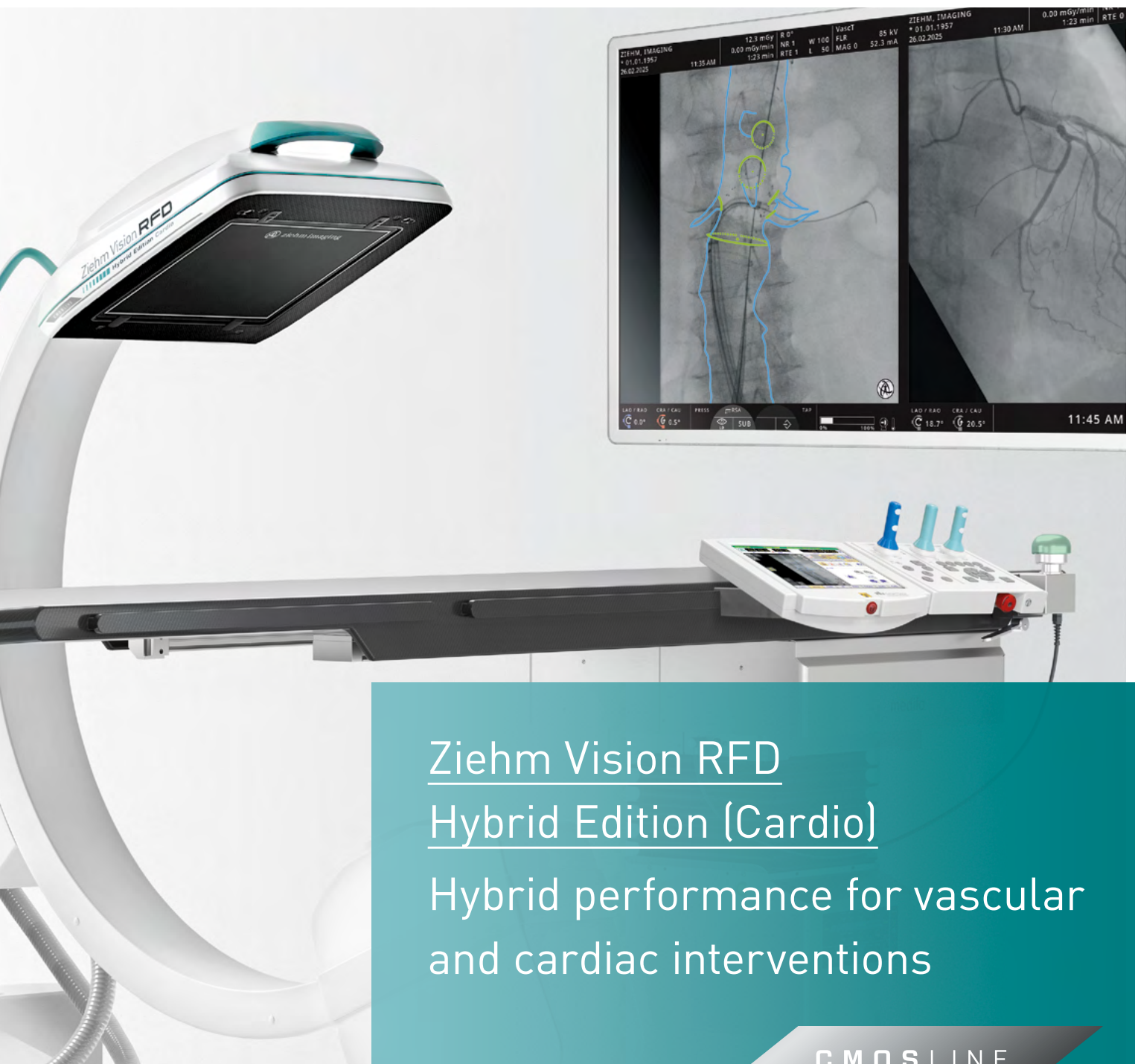




Ziehm Vision RFD Hybrid Edition (Cardio)

