



SIEMENS



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# Going hybrid?

Go with a full service provider for hybrid operating rooms

Answers for life.

# How does a hybrid OR fit into my hospital?



Installing a hybrid operating room is a big decision for every institution. After all, every hospital is unique.

When planning a hybrid OR, there are lots of questions: Who will use the room? What procedures will be performed there? What are the space requirements for equipment and team members? How will hospital workflow be impacted, particularly during surgery? What's the best way to finance it and how will utilization impact return on investment?

**As a rule: The better the planning up front, the lower the costs.**

Siemens has been equipping hybrid ORs for more than 12 years. It has extensive experience in designing and installing customized hybrid operating suites, as the references in the back document. With its in-depth knowledge of operating room dynamics and holistic approach to OR environments, Siemens can offer expert assistance at all stages of your hybrid journey.

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# What will we put in it?

When you've determined the room's utilization, careful consideration should first be given to the imaging system. Fixed C-arms differ greatly in their space requirements, their body coverage capabilities during fluoroscopy, surgical positions to support 3D imaging, their impact on OR hygienic standards, and their level of surgical workflow integration. The imaging system forms the centerpiece of every hybrid operating suite.

Siemens provides a complete portfolio of fixed C-arm systems – everything from ceiling-mounted to robot control imaging solutions. Its broad Artis **zee** family of imaging systems has an appropriate solution for virtually any hospital situation.



**Artis zeego**  
This top-of-the-line C-arm system – the first to employ robotic technology – pushes the envelope. With its exceptional positioning flexibility, Artis **zeego** seamlessly adapts itself to your surgical workflow. Robot control systems enable unique imaging capabilities. As a floor-mounted unit, Artis **zeego** is ideally suited for the laminar airflow in operating rooms. It easily fulfills the high sterility standards of a hybrid OR, saving you construction costs during installation. What's more, system movements do not conflict with ceiling equipment such as OR lighting and imaging booms.

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**Artis zee floor-mounted system**  
Featuring an extremely small footprint, Artis **zee** floor fits into virtually any operating room. Equipped with Multispace.F, the system's C-arm and integrated OR table allow tremendous positioning flexibility. 3D volumes with syngo DynaCT 3D support even highly complex structural interventions.



**Artis zee ceiling-mounted system**  
With its C-arm and flat detector positioning flexibility, Artis **zee** ceiling enables imaging at all angles around the patient and head to toe. Features such as InFocus and IsoTilt hold the projection on the region of interest during gantry and table movements. 3D imaging with syngo DynaCT is excellent, even for peripheral cases.



**Artis zee biplane system**  
With its two detectors, Artis **zee** biplane is a preferred choice for a broad range of neurosurgical and neurointerventional applications, and for treating patients for whom contrast media can pose a high risk (e.g. pediatric patients). Its isocentric working position enables full patient coverage from head to toe.



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# How will it all work together?

A hybrid OR is a crowded space. The imaging equipment, including ceiling-mounted monitors, is tightly integrated with the surgical table. It must allow unrestricted movement of other equipment like surgical lights, anesthesia booms or heart-lung machines. Third-party information such as ultrasound or hemodynamics needs to be integrated into the overall system. The impact on laminar airflow should be kept to a minimum. Also, each team member requires enough space to work comfortably.

## Installing a hybrid operating suite is a challenging undertaking

The Siemens Hybrid OR Planning Department can offer assistance in identifying key project stakeholders and ensuring that the needs of all parties are fully met. Detailed architectural room planning, including schematic drawings of floor and ceiling equipment as well as interactive 3D room models, are a great help for optimizing room utilization. Working in a hybrid environment and performing new procedures requires additional training by the entire OR staff. Other factors such as service support for key equipment are also essential. Siemens can provide assistance with all of these considerations.

**1 Advanced imaging applications**  
Both 2D and 3D. For example, syngo Aortic ValveGuide<sup>1</sup>, which supports transcatheter aortic valve implantations (TAVI)<sup>2</sup> by automatically segmenting intra-operative 3D images, displaying anatomic landmarks and overlaying them with 2D fluoroscopy

