ADVANTECH

Enabling an Intelligent Planet

Digital Transformation:
Optimizing the Operating Room for Surgical Excellence

Preface

The hospital operating room is the most critical and complex service-delivery environment in healthcare. To enhance OR efficiency and improve patient outcomes, we aim to integrate pre, intra-, and post-operative processes across medical departments. Our vision is to streamline and simplify the OR environment by utilizing advanced technologies.

Optimizing surgical preparation and terminal cleaning processes is essential to reducing contamination and complication rates. Equally as important, however, is the collection of real-time data for integrated analysis and clinical decision-making. By deploying networked high-performance systems with advanced imaging and precision monitoring capabilities, hospitals can revolutionize clinical OR applications, hospitals can transform conventional ORs into intelligent ORs of the future.

About Advantech iHealthcare

Founded in 1983, Advantech is a leading provider of intelligent IoT systems and computing platforms. For many years, our Intelligent Healthcare division has supplied a wide range of certified computing systems to the world's largest medical technology providers. We offer a comprehensive portfolio of medical-grade products, dedicated R&D teams focused on healthcare technologies, extensive customization capabilities, and global sales with localized customer service. To ensure safe operation for medical applications, our products are certified to EN/UL60601-1 and ISO 13485 standards. This certification accelerates the development and verification of new products, guaranteeing systems integrators and solution providers a rapid time-to-market.

Reliable OR Solutions for Exceptional Care

Rapid and continuous development of IT has revolutionized the entire medical field and accelerated the rise of intelligent healthcare. Advantech's iHealthcare division assists critical-care hospital teams by establishing patient-centered treatment environments that are equipped with the innovative technologies and platform devices for delivering high-quality patient care.

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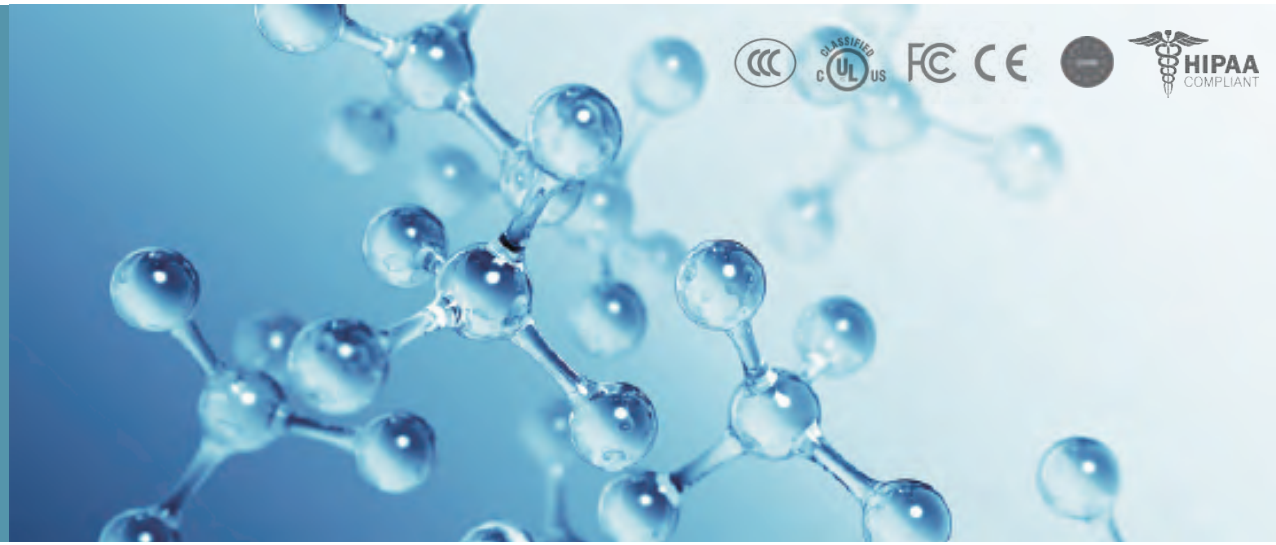
Our Advantage

Over the past 20 years, we have collaborated with leading equipment manufacturers and systems integrators around the world. We are a globally trusted partner committed to excellence and innovation. Our aim is to help healthcare providers strengthen their core competencies by delivering advanced solutions that can be easily deployed, integrated with existing equipment, and flexibly expanded for future healthcare applications.



Purpose-Built Medical Systems

We offer a wide range of high-performance computing systems and imaging technologies specifically designed to support critical healthcare and OR applications.

Integrated Software Deployment

Our user-friendly and scalable solution suites support OR digitalization, allowing video streaming, management, and reporting across the entire surgical process.

Global Customer Service

Advantech global service network offers localized logistics, sourcing, repairs and upgrades, technical support and training, as well as peripheral integration and design-to-order services.

