

ALVO® Integra



OR INTEGRATION SOLUTIONS  
FOR MULTIPLE SURGICAL WORKFLOW NEEDS

# OR integration solutions for multiple surgical workflow needs.

Alvo® Integra is a future-proof OR integration solution, offering full integration of medical and non-medical devices and advanced video management (videorouting, telemedicine).

The ALVO® Integra solutions have been designed in order to support surgical processes, improve OR workflow and ergonomics and increase patients' safety. Based on extensive experience in over 70 countries, ALVO® Medical offers OR integration solutions in three segments, depending on customers' needs and surgical profile. ALVO® Integra solutions are there to help operating theatres become even more manageable, save time and money.



ALVO® ORControl



ALVO® Integra



ALVO® IntegraX

## Modularity

Three segments, one control panel.

All three ALVO® Integra segments use the same control panel, which is the core of the system. It allows to easily expand the OR integration solution from basic to advanced version without the need to replace its basic elements, which lowers costs and shortens the upgrade time. All ALVO® Integra components are integrated with the ALVO® modular OR infrastructure.

## User-friendly interface. Light and dark mode.

Adjusted to the needs of general and minimally-invasive surgery.



# ALVO® OR Control

## Ergonomic surgical suite setup. Devices control.

OR management solution dedicated to controlling surgical environment and devices. A simple and easy to install solution, which centralizes control functions of the integrated devices into one touch screen. Additionally, ALVO® OR Control allows monitoring status of ventilation systems, medical gases and electrical installations.

### System's functionalities:

- Surgical lights
- ALVO® surgical tables
- Doors and blinds
- Visual display and monitoring status of medical gases
- Ventilation systems - status display and temperature / humidity settings
- General lights
- Built-in music player
- Electronic timer integrated in the modular OR infrastructure
- Programmable stoppers and alarms

## Integrated control interfaces

The icons on the touch screen of the ALVO® Integra solutions use the same graphic layout as original device controllers, so that managing the operating room is easier and more intuitive. Certified integration of other vendors' devices, eg. Dräger broadens available integrated devices portfolio.

The ALVO® Integra interface has been designed together with clinicians: nurses, surgeons and anesthesiologists. The shape and dimension of icons has been designed based on data from interactive heatmaps of regular clicks and actions and the schematic layout of surgical safety checklists adjusted to the WHO standard. Thanks to this we were able to create a user-friendly control screen.



## System's overview



## Intuitive, ergonomic and safe devices and video management.

Solution dedicated to managing medical and non-medical infrastructure with video management options. Manageable, compact architecture allows to easily introduce the system into existing facilities. The ALVO® Integra enables advanced video routing, with clinical images displayed on assigned monitors in the OR, as well as video streaming outside the operating room. Optimal price-quality model.

### System's functionalities:

- Includes functionalities of the ALVO® OR Control
- OR video management
- Possibility to connect different video sources of different vendors (cameras, endoscopes, ultrasound, computers PC)
- Images display on surgical monitors
- Includes scrub nurse station with access to hospital data in PACS and HIS
- Recording and archiving connected video sources
- Audio and video streaming inside the hospital network and to the Internet
- Control over integrated cameras

## Video routing

ALVO® Integra provides high quality video distribution in the operating room. Open software architecture of the system enables its further expansion with new video sources and monitors, without interference into the cabling infrastructure. This long-term approach future proofs hospital investment cycle.

Every operating room may have a scrub nurse station with direct access to PACS and HIS systems. Video sources will be permanently assigned to the specific OR. They may include: the camera in the operating field (surgical light), an overview camera installed on the ceiling and the computers with access to PACS and HIS.

Another group of video sources supported by the ALVO® Integra are mobile devices, which may include endoscopic cameras, ultrasound or C-arm. The mobile devices are very often shared between ORs, depending on the needs of a given procedure. Plug-and-play connection of 'additional' video source is important, especially during an ongoing surgery.

