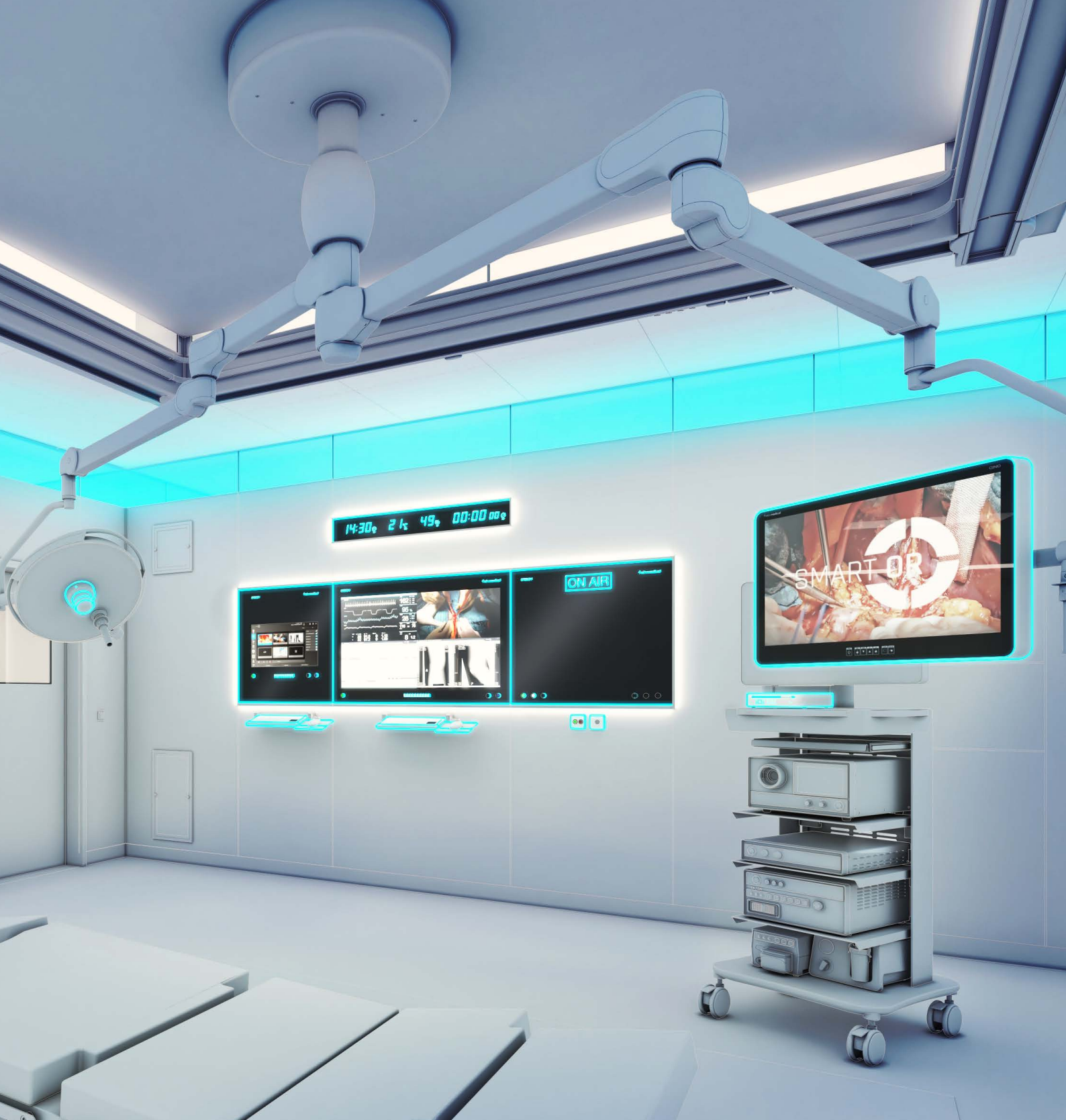


# SMART OR

DIGITAL IMAGE AND VIDEO MANAGEMENT  
EFFICIENT SYSTEM AND COMPONENT MANAGEMENT  
PROCESS OPTIMISATION - SOLUTIONS FROM A SINGLE SOURCE



# SMART OR

## The operating room 4.0

Multimedia technologies are becoming increasingly important when it comes to planning modern surgical facilities. Image and video-assisted operations and examinations make work in the operating room safer, more comfortable and provide new possibilities for documentation and interaction. However, the increasing number of different systems, their data and the complex distribution of signals and media necessitate an easy way to be controlled and processed. This is why we developed SMART OR.

