

OR1™ NEO

The new design of excellence





OR1™ NEO

The Ultimate Operating Environment

KARL STORZ was pioneering the development of OR integration in the 1990s when minimally invasive surgery triumphantly proceeded to the modern surgery today. With the enhancement of OR techniques the requirements within the OR environment increased. More and more devices, new and complex technologies entered the OR. The device control was driven locally and was ineffective. Visualization and access to important data could only be managed in a limited way. The workplace and surrounding areas were inherently inefficient and ergonomically challenging.

What was considered an integrated OR at the beginning of 2000 would not be considered an integrated OR in 2010. With more than 10 years of experience in medical integration and more than 65 years of experience in medical technology we define OR integration as a combination of three different aspects that are all joined together to one entire concept – OR1™ NEO:

- Centralised control of the entire OR to manage endoscopic and peripheral devices and to view, display, document and communicate information from video and other data sources in and out of the OR
- Ergonomic and user-friendly design to optimize the workflow and comfort for a modern and convenient workplace
- Connectivity to enhance audio-visual communication from the OR, whether for teleconferencing, resident teaching or telesurgery and to network with hospital systems like PACS, HIS or RIS

“We started in the early 1990s with the research and development of a solution that would make the control of devices, room functions and the telephone for the surgeon in the sterile field possible. Our vision was to liberate the surgeon and his team from their sterile "island"”.

“We are what we repeatedly do. Excellence then is not an act, but a habit.”

Aristoteles

Medical integration for medical professionals – The core competency of KARL STORZ OR1™ NEO

Endoscopy, FULL HD camera technology, visualization, documentation, communication, integration – we understand the complex requirements in ORs.

Clinicians and hospital administrators need reliable and competent partners who will do everything possible to optimize surgical success – partners who help improve workflow processes and enhance patient safety that benefit both the hospital and the patient.

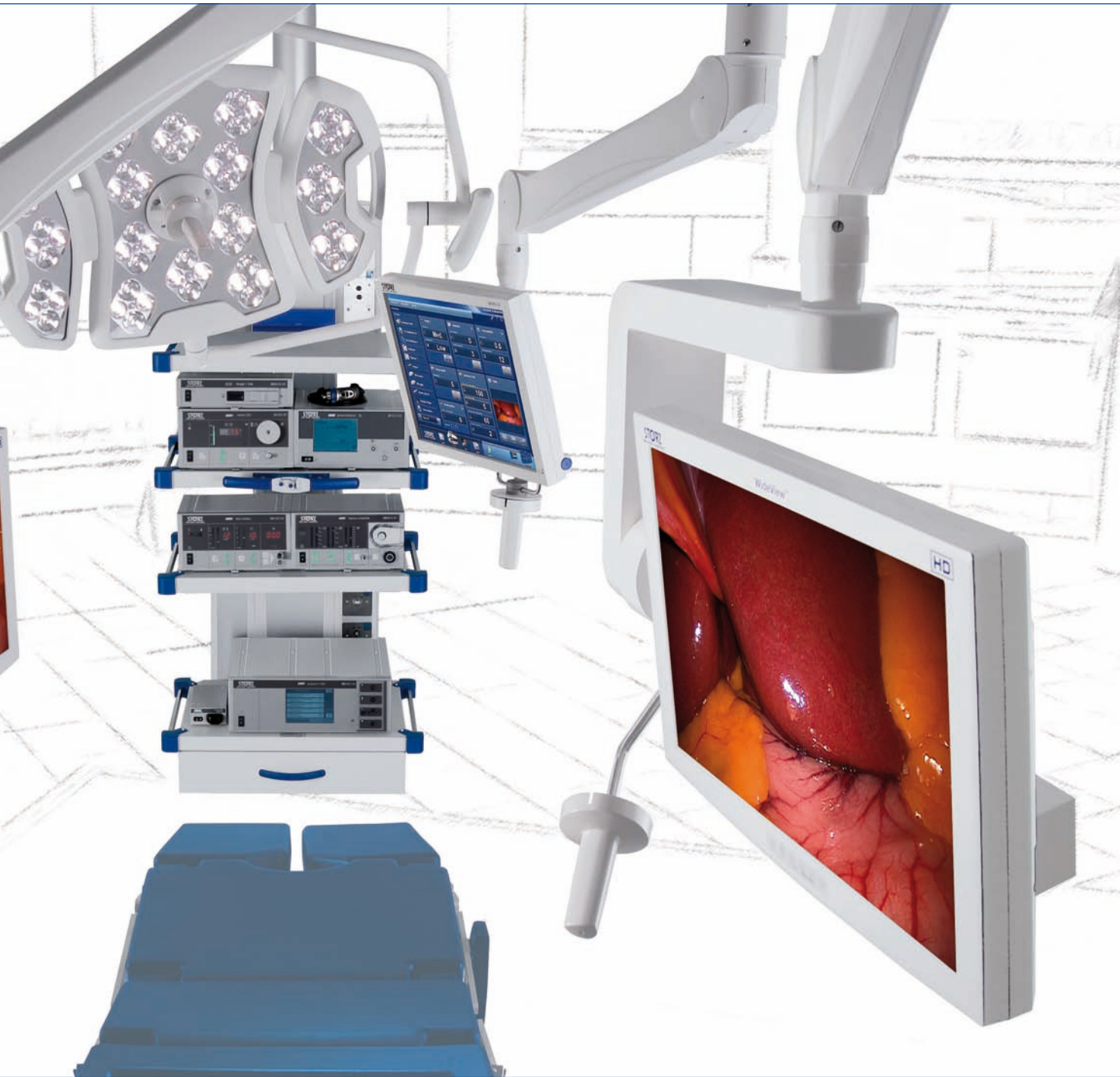
We set ourselves the highest standards in PROVEN MEDICAL INTEGRATION. Certification is a matter of course. This has made the name KARL STORZ a byword for state-of-the-art endoscopy worldwide and OR1™ a synonym for innovation, efficiency and safety in the OR.

