

PHILIPS

Image guided therapy

Spine suite

Hybrid OR

Spine suite

Perform spine procedures with confidence and precision

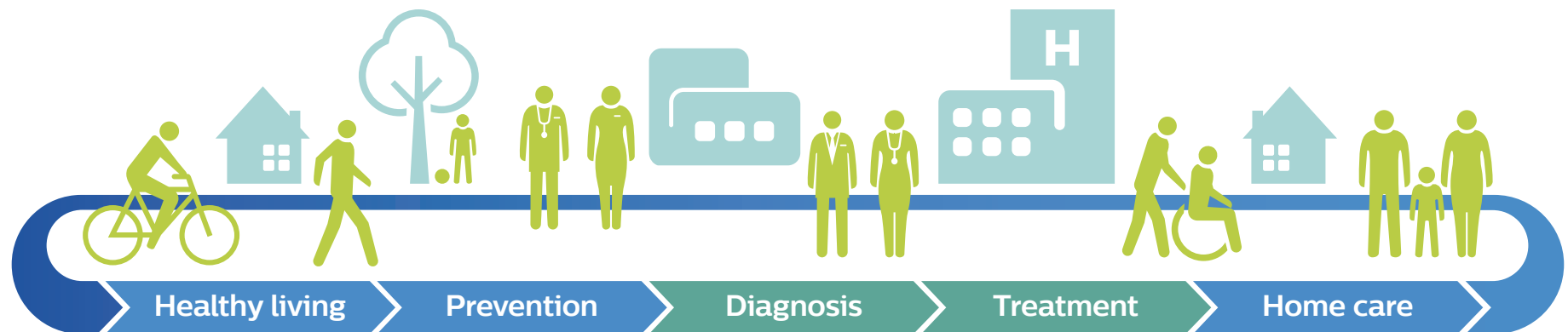


Defining the future of Image Guided Therapy

Innovative solutions across the health continuum

At Philips, we're here to support you in providing optimal care to your patients. Across the health continuum, we cover the full range of consumer and patient needs, from living healthily, to being diagnosed and treated for an illness, to recovery or chronic care at home. We look across the health continuum because when it comes to health, it's the only way you can see.

The areas of diagnosis and treatment are the focus of Philips Image Guided Therapy. They account for 70% of all healthcare costs, and this landscape is rapidly evolving. The expansion of interventional procedures and the development of new technologies continue to open up new possibilities and applications. This in turn opens the way for more targeted diagnosis and new, more complex treatment options.


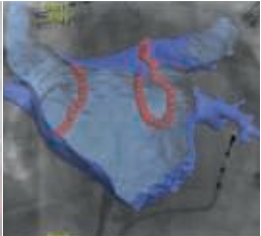

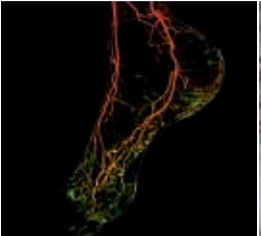
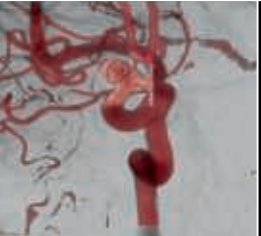
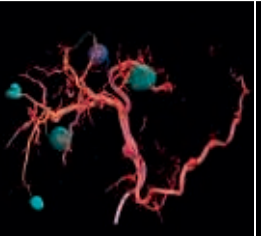



Clinical demands are getting more specific. So are we.

During a procedure you are focused on making the best decisions you can for each patient. Each patient and each disease has very specific challenges, complexities, and needs. As the number of procedures and patients goes up, you can see the need for better forms of image guidance for effective treatment and decision making. At the same time, optimized workflows are key to improving efficiency.

That's why we created clinical suites; a flexible portfolio of integrated technologies, devices and services for a broad range of interventional procedures.

Each of our clinical suites offers specific image guided therapy solutions to provide more choice and flexibility for exceptional care. So you can be confident in your performance and in the fact your patients are receiving exceptional care. Together we aim to create the future of image guided therapy.