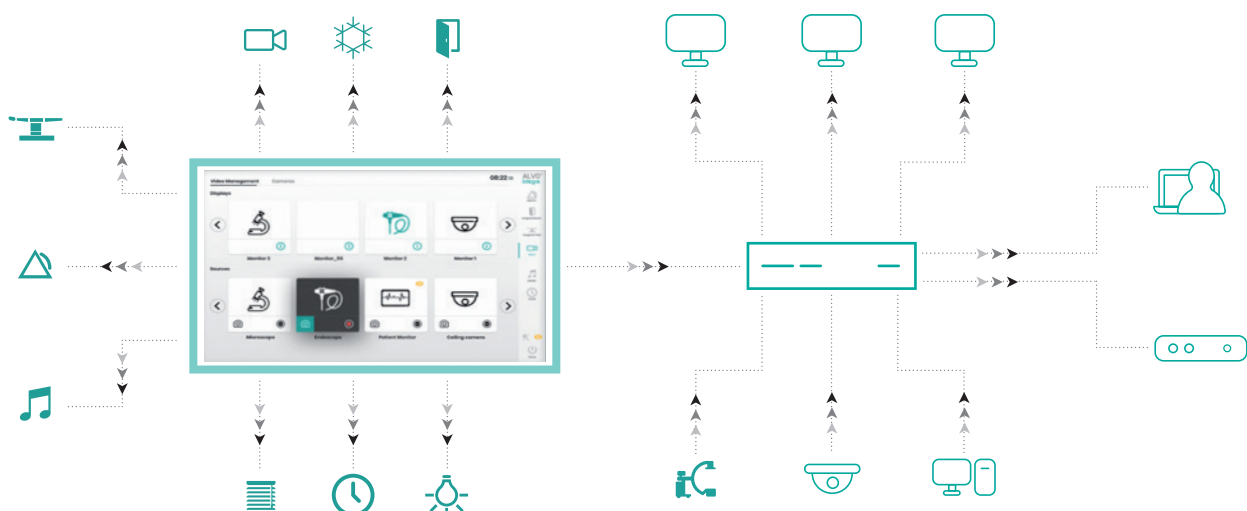
## RGBW lighting

RGBW technology, also called ergonomic lighting, allows the color of the light in the operating room to be adjusted to the phase of surgery. Individual settings of light scenes can be recalled from the Alvo® Integra touch screen. Light scenes based on the colors of green, red, blue and white are used, depending on the type of procedure, or stage of surgery. For instance, white light will be used for the induction phase, to optimally monitor the patient. Minimally invasive procedures, on the other hand, often use green or blue light, which allow for better contrast with the image on surgical monitors and does not cause operator's eyes fatigue.

The lights help hospitals save energy, which is a vital economic benefit. Special sensors will automatically reduce light intensity when the operating room is unused for a longer period of time.



## System's overview



## Customized solution. Project approach.

Scalable solution that uses fiberoptic technology for medical images management and exchange of data between hospital systems PACS and HIS. Designed to meet the needs of large, advanced hospital projects, with customized approach to allow adjusting functionalities to the individual needs of the investor.

### System's functionalities:

- Includes functionalities of the ALVO® OR Control
- OR video management, that allows to easily expand integrated ecosystem adding new video sources and displays
- Plug & play connection of different video sources, vendor independent (cameras, endoscopes, ultrasound, computers PC)
- Images display on surgical monitors
- 4K / FullHD / 3D video distribution in the OR
- Real-time pressure mapping solution ALVO® SENSEi integrated
- May be integrated with hospital PACS and HIS systems to provide data exchange within the hospital network
- Recording and archiving connected video sources
- Control over integrated cameras
- Advanced videoconferencing options, including telestration
- Video-over-IP solution, based on fiberoptic technology, for optimal control and maintenance