Four dimensions OR1™ NEO stands for:

- **Ease of use**

With the central control and the 1:1 **Realistic User Interface (RUI)** of the selected unit the OR1™ system already offers an obviously high ease of use. OR1™ NEO now appears “reborn” with a new shaped user interface – enhanced and more intuitive based on our experience and customer feedback. The new user interface design is optimized both for the special requirements in an OR environment and for touch interaction. The consistent interaction paradigm provides short learning curves, user friendliness, safe, fast and accurate use as well as a high level of user satisfaction. Creating simplicity is anything but simple.





“So we developed a remote control for the KARL STORZ devices. It was possible to operate the camera, light source, pump and insufflator via the camera head buttons or a remote control called SCBcom. This was the hour of birth of the KARL STORZ **C**ommunication **B**us (SCB).”



“In 1998 we could control the devices from a touch screen. The first version was installed in the MIC Clinic in Berlin in Prof. Abri’s OR. A few years later, in 2000, we launched our first voice control SESAM. Today we have VOICE1®, a new voice control based on new technology, user feedback and lessons learned.”



- **Formula for success**

Quality has always been the fundamental key of setting standards. Consequently, three central modules have established OR integration as a safety standard – system integration with SCB, data management and documentation with AIDA, as well as communication and data transfer with IRIS Audio-Video solutions.

- **Science behind the appliance**

New concepts like the integration of the Surgical Safety Checklist according to the WHO offer even more support for the surgical team. Additionally, the editable software solution KARL STORZ OR1™ Checklist can be adjusted to various standard procedures and guide even non-skilled staff through the single steps. These new concepts have a direct impact on workflow: the surgeon and his co-workers know what to do, this makes them feel safe and so they can work in a calm environment. This attitude is recognized by the patient and adds to their perceived safety.

- **Confidence through competence**

Medical professionals bear a high responsibility: nothing less than the life and health of their patients is in their hands. In order to enable the OR team to fully focus on this major task, the technology applied, its reliability and the fulfillment of the special electrical safety requirements for medical electrical systems are key elements. With OR1™, the customer gets a solution that is really designed for the requirements in an operating theatre. This design is also a real and tangible investment in safety.

Since the very beginning, the patient and his treatment has been the focus of all KARL STORZ developments – in KARL STORZ OR1™ they come together in better care, better treatment, less trauma, less anesthesia time and better safety. Nevertheless, we always strive for more.

The innovative spirit of KARL STORZ keeps us in pace with the continuous evolution of OR1™ NEO.



“We had the Realistic User Interface concept right from the beginning. Our philosophy and fundamental idea was to make it as simple and as user friendly as possible, so that the OR team can fully focus on the patient instead of handling devices. For the OR team this is the easiest way to design it, because there is nothing new to learn for them. They may already know our KARL STORZ devices and the user interfaces look like the actual devices.”



SCB control NEO – Efficient and intuitive control of medical devices

During procedures, the surgeon relies on the assistance of the circulating nurse to adjust, set up and trouble-shoot devices like the camera, image capture devices, light source, insufflation, the operating room phone and OR light. In addition, the circulating nurse has other duties such as ensuring staple and suture supply in the operating field, coordination of the collection of pathology specimens, documentation of procedure times, material consumption etc. in HIS system. All these duties are often the responsibility of one person.

To increase the efficiency of the OR personnel, it is necessary to reduce stress for the individual members of the surgical team as much as possible. The redesigned SCB control NEO achieves exactly this aim. It allows all functions to be centrally controlled and continually monitored at a glance from a user interface within the sterile area. The 1:1 Realistic User Interface of the selected unit reduces user errors, saves time and offers additional safety. This also applies to preselected parameters of each individual surgeon and each type of intervention. All unit settings can be configured individually to suit the user or surgical intervention. Once stored, these can be retrieved within seconds as required to reduce changeover times and eliminate the possibility of incorrectly configured device parameters.

