Nexxis™

The fully networked digital operating room

Streamlining the surgical suite

Today's hospitals strive to meet extremely high standards in patient care. Due to increasingly complex surgical and interventional approaches, the operating room in particular benefits from new technologies that help improve workflow efficiency and ease of use.

Traditional operating rooms are being replaced by new configurations, such as the hybrid OR, and require flexible solutions that facilitate the integration of surgical equipment in order to ensure optimal collaboration among surgeons, anesthesiologists, nurses, biomedical equipment technicians, and other clinical staff.

Nexxis

Facing future challenges

The overall demand for surgery is projected to increase by 47% over the next ten years due to a higher life expectancy, a growing population and more lifestyle diseases. To handle the growing number of patients, you will need a solution that increases operational efficiency in the operating room, supports team collaboration, and improves patient care.

Networked OR integration

That's why we developed Nexxis, a unique image management solution that builds on the IP network to ensure complete integration of all devices in and beyond the operating room. This 'OR-over-IP' approach enables more advanced imaging in an increasingly complex environment and ensures centralized control of the entire operating room.

With Nexxis, we combine 20 years of high-level expertise in healthcare imaging technology with our experience in networked visualization and integration to ensure:

- a flexible and scalable IP platform with an open system architecture and limitless configuration possibilities to meet the ever-changing requirements in the operating room

- advanced technology that meets the unique surgical imaging needs, featuring compression-free distribution of data over the IP network, which results in artifact-free image display with near-zero latency

- centralized control and improved collaboration, communication and coordination within the OR and beyond

Nexxis ensures better communication, consultation and coordination in and beyond the operating room. It distributes precise, artifact-free data and images with no compression and without delay.

Through the thoughtful integration of technology, **Nexxis** enables centralized control and multi-disciplinary teamwork in the operating room.

The result? A flexible and scalable surgical environment that enhances workflow efficiency and improves patient care.

Networked visualization in the OR

The limits of AV integration

In today's operating rooms, integration is the key to efficient surgical workflow. Current AV (Audio Visual) systems installed in many operating rooms still have limited integration possibilities, demand extensive cabling, and result in cluttered and complicated configurations. This complexity presents challenges in the surgical environment, where flexibility and scalability are critical to operational efficiency.

Nexxis: a fully integrated digital OR

Nexxis is a fully IP-centric solution for image distribution in the operating room. The system architecture has been specifically designed to meet the performance demands and the unique requirements of the surgical suite, such as high-quality imaging, ultra-low latency, and real-time communication.

The power of IP

This 'OR-over-IP' approach brings significant benefits compared to traditional AV systems, such as centralized control of the entire operating room, reduced system complexity, a flexible and scalable imaging platform, and remote management – all of which are becoming increasingly important in today's operating rooms.

What is IP?

- Abbreviation for 'Internet Protocol'

- The world's most popular open-system (non-proprietary) protocol suite

- Used to communicate across a single network or any set of interconnected networks

- The best known communication protocol, together with the Transmission Control Protocol (TCP)

The key to integration

At the heart of the networked digital OR are Barco's Medical Network Adapters (MNA) and Nexxis OR Management Suite (NMS).

DVI

Nexxis encoders & decoders

The MNA series comprises adapters to encode and decode video, data and other information (e.g. control signals) to and from IP streams. These medically certified adapters ensure overall connectivity and support for current and legacy video sources. Automated device detection eliminates the need for user interventions when setting up the operating room.
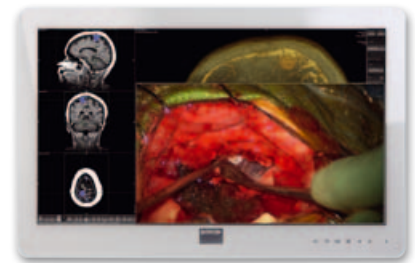
Nexxis OR management suite

The Nexxis Management Suite (NMS) sets up, manages and monitors the IP streams between the encoders and decoders, facilitating configuration and management. Integrated within the user interface of the OR integrators, the software allows distribution of high-quality video, audio, keyboard and mouse towards any destination with a single touch on the screen.