Coronary suite			EP suite			SHD suite			Vascular suite			Neuro suite			Onco suite			Spine suite		
Coronary suite Transforming complex PCI procedures into confident care			EP suite Seamless integration drives EP excellence			SHD suite From planning to live guidance for SHD procedures			Vascular suite Redefine the outcome for vascular treatment			Neuro suite Neuro decisions are based on what you see, so see more			Onco suite Critical insights for superior care in Interventional Oncology			Spine suite Perform spine surgery with confidence and precision		
																				

Trends

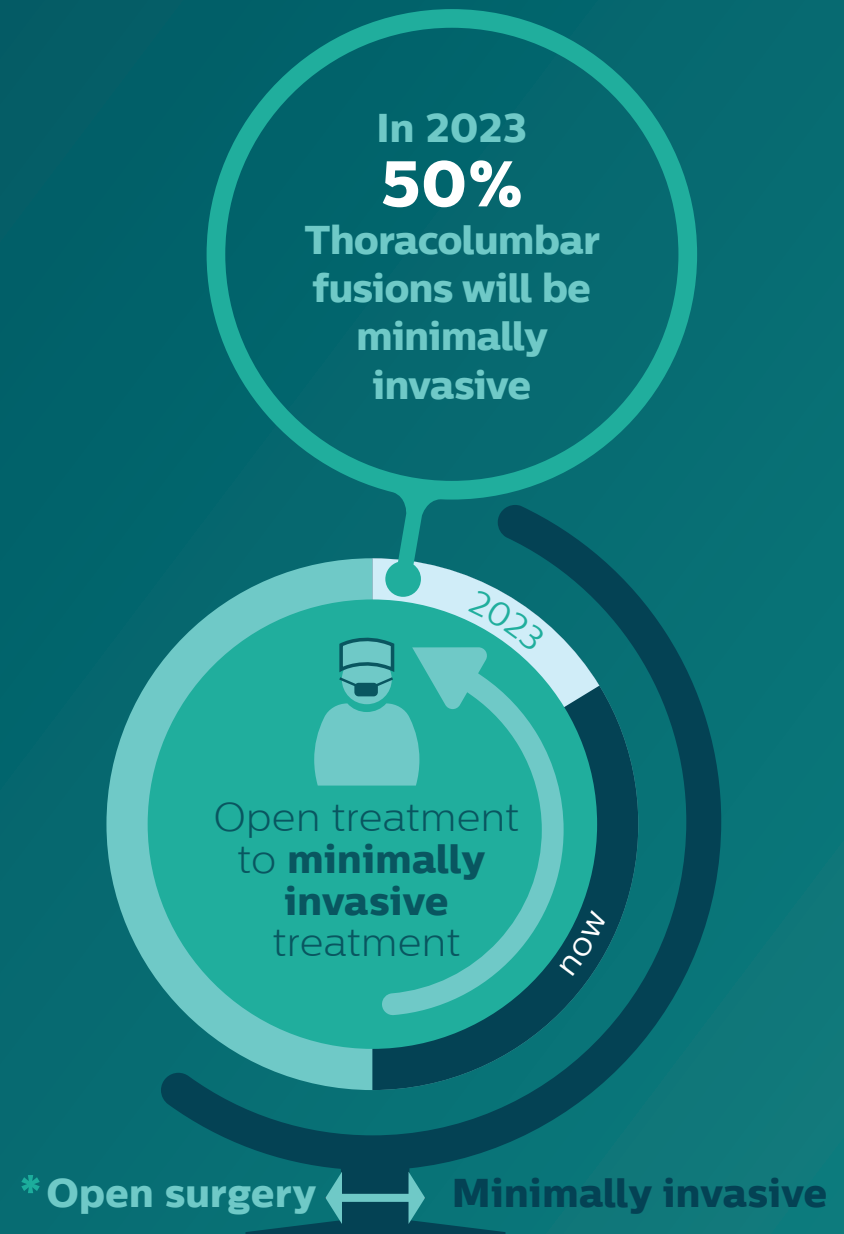
in spine procedures


The spine surgery landscape has changed dramatically in recent years. More and more spine surgeries are moving from “open surgery” procedures, where you can see and touch the patient’s spine while working - to minimally invasive techniques, performed through small incisions. Minimally invasive surgery has the advantage of reducing blood loss, soft tissue damage, and hospital acquired infection. As a result, it can reduce post-operative pain and promote faster recovery, which can shorten hospital stays.

