

# OR-Integration



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A solution from Rein Medical

## OR-Integration

Digital networking in practices and clinics does not stop at operating theatres either. The operating theatre of the future is smart, networked and intelligent. With new possibilities for control, monitoring and diagnostics, operating theatres are becoming interdisciplinary operation centres which, with their high-end equipment, combine the capabilities of man and machine for the benefit of the patient: flexible, clear and effective. Due to the increasing number of different systems and their complex signal and media distribution, an optimized workflow in modern operating theatres is only possible if systems are precisely coordinated and can access each other.

A professional image and video management system manages, documents and controls data, images and videos. It ensures a fast and secure data flow, reduces the susceptibility to errors, increases patient safety and relieves the operating team through ergonomic operation.

OR integration enables full control over all imaging devices and represents the decisive step towards the operating theatre of the future

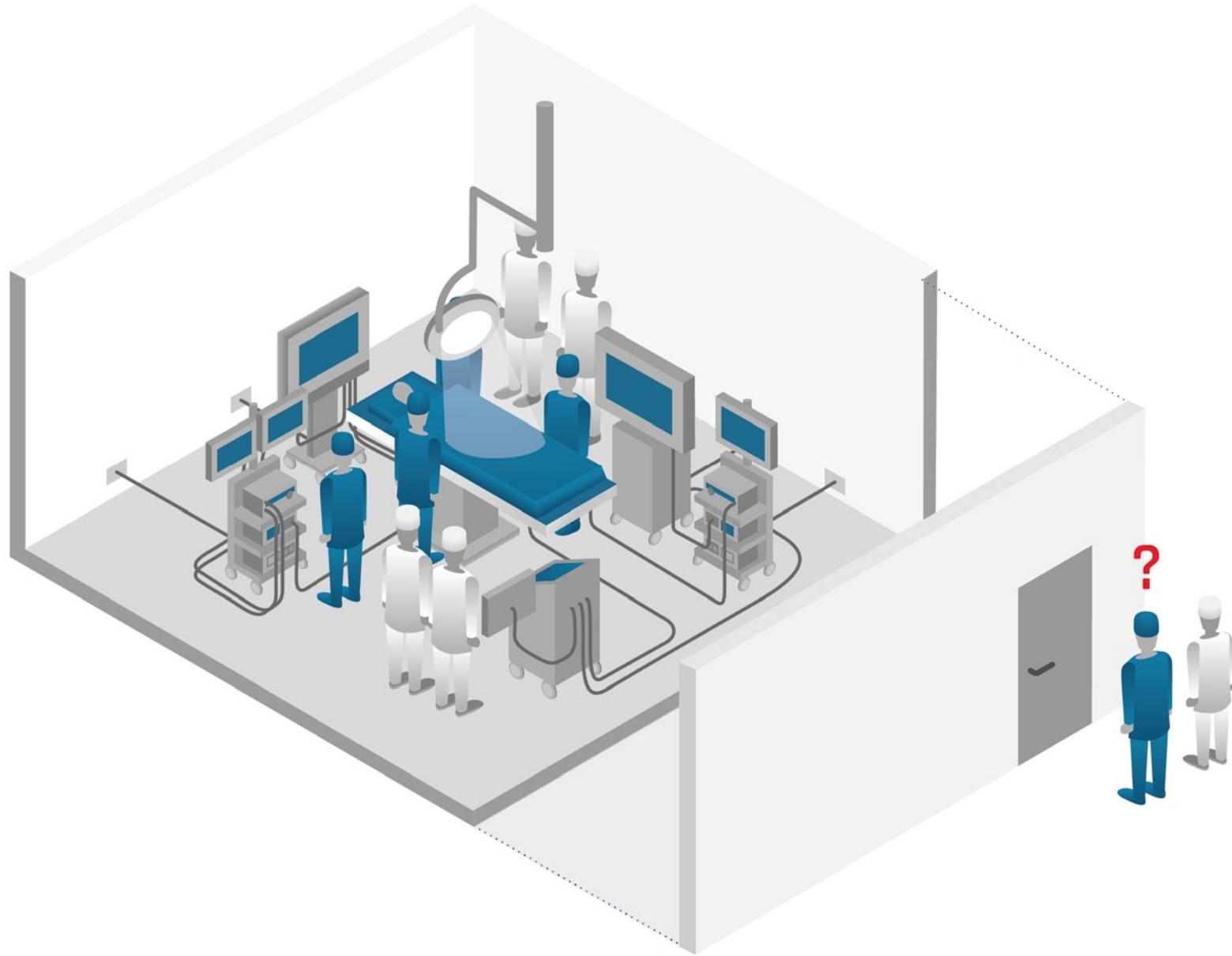
# Initial situation

- > dispersed information
- > limited mobility
- > inefficient processes
- > lack of transparency