Hybrid performance for vascular
and cardiac interventions

CMOS LINE



Ziehm Vision RFD Hybrid Edition (Cardio). An aging population and the shift toward minimally invasive procedures are creating an increased demand for advanced cardiovascular imaging. The Ziehm Vision RFD Hybrid Edition¹ (Cardio) CMOSline² is the mobile answer to this growing need – combining premium image quality with unmatched flexibility. Featuring QuantumStream, the first true 2k2k imaging chain and CMOS detector technology, this system enables precise, high-end imaging in any standard OR. Whether in complex vascular procedures or delicate cardiac interventions, the Ziehm Vision RFD Hybrid Edition (Cardio) delivers hybrid and mobile cath lab performance without the cost, complexity, or installation requirements of a fixed installed angio system. This makes it a powerful tool for hospitals looking to expand their capabilities and remain competitive.

THE FIRST
TRUE 2K2K
IMAGING CHAIN

01 / Maximize clinical precision with QuantumStream the first 2k2k imaging chain

The Ziehm Vision RFD Hybrid Edition (Cardio) elevates intraoperative imaging to a new standard of clarity and detail – for both vascular and cardiac procedures. With its advanced QuantumStream imaging chain, it delivers a seamless resolution of 2k x 2k from acquisition to display. This allows for deeper insights and confident decision-making even in the most demanding hybrid or cardiac interventions.

QuantumStream – Ziehm Imaging’s next-generation imaging chain – is designed to transmit true, non-interpolated resolution of 2k x 2k across the entire imaging system. It enables higher imaging efficiency and streamlines intraoperative workflows by delivering superior image clarity, enhanced surgical precision, and ultimately safer interventions with improved patient outcomes – for better care.