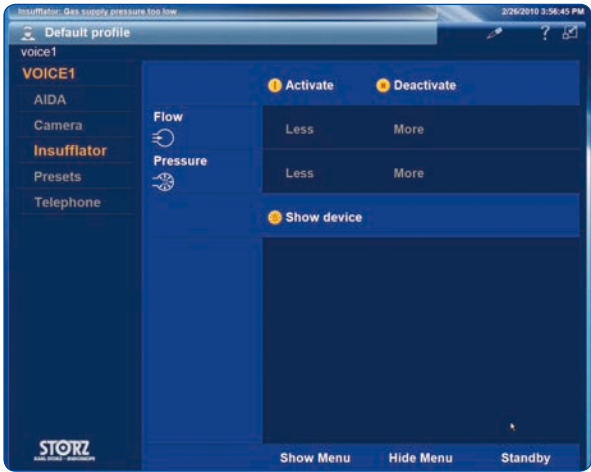
In addition, speech control with VOICE1® offers an elegant variant for controlling the OR via SCB and makes it possible for the user to control devices entirely by their voice.

SCB control NEO puts you in control of your OR:

- Central control of KARL STORZ devices
 - Endoscopic cameras
 - Light sources
 - Insufflators
 - Suction and irrigation pumps
 - HF units
 - Shaver
 - Motor systems
 - Laser
 - AIDA compact NEO documentation systems
 - OR1™ AV system NEO solutions
- Compatible third party devices
 - HF units
 - OR lights
 - Surgical cameras
 - OR tables



“A few years later we started to integrate other devices and make them controllable via touch screen. This came at the request of customers because they also wanted to operate the OR table or the surgical light centrally. Today we can integrate more than 80 different devices and there are still more to come.”

