



# AQAI VIDEO SYSTEM AVS

THE ULTIMATE TOOL FOR SIMULATION EXPERTS



# AQAI

SIMULATION CENTER MAINZ



## SIMULATION CENTER MAINZ

AQAI – The name is an abbreviation: „**A**ngewandte **Q**ualitätssicherung in **A**nästhesie und **I**ntensivmedizin“ – Quality applied to anesthesia and intensive care

AQAI started at the beginning as an initiative to improve quality in anesthesia and intensive care. For more than 15 years we have hosted an information system on complications and critical incidents, which today is one of the largest databases on these kinds of data in the world.

In the simulation center Mainz this initiative gains advantages from putting theory into practice. We realized that this idea was not only for anesthesia but also

for the entire field of medicine in an interdisciplinary manner. We do trainings for various professions with all types of patient and virtual reality simulators. To enhance the comprehensive training spectrum and to make it more realistic, AQAI developed a package of simulation add on products. Being one of the most important tools AQAI produces the AVS: the ultimate tool for simulation recordings and debriefings.

### AVS – AQAI VIDEO SYSTEM COMPACT, FULLY INTEGRATED

- Client server technology  
– network based cameras
- Parallel recording and viewing  
of 4 channels
- Intelligent event manager  
for debriefings



## AQAI VIDEO SYSTEM AVS

Compact, innovative, user friendly

AQAI has designed a special video-rack for the professional simulation facilitator. The video rack is equipped with all necessary cables – ready to use. It is based upon latest network technology, using network cameras and a video server with state of the art video storage capability. The rack is self contained but can also be integrated in existing network environments.

The AQAI Video-Software allows simultaneous recording of one session and viewing of a stored session. During

video recording the user may add multiple jump markers which can be pre-configured to certain events (like induction, start of scenario ...).

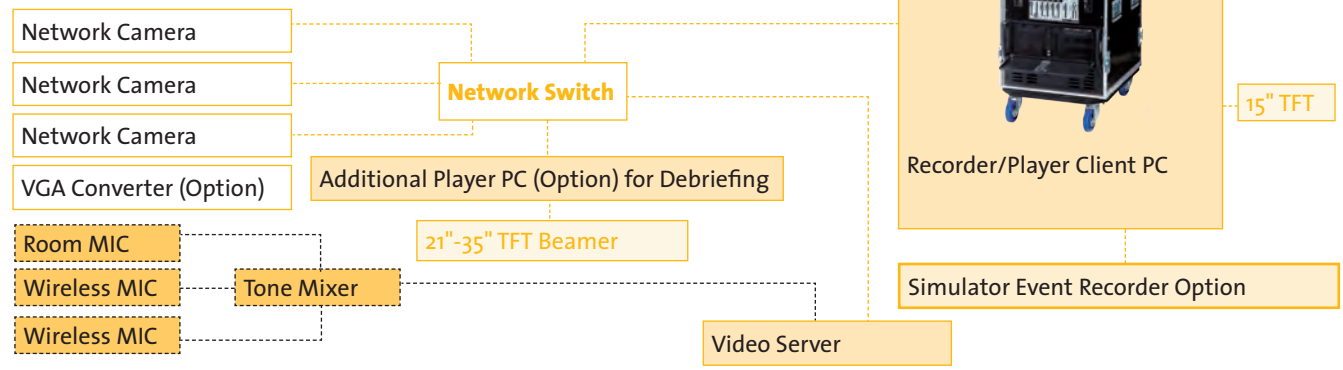
During debriefing it is possible to jump to the markers and start playing from there on, or from a configurable amount of time before. As an additional option simulation events like drug administrations can also be used as jump markers.

surgeon ready, sign in  
 start  
 scenario briefing  
 patient identification  
 start anesthesia  
 oxygen administered  
 intubation  
 auscultation



ready, sign in

### OVERVIEW AVS ARCHITECTURE



15" TFT

Recorder/Player Client PC

Simulator Event Recorder Option

Video Server

Network Switch

21"-35" TFT Beamer

Additional Player PC (Option) for Debriefing

Tone Mixer

Network Camera

Network Camera

Network Camera

VGA Converter (Option)

Room MIC

Wireless MIC

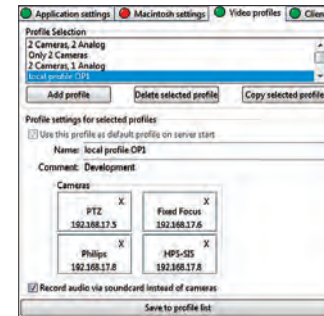
Wireless MIC



## AQAI VIDEO SYSTEM

### Key features at a glance

- **AVS Hardware:** 19" trolley with server and swing out keyboard/display unit, network cameras, tone mixer, wireless MIC receiver
- **Viewing software:** supports high quality debriefings by easy to use jump markers, real time slider
- **AVS Audio System:** audio in CD quality, inputs from 2 wireless microphones (trainees) and 1 room microphone, tone mixer



**AVS IS A VERY FLEXIBLE SYSTEM.  
IT CAN BE EXPANDED OR  
CUSTOMIZED TO THE USER'S  
INDIVIDUAL NEEDS.**



## AVS HARDWARE

Robust trolley, server integrated, network based cameras

AVS is composed of a 19" rack 60 cm in height, which is very robust and can be transported very easily. Inside state of the art technology is used. Video sources can be any network streams, e.g. from digital cameras or analog video sources, e.g. from endoscopy units.