PERFORMANCE
Industry-leading
30 kW generator



IMAGE ACQUISITION
CMOS detector with
100 µm pixel size

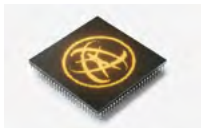


IMAGE PROCESSING
with a resolution
of **2k x 2k**



IMAGE OUTPUT
32" **4k** UHD monitor

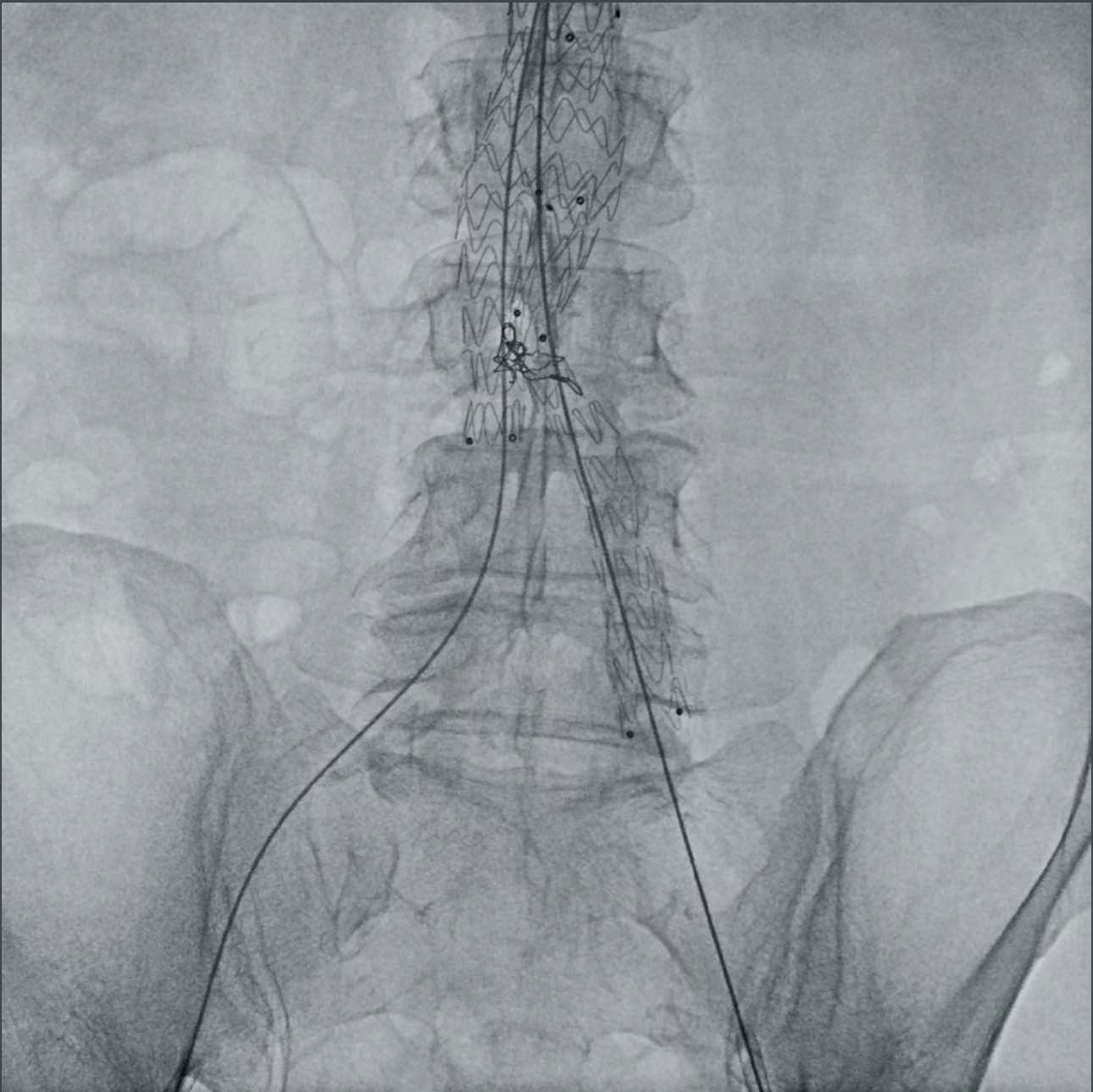


IMAGE INSIGHTS
Relevant **patient** and
C-arm information

Clinicians benefit from:

- Sharper image details, especially in magnification modes
- Improved visibility of guidewires, stents, and cardiovascular anatomy
- Smoother transitions in fast-moving objects

Excellent image quality and ease of operation allow for multidisciplinary use of the Ziehm Vision RFD Hybrid Edition (Cardio). The system can be used flexibly in cardio and vascular interventions or complex ortho, trauma and spine procedures.



Snapshot of an endovascular aneurysm repair (EVAR)

Performance within QuantumStream

Unmatched power generator for challenging projections

The first 30 kW generator performance on the market (IEC 60601-2-54) ensures excellent results even during steep angles and lateral projections. The high-frequency generator operates with variable pulse width and optimized image quality while minimizing dose levels. With up to 300 mA, the C-arm provides crystal-clear images even of fast-moving objects like the beating heart or inserted guidewires – making it ideal for cardiovascular procedures. The compact housing of the generator simplifies positioning at the OR table.

Image acquisition and processing within QuantumStream

High-resolution CMOS detector

Compared to conventional C-arm detectors, CMOS flat-panels within our premium CMOSline achieve higher spatial resolution with lower noise thanks to their 100 µm pixel size. Combined with true 2k2k image processing, the system delivers exceptional imaging precision – especially noticeable in magnification modes. Therefore, the system provides image quality previously only available with fixed installed angio systems – while maintaining full mobility and OR compatibility.

