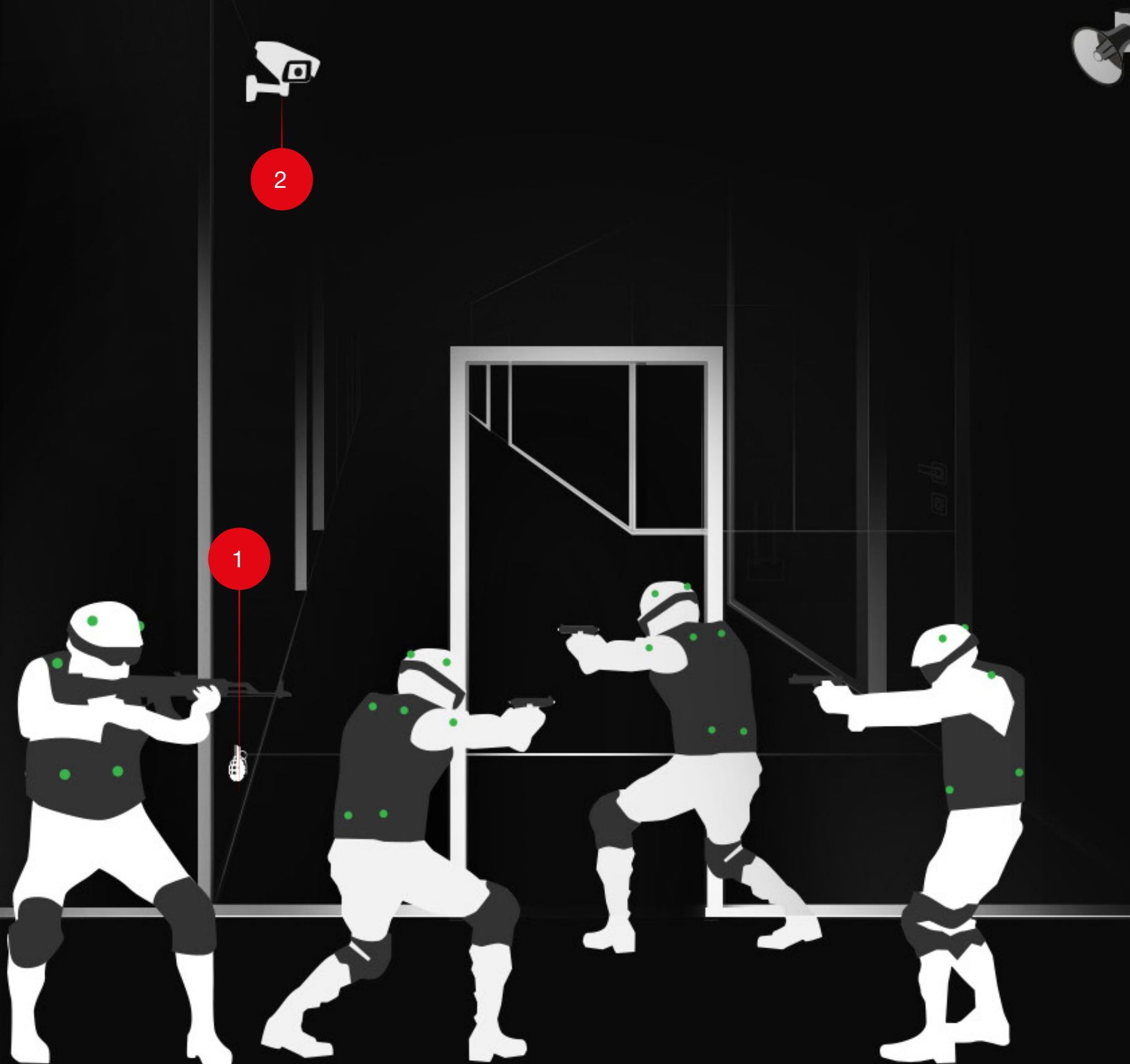
The soldiers are moving towards the captured building, the clearing of which is the main goal, avoiding the fire of enemy snipers, using the folds of the terrain, natural and artificial shelters. At the same time, a group of fighters must bypass simulators of pressure type mines, which are carefully masked and placed throughout the training complex.



1

Device to simulate the explosion of the lock

The group approaches a locked door, sets on it a simulator of a device that explodes locks.



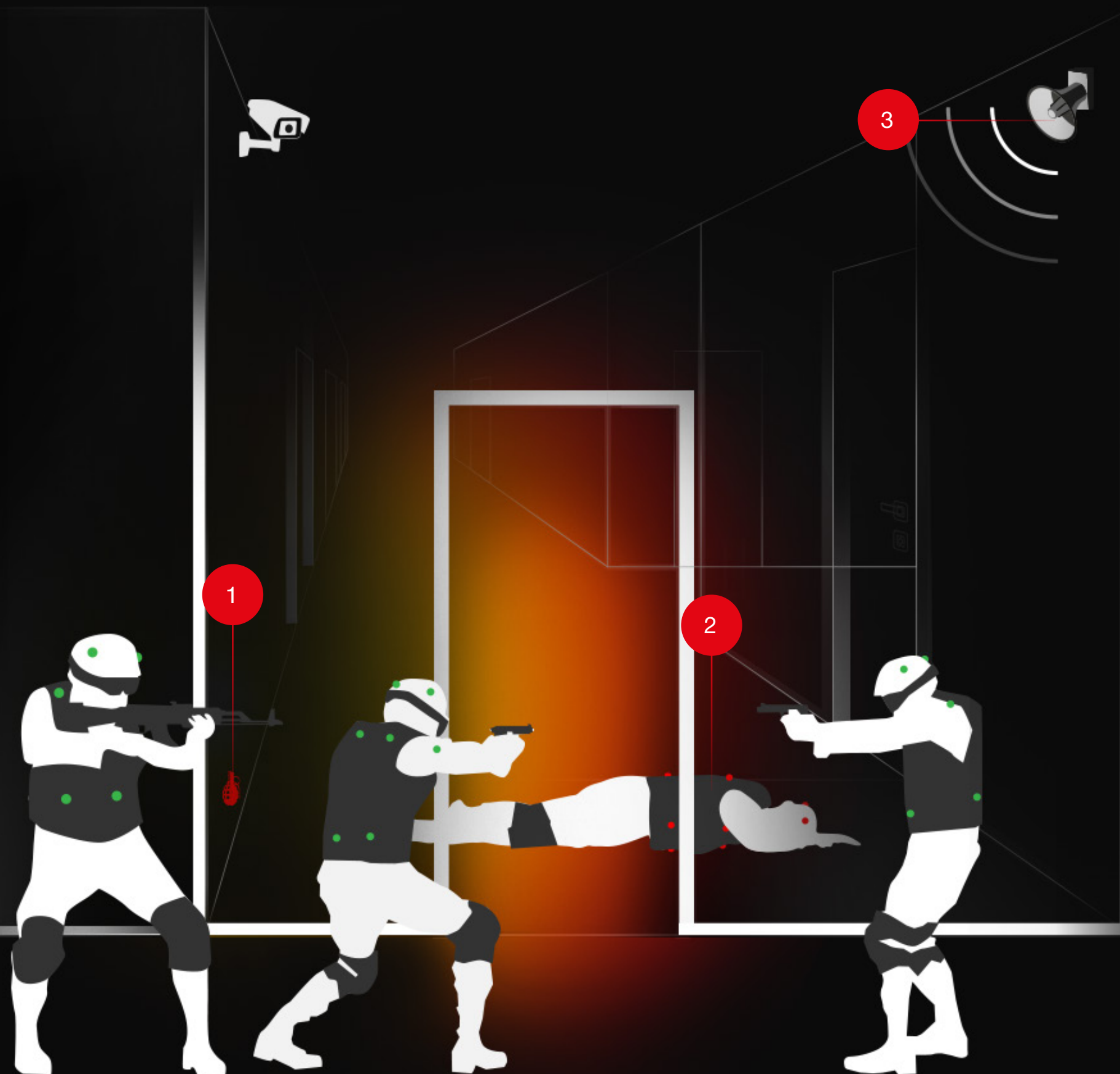
1

Tripwire mine simulator

2

CCTV and visual control internal camera

The door lock explodes, the pyrotechnic system creates an explosion and a bright flash. The first soldier from the group enters the room.