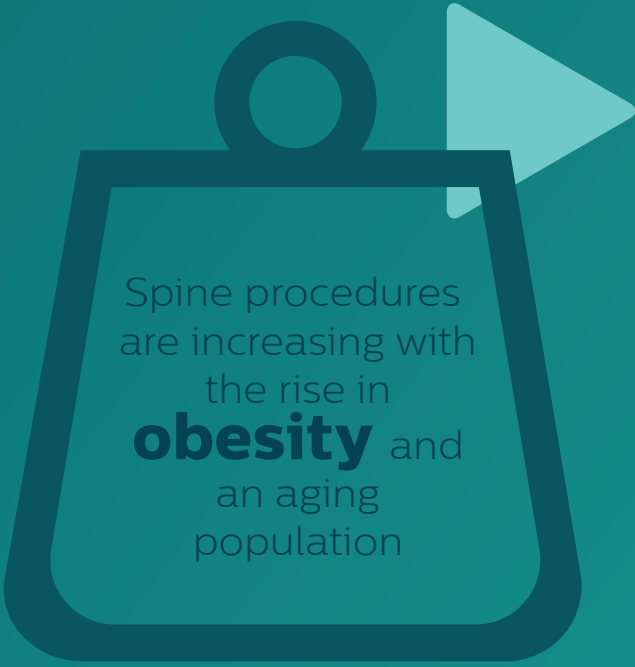
Minimally invasive surgeries come with challenges. However, due to reduced visibility of the spine during these procedures, you have to rely on real-time imaging solutions to guide your surgical tools and implants.

“**The structural solution possibilities to provide a Hybrid OR enables us to carry out minimally invasive interventions**, which, for the patients in turn, generally means shorter lengths of stay in the hospital.”

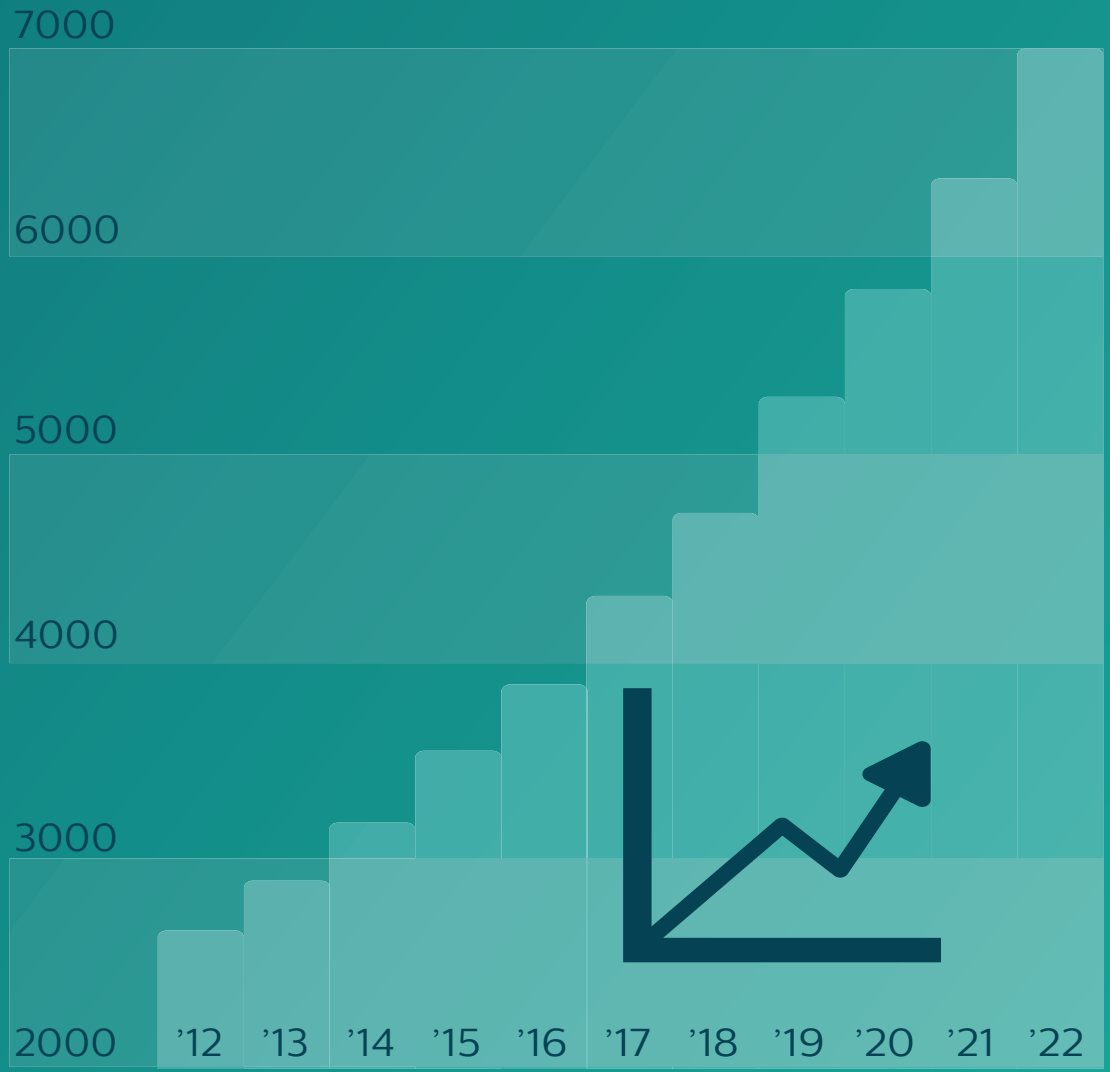
Prof Dr med M Synowitz, Director of the Clinic for Neurosurgery, University Medical Center Schleswig-Holstein, Kiel, Germany