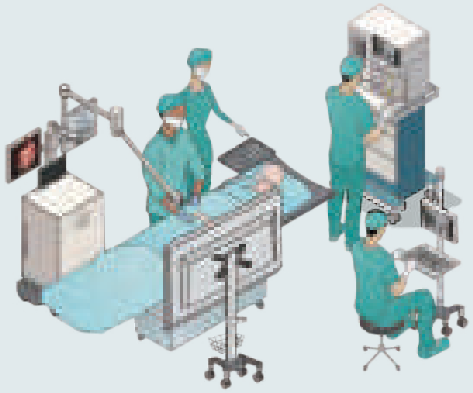
Consultation and Management

Our dedicated team provides consultation and technical advice throughout the digital transformation journey, delivering bespoke solutions that improve hospital workflows.

Certified Turnkey Solutions

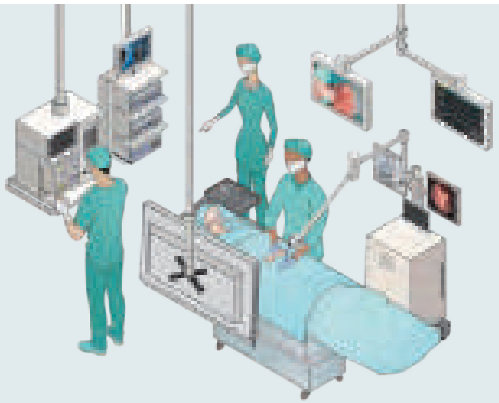
We work with certified system integrators and worldwide channel partners to demonstrate proof of concept and quickly provide turnkey solutions that meet customer needs.

Versatile Features for Diverse OR Needs



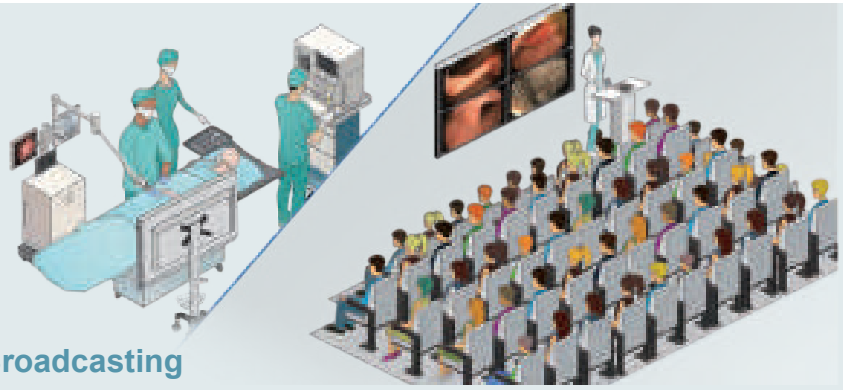
General OR

General surgeries can involve a range of simple to complex procedures. The AVAS-60E Video Mobile Workstation provides a solution that instantly transforms general OR into digital OR. Featuring integrated video and audio management, recording, and broadcasting capabilities, this mobile workstation allows effortless multitasking to optimize efficiency.



Integrated OR

The AVAS series are designed to optimize OR management by combining surgical capabilities with advanced imaging modalities for intra-operative monitoring and diagnosis. By introducing real-time imaging capabilities into the OR, AVAS solutions can enhance surgical precision and OR workflows to yield superior outcomes for both patients and hospitals.



OR Broadcasting

Live broadcasting of surgical procedures for consultation and educational purposes is a crucial function for hospitals. Advantech's iVideOR is built to simulate in-person interactions in the operating room for private broadcasting across secure hospital networks. Using the multi-view feature, conference participants can simultaneously view different angles of the procedure.

Recovery Unit

Medical-grade computing systems monitor patient vital signs and compare collected data against electronic health records. With live data streaming and video integration, centralized monitoring of recovery units can be conducted remotely to streamline hospital workflows and improve operational efficiency.

OR Video Management

iVideOR

Experience the ultimate convenience with Advantech's iVideOR operating room video management and editing software platform. Designed to simplify the medical video management process, iVideOR allows healthcare professionals to live stream surgeries, record procedures, and manage captured video data from a centralized location. With the inclusion of video-over-IP technology, image sources can be routed to specific destinations without needing to disconnect/reconnect equipment or interrupt procedures, optimizing pre-op to post-op workflows for enhanced patient care.

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Video Streaming Solutions

Advantech's AVAS solutions provide advanced video archiving and streaming capabilities for intelligent OR operations. The latest addition to the impressive lineup is the AVAS-60E mobile video integration workstation. Featuring an AVAS-200 series IP-based NDcoder for seamless data transmissions, AVAS-400 imaging hub with software development APIs for customizing video and imaging streams, and iVideOR software platform for integrated OR video management.

AVAS Series

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Medical Boom Arm Carts

AMiS-90

Featuring an ergonomic boom arm with dual PTZ cameras and motorized height adjustment, the AMiS-90 medical boom arm cart provides a real-time surgical tele-mentoring platform for remote care delivery. The flexible boom arm allows the camera to be positioned at the optimal height and angle for improved ergonomics and space utilization. By maximizing accessibility and flexibility, AMiS-90 can streamline workflows and enable a more functional OR environment.