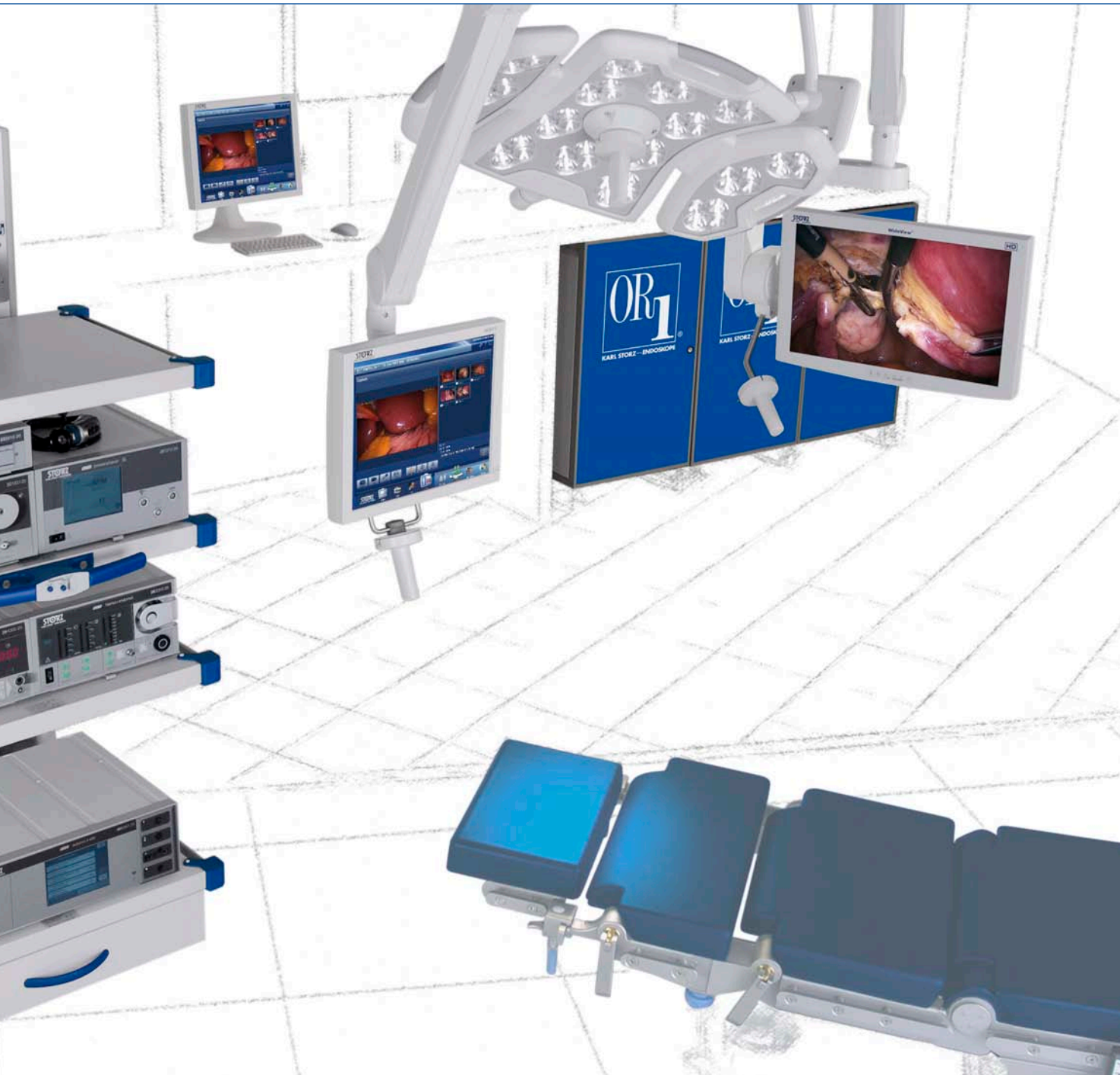


AIDA compact NEO – Professional data capturing and documentation in simple steps

Anyone claiming to offer clear arrangement in design and brilliant image quality as we do with OR1™ NEO needs to produce the evidence.

With KARL STORZ FULL HD technology for endoscopy we deliver outstanding image quality for the precise rendition of even the finest tissue and vascular structures. We use the highest physical image resolution specified for HD of 1920 x 1080 pixels, equal to 5 times the image information available from today's PAL standard. The 16:9 image format provides a larger display window for a more informative, panoramic view. Greater detail and depth of focus combined with enhanced color brilliance offers considerably improved ergonomic viewing.

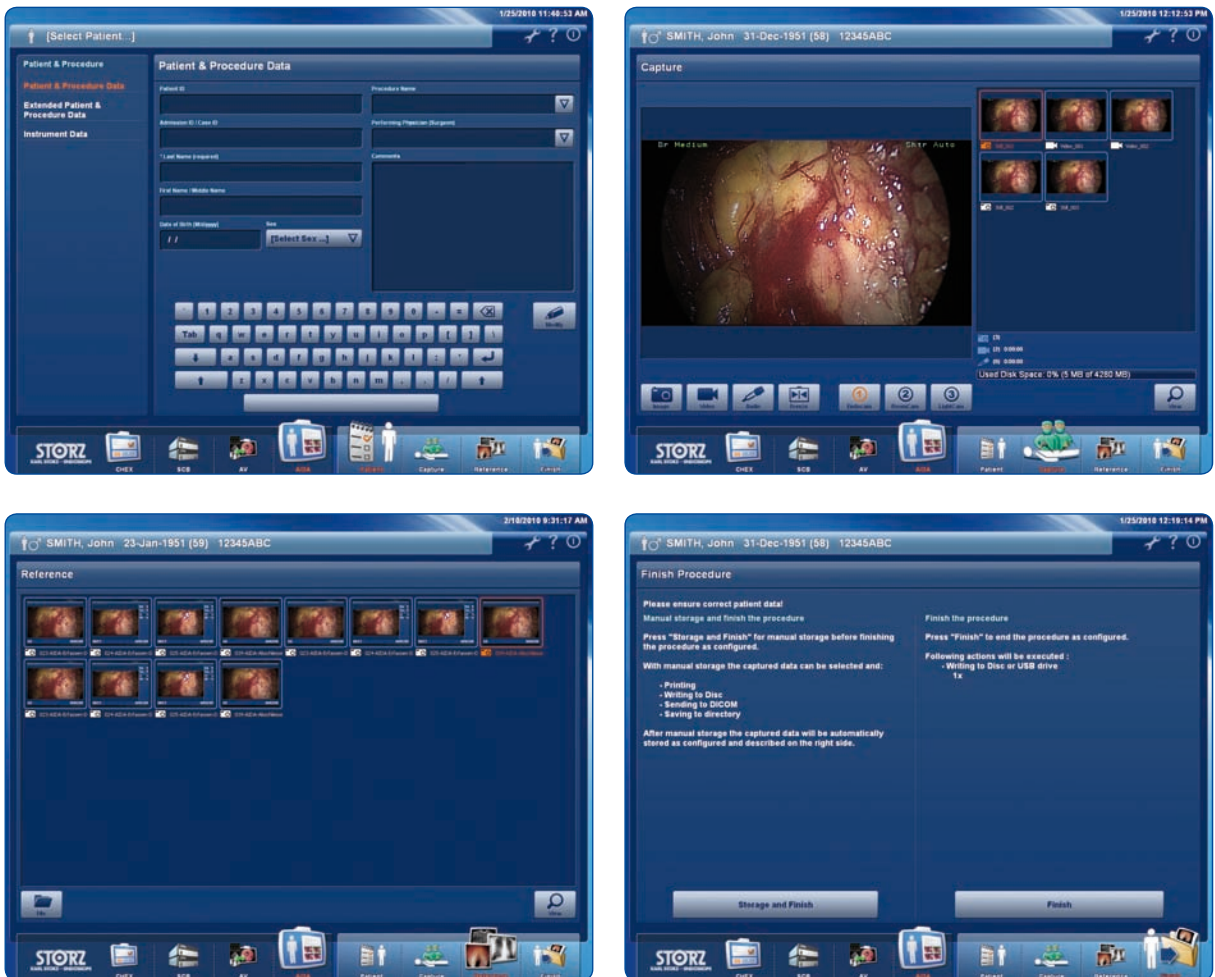




“At the same time we developed the first AIDA documentation system. With AIDA 1.0 we could store still images in a patient-related database. We also installed this system in the MIC Clinic in Berlin with a single touch screen solution for AIDA and SCB. Of course we also wanted to capture videos and so we added this function in the subsequent version.”