The number of medical devices in the OR continues to increase. The volume of data is also increasing all the time. In order to improve response times and minimise follow-up costs, hospitals are increasingly investing in multi-functional operating theatres. Operating theatres are equipped with computer-assisted medical devices, endoscopes and imaging systems that collect a wealth of data, provide a wealth of information and support physicians in their surgical procedures.

A plethora of highly specialised technology must be closely monitored by OR personnel. Often the overview is missing; monitors are located in unfavourable places and cannot be seen properly by the staff. The training and operation of individual devices usually takes a lot of time and always represents a potential risk for patient safety. A variety of different cables restricts freedom of movement, increases the risk of „trip hazards“ resulting in a loss of valuable time.

If the IT has to be adapted to the requirements in the operating theatre, there is a lack of flexibility in changeover times. Furthermore, the room status is not visible to outsiders. Employees or colleagues have to be introduced into the OR with considerable effort if there are questions. A deficient system with corresponding information about the spatial situation in the operating theatre complicates the process of operation and communication both inside and outside the operating theatre.



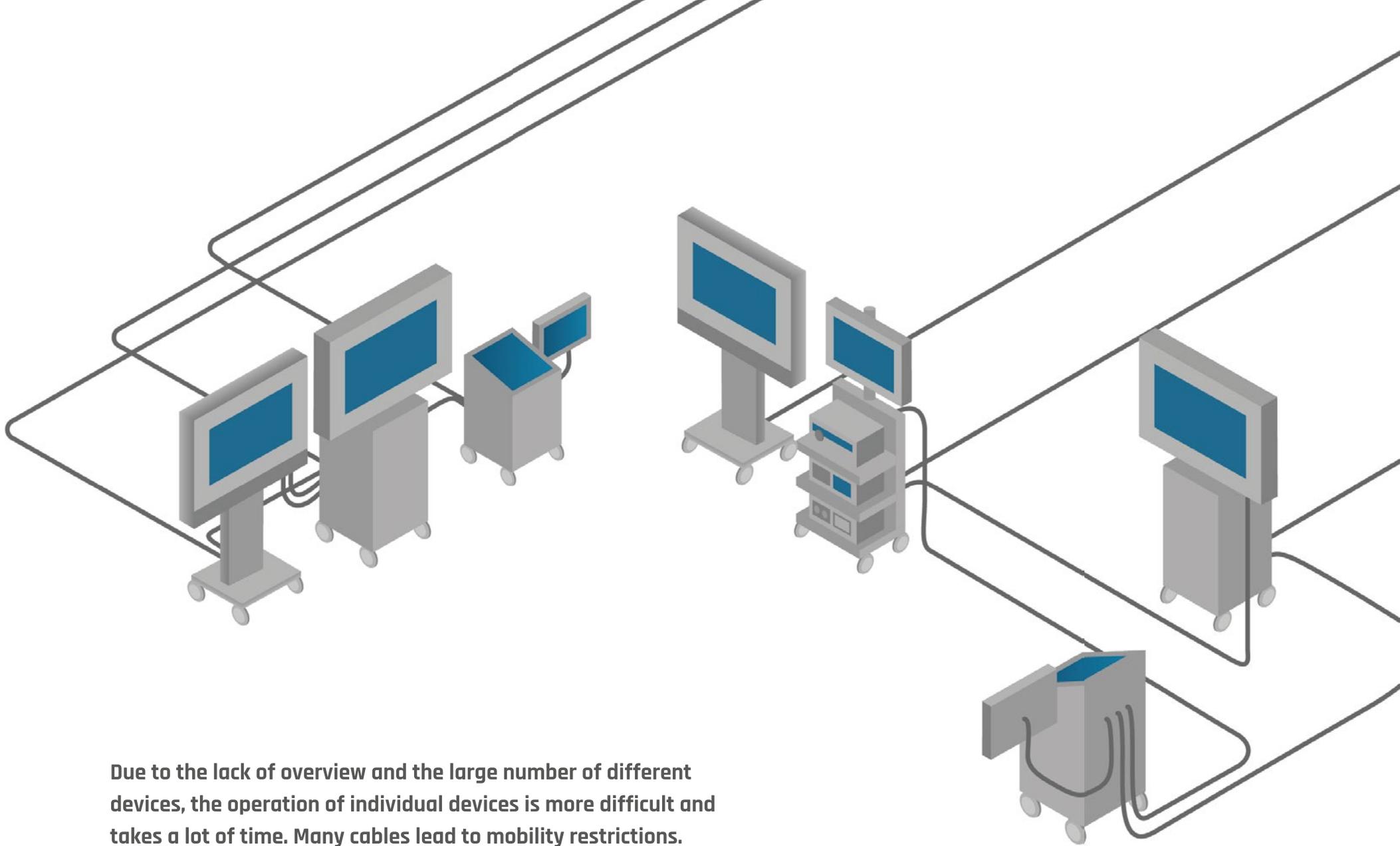
# Challenge

- > Standardised workstations
- > Uniform control of surrounding components
- > Real time transmission
- > Intuitive operation
- > Pre-definable equipment settings
- > Rapid and automated allocation of data