## The solution

Comprehensive control and flexibility: Our SMART OR software manages all video sources and sinks in the OR and conveniently provides images, video, audio and procedure-relevant metadata within the IT network.

If images and videos need to be distributed, recorded or managed in the OR, SMART OR takes care of it. SMART OR is the right choice for everything from single-user solutions for documenting image and audio material from local sources to complex tasks within networked environments.



**Routing**  
Local AV signal distribution



**Documentation**  
Patient and procedure-related documentation



**Archiving**  
Central multi-level documentation archiving



**Monitoring**  
Access to status information and events



**Environment Control**  
Control of a wide range of environmental components



**Administration**  
Central system management and monitoring



**Streaming**  
Bandwidth-efficient distribution in the IT network



**Plug-ins**  
PACS, HIS, conference circuits and more



**Exporting**  
Data can be retrieved and exported at any time



**Workflow support**  
Workplace and terminal-based event documentation



**Interfacing**  
Data integration and exchange



**Automation**  
Automation of procedural process steps



# NETWORK

# CONNECTION

LDAP, DICOM,  
HL7, API

SMART OR

## DICOM and HL7 for PACS and HIS connection

Feed patient and procedure data from central systems (RIS/HIS) via THE IT network to the documentation workstation and feedback on events that have taken place as well as generated media material.

### Benefits:

- Patient/procedure imports
- Linking to generated documentation
- Enabling automated documentation

## Flexible signal networks

The configuration management of SMART OR lets you flexibly map the signal network according to individual conditions and then organizes the corresponding optimal signal paths.

## DICOM CONNECT

SMART OR DICOM CONNECT connects SMART OR with clinical DICOM communication. DICOM CONNECT lets you automatically transfer patient data from the worklist, send images generated in the operating theater to the PACS and report on procedural events. The DICOM CONNECT interface can be flexibly adapted to individual and manufacturer-specific requirements.

## HL7 CONNECT

SMART OR uses SMART OR HL7 CONNECT to provide a connection interface to the hospital information system (HIS) or central message servers to map even complex data exchange scenarios.

"Health Level Seven" (HL7 for short) not only enables communication and co-operation between health care institutions, but also between administration, treating physicians and all other parties involved within a hospital.





## Easy source management

With just a few gestures, you can determine which image is displayed on which monitor. Presets let you permanently save recurring layouts and recall them at any time. These presets can be specific to the room, the treatment or the doctor. The signals can also be displayed as PIP/POP or in quad mode.



## Video routing and archiving from a single source

Multimedia technologies are becoming increasingly important when it comes to planning modern surgical facilities. Image and video-assisted operations and examinations make work in the operating room safer, and more comfortable and provide new possibilities for documentation and interaction.

The increasing number of different systems, their data and the complex distribution of signals and media necessitate an easy way to be controlled and processed.