The new and multifunctional design of the documentation system AIDA compact NEO simply provides limitless possibilities from the central control unit. It is therefore easier and quicker to record still images, videos and audio files – of course in HD quality – and to create doctors' letters and documentation.



AIDA compact NEO provides convenient archiving of all patient and image data on Blue-ray, DVD, CD or USB data media and can be easily linked to patient or personal data management systems. The AIDA, DICOM or HL7 interface connects OR1™ directly to your hospital information system or to PACS.

"To meet our customers' varying requirements we launched two other AIDA systems a few years later – the AIDA DVD as a space saving stand-alone solution and the AIDA compact as an all-rounder. Since connectivity and the access to previously stored data plays an important role, we equipped our systems with DICOM and HL7 interfaces, which are of course IHE certificated. Software applications for structured reporting or editing now complete the AIDA product family."



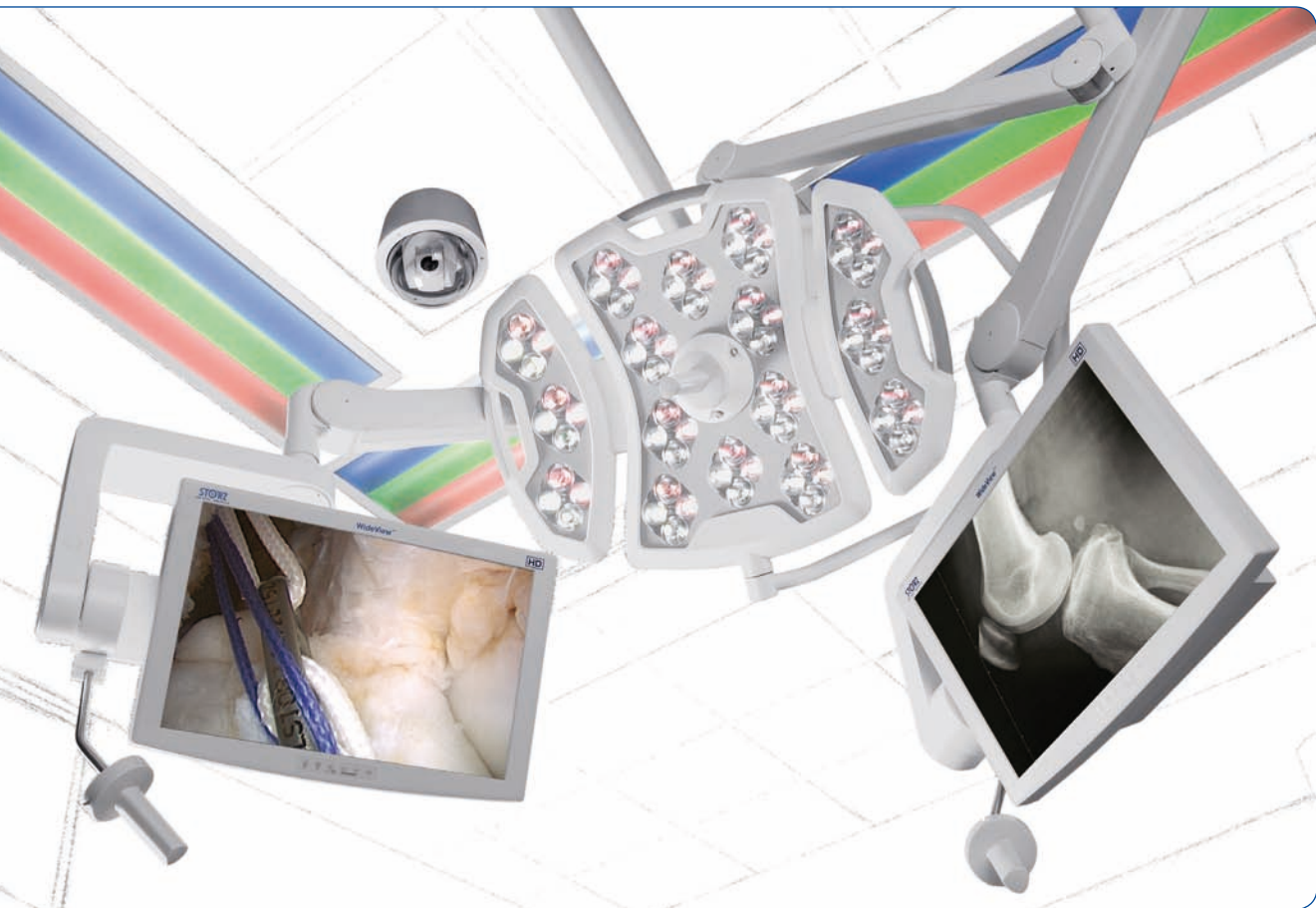
AV system NEO – Flexible communication technology inside and outside the OR