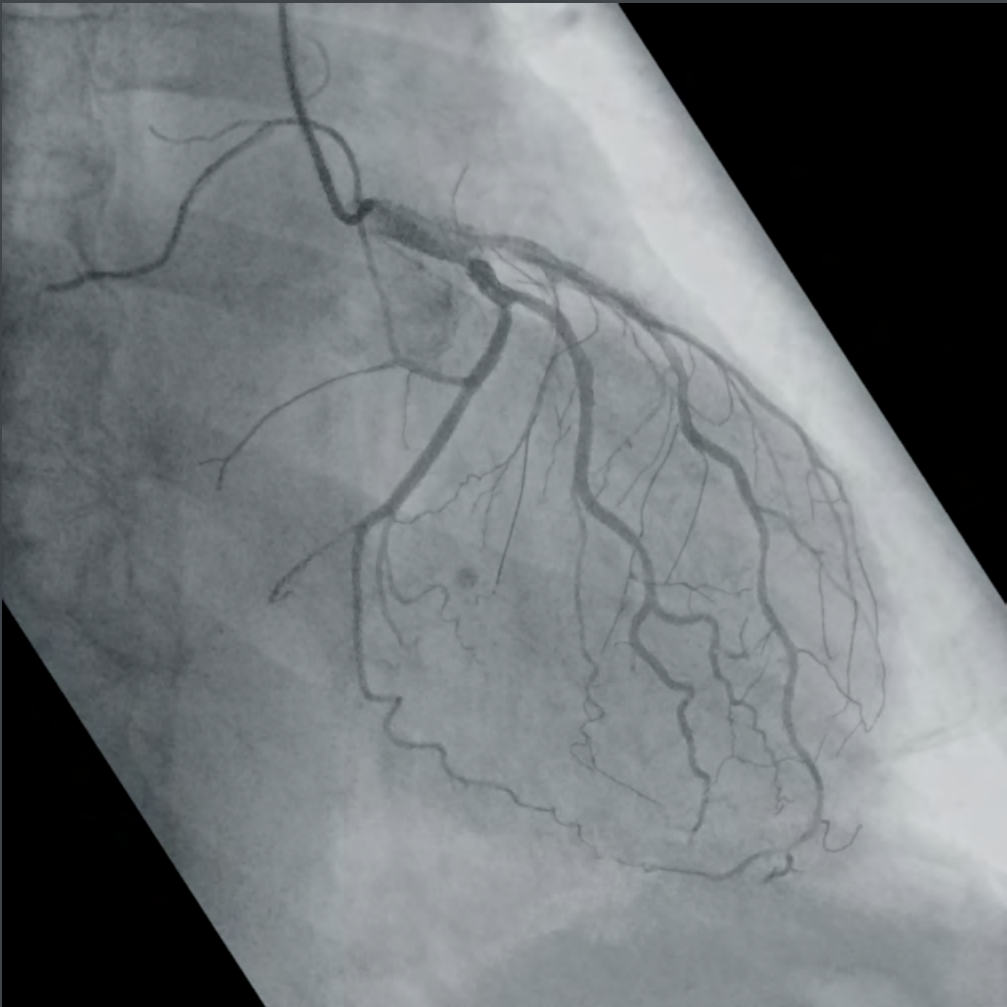


The 21 cm x 21 cm detector is optimized for cardiac intervention-focused procedures.

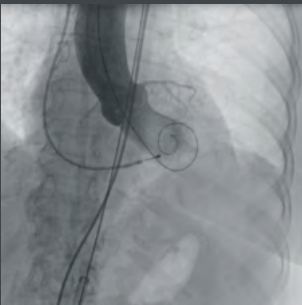


The 31 cm x 31 cm detector is ideal for complex hybrid applications.

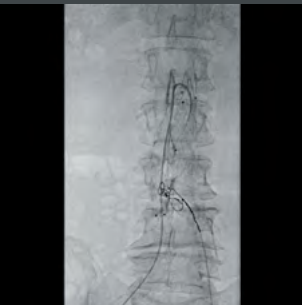
Angiography of left coronary arteries



Digital Subtraction Angiography (DSA) of an endovascular aneurysm repair (EVAR)



Angiography before transcatheter aortic valve implantation (TAVI)



Fluoroscopy of an endovascular aneurysm repair (EVAR)

Image output and Image Insights within QuantumStream

Every detail in sight with 4k UHD
and Image Insights

The high-resolution 32" 4k UHD monitor completes the imaging chain. Mounted on an articulating arm (AMA) or directly on our mobile cart, it displays all details of non-interpolated QuantumStream images. Even the most delicate anatomical structures become visible with outstanding clarity – in both vascular and cardiac cases and any further applications. This leads to real-time procedural control and greater confidence in the OR.