 More than a **1/2 billion** people suffer from back pain across the globe

 Spine procedures are increasing with the rise in **obesity** and an aging population

Total **spine procedures** (k) globally





Key benefits

- Provides exceptional, large field-of-view 2D and 3D images that boost confidence and enhance precision throughout the procedure
- Improves understanding of the spinal anatomy by providing exceptional 3D imaging
- XperCT removes the need for post-op CT verification by providing excellent in-room cone-beam CT imaging
- Enhances the user experience thanks to greater movement flexibility through FlexMove, intuitive positioning guidance, and enhanced patient access



Spine suite

Perform spine surgery with confidence and precision

Helping you focus on what's important – your patient

Today patients with spine disease have more treatment options, including minimally invasive spinal fusion procedures. During these procedures, advanced real-time image guidance is critically important in helping you get a better understanding of the anatomical structure and define the correct pathway for device placement.

With the increasing complexity of spine surgeries and requirements for minimally invasive procedures, our Spine suite offers a state-of-the-art hybrid operating room that enables you to perform fast, accurate, and simplified procedures. It supports the full spectrum of spine procedures – from pedicle screw placement and vertebroplasties to complex spinal fusions.

Based upon the Azurion platform, Spine suite supports increased confidence in decision-making and placement of devices through diverse surgical table options, workflow innovations, and dedicated 2D and 3D image guidance tools.

The tools provide remarkably detailed insights into anatomy, pathology, and clinical outcome during each phase of the procedure as you decide, guide, treat, and confirm. Workflow innovations, such as our FlexMove, can support medical teams in dramatically reducing overall procedure time and our technology enhances staff and patient safety by efficiently managing radiation dose.

With the Spine suite, you have the innovations at hand that empower you to redefine outcomes for your spine patients.

“ The Azurion has a large-area Flat Detector that provides exceptional 2D and 3D visualizations of complex spinal structures – providing far higher image quality than an image intensifier system – to enhance confidence, decision making and precision during spinal surgery.”

Prof Dr A Seekamp MD, Director of the Orthopedic and Emergency Surgery Clinic, University Medical Center Schleswig-Holstein, Kiel, Germany

Complex spine

deformities and disorders



3D cone-beam CT (XperCT)

As people live longer and the prevalence of obesity increases, the number of people with complex spine deformities and disorders is also on the rise. Innovative new devices and imaging technologies are supporting surgeons in performing minimally invasive procedures, such as spinal fusion, to treat complex spine disorders. A key challenge when performing a complex spine fusion is to safely fuse the vertebrae without affecting nearby nerves, muscles, ligaments, and other structures which may cause pain and discomfort. To standardize this fast evolving landscape, the medical community and manufacturers are working towards generating evidence to answer clinical dilemmas and define novel guidelines. Philips participates actively to further standardize spine procedures with the aim of reducing procedure time and improving outcomes.

Our Spine suite provides workflow innovations and dedicated 2D and 3D image guidance tools to support high levels of standardization and that have the potential to redefine outcomes for your spine patients. They support each step of your procedure – as you decide, guide, treat, and confirm.