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All-in-One Medical Computers

POC Series

Designed for healthcare applications, the POC series are fanless all-in-one computers certified to medical safety standards (UL60601-1, EN60601-1, and IEC60601-1). Suitable for deployment as information displays or control dashboards, POC terminals can be flexibly integrated with existing OR equipment to provide real-time data for critical decision making.

Surgical Displays

PAX Series

PAX series surgical monitors feature multiple I/O, analog and digital interfaces, as well as a loop-out function for multiple display systems ensuring high connectivity for diverse healthcare applications. Plus, with Advantech's Design-to-Order service, the display size, color, and form factor can be customized according to specific needs.

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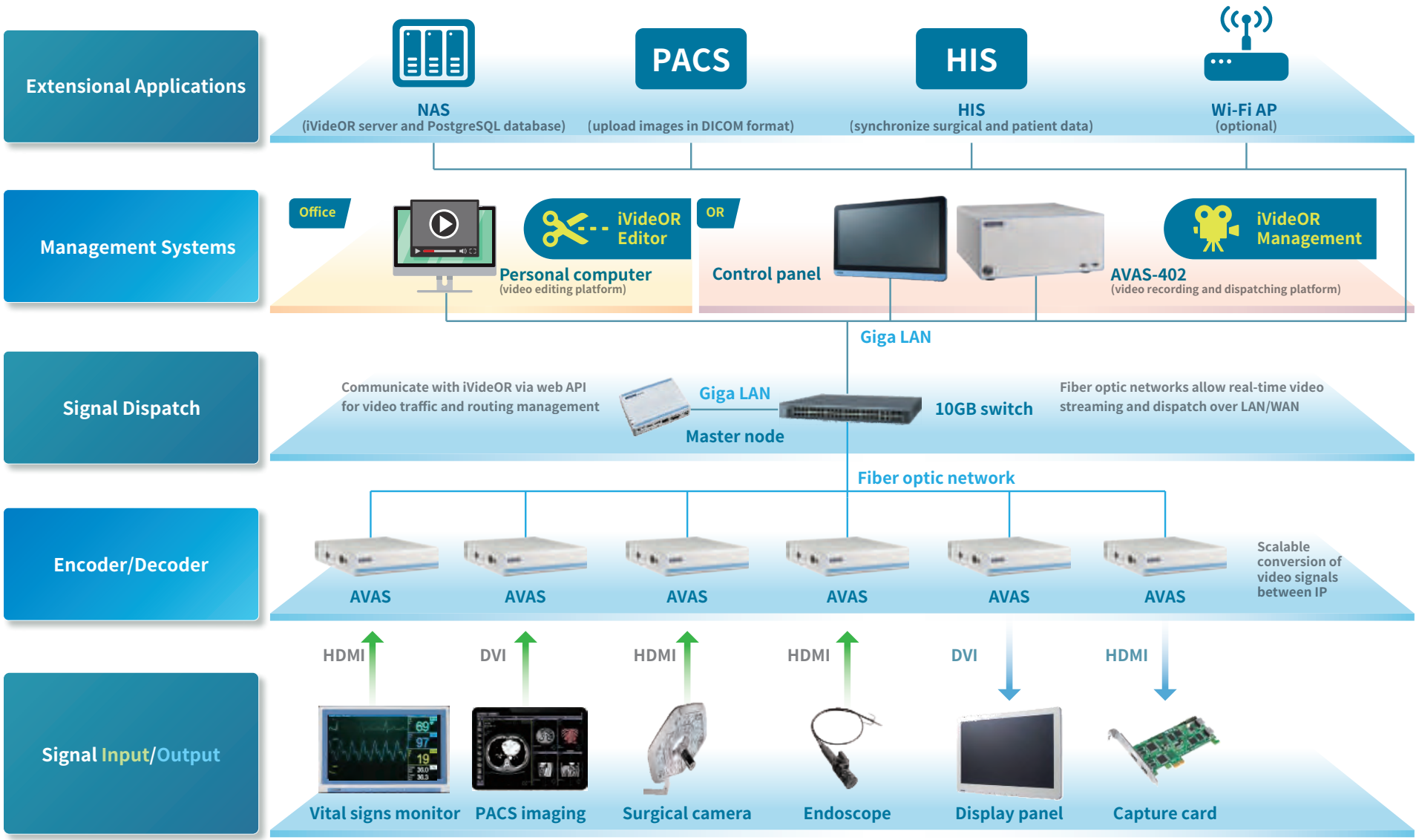
OR Video Management Architecture