Ziehm Imaging's Image Insights show key data directly on the live image – without obscuring critical clinical information. This integration supports efficient communication and informed decisions, especially in fast-paced hybrid OR environments.

Patient information
outside the clinical image for
better and clearer display

Imaging and dose indicators
for well-informed decisions and smarter
imaging at all times

IMAGE INSIGHTS
FOR FAST
DECISIONS



Live C-arm positioning information
to display orbital movement and
angulation

Individual footswitch configuration
to ensure clear and effective C-arm
use at all times

Anode heat capacity and oil temperature for safe and sensible use of the C-arm

Stored C-arm positioning information of the reference image to display orbital movement and angulation, allowing the exact same C-arm position to be reached

02/ Convert every OR into a fully mobile hybrid suite

The sharp rise in cardiovascular disease is leading to an urgent need for hospitals to perform more procedures with fewer resources. The Ziehm Vision RFD Hybrid Edition (Cardio) is available in two variants, tailored either to the specific requirements of vascular surgery or cardiology. For complex interventions where 3D imaging is essential, the Ziehm Vision RFD 3D⁴ can be provided as an advanced solution. Each system delivers premium image quality, workflow efficiency, and mobility without the need for structural changes to the operating room – creating a fully mobile hybrid suite.

One platform. Two solutions.

For advanced vascular interventions, including complex AAA procedures like EVAR, FEVAR and TEVAR

Designed for mobile cath lab environments with a focus on interventional cardiology, electrophysiology and structural heart procedures

One step further.

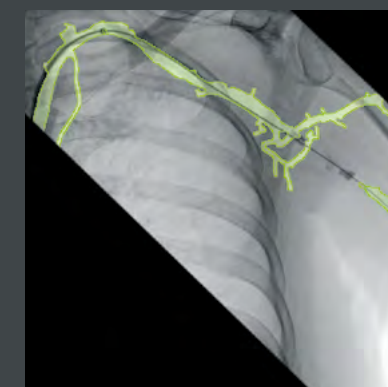
For expanded use in a wide range of clinical applications that require advanced intraoperative 3D imaging, including intraoperative verification of stent positioning.

All variants support fast and reliable decision-making and provide the surgical team with valuable communication and orientation tools. Vessels and anatomical landmarks are now easier to identify thanks to **Enhanced Vessel Visualization** and refined **Measurement Functions**.

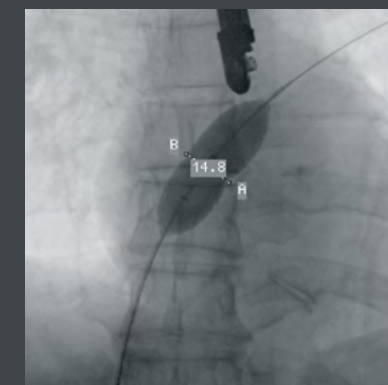
The **Anatomical Marking Tool (AMT)** allows clinicians to apply live, color-coded annotations such as vessel markings or implant positions directly on the image – helping improve orientation, planning, and communication during complex cardiovascular procedures.



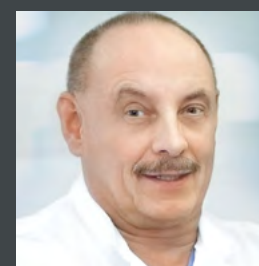
Control angiography after carotid stent implantation



Fluoroscopy of an axillary artery using Enhanced Vessel Visualization



Measurement of a persistent foramen ovale (PFO)



"Thanks to the equivalent image quality and similar setting options, Ziehm Imaging offers with its unique mobile C-arm an additive intra-operative imaging option to the traditional fixed installed angio system."⁵

Prof. Dr. Hartmut Gülker

Founder CardioMed Cardiovascular Sciences, Wuppertal, Germany

Ziehm Vision RFD Hybrid Edition

The complete mobile hybrid solution for vascular procedures

The Ziehm Vision RFD Hybrid Edition is more than a mobile C-arm. In combination with a broad variety of components it becomes a fully integrated hybrid imaging solution. This system allows hospitals to perform complex endovascular procedures with the precision, performance, and image quality comparable to a fixed installed angio system, but without the associated cost, space requirements, or construction work.