## Integration with HIS / PACS

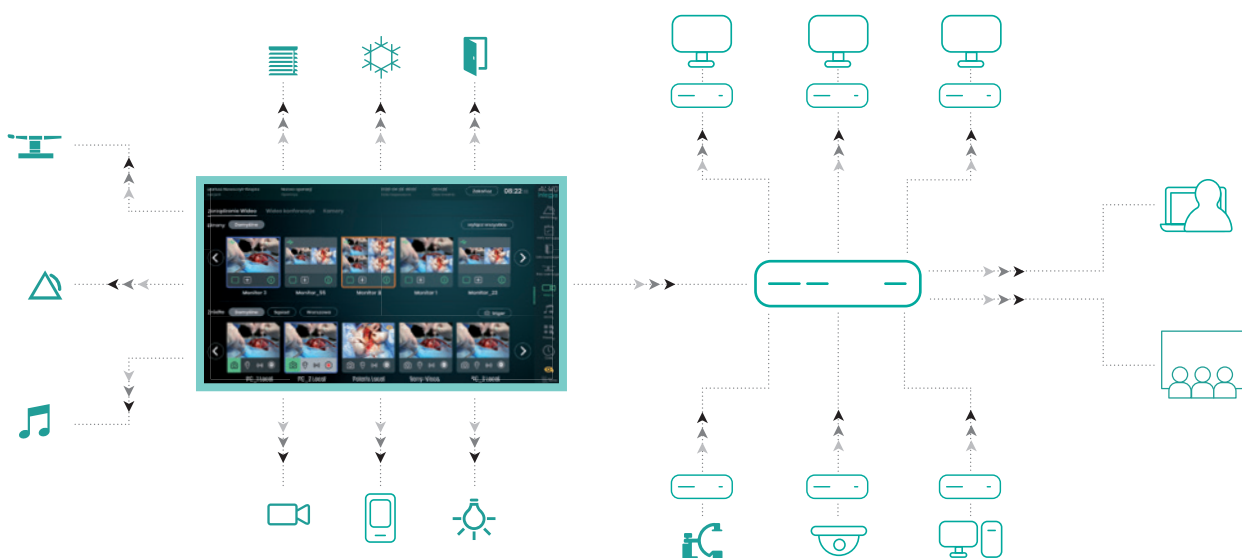
In order for the surgical team to archive images and video sequences on the PACS servers, the Alvo® Integra solution enables exchange of data at the application level with PACS and HIS systems. The system allows downloading surgery plans from the HIS system, in order to assign images and archived data throughout the procedure to a given patient. After the surgery, surgeons may send and archive complete patient data in the PACS system. This way processing surgical patients through the hospital system is much faster and safer.

## Videoconferences

Exchanging multimedia and remote collaboration during surgical procedures have become natural. While, letting crowd in the OR does not comply with hygienic regimes. Videoconferencing option serves university units, as a way of introducing students and surgeons to practical knowledge. The ability to transmit high quality image from the surgery room with simultaneous voice communication solves this problem. Clinicians may now record and stream live video conferences to a large auditorium. Telestration software allows annotations to be drawn over video footage to illustrate key clinical findings in an interactive manner.



## System's overview

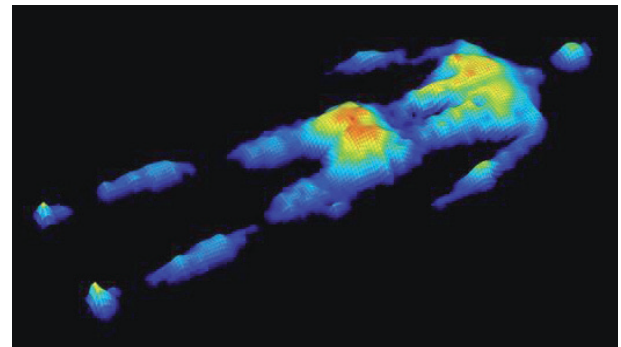
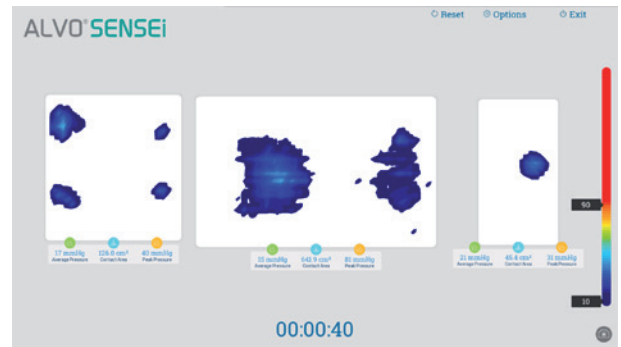
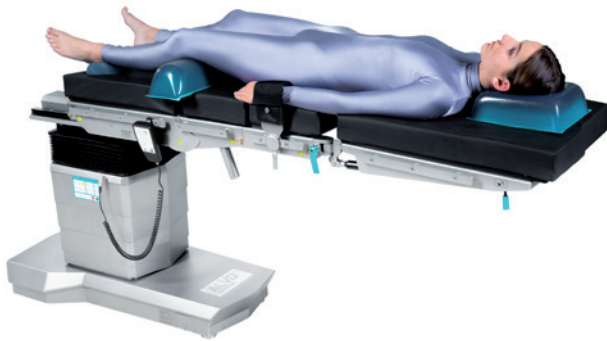