Innovation for better healthcare outcomes

All-in-One OR Video Recording Solution

iVideOR.Lite

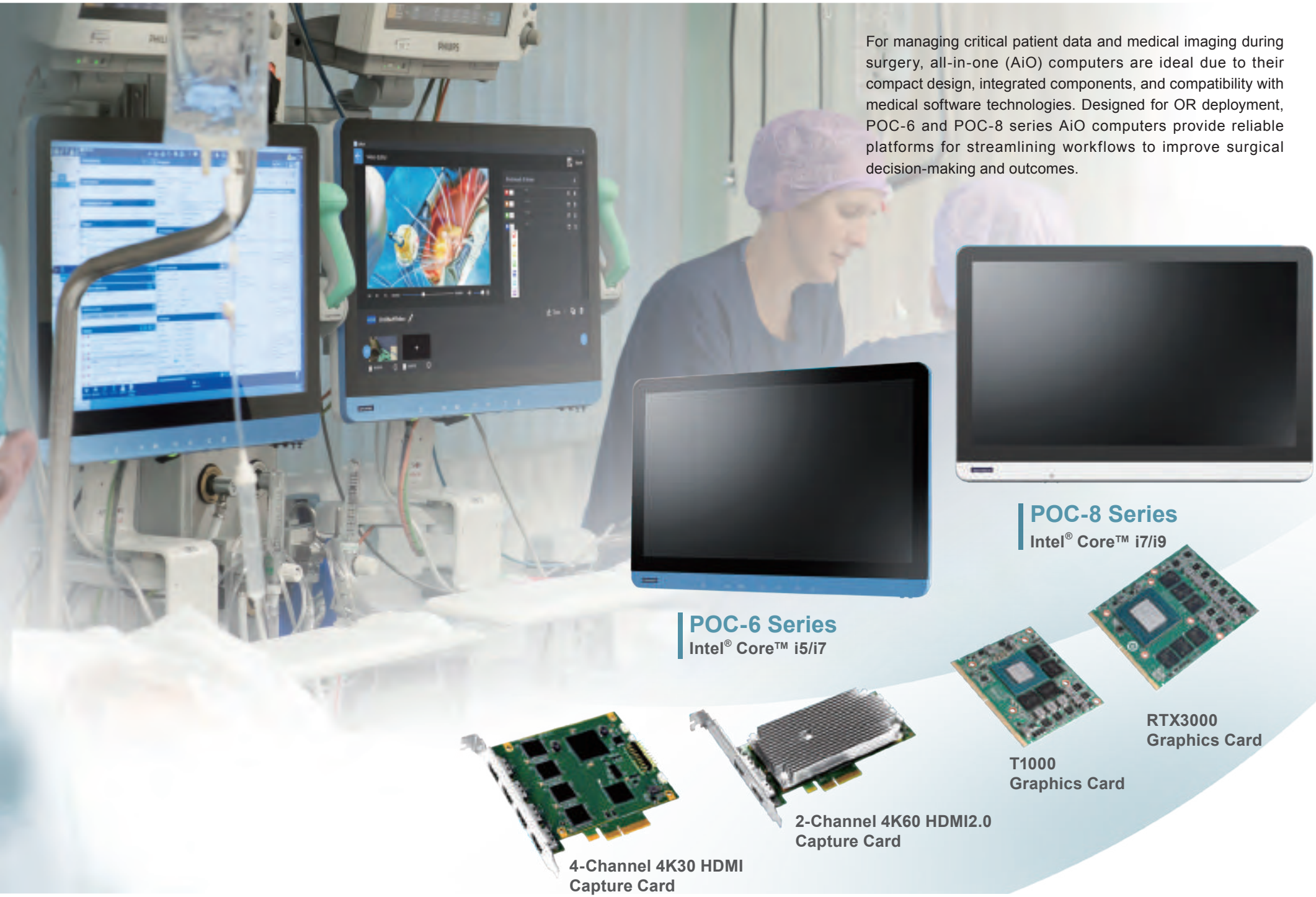
iVideOR.Editor

iVideOR.Lite

iVideOR.Lite Function List

- Access surgery information
- Live preview images
- Configure image colors
- Record video
- Bookmark video
- Capture image snapshots
- Apply WHO surgical safety checklist
- Embed external applications
- Upload to DICOM

For managing critical patient data and medical imaging during surgery, all-in-one (AiO) computers are ideal due to their compact design, integrated components, and compatibility with medical software technologies. Designed for OR deployment, POC-6 and POC-8 series AiO computers provide reliable platforms for streamlining workflows to improve surgical decision-making and outcomes.