1

Activated trip-mine simulator

2

The soldier is hit, the SKIF kit is deactivated

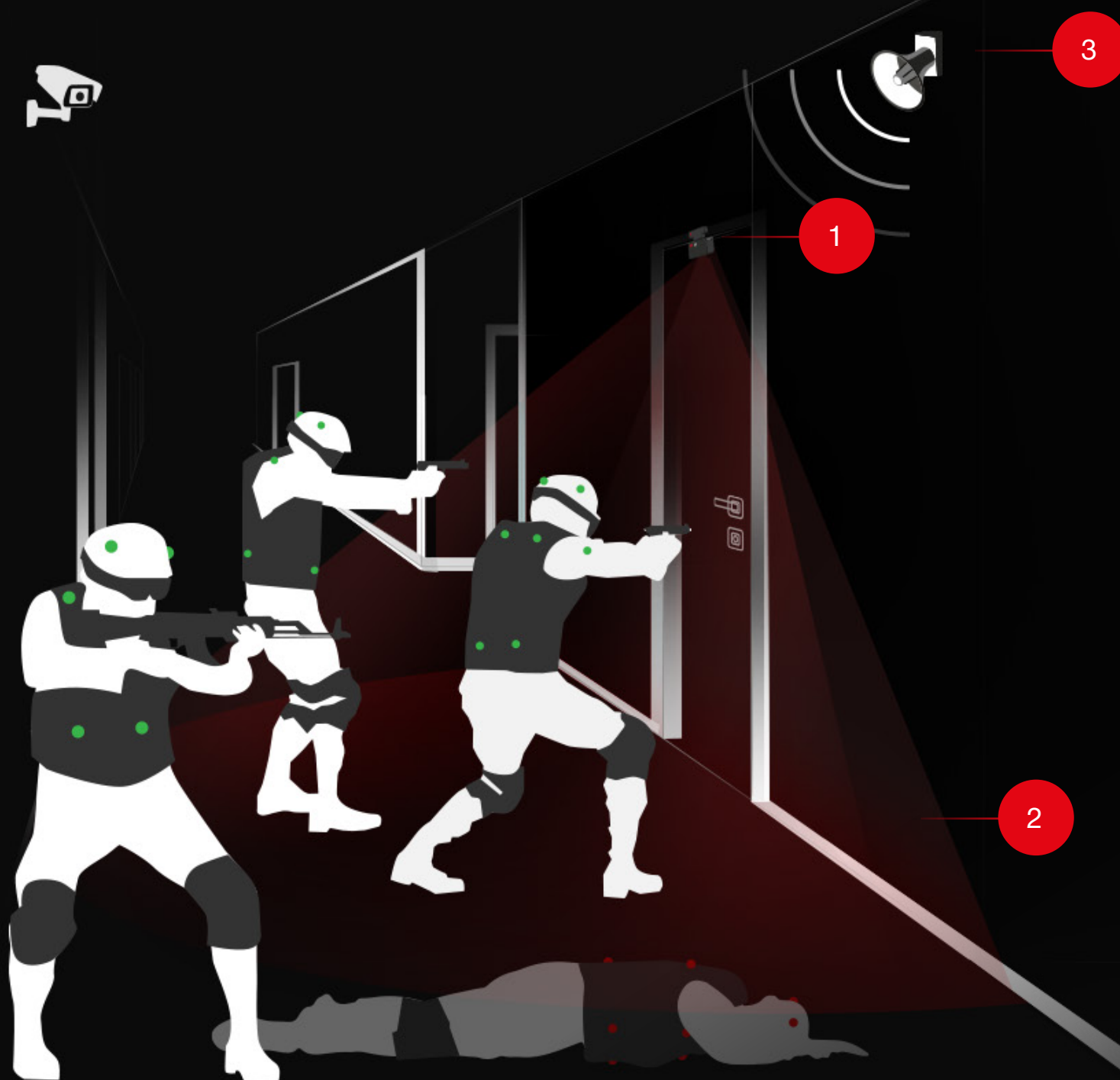
3

The controlled audio system gives an audible indication of an explosion

The first soldier did not notice the mine and activated it, the simulator emitted a loud beep (explosion) and a bright flash of light. The first soldier is deactivated, his personal kit makes an audible indication, the sensors light up in red, a special bracelet sends electrical impulses to his body, for physical sensation of defeat or injury.

Other soldiers are behind the wall and are not injured from the blown up mine-extensions, they heard and saw what was happening. The information about the mistake is made and the degree of the conditional injury of the fighter goes to the command post.

The commander gives the order to provide first aid to a wounded soldier. The affected soldier continues to lie on the floor until first aid or until completion of the mission.



1

“Unopened door” sensor

2

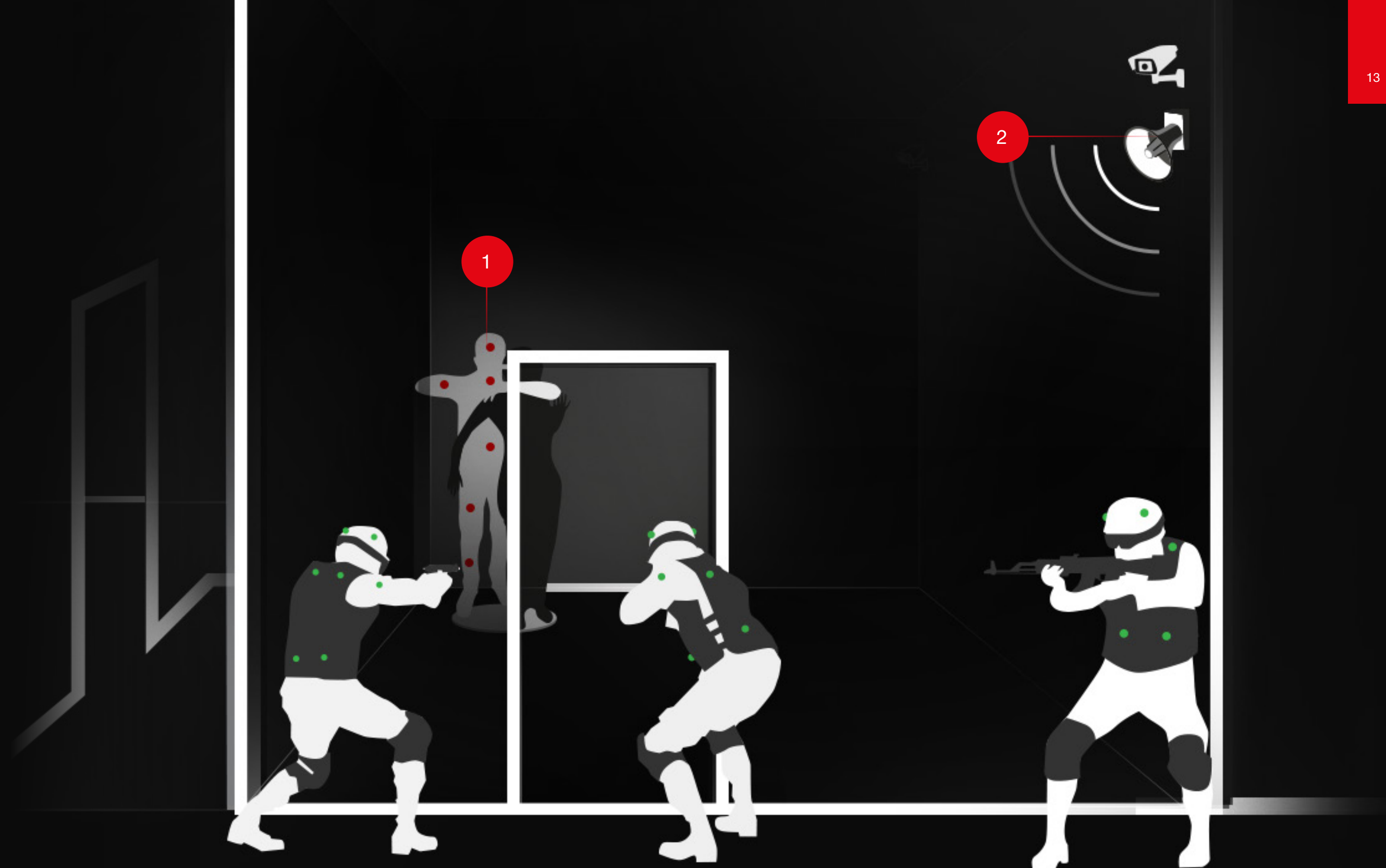
The affected area when the sensor is activated

3

The audio system mimics the sound of a woman crying in the room

The group of soldiers passes a trip-wire mine and goes into the corridor of the room, where there are several doors leading to different rooms. A woman is crying from the first door, it is imitated by a controlled audio system capable of realistically reproducing any sound.