Communication is vital, but should be unlimited and come directly from the sterile area. New technologies emerge every day increasing the possibilities of data transmission to and from nearly every point of the world. The modern human being seems to be available at any place and any time. In order to use the benefits of this technical evolution, KARL STORZ continuously works to develop state-of-the-art communication technology for the OR and beyond.





“Beside the need for documentation and central control of devices we also found the demand for communication at that time. Our customers wanted to be able to, for example, answer the telephone during surgery. Also every member of the personnel should have the chance to place the monitor in order to get the best view from different positions, because our goal was of course to create an ergonomic workplace for the OR team.”



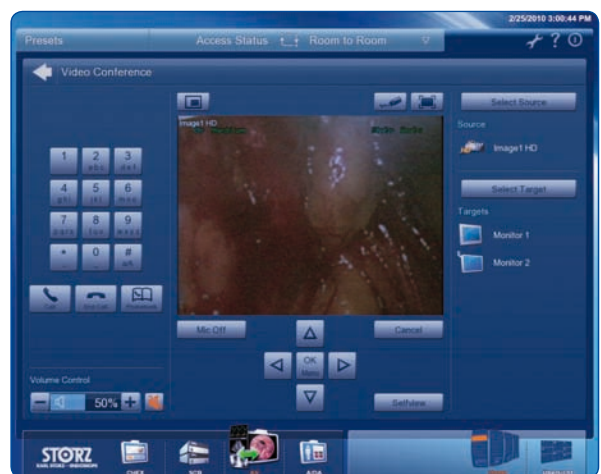
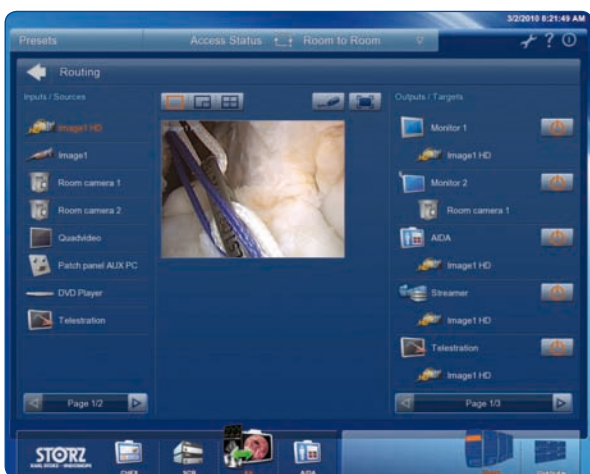
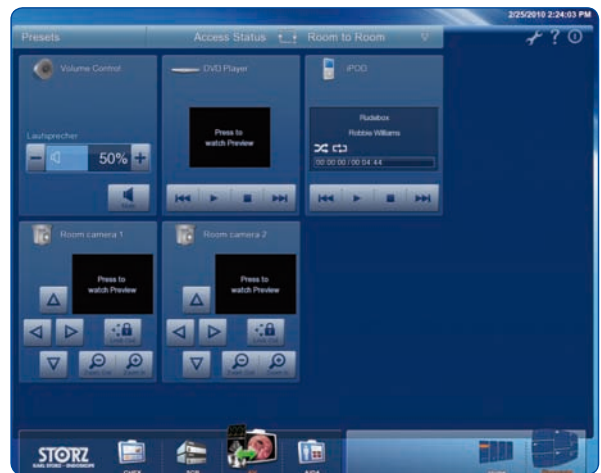
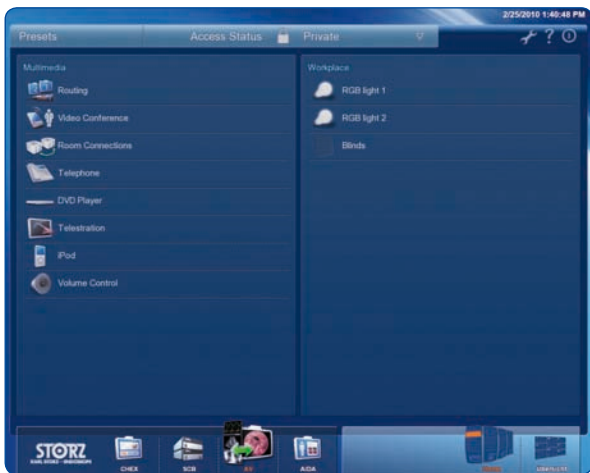
But why have so much technology in the OR?
The answer is quite simple. New communication technologies can easily bring in the knowledge of external experts, pave the way for interdisciplinary consultation or feed technical and surgical information to medical students and therefore have a major impact on enhancing patient care.