POC-8 Series

Intel® Core™ i7/i9

POC-6 Series

Intel® Core™ i5/i7

RTX3000 Graphics Card

T1000 Graphics Card

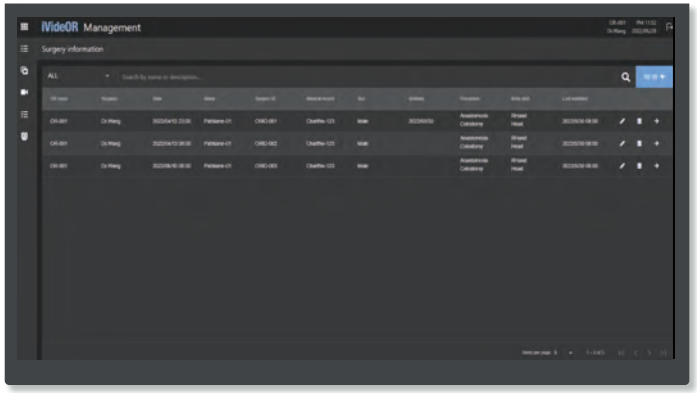
2-Channel 4K60 HDMI2.0 Capture Card

4-Channel 4K30 HDMI Capture Card

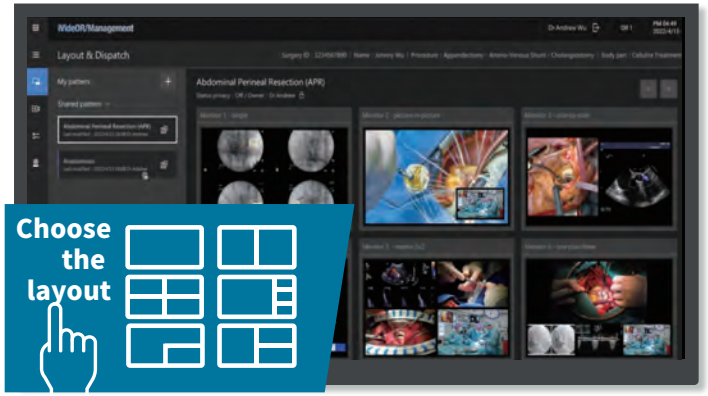
OR Video Management Solutions

iVideOR

Transform surgical imaging with a futureproof OR video management and editing platform



- Input surgery information (patient lists)
- Editable content fields



- Select layout from established presets
- Create custom layouts
- Dispatch image sources
- WHO Surgical Safety checklist

- Capture video and images during surgery
- Configure layout and image sources live

Editing/Upload

Editor

- Edit recorded video
- Upload images to PACS in DICOM format

Maximize Operating Room Efficiency

Streamline workflows by simplifying OR setup, equipment configuration, and image/video capture with direct export to USB storage, PACS, and NAS.

DICOM Imaging Support

Capture screenshots during operation and the post-operation video review and archive content to PACS with single-click uploads.

Convenient Cross-Platform Data Access

Clinical data, medical imaging, and test results can be easily accessed at any time from a networked computer.

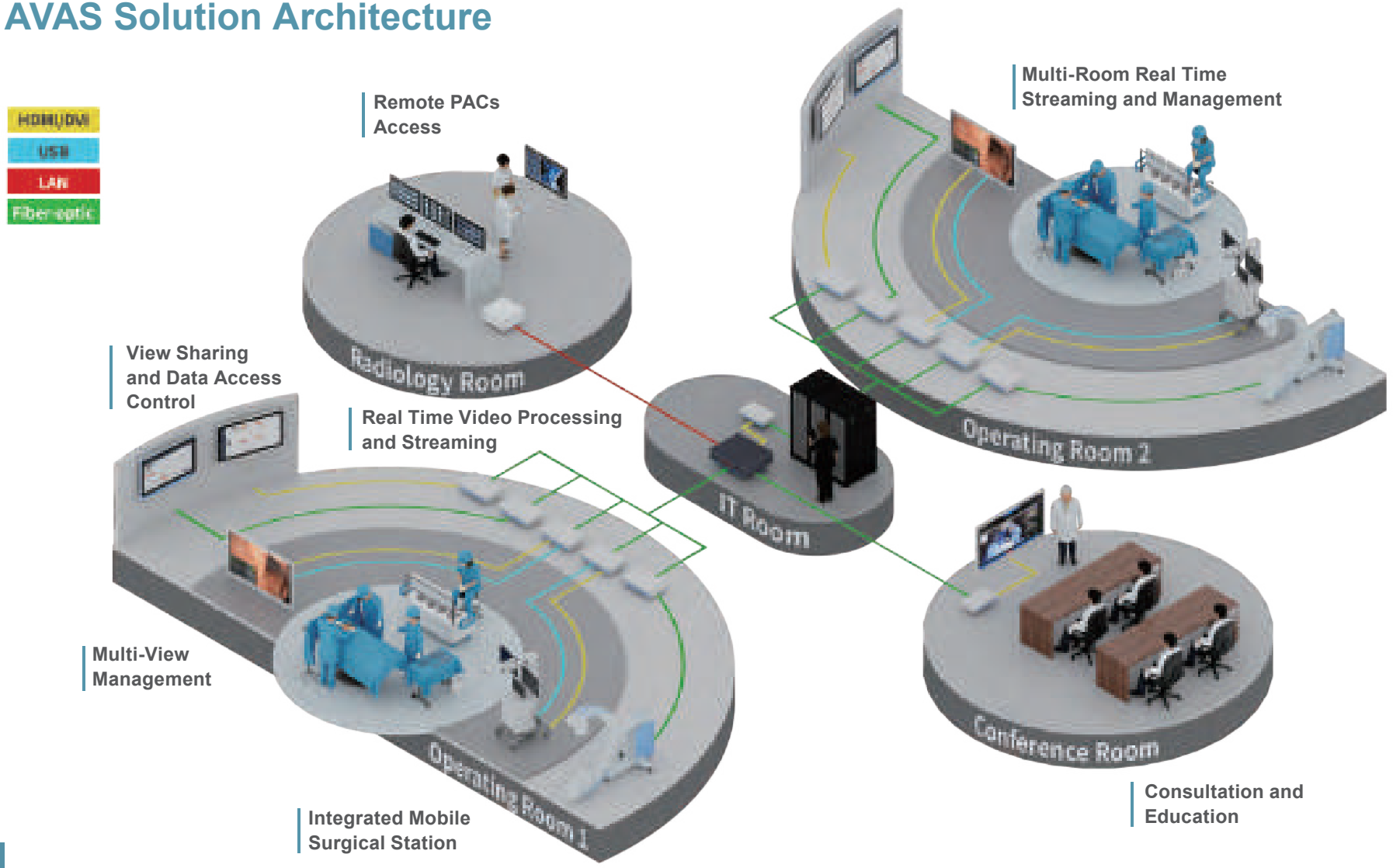
Real-Time Communication and Content Sharing