«Unopened door» sensors are installed on the doors. If the fighters do not clear the room and move on, they will be conditionally hit by an emitter on the door (the imitation of enemy shots in the back). If all soldiers are defeated, the training will be started from the beginning, or from the moment at which a mistake was made.



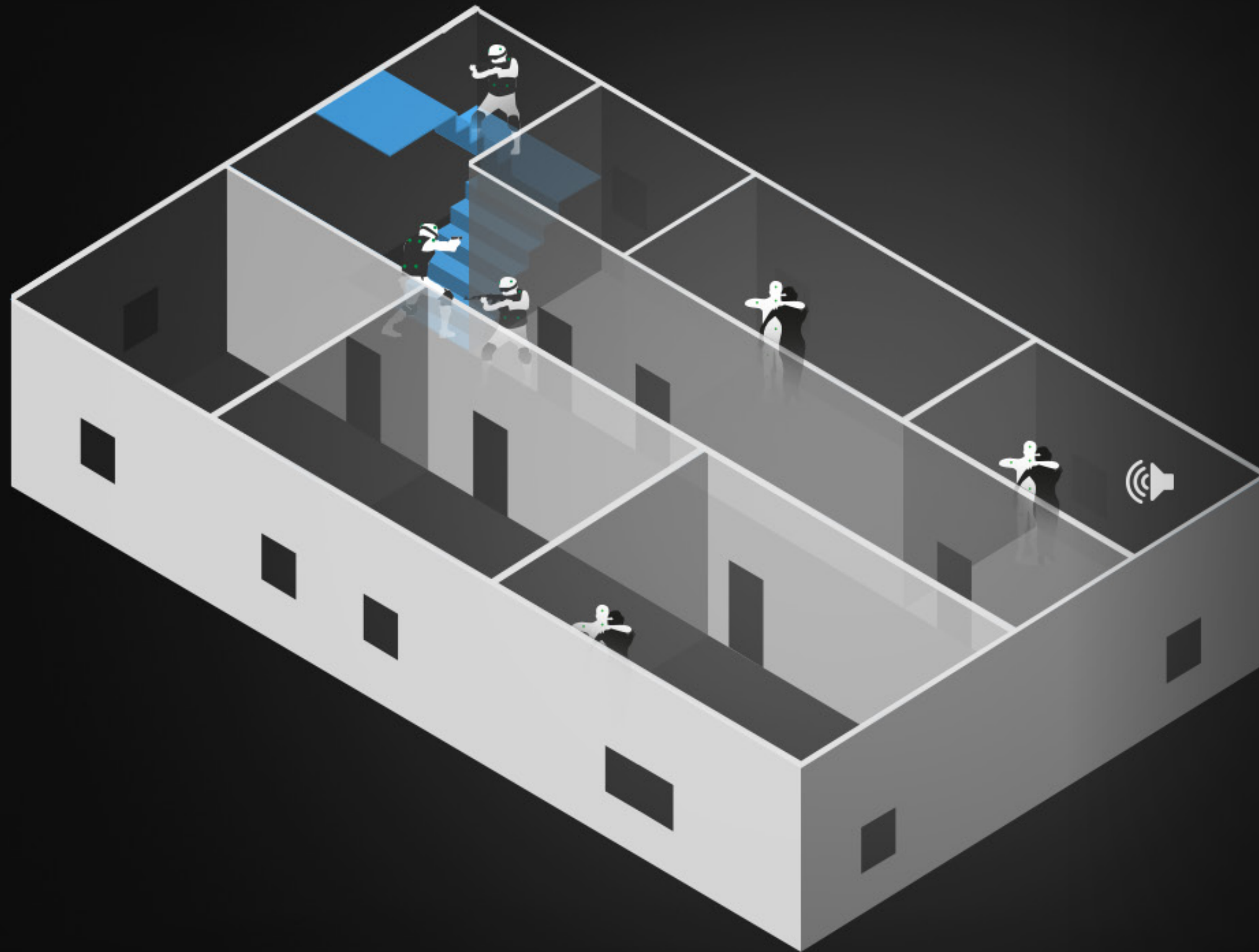
1

Enemy target

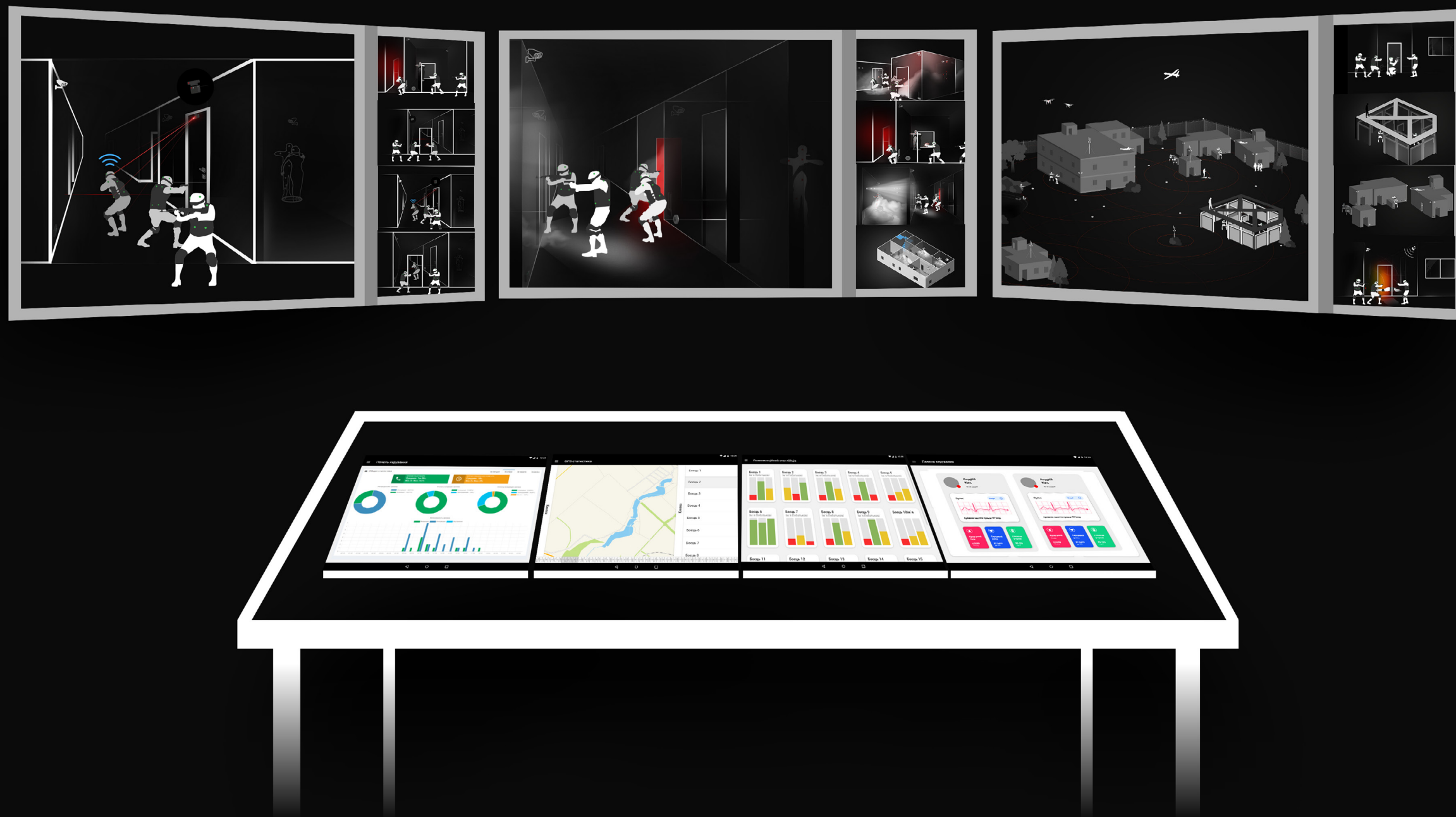
2

Audio system with simulated sound

The team comes to the door and opens it. There is a shooting enemy target, and a target simulating a hostage. An enemy target can be hit by the soldiers and can hit the soldiers by capturing their movement in the room. A hostage target can be hit by the soldiers, which is fixed in the system control, as an erroneous action. After recording the movement in the room, the enemy target will start firing towards the soldier, waiting for the reaction time set by the instructor. The soldier manages to destroy the conditional opponent with an accurate shot without hurting the hostage.