- > Connection to HIS, RIS and PACS
- > Upgrading during ongoing routine operation

**The challenge is to create workstations that are as uniform as possible and standardised processes that enable the operating team to control all the equipment and simplify the workflow.**

The available data and information must be bundled and made available in real time - if possible automatically. The control and operation of the user interface must be simple and intuitive. Pre-definable equipment settings and transfer scenarios can improve the utilisation of OR capacities.

Image and document management must be adapted to the special needs of medical documentation. A fast and automated assignment and a direct connection to HIS, RIS and/or PACS facilitates access to the existing image, video and data material. In order to ensure continuous operation, the operating theatres are ideally converted during ongoing operation. Precise deadlines must be adhered to at all costs.



Due to the lack of overview and the large number of different devices, the operation of individual devices is more difficult and takes a lot of time. Many cables lead to mobility restrictions.

# Our Solution

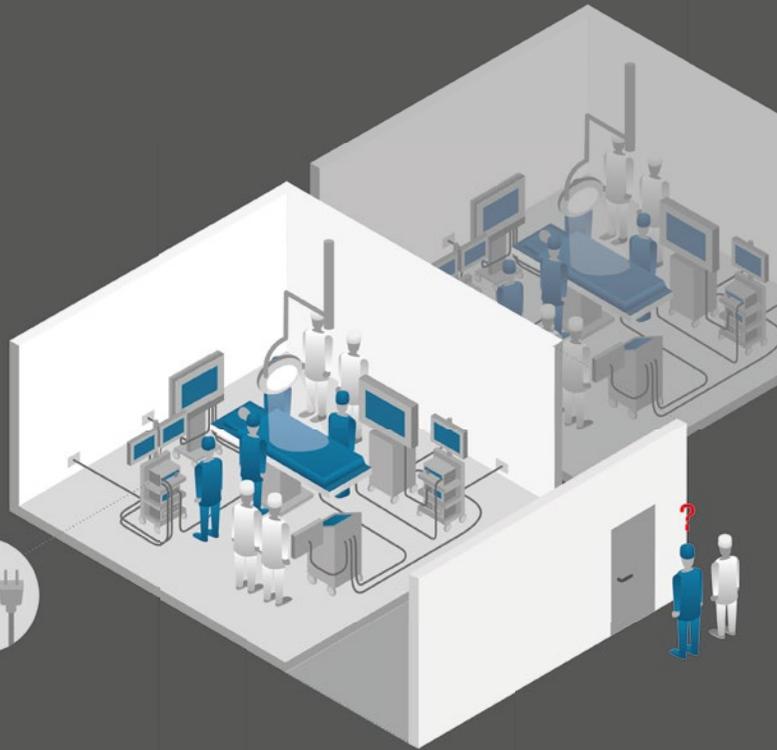
- > Improved workflow via seamless integration
- > central administration
- > simple and intuitive operation
- > future-proof components
- > comprehensive solution for individual requirements

A centralized and decentralized OR integration of hardware and software components offers the possibility to optimise workflows and reduces the risk of operating errors. With the hardware and software from Rein Medical, the OR of the future will become a digital performance centre.