Decide

Guide

Treat

Confirm



Clarity IQ

Excellent visibility at low X-ray dose levels for a comprehensive range of clinical procedures.

Zero Dose Positioning

Helps you manage dose by positioning the system or table on Last Image Hold so you can prepare your next run without using fluoroscopy.

Hybrid OR solution featuring FlexMove

This innovative surgical environment offers unmatched procedural flexibility and ease of use, while meeting the highest standards for surgical infection control and hygiene.

Integrated OR table

Seamlessly integrated OR table with controls that operate both the OR table and the C-Arm.

TSM and FlexVision Pro

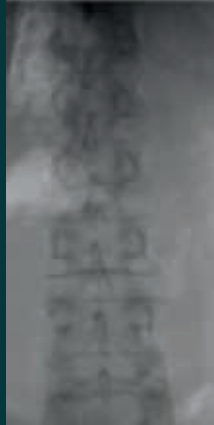
View and control all system inputs including MRI data via the PACS at tableside to save time and unnecessary walking in and out of the sterile area.

Procedure cards

Set up the system the way you want with one click - exam settings, room set-up, required devices and materials, etc.

Complex spine deformities and disorders

Effective guidance in treatment and decision



..... **Decide**

..... **Guide**

Live X-ray guidance

with ClarityIQ technology creates high definition images with exceptional detail to support precise treatment strategies, navigation, and follow-up.



..... **Treat**

..... **Confirm**

In-lab verification of screw placement

XperCT enables you to obtain reliable information on the placement of the screws while the patient is still on the table, to assess the efficacy of the treatment. By using XperCT, you have extra assurance of device placement. The use of XperCT during the surgery can also allow you to skip post-operative scans with conventional CT which can save time, money, and reduce the need for extra procedures.

XperCT

Fast, high-resolution intra-operative cone-beam CT

Superb image quality with fast imaging protocols, resulting in fewer breathing and motion artifacts

We developed dedicated acquisition protocols for spine procedures that deliver fast cone-beam CT scans to improve image quality.

Key benefits

- Fast and easy intra-operative 3D imaging
- Provides exceptional, large field-of-view 3D images (up to 6 levels) that boost confidence and enhance precision throughout the procedure
- XperCT removes the need for post-op CT verification by providing excellent in-room cone-beam CT imaging

Reduced metal artifacts

Visualization around metal objects often poses challenges, making it difficult to assess anatomy in the vicinity of metal implants. For these cases XperCT provides a unique Metal Artifact Reduction filter, which significantly reduces the scattering artifacts in cone-beam CT.

“Post-operative CT scans to check implant placements are no longer necessary; it is possible to verify whether a procedure has been successful immediately after treatment. As soon as surgery has been performed, we can be 100% sure that implants are in place, thanks to the high quality of the intra-operative cone beam CT (XperCT) image and positioning flexibility of the system.”

Prof Dr A Seekamp MD

Director of the Orthopedic and Emergency Surgery Clinic, University Medical Center Schleswig-Holstein, Kiel, Germany

Case:

Scheuermann's Kyphosis with 80 degrees preoperative thoracic Cobb angle

Patient:

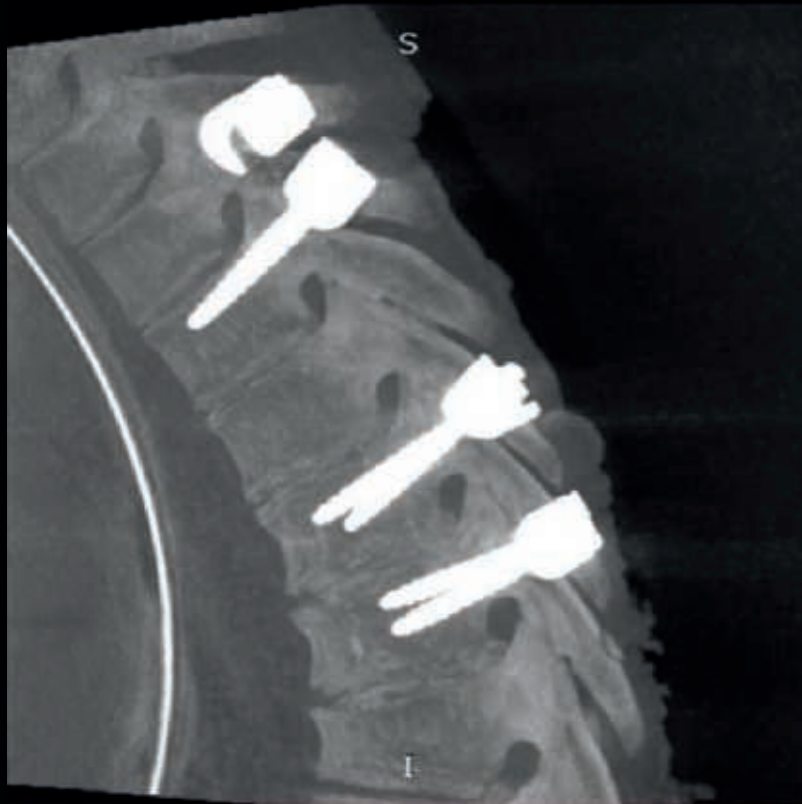
- 18 year old male
- Underweighted patient (BMI=17.4)
- kyphosis deformity