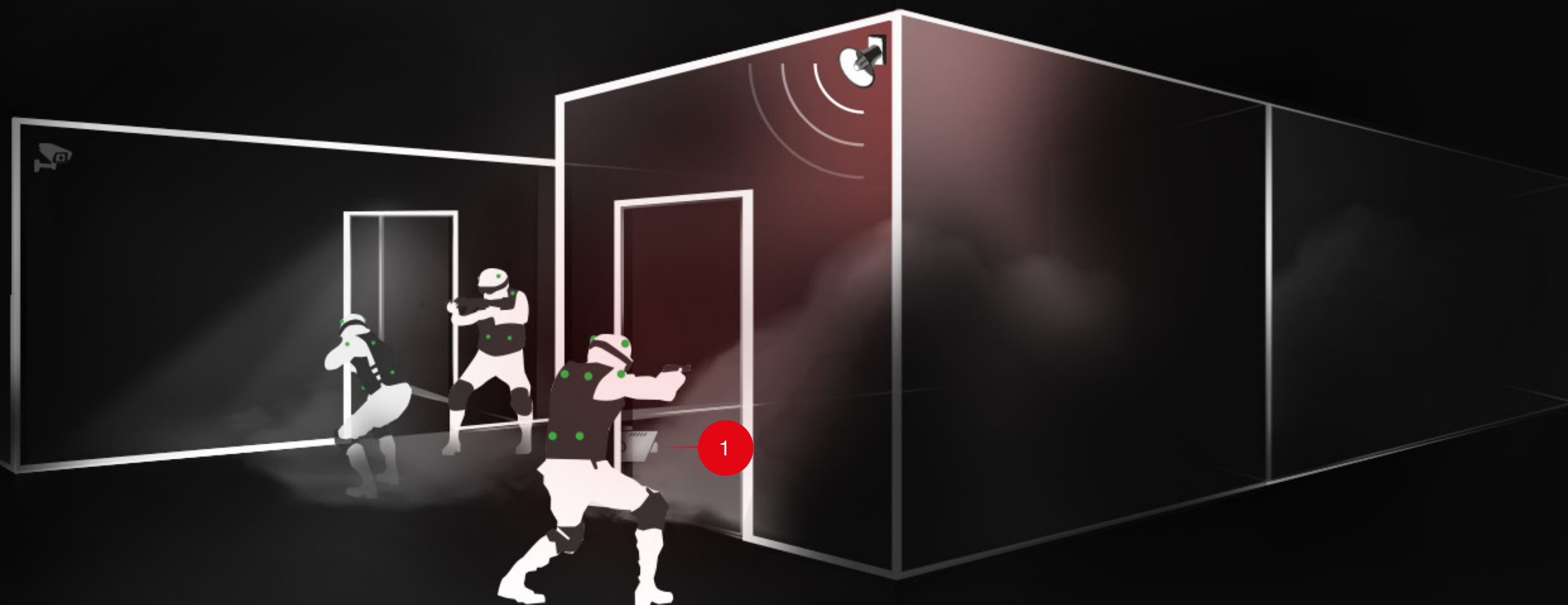


According to the assigned task, the group goes into the room, simultaneously checking each door, bypassing or deactivating simulators of tripwire mines. The first floor is cleared. The soldiers go to the second floor according to the instructions of the instructor, who is at the command post.



The command post monitors the behavior and psycho-physical indicators of the soldiers. The moves are recorded on personal and stationary cameras, as well as special modules, all the data is displayed on monitors. On the monitors, you can also watch the physical condition of each fighter after doing certain actions and his psychological reaction to external stimuli.

The accuracy of the shooting, the number of shots made, the presence of conditional injuries, their degree and many other personal indicators of the effectiveness of the fighters are also presented for the analysis.

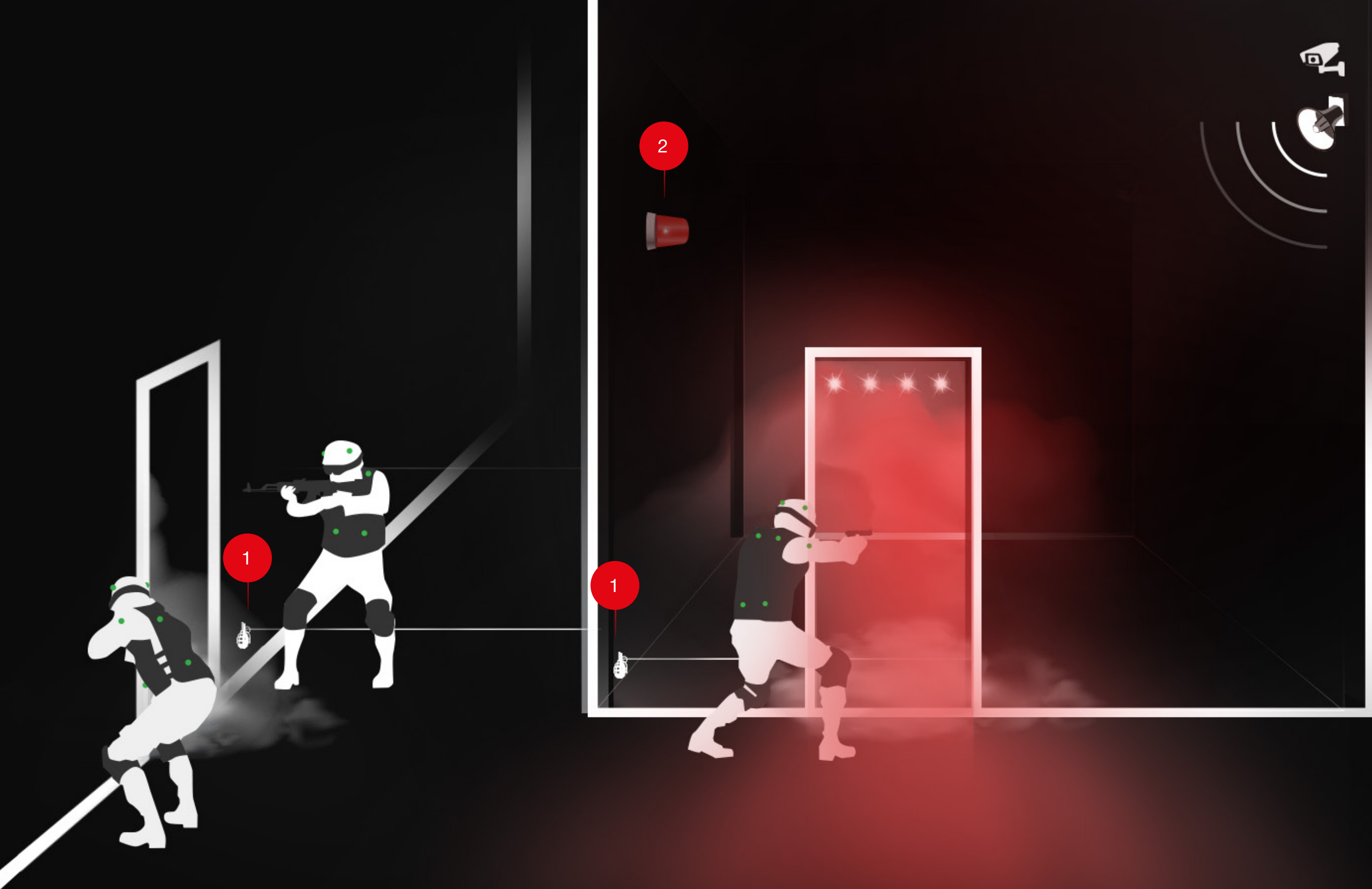


1

Fog machine

The command decides to complicate the task. The smoke of varying degrees of density is supplied on the second floor. The smell and color of the smoke can be adjusted. There is also emergency lighting of various colors and intensities in rooms and corridors.