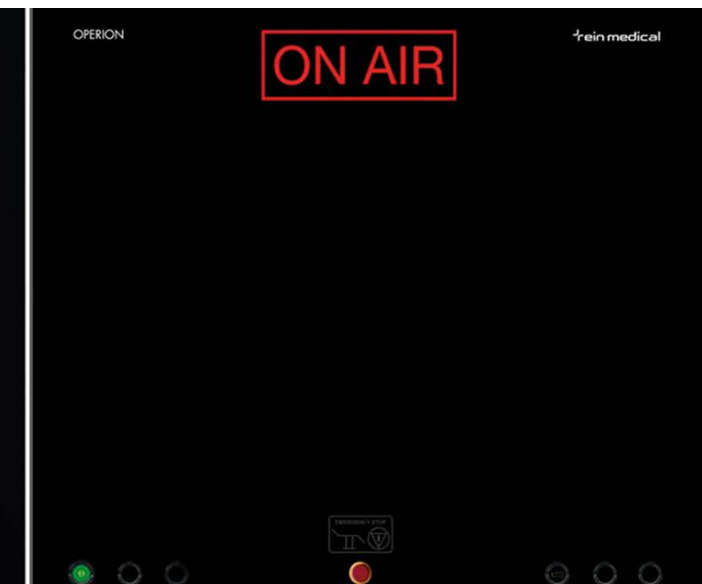
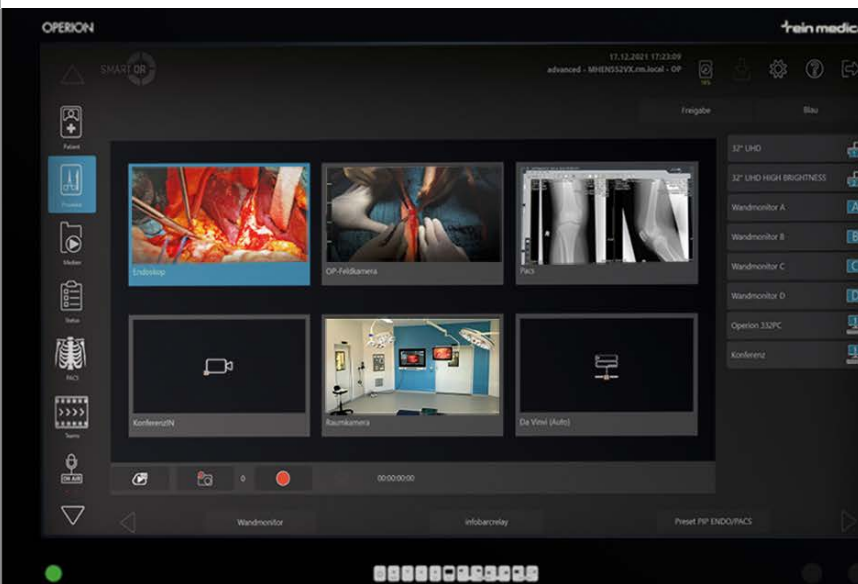
SMART OR takes over this control and distributes it. It lets OR staff control videos, images and data accurately via an easy-to-use command center.

## Routing

The individually configurable routing paths give the OR team full control over the signal flow and the devices without the complex networking and elaborate technology being visible in the background.

## Archiving & documentation

Centrally archived data can be retrieved, stored, linked and processed locally or by physically independent networked CLIENTS. The document management is adapted to the special needs of digital medical documentation and can be connected to HIS, RIS and PACS.