Seamless integration into the OR workflow significantly improves the flow of information. In addition to central management of videos, images and patient data via the intuitive SMART OR software, Rein Medical offers the corresponding hardware with wall-integrated monitors and workstations from the OPERION family and the versatile All-In-One PC series, CLINIO. With the universal plug-in connection of the „SMART OR VPT-Box“ developed by Rein Medical and the „DOOR SIGN“ room signage system, further possibilities are added which considerably simplify the workflow in the operating theatre.

The content is centrally available and can be accessed from anywhere. The prescribed clinical documentation is made much easier. In addition, SMART OR improves the medical care of the patient: A complete video integration with documentation and link to PACS improves diagnostic capability, allows more precise insights into the operating procedure and provides detailed image comparisons (before/after).





# Initial situation

## Dispersed Information

The multitude of systems leads to limited exchange possibilities of important data

## Restricted mobility

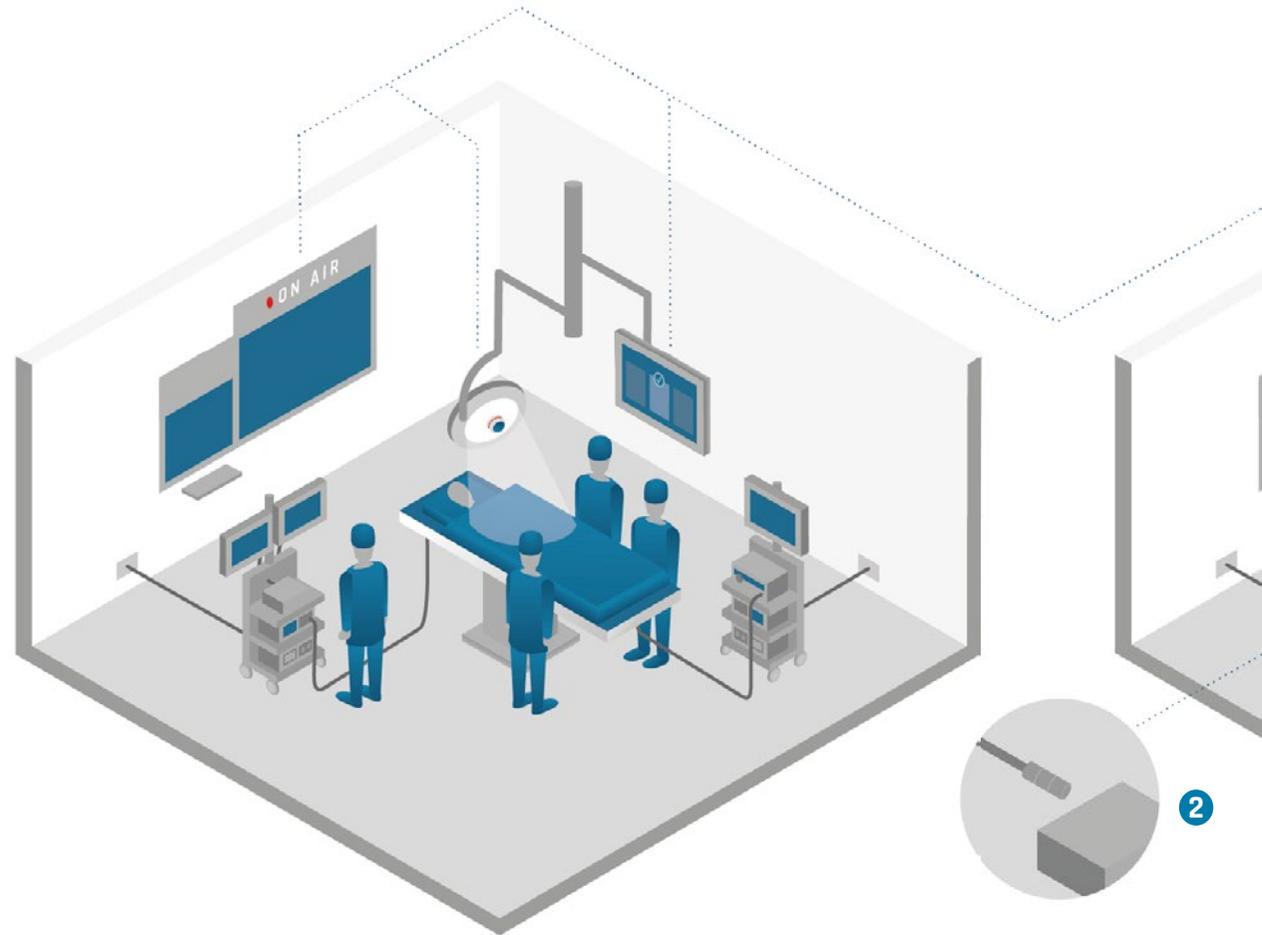
„Tripping hazards“ due to the myriad of cables