Network-enabled surgical displays

Barco provides a range of network-enabled surgical displays with an integrated AV-to-IP decoder. Further reducing the amount of connectors and cabling, these displays will offer substantial benefits in the operating room.

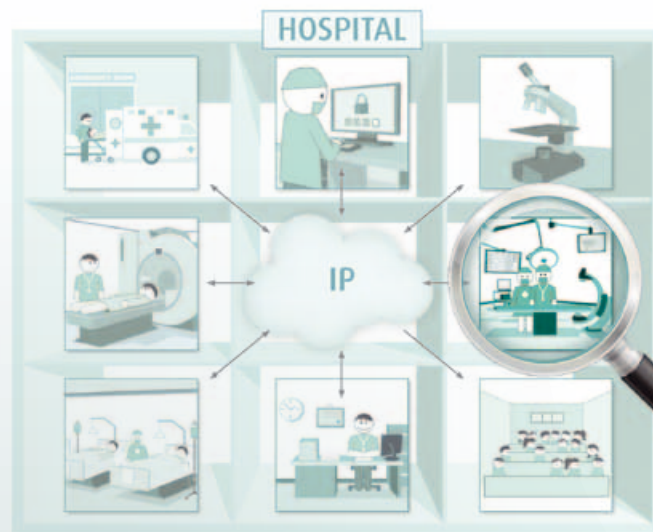*MDSC-2226 MNA surgical display with integrated AV-to-IP decoder*

Analog video

3G-HDSDI

DisplayPort

Nexxis encoders and decoders

Nexxis uses state-of-the-art encoders and decoders to convert digital and analog video signals to uncompressed IP video streams.
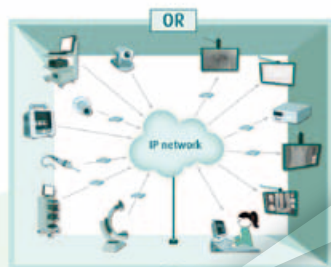
Hospital-wide collaboration

Nexxis provides a safe and secure gateway that is HIPAA compliant (both LAN and WAN) to provide access to critical patient information generated at other sites within the healthcare facility. With this approach, the surgical team can access PACS images and lab results during a procedure. It also enables distribution of data from the OR to other areas in the hospital, such as a doctor's office or the training auditorium.
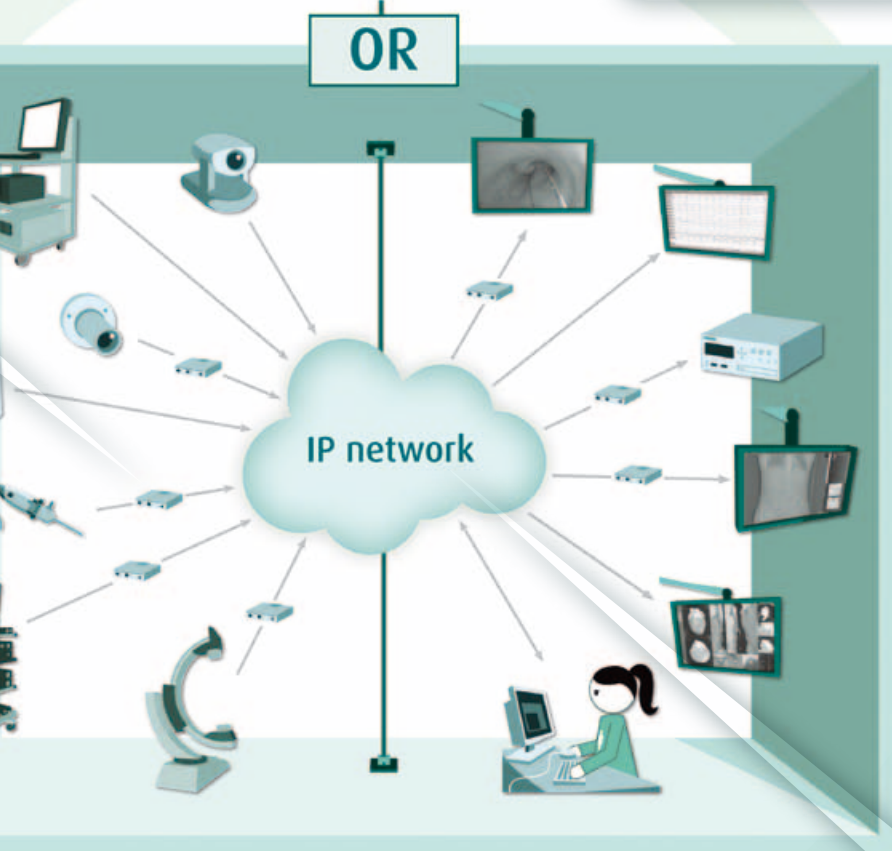
Nexxis