Lighting, smoke and other elements of the system for creating stressful situations work independently in each room. The instructors can change the number of stress factors and their type at their discretion.



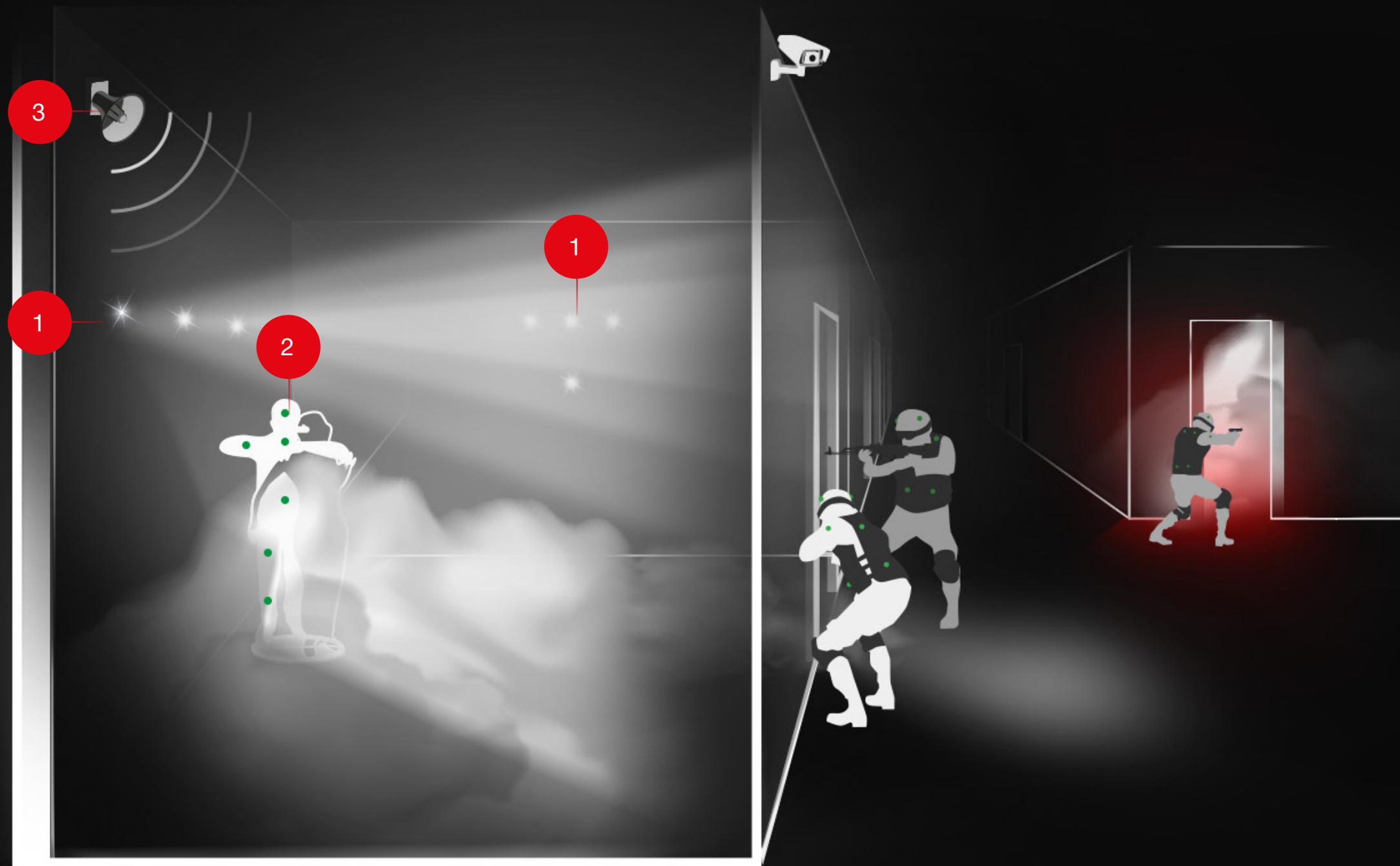
1

Electronic device — tripwire mine

2

Device for creating emergency lighting

The tripwire mine simulators are installed in the doorways. In conditions of smoke and under the influence of other stress factors, it is especially difficult to avoid or deactivate them. A team of soldiers adapts their tactics of the operation to difficult stressful circumstances.



1

Controllable flash device

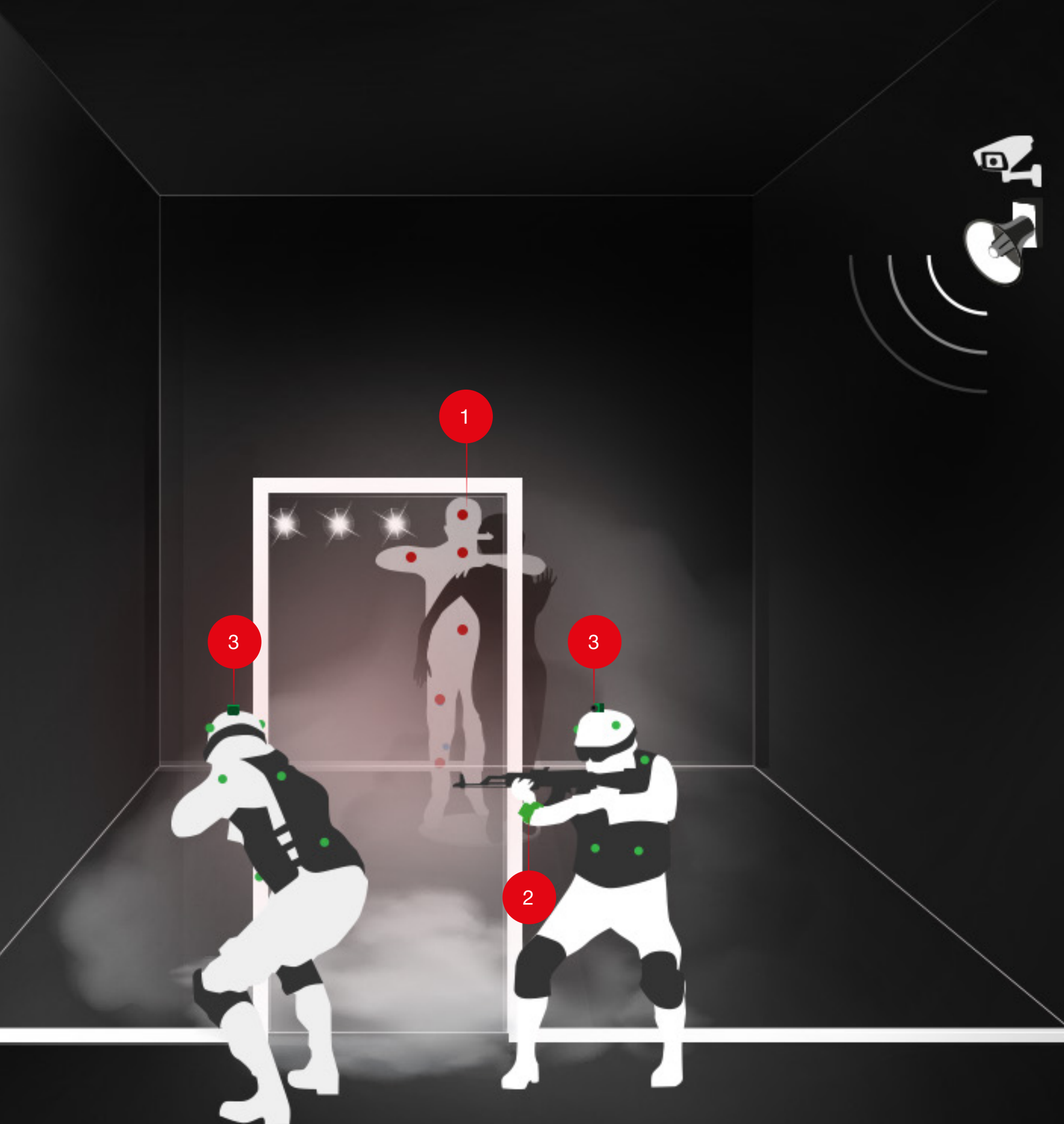
2

Enemy target with hit sensors

3

Sound simulation audio system

The instructor from the command post selects rooms in which the sound effect is activated (screaming, shooting, rustling, etc.) and activates several shooting targets located in different parts of the room. For the disorientation of the soldiers, the sounds of shots and the location of shooting targets can be in different parts of the room. The number of targets, their placement and other factors can be changed depending on the plot of the special operation.