## Inefficient processes

Differing systems and non-uniform user interfaces have a negative effect on the working and communication processes

## Lack of transparency

Lack of information on the spatial situation





# SMART OR<sup>®</sup>

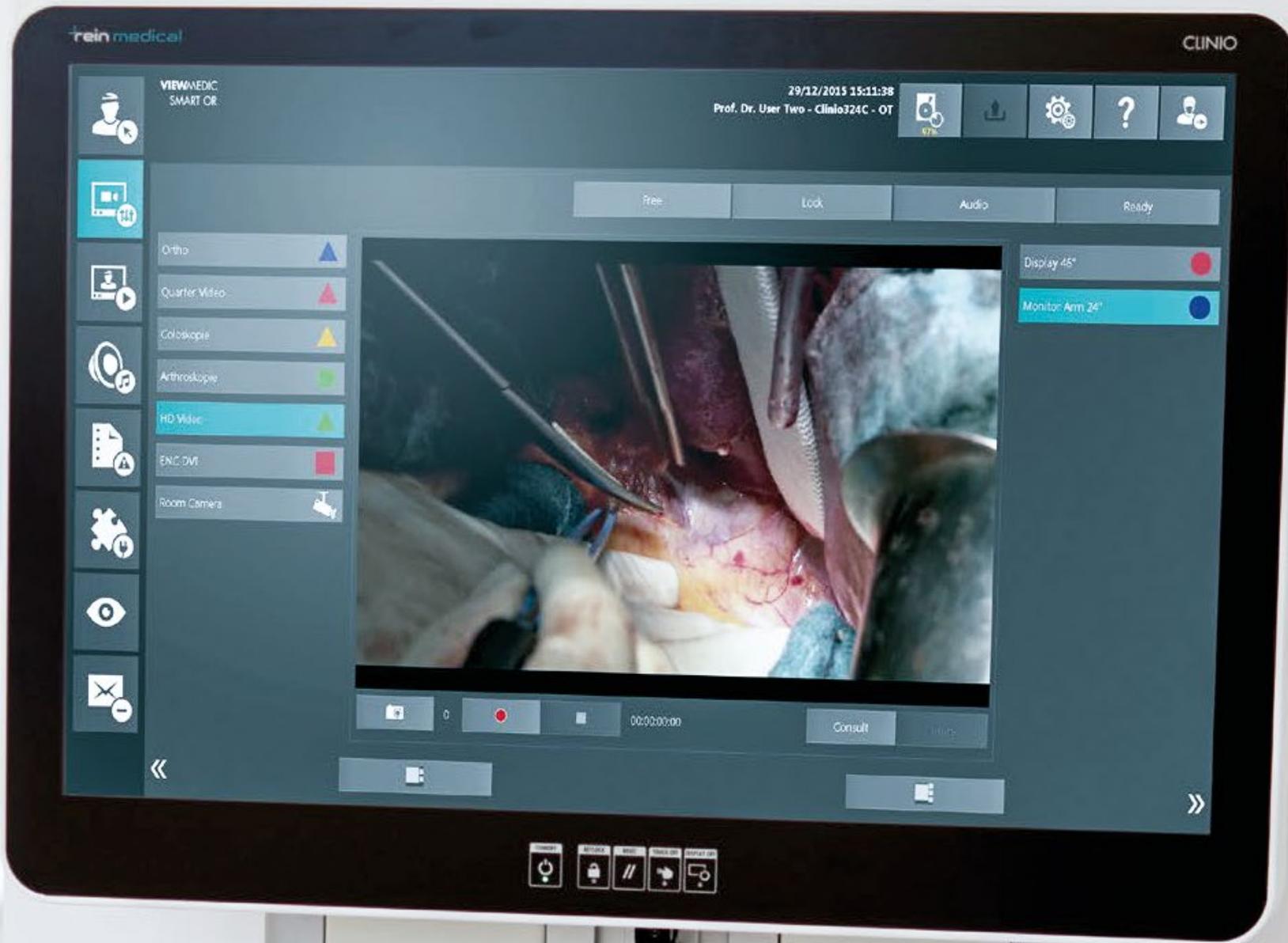
Software that streams,  
manages and archives