Key features of the mobile hybrid solution:

→ SmartVascular

This workflow is dedicated to vascular interventions, enabling seamless transitions between Fluoro, DSA, MSA, and RSA – including intuitive footswitch control.

→ CO₂ angiography

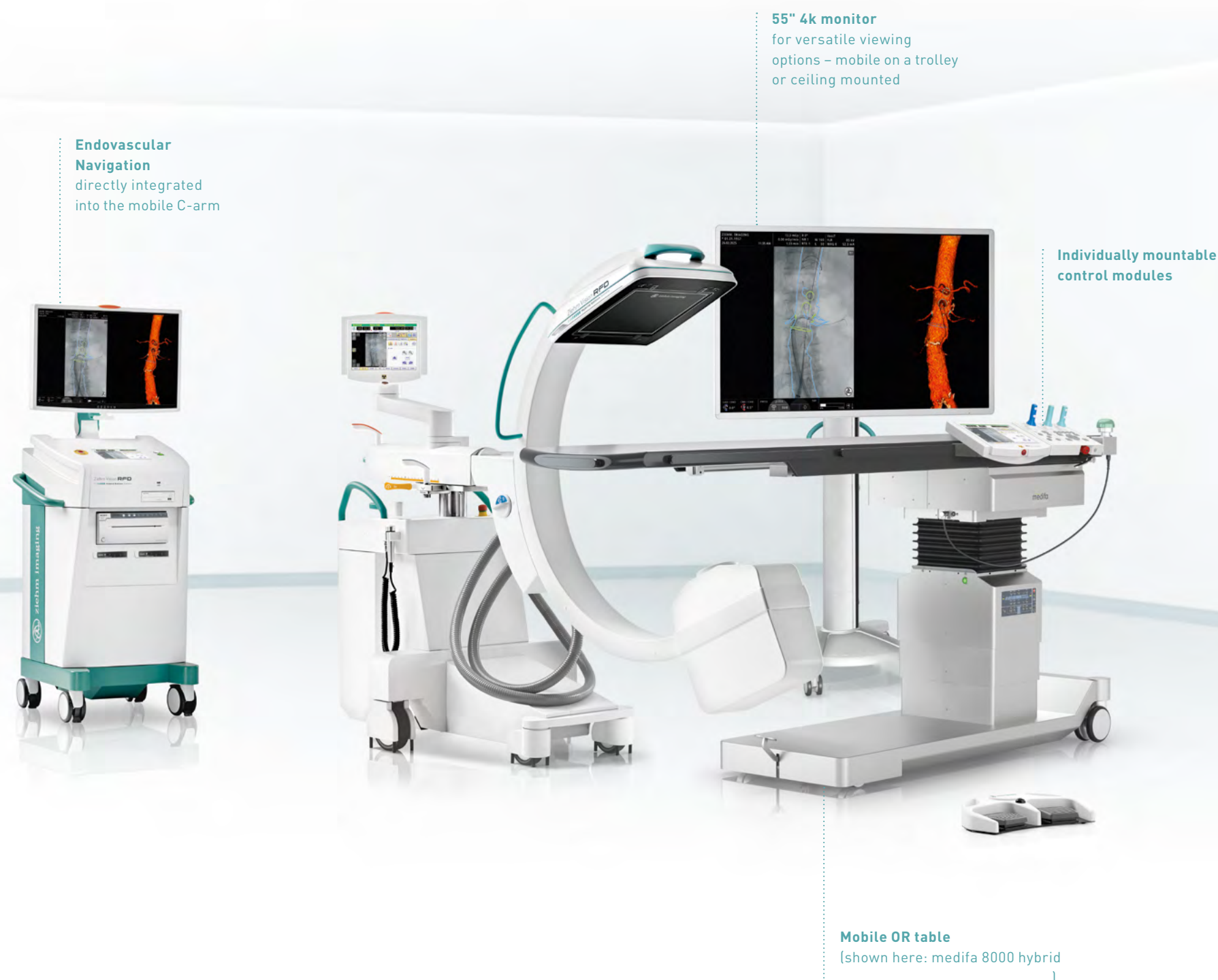
Sensitive treatment with CO₂ contrast agent to expand the range of treatable patients – safely and economically.