gh networked integration

Multi-OR communication

Clinical staff can share information in real time with other surgical suites. Surgeons now have access to consistent and transparent images from any operating room, which facilitates colleague consultation.

Central control and integration

Nexxis integrates all devices in the operating room, from cameras, computers and scanners to surgical displays and recorders.

OR-over-IP

Nexxis distributes images over a central IP hub and displays these images anywhere in the operating room, with near-zero latency and with exceptional quality.

Designed to meet
unique surgical imaging needs

Artifact-free images

Nexxis distributes content over the IP network without the use of compression, eliminating image artifacts and maintaining very high image quality. This digital OR platform uses the network to distribute video, graphics, audio and computer data, in raw uncompressed format, inside the operating room and even between surgical suites.

Real-time collaboration

Nexxis enables real-time communication with other operating rooms. High-quality audio and video can be shared at any time during a surgical procedure. Even a remote keyboard and mouse can be used to control applications or highlight content of interest in multiple operating rooms.

Fit for new imaging needs

To ensure near-zero latency and uncompressed video distribution, Nexxis is designed around a high-bandwidth (10 Gbps) network backbone. This bandwidth is ideally suited to distributing any kind of surgical data, from existing analog video sources to high definition video and 3D Full HD endoscopy imaging.

Near-zero latency

OR integration requires a solution that enables image transmission without adding latency. Whereas most video conversion systems introduce a latency of at least 15 to 20 milliseconds, Nexxis distributes images significantly faster, enabling perfect hand-eye coordination during image-guided surgery.

Easy, efficient, and medically approved

Efficient OR utilization

Nexxis offers a comprehensive set of tools to allow technical staff to remotely monitor, troubleshoot, diagnose and solve technical problems in the operating room. OR setups, maintenance, upgrades and servicing can now be performed without entering the operating room, ensuring maximum OR utilization.

Easy management

One universal network cable is all you need to distribute audio, video and data over the network, which reduces cable clutter and installation cost. Combined with the all-in-one encoders and decoders, Nexxis effectively simplifies the system architecture for easy OR integration and management.

Medical compliance

To ensure quality imaging in the surgical suite, Nexxis uses state-of-the-art encoders and decoders to convert digital and analog video signals to uncompressed IP video streams. These encoders and decoders are certified for use in medical environments.

Future-proof performance

Scalable and flexible

Nexxis provides a flexible platform that allows you to connect any device, even during surgery, without complicated preconfiguration. The scalable system supports easy modification and expansion as technologies and techniques for general, minimally invasive and interventional surgery evolve.

Future-proof architecture

With Nexxis, all you need is a universal network cable to set up your system, so you can build and grow as you need to. The system architecture - the 10 Gbps network and universal network cabling - allows you to easily adopt new imaging technologies and meet new integration requirements in the operating room. A future-proof solution is guaranteed.

Your benefits?

- Artifact-free imaging
- Unified cabling
- Effortless multi-OR communication
- Simple system architecture
- High system uptime
- Adapt as you need to
- Expand as you grow

Supporting healthcare professionals
a billion times per year

More than a billion times each year, Barco display solutions help physicians make critical decisions. Every day, Barco provides them with peerless diagnostic performance.

Barco provides a full range of advanced display solutions for mammography, radiology, surgery, and pathology, along with DICOM-compliant clinical displays and mobile point-of-care devices. Together with its automated DICOM calibration software and networked digital OR, Barco delivers a wide range of first-class solutions for enhanced visualization.

Barco's commitment to quality has earned the trust of customers from all over the world, who partner with Barco to meet their most demanding imaging challenges.This partnership approach is also reflected in Barco's worldwide customer service network, ensuring professional support, wherever you are, whenever you need it.

Request more information

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