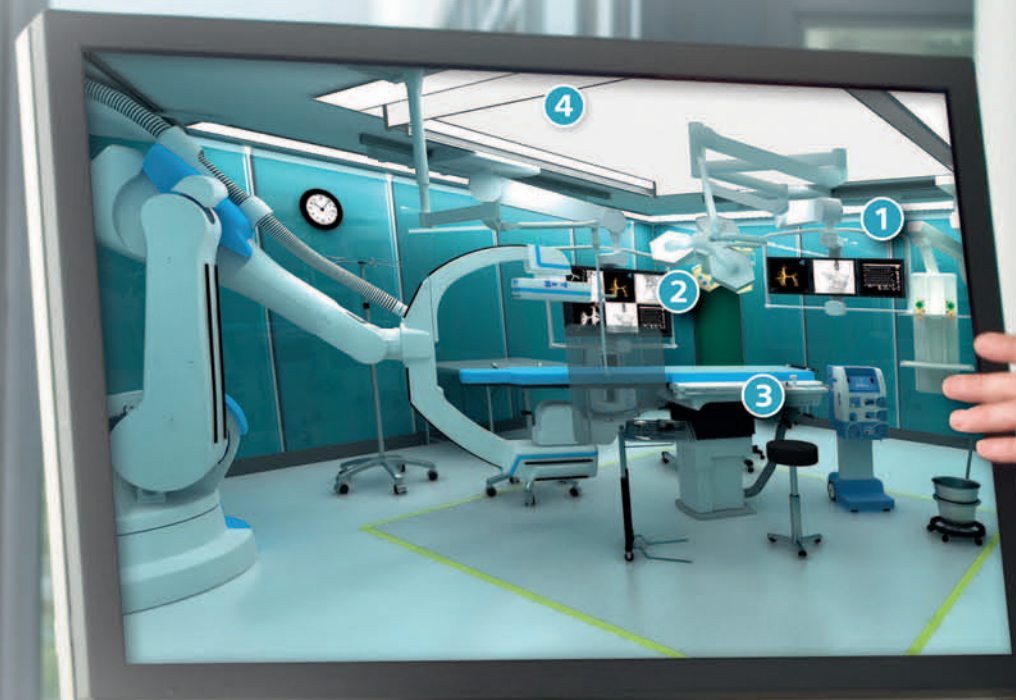
**2 Monitors**  
The Artis zee Large Display, a full-color, 56-inch medical-grade screen, lets you view multiple inputs simultaneously directly at tableside

**3 Patient table**  
Easy access, superb positioning and a maximum weight capacity of 200kg (441 lbs) make the Artis OR surgical table an excellent choice for many specialties

**4 Laminar airflow**  
Floor-mounted systems such as Artis zeego offer clear advantages in the OR environment. Having no ceiling-mounted components, there is only minimal impact on the room's laminar airflow

<sup>1</sup> Under development. Not available for sale in the U.S.

<sup>2</sup> CAUTION: Investigational Device. Limited by U.S. Federal Law to investigational Use. The information about this device is preliminary. The safety and effectiveness of the devices for the uses discussed have not been established. The device is under development and not commercially available in the United States; and its future availability cannot be ensured.



# How can we operate it cost effectively?

Healthcare today is a dynamic and complex business with many economic challenges. System uptime, utilization, staffing and long-term profitability are key considerations with every investment. Siemens has a sizeable service portfolio to help you meet your performance and growth targets, including various financing solutions.

## Helping you finance your hybrid plans

Siemens offers various financing solutions to help you realize your hybrid OR plans and proactively pursue your business objectives.

## Continuous customer satisfaction

At Siemens, customer care is ongoing and takes many forms, covering everything from application training to full technical support, including equipment installation, maintenance, remote diagnostics and software upgrades. Our broad offering includes Enhanced Productivity Services such as the Siemens Guardian Program™, which proactively monitors system performance in real time to detect and resolve potential errors before malfunctions occur and ensure optimal availability.



*“The Guardian Program has been a great asset to our clinic. Siemens proactively responds, quickly, in real-time. Minor issues are only really minor if a system can continue to run. Siemens does what they need to do so we can get our job done faster.”*

**Bill Crummer** | Biomedical Engineer,  
Medical University of South Carolina, USA

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Hybrid OR, Courtesy of Centre of Cardiovascular Diseases, Rotenburg a. d. Fulda, Germany

## Who can do all that?

As a major driving force behind numerous healthcare trends, Siemens has helped customers around the world plan and install a hybrid operating room ideally suited to their specific needs – and future needs.

### Partnerships with major OR suppliers

Siemens fosters long-standing partnerships with several leading OR equipment manufacturers to ensure seamless system integration and hardware compatibility. The references in the back include hybrid OR installations where accessories from other OR suppliers were integrated.

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Hybrid OR, Courtesy of Centre of Cardiovascular Diseases, Rotenburg a. d. Fulda, Germany

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*“The room functions very well. We believe we have achieved all the goals we were aiming for.”*

Linus Blohmé | Head of Trauma Surgery, Karolinska University Hospital Stockholm, Sweden

*“The Artis zeego can do so much more than traditional radiography technology.”*

Joan Dippenaar | X-ray Technician, Medi-Clinic, Cape Town, South Africa

*“Our investment will have paid for itself within three to five years.”*

Andreas Ruland | Managing Director, Oberallgäu Hospitals, Immenstadt, Germany

The statements by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.

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