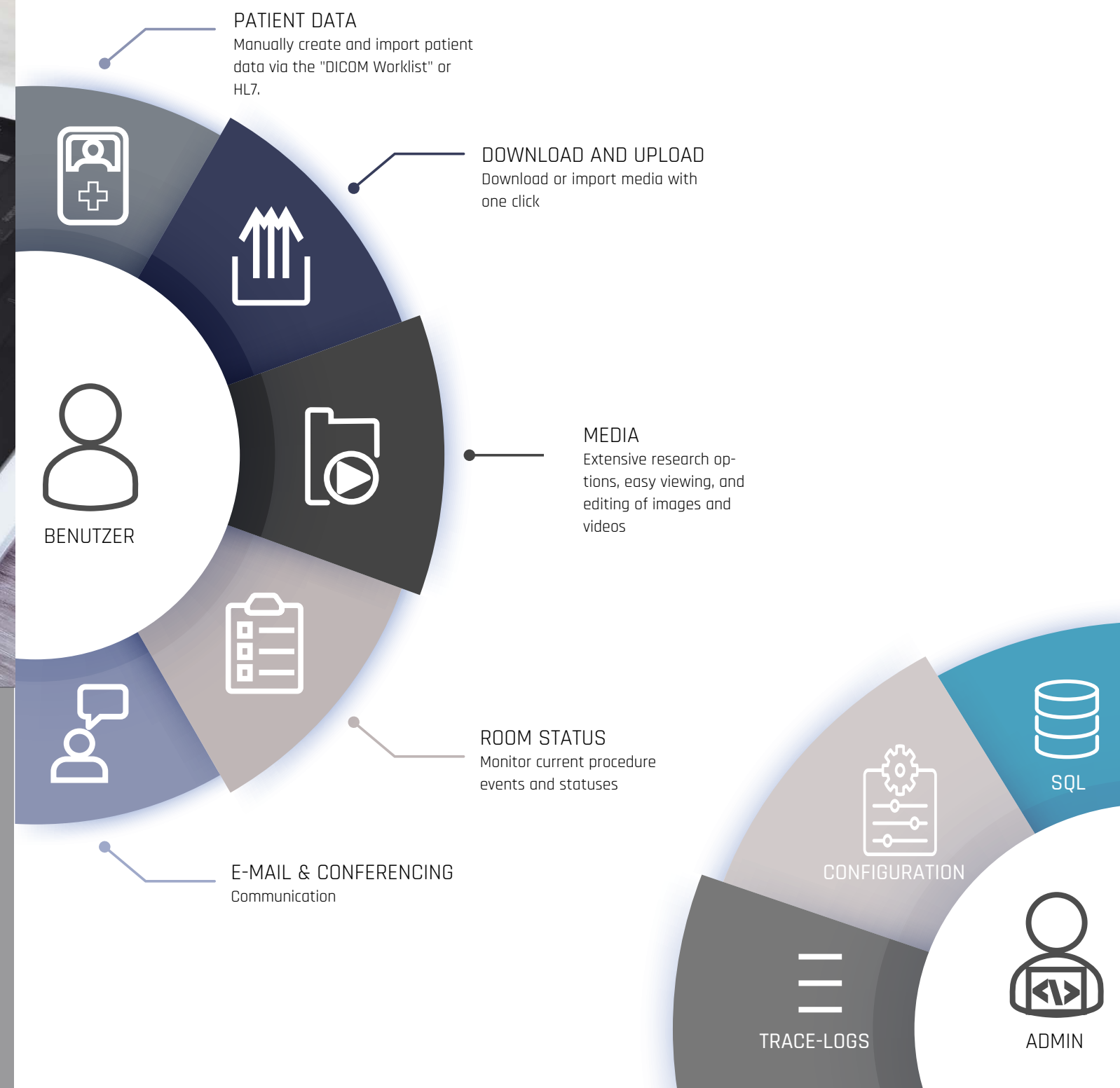


# SMARTER

# WEB CLIENT

## Accessible anytime and anywhere

SMART OR's web applications offer flexibility across devices, browsers, and locations. This means that you can access available media material and procedural information at any time, whether in the office or from home. The WEBCLIENT brings the patient data you need into your browser. It is not just the auto logoff function that provides the necessary security. Thanks to the technology used, the WEBCLIENT is secure, fast, robust and freely configurable.





# SECURE

# FLEXIBLE

## Access all content at any time with SMART OR CLIENTS

The CLIENTS provide the user interfaces for those working with SMART OR. They have access to the central video management functions via the network. For example, once the OR team has given its approval, the head physician or the students in the lecture theater can follow the OR without having to be present themselves.

## Clinic-wide streaming

The number of imaging instruments and applications in modern ORs is constantly increasing: SMART OR makes it easy to manage this wealth of information and display it clearly. Our ultra-fast and resource-saving network streaming allows for high-quality live transmissions and space-saving archiving. CLIENTS connected elsewhere via a suitable network can access the multimedia streams and communicate with each other bidirectionally.

ON AIR

## Streaming with rights management

Using the rights management integrated into the NETWORK SUITE, the doctor in charge can precisely define who is allowed to view which live stream in the CLIENT. Up to 16 video streams can be displayed simultaneously on one screen in HD quality. The "on-air" display in the OR immediately shows the attending physician whether someone outside the OR is accessing local video signals.



# VIDEOMANAGEMENT



## Flexible signal networks

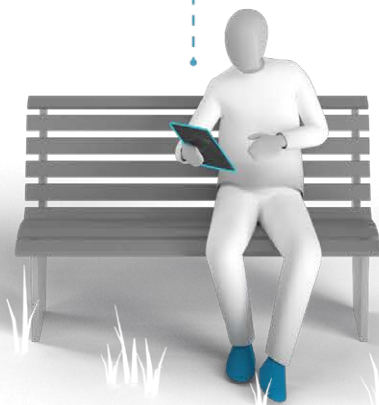
SMART OR enables users to flexibly distribute images from all connected sources within the OR. Optionally, full-screen images or multiple quadrants on one display can be utilized to meet procedure-specific requirements flexibly.