With our new AV system NEO that offers intelligent routing and imaging solutions, interaction is possible from any location within seconds, e.g. from OR to OR, to the senior consultant's office, the lecture hall or to any other external location. Videoconferences, live transmissions of surgical procedures, videostreaming, audio communication via telephone or pager are all feasible.

“So in 2001 we developed the Media Control to facilitate audio-video-routing, teleconferencing, control of room light and much more. The Media Control was the first unit of its kind combining AV with medical technology. We always had a single touch screen for all three different functionalities.”

The focus is set clearly on modularity: The new generation of the AV system NEO achieves this by its flexible structure. Features and options are clearly defined and variable. The modular design of the system enables you to choose the functionality needed in your specific environment, at the same time leaving space for future upgrades and enhancements.

All telemedicine functions are operated via the central touch screen. The new design of the user interface enables easy and intuitive handling of the functionalities.



“A few years later, in 2004, we launched a second generation, the OR1™ S-Series, which was more flexible to adjust to the customers’ requirements, and the StreamConnect® Server, one of the first video streaming solutions in combination with an integrated OR.”

OR1™ Checklist – Workflow management delivering patient safety

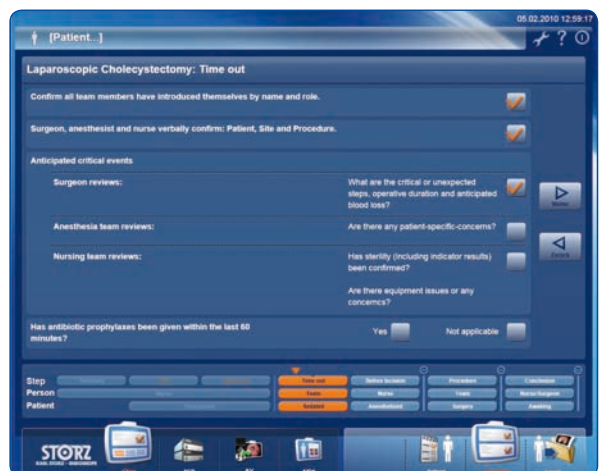
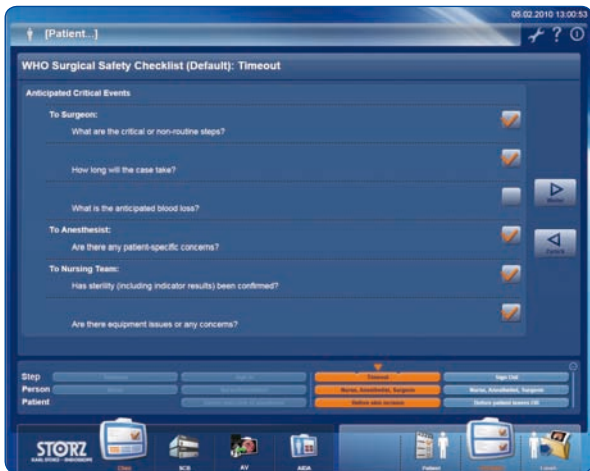
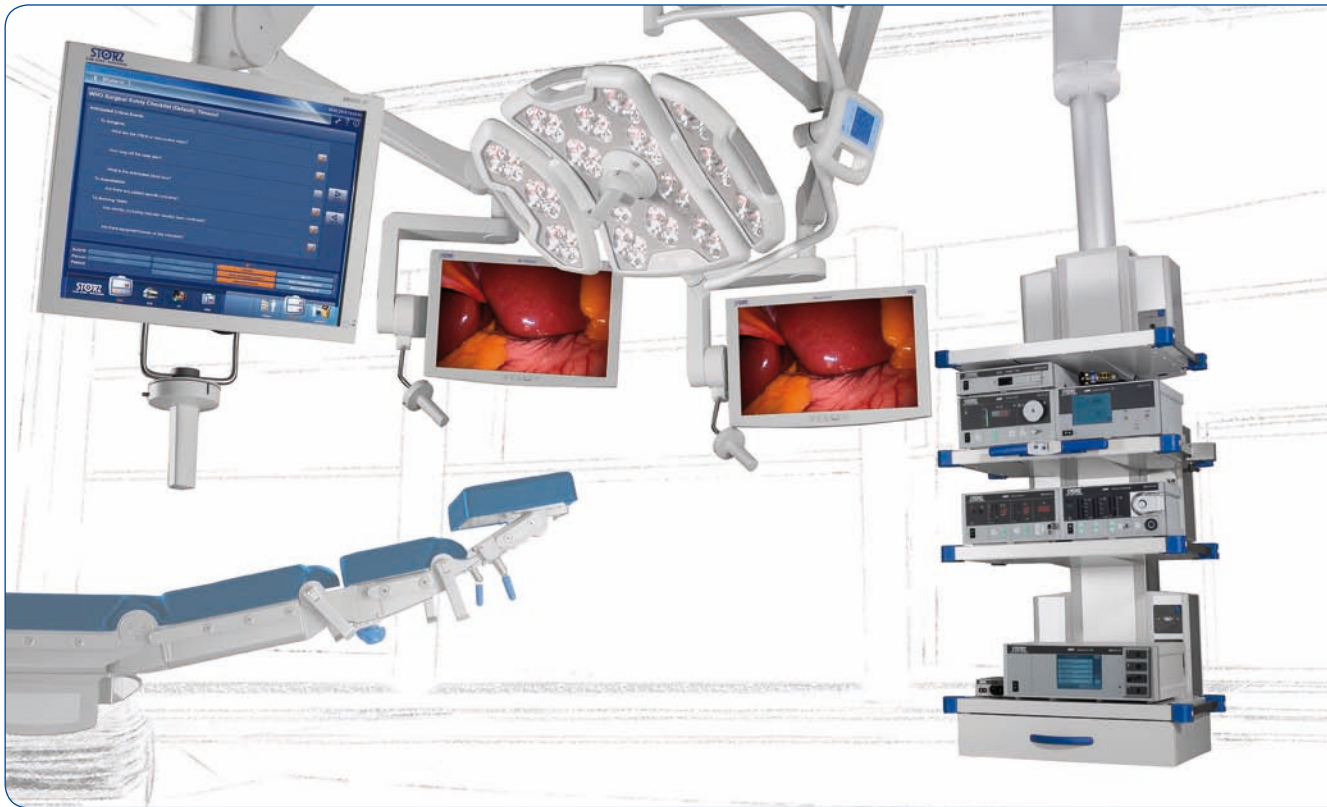
Inspired by the cockpit check just before take-off, a few studies were made analyzing the impact of a purpose-made checklist on surgical procedures. As a result, every study verified a decrease of complication rates, a study by the World Health Organisation (WHO) even showed a significant lowering of the mortality rate.