1

A hit target

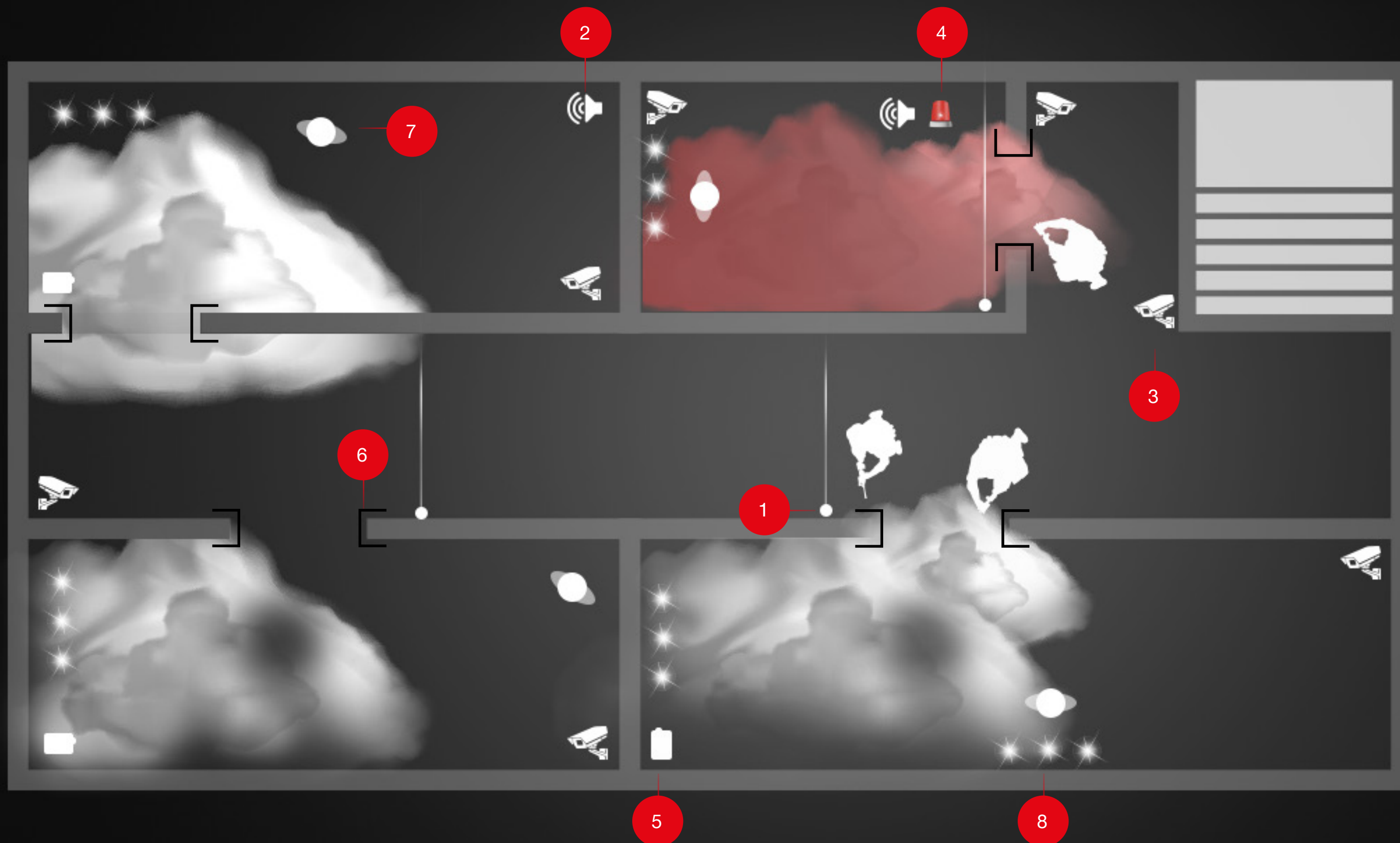
2

The system of personal monitoring of psycho-physiological indicators

3

A personal camera

A loud explosion and a bright flash are emitted in the room. A soldier enters the room and hits the shooting target in severe, stressful conditions. The command post receives signals about changes in the psychological state of the fighter, which are caused by the action of the system for creating stressful situations.



1

Electronic device — SKIF tripwire mine

It has the functional design of a tripwire grenade left by an enemy, which is activated when the cord is touched. It can be used both in buildings and in open areas. The device has recognizable dimensions and the shape of a hand grenade; it can be masked both among vegetation and among household items. The main objective of the device is the training of recognition and overcoming of tripwire mines.

2

Controlled audio system

The system of acoustic speakers located throughout the building is capable of reproducing a set of sounds (crying, whispering, screaming, system alerts, etc.). Sounds can be used for both orientation and disorientation. Depending on the given scenario, a sound scheme is reproduced with a clear time setting. You can manually activate the desired sound at a specific spot in the building.

3

Internal CCTV Cameras

The entire territory of the educational complex is covered by a system of video surveillance cameras. Cameras located inside the building provide control of everything that happens in the premises. The software in the command post room allows you to quickly switch between different cameras to see the current picture of the training process.

4

Operated emergency lighting system

Each room has a controllable emergency lighting system. Flashing colors (can be adjusted) lighting creates more difficult conditions for soldiers, making the development of a special operation more difficult and stressful.

5

Fog machine

The remotely controlled fog machine allows you to supply smoke in certain places of the building. The color, density, volume and smell of smoke can be adjusted to create extremely complex training conditions. A fog machine can simulate the effects of a smoke grenade, or other sources of smoke.

6

The sensor “unopened door”

The system monitors compliance with the rules of tactical training regarding the movement of the group on the premises. The group should not go further, leaving behind “uncleared” rooms and parts of the room. The system controls this rule as follows: on its way, the group passes doors leading to different rooms or areas of the room. If the door was not opened and the group continued to move further down the corridor, the sensor simulates the shots of an attacker who was behind the group. If the group has entered the room, the system turns off.