Treatment:

- Hybrid hook/pedicle fixation from T4 to L2 (14 screws and 2 hooks)

Room:

- Hybrid OR used to perform intraoperative 3D conebeam CT (XperCT)



3D cone beam CT (XperCT)

Courtesy of Dr A Elmi-Terander MD PhD Karolinska University Hospital, Stockholm, Sweden.



3D cone beam CT (XperCT)

Courtesy of Dr A Elmi-Terander MD PhD Karolinska University Hospital, Stockholm, Sweden.

“ When you are using this kind of system, you have the possibility to check your results immediately and then you have the possibility to correct that in the OR.”

Dr. A Elmi-Terander, MD, PhD. Senior Consultant Neurosurgery
Karolinska University hospital, Stockholm, Sweden

FlexMove

Workflow without compromise

As the name suggests, FlexMove is a versatile ceiling mounted C-arm option that is designed to improve flexibility during spine procedures. You get the maneuverability of a mobile C-arm and the power of an angiography system to enhance visualization anatomy.

As with a mobile C-arm, the FlexMove system can be brought in from any side of the table for excellent patient access. All movements are fully motorized, and the system can be easily moved in and out without disrupting staff or equipment. Position memory brings the system automatically back to a previous position, such as a pedicle screw entry point, to save time.

This positioning flexibility means you do not need to move the operating table during imaging or surgery, which can promote smooth and efficient spinal procedures.

“Our integrated Hybrid OR solution is an extremely movable device with the high quality of an angiography workplace.”

Prof Dr A Seekamp, MD, Director of the Orthopedic and Emergency Surgery Clinic, University Medical Center Schleswig-Holstein, Kiel Campus, Germany



Key benefits

- **Workflow without compromise**

The anesthesiologist can stand at the head of the table, and team members can stand in their preferred working positions at both sides of the table, for diverse procedures

- **Positioning flexibility**

All equipment is mounted on the ceiling to maximize use of OR space and allow easy positioning for different teams and procedures

- **Easy full body patient coverage**

Provides full body coverage on both sides of the table to support complex open surgical and minimally invasive procedures



Spine suite solutions

We offer a comprehensive range of options and support to help you realize a suite that fits your clinical and budgetary requirements. Our offerings also include advanced education, efficiency programs, and RightFit service agreements.

Our image guided therapy Spine suite is a combination of the Azurion platform, spine products, workflow options, accessories, education, and services. We also offer solutions to create a leading-edge Hybrid OR. Since all solutions are integrated, you have the flexibility to configure a multipurpose treatment environment that enables you to perform a wide and diverse range of clinical procedures, such as vascular and cardiac surgery.

“ We teamed up with vascular, neuro, and orthopedic surgeons to create this multi-purpose OR to realize a high room utilization, provide state-of-the-art care, and reduce the overall cost for the hospital.”

Dr M Bemelman, Trauma Surgeon, Elisabeth Hospital, Tilburg, the Netherlands

System platforms

- Azurion 7C20
- FlexMove

Spine products

- XperCT Dual
- VasoCT
- XperGuide

Integrated tools

- DoseAware

Table options

- Xper table
- Maquet Magnus table tops
- Trumpf TruSystem table tops

* Medtech 2012 US image guided surgery; MRG, 2014, Global markets for MIVCF; MRG 2015, Surgical navigation systems; MRG 2013, US markets for minimal invasive spine technology

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