Live video streaming and real-time communication enables remote collaboration and support from specialists.

Video Archiving and Streaming

Digitally Transform OR with AVAS Systems

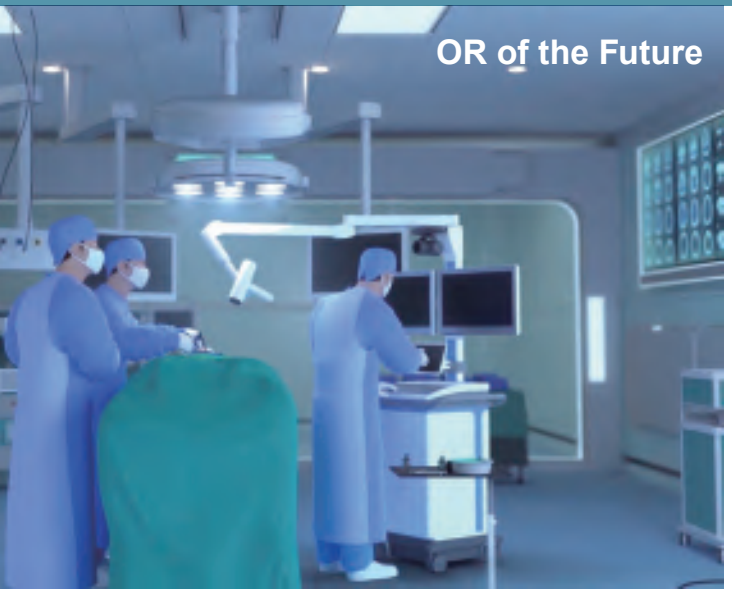
AVAS Solution Architecture

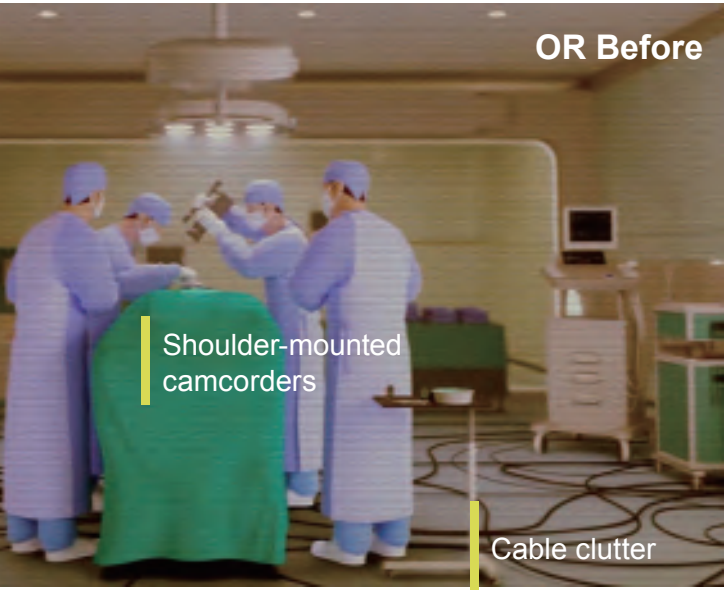


Integrated Mobile Video Workstation

AVAS-60E

AVAS-60E is a mobile video workstation that integrates a boom arm, AiO computer, surgical monitors, cameras, speakers, and intelligent power system to provide a total solution for video archiving and streaming in ORs.