7

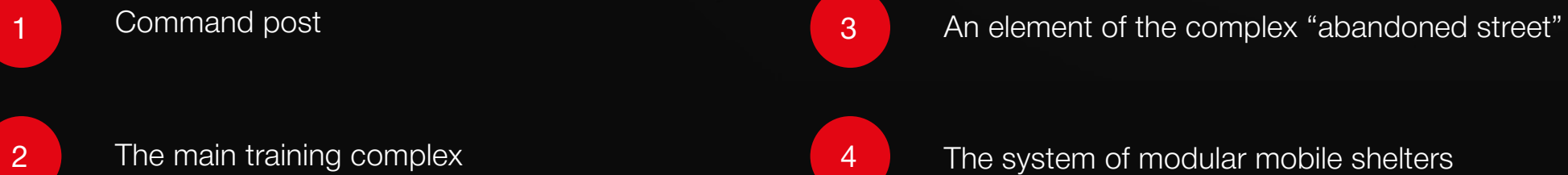
The shooting target with hit sensors

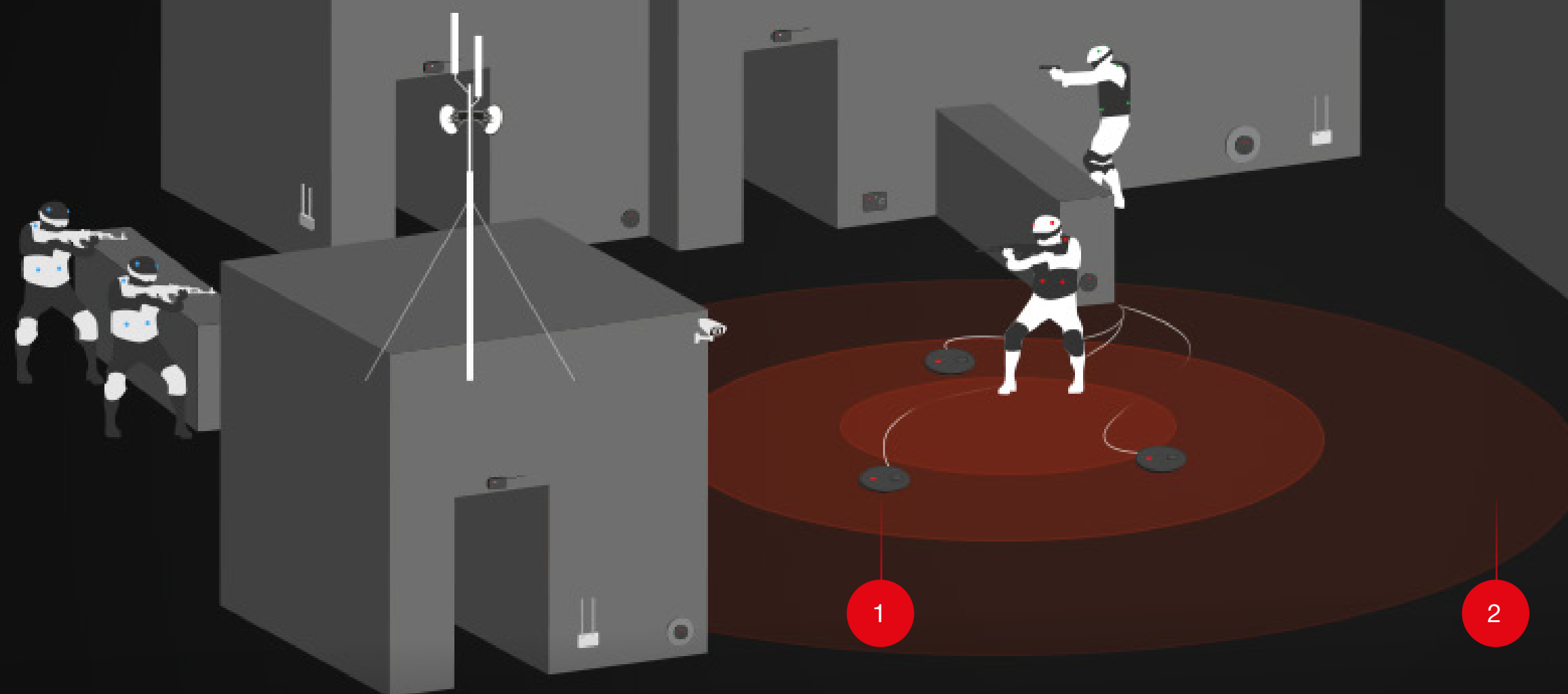
A human sized target. Due to the embedded algorithm and electronics, this device is able to simulate both armed opponents and unarmed people (hostages). The interactive target device has built-in motion sensors and an emitter-weapon. If the target is configured as an armed enemy, it is sent to the conditional control sector. If movement occurs in the indicated sector, the target “opens fire” from the built-in emitter. The reaction time (the delay with which the shooting will be activated) is configured in the program. When a target is hit (from a simulated firearm or explosive device), the folding part is lowered to the lower position. In this state, the target is unmistakably identified as hit, it is no longer perceived as a threat or target. That allows you to more accurately evaluate the actions of the participants in the trainings.

8

Flash device

The controlled device creates bright flashes that mimic the effects of light-noise grenades or other stress factors.





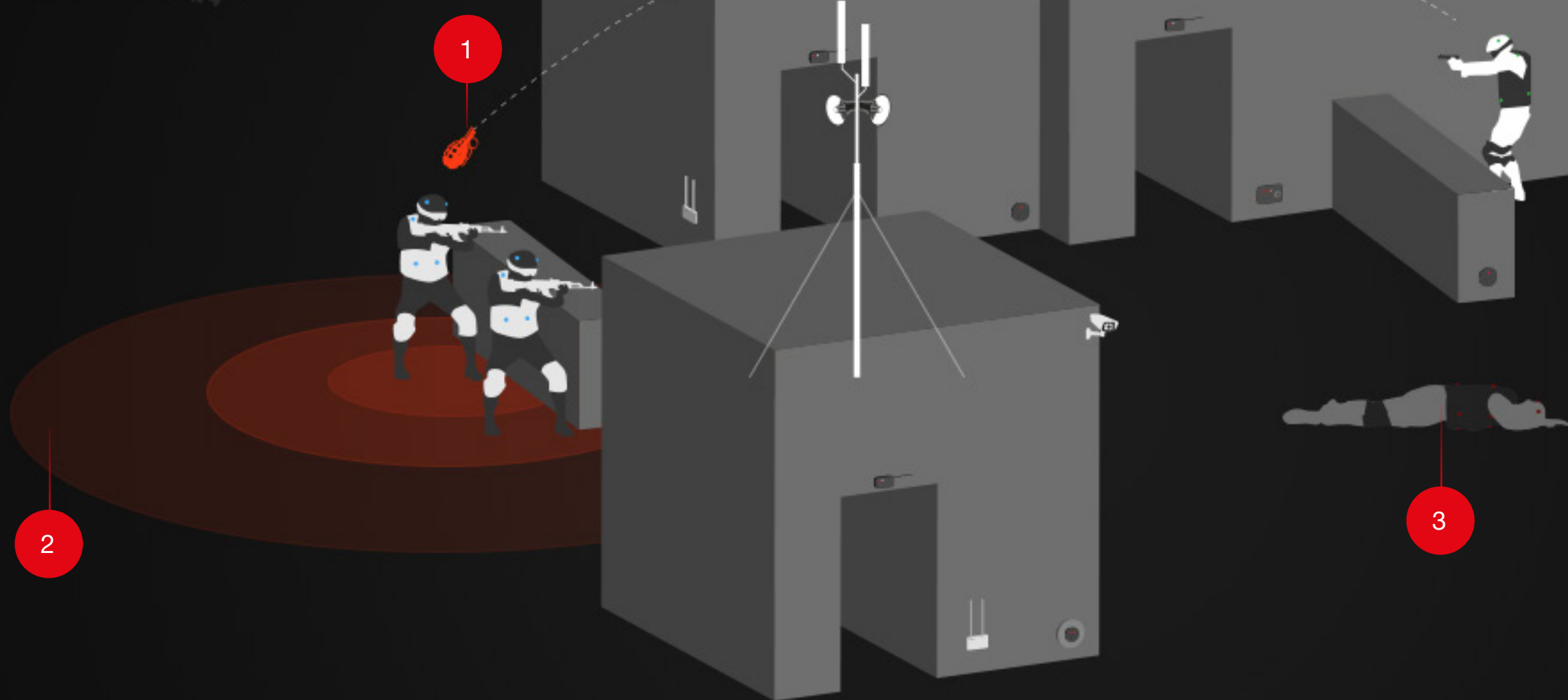
1

Electronic device — pressure type mine

2

Mine damage radius

The SKIF simulator of the pressure-type mine imitates the functionality of various anti-personnel mines that fire when a foot (or any other part of the body) touches the mine's pressure cover. The simulator can be planted directly into the ground to a shallow depth, masked with a layer of dirt or turf and hit personal kits over the air.



1

Electronic device — hand grenade

2

Grenade damage radius

3

Hit soldiers

The electronic device — SKIF hand grenade imitates the effect of modern hand grenades. The activation and application algorithm is identical with the original grenades. When throwing a grenade simulator, the fighter pulls out a safety pin and releases the bracket. A grenade falls near conditional opponents, and deactivates them. The simulator allows you to bring to automaticity the procedure for handling a combat grenade.