## Real-time pressure mapping software.

Intraoperative patient safety.

Safe patient positioning on the surgical table may be monitored real-time in order to effectively prevent from pressure ulcers, decubitus and nerves injuries, which may occur during prolonged surgeries. ALVO® SENSEi is a first-to-the-market software with ultrasound-welded mattresses with sensors that monitor patient position intraoperatively. The sensors generate and record real-time anatomic image of the patient's body with points of pressure.

Thanks to this technology the anesthesia care and surgical team may observe on any assigned display in the OR the layout of forces and high pressure areas, to immediately react and reposition the patient. Repositioning, aimed at releasing from pressure defined body part, eg. through performing slight Trendelenburg, may be done remotely, via the ALVO® Integra X touch screen.



CONSULTING > DESIGN > PROJECT MANAGEMENT > INSTALLATION

- The ALVO® Integra solutions increase OR ergonomics, help save time and money
- Managing the OR infrastructure is comfortable, via one central, intuitive touch screen
- High quality image distribution 3D, 4K, FullHD, with no artefacts, support convenient and safe surgeries
- Advanced videoconferencing options facilitate trainings and remote consultations
- Digital surgical safety checklist increases data safety and reduces the number of paper documents in the OR
- ALVO® Integra solutions facilitate quick access to the digital medical data
- Remote service application and access to the system via service mode prevents from unplanned disconnection and lowers the maintenance costs. It also allows to monitor the condition of active devices, which are part of the system, in order to alert on any adverse events upfront
- Lower risk of medical errors
- The system is certified and compliant with CE



## INTEGRATED RGBW LIGHTING

- City Hospital, Siedlce, Poland
- South General Hospital Sös, Stockholm, Sweden



## VIDEO OVER IP ROUTING

- Asian Institute of Gastroenterology, Hyderabad, India
- Danderyd Hospital, Stockholm, Sweden
- SPSK5 Hospital, Poznan, Poland
- Medicus Clinic Wroclaw, Poland



# Functionalities overview

ALVO® OR Control ALVO® Integra ALVO® Integra X

	ALVO® OR Control	ALVO® Integra	ALVO® Integra X
User-friendly interface with light and dark mode	✓	✓	✓
Central control touch screen (built in)	✓	✓	✓
Control over medical devices (eg. surgical lights, table)	✓	✓	✓
Control over non-medical infrastructure (doors, blinds, general lighting, ventilation)	✓	✓	✓
Visual status display of ventilation and electrical systems, medical gases	✓	✓	✓
Music player	✓	✓	✓
OR status display	✓	✓	✓
OR video management		✓	✓
Video archiving		✓	✓
Video streaming to the hospital network		✓	✓
Control of the camera in surgical light and ceiling camera from the central touch screen (away from the surgical field)		✓	✓
Remote access to the computers outside of the OR			✓
Videoconferences with telestration			✓
HIS, PACS integration			✓
Customized solutions			✓
Possibility to control from both wall-based touch screen and tablet			✓
Real-time pressure mapping interface integrated			✓
Digital surgical safety checklist			✓

We invite you to a technical dialogue in a simulated OR environment, ALVO Integra Center at our HQs in Smigiel:

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