The cameras are powered over Ethernet, that means that just one network cable has to be used. Some cameras are fully controllable with a joystick to allow

adjustments of the camera perspective during the recordings. Additional VGA converters can be used to record signals from video outputs of monitors or computers.

AVS in the basic configuration consists of:

- The rack with the server, swing out keyboard and screen
- 2-3 cameras
- 2 wireless microphones



- 1 room microphone
- All necessary cables
- AVS software package



## RECORDING SOFTWARE

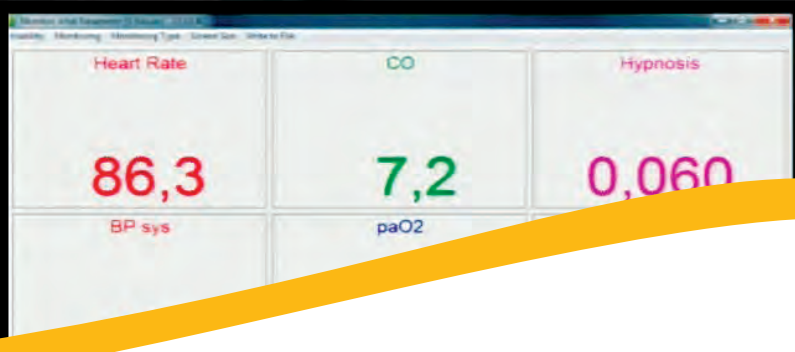
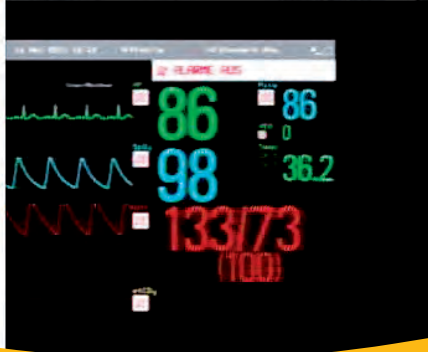
The most important feature of simulation recording software is the ability to place jump markers for the debriefing.

The event manager facilitates pre-configured events from a list that can be customized by the individual user. Additionally free text can be defined any time to mark and describe a certain moment of the scenario.

The event manager runs as a client software. This client can be started on more than one PC allowing markers set by the instructor (inside the room) as well as by the technician. The software also runs on netbooks with wireless connections. Apps for smartphones are under development.



start  
 patient identification  
 start anesthesia  
 intubation  
 surgeon ready, sign in  
 blood gas analysis to lab  
 telefon  
 desaturation < 90%  
 blood gas results  
 desaturation < 75%  
 VT / VF  
 deflation



## VIEWING SOFTWARE

AVS supports high quality debriefings by configurable 4 channel video recordings

Player view of 4 channels:

Channels #1, #2: different camera views of the scene

Chanel #3: VGA converted view of patient monitor

Channel #4: Variable use, e.g. screen output of the simulation interface software.

Double Click on one of the 4 channels enlarges it to full screen.



The viewer software runs on any client PC in the AVS network. By simple clicks, the facilitator opens a certain scenario, replays various scenes and jumps to any marker that has been defined during the recording. The real time slider allows to move forward and back on the time axis to all situations.







## AVS AUDIO SYSTEM

High quality debriefing means both: motion pictures plus full audibility of the scene

The audio equipment consists of 2 wireless microphones for the participants and at least one room microphone. The audio signals are composed in a mixer and then streamed in high quality.

**THE QUALITY OF THE TONE RECORDING IS ONE OF THE KEY FEATURES OF THE AVS.**





## AVS – THE RESULT

### Optimized audiovisual system supports optimal learning

Simulation is certainly the optimal learning tool for any kind of education in medicine. Beside the simulator work debriefings are the most important phases to achieve a learning goal.

Experienced facilitators know: using brilliant video and audio quality to discuss the learning process enables the participants to self-reflect their behavior and allows a transfer from practical work into permanent knowledge.

- AVS is the video system that optimally supports any kind of simulation recording to enhance the quality of the debriefings.
- AVS with its key features is simple to use during recording and debriefing but nevertheless offers best quality.
- AVS has been designed by experienced simulation experts.
- Despite all these features AVS is available at a reasonable price, please ask for a quote.