

Saving lives with IP video.

Recorded training optimizes clinical processes and medical staff training.



Organization:
SIMStation

Location:
Vienna, Austria

Industry segment:
Healthcare

Application:
Remote training

Axis partner:
SIMStation GmbH

Mission

In medical emergencies, split-second decisions often make the difference between life and death for a patient. Every move has to be right; there's no time for mistakes. Truth be told, 60% of all incidents in emergency situations can be traced back to non-technical causes, such as a team leader giving vague instructions or poor team management. In such cases, a professional audio video system for simulations and proper training of specialized staff may very well be a lifesaver.

Solution

With a video-based training solution from SIMStation, healthcare professionals are extensively trained and thereby prepared for various medical procedures and emergency situations through use of simulation and video monitoring. The simulation can take place in a familiar work environment or in a training center.

The hardware used to run the system consists of Axis cameras, monitors and microphones. The software used to control the system has been developed by SIMStation.

Result

The Austrian company developed both a mobile and a stationary station for training purposes because experience is of the utmost importance in the medical field. This is the only way to learn and firmly root maneuvers, test out procedures (even under the most difficult of conditions), acquire knowledge and ensure the optimal course of treatment. In day-to-day hospital work, experience is usually gained through direct encounters with patients. Inexperienced staff may inadvertently make mistakes. To prevent this, the Viennese company SIMStation has developed a preinstalled, out-of-the-box simulation solution for training purposes, which is ready for use in no time.



The ambulance arrives at the hospital with its siren wailing and lights flashing. At the entrance to the emergency room, the doctors and nurses are at the ready, waiting for the patient to arrive. When dealing with an emergency, every move has to be second nature, communication between the staff must be in perfect harmony, and responsibilities must be clear. If even one thing in the chain of care is off, it could have far-reaching consequences for the patient; small moments may determine whether a person lives or dies. The doctor's instructions ring out through use of a microphone. What at first looks like a genuine emergency situation is in fact a simulation; the patient on the stretcher a dummy. In the hospital, the emergency is rehearsed – captured by an Axis network camera, transmitted to a control room, commented on by a doctor, and finally discussed in the team. A modern simulation solution that is already in use in many hospitals around the world.

Stationary simulation

Many hospitals already have a stationary training area. The simulation center, e.g. a real mock operating room, is set up with all of the important equipment and a dummy as a patient in order to present a treatment scenario. Here, teams can practice emergency situations or other medical procedures. By means of Axis cameras, the action is transferred to the SIMStation in an adjacent room. From there, the simulation doctor controls the cameras in the training room and observes the action with the help of a monitor. The doctor also uses a microphone to provide instructions, which are communicated to the team over a speaker. Meanwhile, the software records everything – the actions in the simulation room and the instructions of the doctor. Another feature of the SIMStation software is that if any abnormalities were to occur, the simulation doctor can set flags in the shots to jump to the required location when it is time for debriefing. In the debriefing room, the participants can view the recorded simulation either directly on a monitor or on a screen through use of a projector. This enables them to, for example, observe their own behaviors, detect any errors, and discuss ways in which these can be avoided. This, in turn, optimizes treatment procedures and processes.

With a stationary simulation solution, multiple training, control and debriefing rooms are combined to form a SIMNet. This is done via conventional network cable or wireless LAN. The installation work is minimal.

Cameras, tablets and network storage that are added later are detected automatically and integrated in the SIMNet. The SIMStation Tablets are not linked to specific rooms and can be used by the instructing doctor/trainer in each room. Furthermore, the network-based system architecture makes it possible to connect different training centers or make simulations available on the Internet.

SIMStation is based on a modular concept. This makes it possible to expand a simulation center at any time. It starts with a basic configuration. The system is then gradually expanded by adding additional components. Unlike conventional, centralized and server-based systems, for which the upgrade or power capacity of maximum system expansion must be planned from the outset, SIMStation is a modern, modular system. It works on the principle of a private cloud – using the resources of all connected devices and expanding their possibilities with each added component.

In-situ simulation – mobile training

The basic equipment comes with all components and functions necessary for mobile use in one training room, one control room or one debriefing room. The simulation center fits into a small car and consists of a recording box, an accessories box, a monitor box, a voice box and a debriefing box. Each simulation room is equipped with multiple HD network cameras (1080p), microphones and a speaker system.



“We tested a number of cameras from different manufacturers. We considered it particularly important to be able to transmit multiple video streams without delay or disturbance. In addition, good image quality is a must so that small details can be viewed as necessary. The network cameras from Axis have met all of our requirements and have now also passed the practical test with flying colors.”

Joachim Hilbrand, SIMStation.

PTZ dome cameras, permanently installed or mobile cameras, or wireless cameras can be selected depending on the application. SIMStation is compatible with all Axis camera models.

The solution for the control room is housed in a compact server case. The SIMStation recording software can be controlled via one or more touchscreens. A conference microphone can be used for communication with the instructing doctor or the people in the simulation room.

Each debriefing room or live broadcast room is equipped with a SIMStation Player. Using the HDMI output of the Player, the recordings can be saved and then replayed using a monitor or a projector – whether in a small debriefing room or a large auditorium. Video debriefing and live broadcasts are controlled via a SIMStation Tablet.

System installation is simple. All it takes to connect the individual components and rooms is network cable. The total installation time ranges from 15 to 45 minutes, depending on the location and the local conditions.

SIMStation provides uniquely intuitive and easy-to-use software with a user interface developed by leading simulation experts. During recording, the SIMStation control and recording software is operated via touchscreen, making it possible to individually tag incidents for later discussion in the debriefing. The SIMStation Tablet is used for the evaluation. Acting like a virtual assistant, it provides the trainer comfortable operation when controlling the evaluation, thereby increasing efficiency.

Conclusion

Through use of SIMStation simulation solutions and Axis cameras, hospital procedures can be made safer and more efficient. The staff is given extensive training, leading to optimal treatment of patients. Considering the fast-paced and budget-conscious environment of the typical hospital, use of such solutions is of fundamental importance. The optimal conditions created in daily working life through the extensive training reduces employee dissatisfaction, thereby creating a pleasant work environment. Because ensuring that hospital staff are satisfied and well trained is the best way of ensuring that they provide optimal treatment and care to their patients.



About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform - delivering high value to customers through a global partner network. Axis has long-term relationships with partners and provides them with knowledge and ground-breaking network products in existing and new markets.

Axis has more than 2,100 dedicated employees in more than 50 countries around the world, supported by a global network of over 80,000 partners. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ Stockholm under the ticker AXIS.

For more information about Axis, please visit our website www.axis.com.