

SimEduSmart

Medical Simulation Training Frameset

What is SimEduSmart?

The Medical Simulation Training Frameset (SimEduSmart) is a training system to support interactive and practical medical training by using a high fidelity patient simulator and multimedia environment.

Purpose of the system:

SimEduSmart offers effective technologies and an interactive environment for all participants (doctors, nurses) to get prepared for not foreseen situations in medical treatment, in general and military healthcare. The system provides a flexible, user-friendly, high quality and real-life training experience for its users.

The simulation centre offers a manikin-centred simulation environment which can be designed in several ways, depending on priorities. Such priorities can derive from the actual purposes of the actual training, the specific area of healthcare, the target group of the educational activities, the simulators used or the external features of the training location or the available trainers.

Areas where SimEduSmart can be used, as per medical specialty:

- Traumatology and defence traumatology,
- Anaesthesiology
- Oxyology
- Intensive therapy,
- Triage systems,
- Psychology
- Group dynamics – „non medical skills“ training
- Professional nursing,
- Crisis management,
- Reanimation.

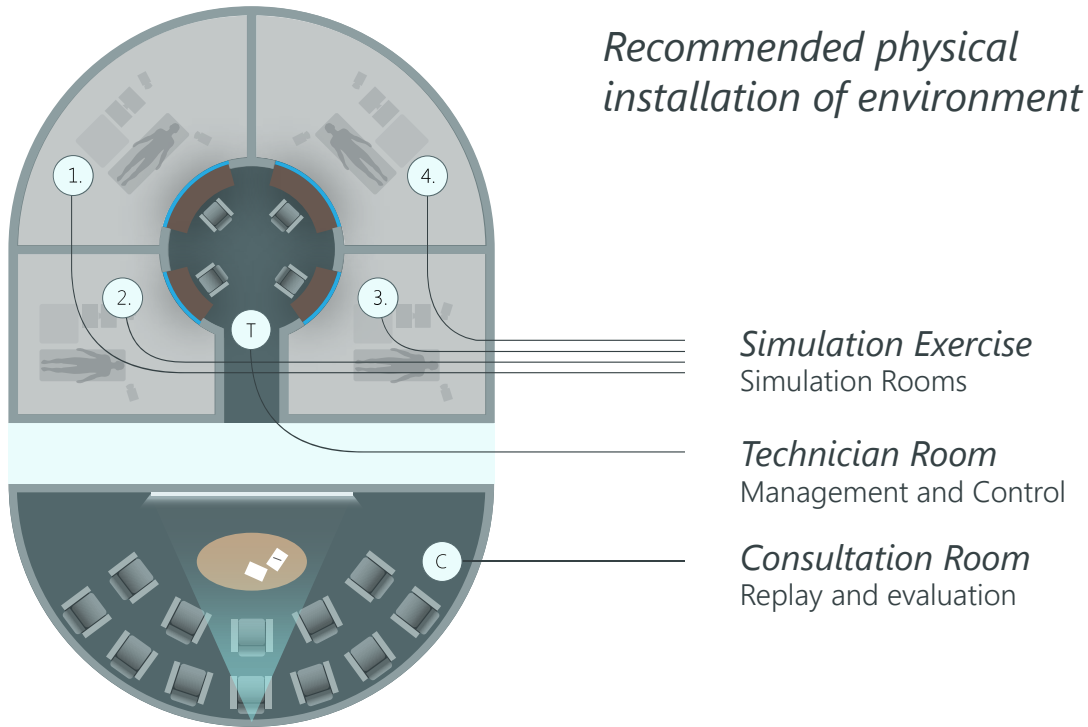
Areas within Defence:

- Postgraduate training of specialised doctors
- First aid and lifesaving training for Defence
- Resident training,
- Training of nurses and support staff (primary and secondary level)
- Training of medical students
- Mental training and practice
- Team building and training

Methodology

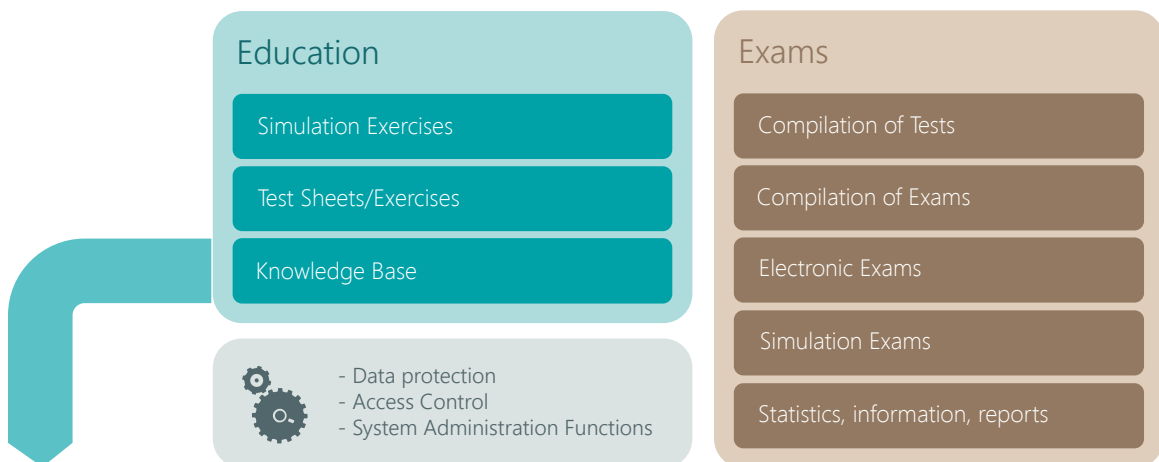
Simulation Skills Centre

The central system, replacing a heterogeneous system, provides a real-life, practice-oriented approach of medical training, which is flexible, user-friendly and high quality environment which offers real-life training experience for potential users.