PTZ Camera
Resolution: FHD
12x/30x optical zoom

Dual Display
24” (FHD)
27” (FHD or 4K)

Main Stand
Electromechanical height adjustment
(180 ~ 260 cm)

Boom Arm
(134 ~ 170 cm)

Boom Camera
Resolution: 4Kp60
30x optical zoom

Control Panel
Video controller
Video recorder

System Cabinet
For ND coders, switches, power adapters, etc

Battery System
Battery type: Lithium-ion
Battery capacity: 420Wh

Surgical and Clinical Displays

PAX Series

Touchscreen
Easy operation
Integration
Multiple I/O
Glorious imaging
1.07 billion colors
Enhanced EMC
Wide compatibility
Resolution
FHD and 4K support

Surgical Displays

PAX-3 Series | 24/27/32/55”

For examination, navigation, and surgical applications

Clinical Displays

PAX-1 Series | 21/24/27”

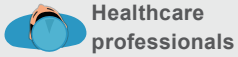
For general, clinical, and laboratory applications

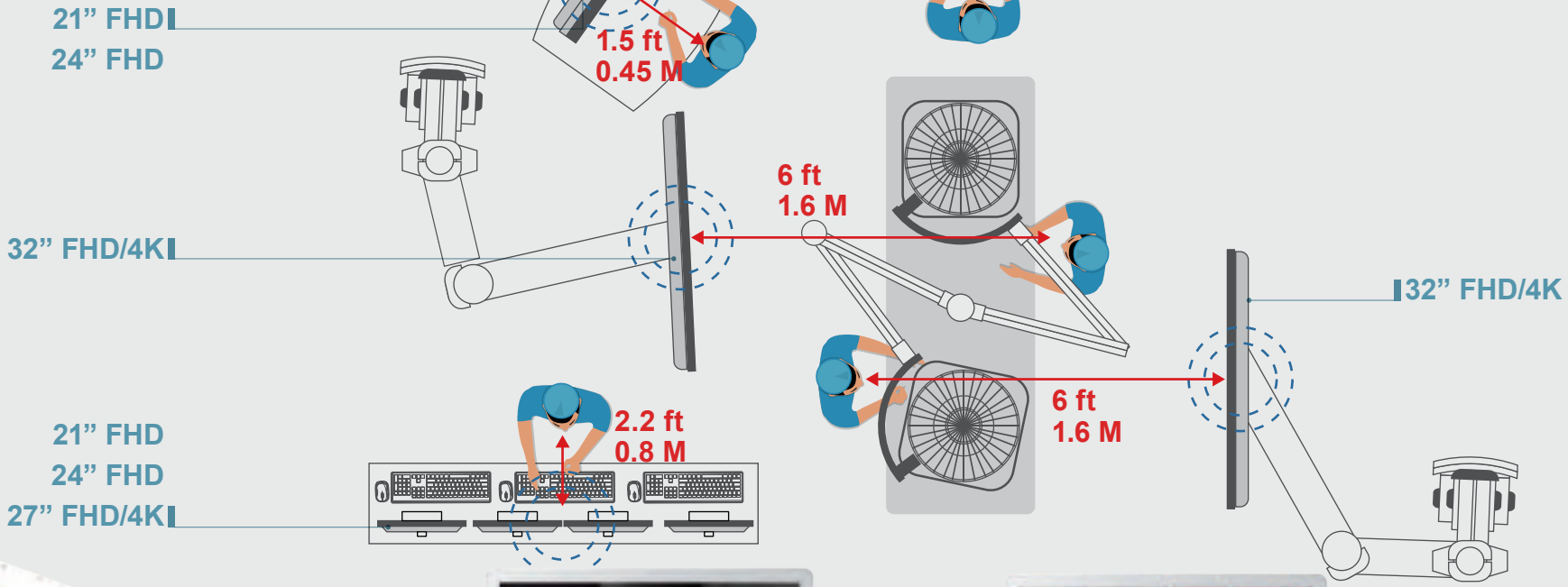
OR

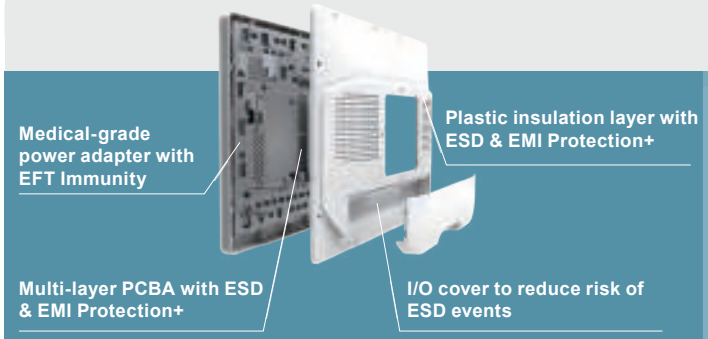
Equipment

Trolley

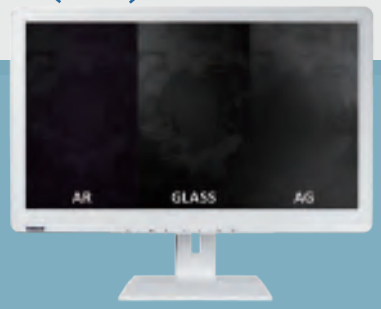
Range of Display Sizes for Optimal OR Deployments







Enhanced EMI protection ensures compatibility with standard integration equipment and tools



Touch screen with AR/AG/glass surface treatment options

PAX series monitors have enhanced red color saturation that increases the available contrast range for high-contrast imaging. The monitors also feature multiple I/O for effortless integration with diverse OR equipment.