1

Drone simulating UAV

2

Tarantula system — SAM

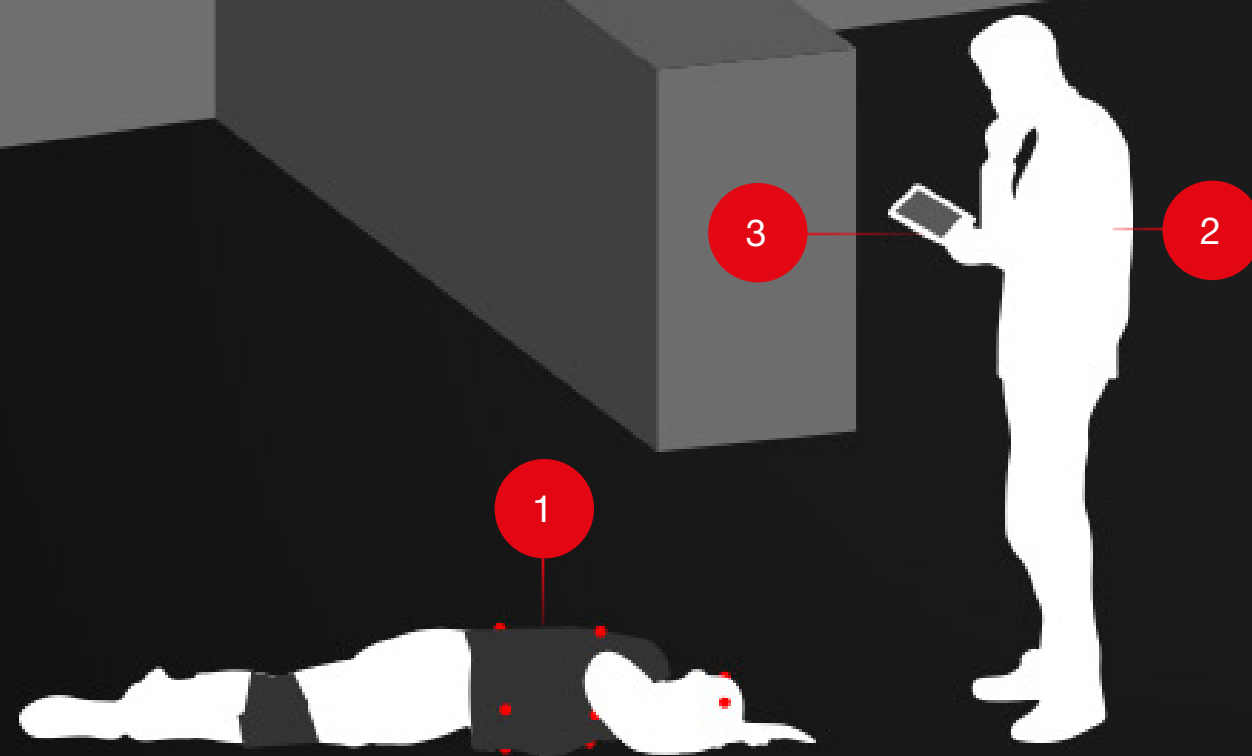
3

Drone with grenade reset function

4

Grenade radius

Drones simulate low-flying air targets during training (helicopters, drones and UAVs of opponents). Drones can conditionally hit soldiers by simulating firing from firearms or dropping grenade simulators. Drones can be additionally used for online broadcast of the process of conducting trainings from a height, providing an overview of the entire training ground or specific sections of it.



1

Conditionally wounded soldier

2

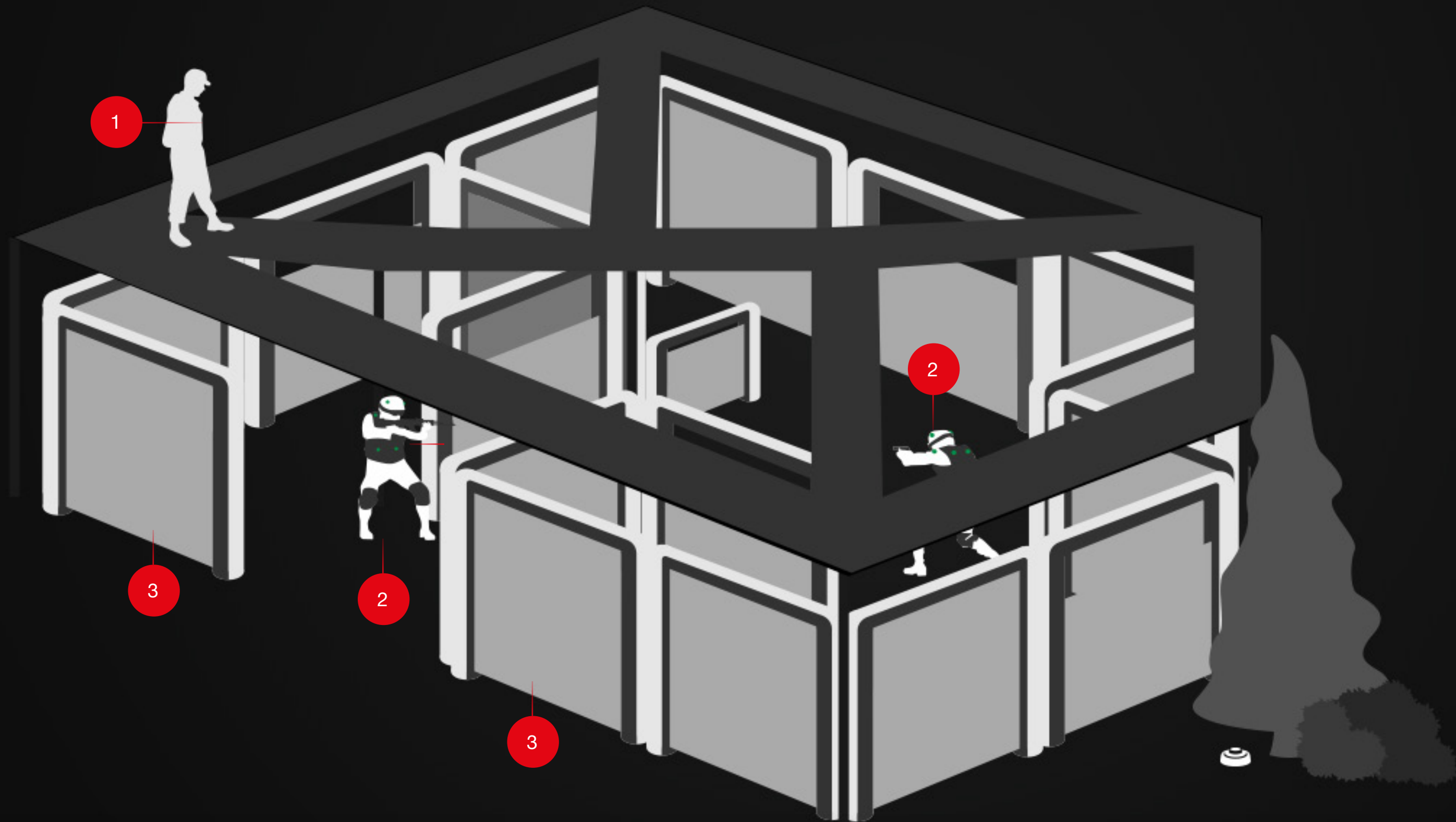
First aid soldier

3

The paramedic training tablet

The Sarmat system provides training for paramedics. The main goal of the simulator for paramedics is to develop emergency care skills for injuries and other emergency situations that may arise during the performance of real tasks in a stressful environment. The paramedic tablet is integrated with the general SKIF simulator program and the start of the test can begin immediately near the “wounded soldier” during the exercise. When the soldier who is to provide first aid approaches the conditionally wounded, the test in the tablet is activated.

The situation is described, the conditional first aid soldier must make the right decision (action to assist the wounded). Depending on the results of the test, the affected soldier can either be cured or withdrawn from training.



1

The instructor

2

Soldiers

3

Elements of a modular shelter system

The modular shelter system allows you to create a labyrinth that simulates fragments of a building or an entire layout of the building. The modular system allows you to change the layout at will and simulate the layout of both real objects and those specially selected in terms of training efficiency.

Modeling a specific layout of a particular room will allow you to conduct training using tactical equipment and pyrotechnics without harm and risk to a real and, possibly, expensive environment. The reinforced design of the figures provides greater reliability and increases the service life.

Notes

The training complex “Sarmat” is created according to the technical task of the customer.



Tactical laser tag system

ENG

first@skif.cc
skif.cc

093 547 62 18 Viber / Telegram / WhatsApp
067 944 31 00