Frameset System

SimEduSmart provides an ICT frameset for the Skills Centre which gives substantial support to automatise parts of simulation practice training exercises.



Academic materials
Where articles, learning materials are stored and created/edited

Examination protocols
Examination protocols of various illnesses

Scores
Medical diagnostic calculators

Description of Scenarios
Descriptive text about scenarios of the given exercise

Video Storage
Master videos and other training videos

What is the course of the simulation exercise?

Prior to the exercises – preparatory stage



As a Trainer/Lecturer

- Collection of all training material necessary for the preparation of the student
- Information about the exercise (text) with references and links to the related parts of the Knowledge Base
- Selection of Scenarios for the Exercise
- Matching students and exercises
- Preparation of exercise: accessories and properties, video recordings
- Teacher preparation for the exercise, with the prepared material of SimEduSmart
- Entry level testing: the prerequisite to attend the exercise is to pass the entry level test

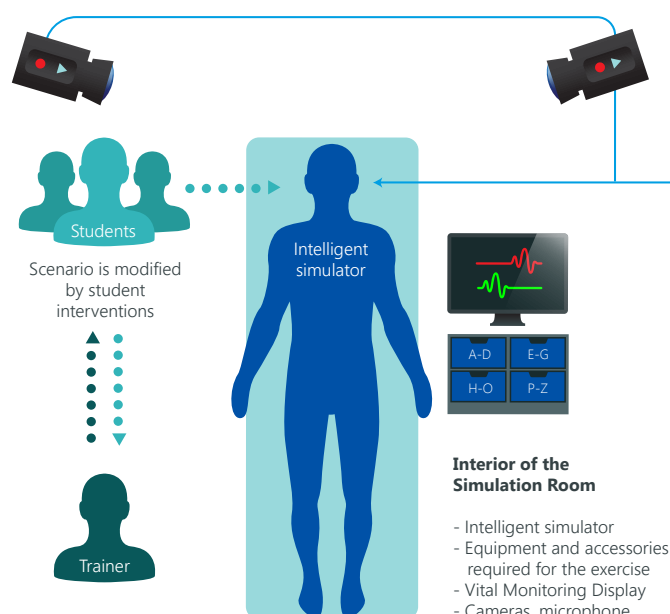


As a student

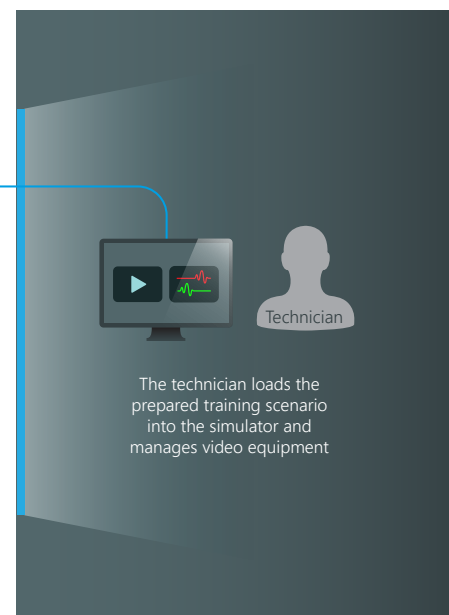
- The student is informed via e-mail, that he/she is registered for a certain exercise
- Link from the information page of the exercise to access to data like date and time and location of exercise and support materials necessary for preparation.
- Study of written materials, and, wherever possible, the master videos
- Successfully written „entry level exercise“

Simulation Exercise

Simulation Room



Technician Room



The video recordings of the exercise is uploaded into SimEduSmart.

The final element is the group evaluation of the videos. What has been done well and what has to be done better next time.

Healthcare training by using a simulation manikin

High fidelity patient simulator (Adult – iStan)



iStan is a high performance, new generation, advanced wireless patient simulator with responses closely resemble those of a human patient.

The new iStan contains all functions which are necessary and useful for training sessions in an interactive healthcare Skills Centre. The simulator has an „all-in one“ system, a fully articulated limbs and joints system which can be fully controlled wirelessly, and has new and updated features which makes iStan the most advanced patient simulator in the world. In addition, the new iStan meets the requirements of the new Müse standard (user interface of the new CAE touchscreen function), which enables an easier, faster and more user-friendly operation of the simulator.

The new iStan has a new skin (a more advanced and realistic skin, which is also more durable) and was created in a way that it should function within various environments from classrooms to field exercises of the Defence sector.

Amongst the new functions you can find the reactive eyes, which generate automatic pupil reaction together or one by one to light or trauma.



The patient simulator has a high availability and robustness, designed to endure the heavy duty of forced respiration (CPR). The new, more silent operation enables the user to hear all patient sounds (and not the mechanics), which improves real life experience when a patient breathes.

There is a new software: Müse-iStan is now compatible with the new CAE (METI) user interface which combines the CAE (METI) physiology models with intuitive, dynamic control during movements.

The high fidelity iStan patient simulator is connected via a standard interface to the SimEduSmart frameset. Being an integrated system the master videos prepared and recorded with iStan are uploaded into the Knowledge Base of SimEduSmart from which students and participants can access them even after the training course is completed.