The surgical checklist OR1™ Checklist offers huge potential to enhance patient safety and save follow-up costs in case of complications, because it supports the OR team during the surgical workflow by check marking important steps before, during and after surgery.

The checklist can be predefined, e.g. the WHO Surgical Safety Checklist, or customized so that the hospitals and departments can configure their own checklist adjusted to their specific surgery and workflow requirements. So the OR team ensures that the right instrumentation is prepared for the right patient in order to perform the right surgery on the right side and even more. This gives the staff a sense of security and the patient a feeling of confidence and trust.



“Today’s trends indicate the need for further integration of ORs, imaging and communication solutions as well as the connection to hospital information systems with simple and intuitive use. Although economic aspects and process optimization continue to gain importance, specialized hybrid ORs are becoming more relevant.”



“We are continuously focused on advanced development of the OR1™ technology and so software applications like the OR1™ Checklist, AIDA Advanced Reporter, OverView or ORchestrion® complete our product portfolio. Our aim is to establish OR1™ seamlessly into the hospital infrastructure and to safely enhance the patient outcome in the surgical process.”



“The very first installation was in 1998 as mentioned before in the MIC Clinic in Berlin. This was kind of our “prototype” and research installation. In 2001 we installed one in Paris and in 2002 one in Saudi Arabia and since then we talk about OR1™ like we know it today. Nowadays we can look back on something like 3000 OR1™ installations worldwide.”

Synergy in Operation – Expertise in design, building and financing

The modern operating room, the centrepiece of every hospital, is one of the most sensitive systems in healthcare. The sheer variety of tasks required for the construction or reconstruction of new operating room facilities is breathtaking. We offer a variety of solutions, in conjunction with our professional partner MEDPLAN Engineering, to help you breathe more easily.

The planning and realization of the OR1™ NEO is MEDPLAN Engineering's core competence. This is based on a holistic concept that involves the consultation, development, planning and the realization of operating rooms as well as entire clinics. This concept also integrates country-specific requirements for building and medical technology and offers flexible solutions which meet the individual requirements of a particular hospital. MEDPLAN Engineering analyzes and records existing workflow processes

and integrates the findings into the planning and design phase with the help of simulations.

In cooperation with our expert partner KARL STORZ-SOLUTIONS, we accompany and consult you in a comprehensive way from the conceptual design to the financing of the project. Our guiding principle is: all from a single source and from a single partner. This involves the entire customized product and service portfolio for your OR and your future.

Whatever your planning or financing requirements are, we only pursue one goal – smooth and professional cooperation to implement your individual solution in a transparent and efficient manner.



“The experiences of all these various OR1™ projects fit into all our future projects and in the development of new products and technologies. OR1™ NEO is the next step that will be followed by many further steps. Project Sales Team, Product Management, Marketing and R&D – we are all proud of our real OR1™ story of success.”



Synergy in Operation

STORZ
KARL STORZ—ENDOSKOPE

THE DIAMOND STANDARD

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