Adaptable and Flexible
In-Wall Mount Solutions

Interactive Display Panels

- Available in 21/24/32/55”
- P-CAP touch control
- DICOM preset
- Multi-view PIP/PBP/Quad
- HDMI/DP/DVI/SDI inputs
- Simple in-wall mounting kit
- Medical-grade certification

Workstations/Control Panels

- Available in 21/24/32/55”
- Windows/Linux/Android OS
- LAN, Wi-Fi, and COM connectivity
- P-CAP touch control
- DICOM preset (optional)
- Simple in-wall mounting kit
- Medical-grade certification

Futureproof OR Monitoring and Management

Enabling Medical AI

High performance medical computers play a crucial role to enable AI in surgery by providing the necessary computational power, and resources for processing large amounts of surgical and medical data in real-time.

USM-500 Series

- 13th Gen Intel® Core™ i3/i5/i7 processor with 10 years longevity
- NVIDIA-certified with support for NVIDIA RTX A6000 GPUs
- 4 x PCIe expansion slots for integrating add-on, graphics, data capture, and LAN cards
- Medical-grade design

NVIDIA CERTIFIED

POC-8 Series

- 13th Gen Intel® Core™ i5/i7/i9 processor
- Easy expansion with NVIDIA® MXM T1000/ RTX3000 graphics module or data capture cards

Product Offerings

For product details

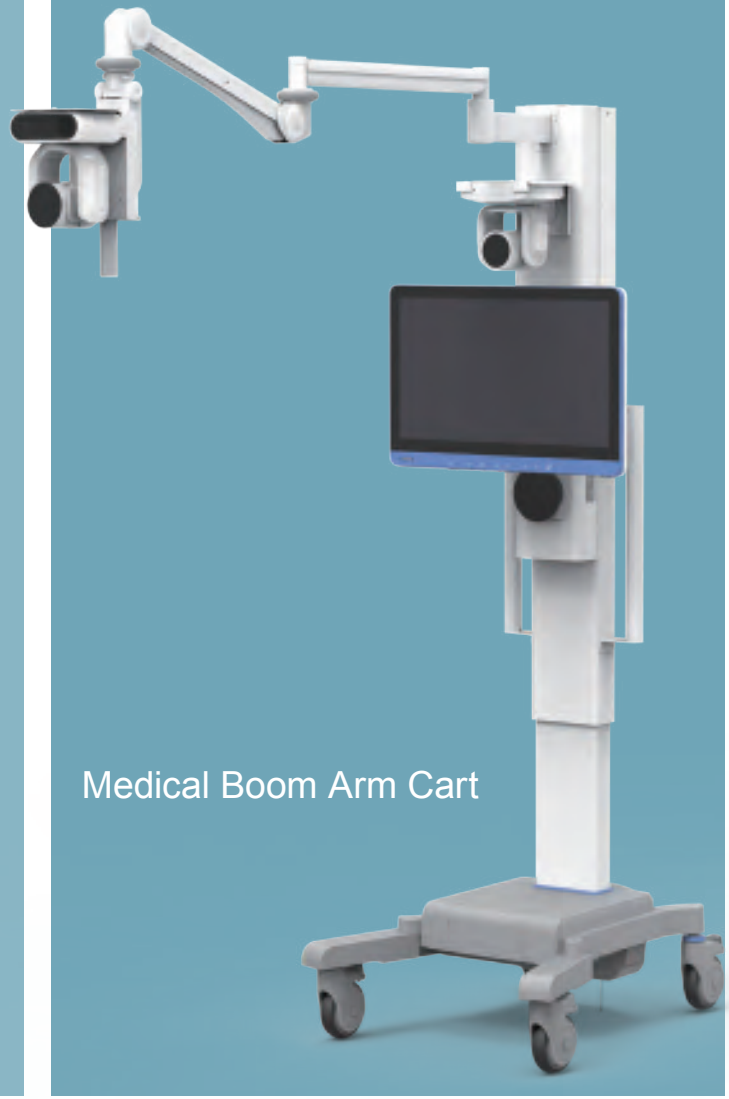
iVideOR Suite

Solution Suite

AMiS-30EP

OR Workstation

AMiS-90



Medical Boom Arm Cart

PAX

Surgical and Clinical Displays

AVAS-60E

Integrated Mobile Video Workstation

AVAS-2

Video-over-IP Streaming Boxes

AVAS-4

Video Recorder and
Management Server

USM

Medical Computers

POC

Memo

Regional Service and Customization Centers

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Hochiminh	84-28-3836-5856

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Breda	31-76-523-3100

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