- ▶ Conversion of image data into an AVC/H.264 livestream in Full HD quality
- ▶ Managing all video sources in the OR
- ▶ Comprehensive integration in the network
- ▶ Intuitive operator interface and integrated rights management
- ▶ Easily operated archiving system
- ▶ Medical documentation management

**In addition to the central management of videos, images and data, Rein Medical offers a platform-independent, clinic-wide solution through the intuitive SMART OR software.**

SMART OR enables complete video integration with documentation and link to PACS. This facilitates diagnostic ability, enables more precise insights into the surgical procedure and provides detailed image comparisons (before/after).

The integration of the WHO Surgical Safety Checklist increases patient safety and ensures coordinated and uniform procedures in the OR team that regulate the tasks and responsibilities in the OR.



simple operation



efficient Livestreaming



scalable configuration

# SMART OR<sup>®</sup>

At a glance

## Optional integrations per room:

- > Route
- > Documentation
- > Streaming

## SMART OR Local Suite

The SMART OR LOCAL SUITE provides an introduction to professional video management. Up to four users (SMART OR CLIENTS) have access to media streams from the OR over the network.

Options per room

## SMART OR Network Suite

The SMART OR NETWORK SUITE allows complex integration scenarios in multiple ORs. SMART OR CLIENTS are freely scalable and can access and distribute currently provisioned OP's streams.

Options per server

# Seamless integration

- **DICOM and/or HL7 connection**  
to existing systems (HIS, RIS, PACS, etc.)
- **LDAP connection**  
to directory services such as MS Active Directory
- **Exporter and Director**  
Automatic documentation and media export service  
to the network



# SMART OR Hardware

## VPT Box

### At a glance

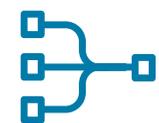
- > Universal hybrid plug
- > Audio & video transmission via fibre optics
- > Transmission of USB signals via fibre optics
- > Automatic activation of new sources at runtime
- > Trigger transfer from existing devices to SMART OR
- > Automatic preview of image sources



simple  
operation



future-  
proof



hybrid

OR 1



KLINIKUM  
FRANKENFELDEN  
FÜR EIN GESUNDES LEBEN

08:07  
Freitag 9.11.2018

Date of birth:	19.4.1958	♂
Patient-ID:	846275913	
Procedure:	Coloscopy	
Infection:		



Room state:  
Cut



rein medical

# DOOR SIGN

## At a glance

- > Room and infection status directly recognisable via LED frame
- > Patient Information at a glance
- > Simplification of the OR workflow in day-to-day operation
- > Easy to operate touch surface
- > Data collection for process optimisation possible



easy to  
operate



safe



flexible

# Other hardware from Rein Medical

FOR BETTER



quality



hygiene



efficiency

## OPERION<sup>®</sup>

### Wall-mounted monitors and workstations

- > Class 1 medical device
- > Screen diagonals from 19" to 75"
- > 4k UHD technology from 49" upwards
- > Anti-reflective full-surface glass front
- > Automatic brightness stabilisation
- > Pre-sets for different colour space

# CLINIO®

## AIOs and Monitors

- > Class 1 medical device
- > Screen diagonals in the sizes 22", 24", 27" and 32"
- > 4k UHD technology at 27" and 32"
- > full glass front
- > maximum hygiene due to IP65 protection on the front and housing with germicidal powder coating
- > control via COMMAND BAR, remote control via GPIO
- > developed for the patient-oriented setting



# This is who we are!

Rein Medical GmbH, founded in 1994 and headquartered in Mönchengladbach, is a manufacturer and developer of software and hardware solutions in the field of medical IT. The service spectrum ranges from medical computer systems to diagnostic and viewing systems, to clinic-wide image and video management. Rein Medical is a system service provider that implements holistic IT solutions for clinics and practices from planning to handover.

Around 80 employees work in Germany, Switzerland and Spain.

Rein Medical has been part of the Japanese JVC Kenwood Corporation since 2018. JVCKENWOOD is a global leader in the development and manufacture of sophisticated audio, video and wireless communications solutions. In the field of diagnostics, high-end solutions for early cancer detection have been being developed for a few years.

[reinmedical.com](http://reinmedical.com)

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