## Modular

SMART OR can be adapted from a simple documentation workstation, through local routing, to a fully integrated operating room with central archiving and data integration, to meet individual needs. Complex networking and sophisticated technology remain in the background throughout.

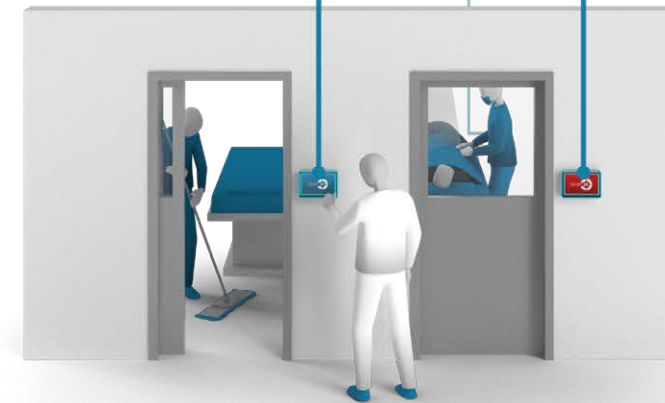
## SMART OR WEB APP

The SMART OR WEB APP provides the capability to integrate mobile devices into the entire system, allowing data to be viewed and reviewed independent of location.



## Streaming & Conferencing

All sources within the operating room can be transmitted to connected offices or lecture halls, with the additional feature of bidirectional audio communication. Another useful function is the integration of platforms such as Microsoft Teams. SMART OR thus offers straightforward and time-saving consultation of a chief physician or enables students to receive "live" educational content without needing to enter the operating room.



## Workflow support

The SMART OR DOOR SIGN Terminal provides a color-coded visualization of the operating room status. This immediately informs users whether the patient, for example, is in the process of suturing or the room is undergoing cleaning. Additionally, staff can be informed about potential infections or similar conditions before entering the room.

## PACS, RIS and HIS

Through HL7 and DICOM interfaces, patient data or previous findings can be seamlessly integrated into SMART OR and its core functions. This eliminates the need for users to switch between various applications to access the currently relevant (image) data.

## Monitoring

The video, audio, and data monitoring at the location can automatically document events and access clinic-wide applications.





# SMART OR

# CONNECTS



## Connected Rein Medical family

### Connectivity options

If SMART OR MANAGER is available as a central communication node within a video management integration, it can also be used to connect Rein Medical devices. Third-party components, such as OR field cameras or luminaire cameras can also be connected and controlled. The data connection can be established with the PACS, HIS, RIS and other subsystems via DICOM, HL7 or API and enabling straightforward data exchange.



1 DOOR SIGN -  
Terminal Application



2 CLINIO -  
Monitor, All-in-One-  
Computer, Computer



3 OPERION -  
Wall-integrated  
monitor with optional  
PC system



5 INFOBAR -  
Information display



6 IOI -  
Encoder and decoder

4 OPERION HUB-  
Media distributor



## Who are we?

At Rein Medical, we drive innovation. Our German company with a team of 100 employees has been involved in medical IT for more than three decades. Nowadays, we're a system service provider that implements customized IT solutions from planning to handover from a single source. We also accelerate the digital transformation in practices, clinics and other medical facilities. We develop and produce individual all-in-one computer solutions, high-resolution displays, customized IT wall modules for operating rooms as well as video/audio and image management systems. Rein Medical has been part of the JVC Kenwood Corporation since March 2018 and is a globally active company.

## Quality through the international standard ISO 13485

Rein Medical is the proud holder of ISO 13485 certification, which demonstrates our high-quality standards and commitment to continuous improvement in quality management systems. The successful certification confirms our commitment to providing our customers with the highest quality products and services. We are proud to be able to back this up with a certified QM system.

## Future „Made in Germany“

We stand for quality and set a hygienic benchmark with our certified IT. From the design, development and production of our hardware to the programming of our software, we realize our IT solutions at the Mönchengladbach site. With our worldwide partnerships, we offer innovative holistic solutions for an optimized workflow, ensuring smooth and reliable processes in the operating room.

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