→ Endovascular Navigation

Support of fusion imaging and precise intraoperative guidance for aorto-iliac and peripheral procedures.

→ EndoSize⁶ Vascular Edition

Comprehensive solution for endovascular procedure planning.

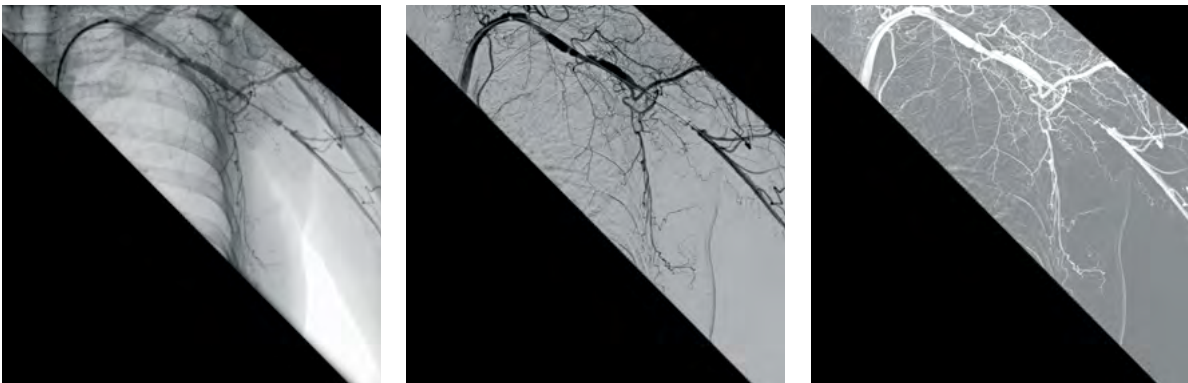


→ Intelligent workflow assistants for more confidence in the OR

To meet the complex requirements of modern endovascular procedures, the Ziehm Vision RFD Hybrid Edition sets the benchmark by offering a complete suite of advanced angiographic tools.

SmartVascular: One-click vascular workflow management

The SmartVascular workflow provides an intuitive, touch-based interface that enables seamless switching between native image (Fluoro), DSA (Digital Subtraction Angiography), MSA (Maximum Opacification Subtraction Angiography), and RSA (Roadmapping) – with a single click. It can even be controlled via the preconfigured footswitch for hands-free operation, so that the surgeon can concentrate optimally on the procedure. The performance of RSA directly from a single DSA image saves time and minimizes dose. It transforms demanding interventions into standardized, controlled steps – supporting clinical teams with reliability and repeatability.



Native image

DSA for high-contrast vessel visualization

RSA for precise navigation and tool placement

CO₂ angiography: A safe and cost-effective alternative

Contrast medium imaging with CO₂ is an innovative and cost-efficient alternative for patients with allergic reactions or other contraindications to iodinated contrast agents. The Ziehm Vision RFD Hybrid Edition supports CO₂-based imaging in DSA, MSA, and RSA modes using a dedicated CO₂ workflow package. Despite the alternative contrast medium, images are displayed in the same high-quality format as with iodine – enabling physicians to maintain procedural standards without compromising on image clarity or patient safety.

Endovascular Navigation

Endovascular Navigation enables physicians to perform complex procedures with greater accuracy, confidence, and efficiency. For the first time, navigation with image fusion is integrated directly into a mobile C-arm. This enables advanced navigation to be available in a mobile setting – without the need for a fixed installed angio system.

Endovascular Navigation Aorto-iliac includes the EndoSize planning software and is optimized for standard and complex aorto-iliac procedures:

- EVAR (Endovascular Aneurysm Repair)
- FEVAR (Fenestrated Endovascular Aneurysm Repair)
- TEVAR (Thoracic Endovascular Aneurysm Repair)
- Further complex procedures like IBD (Iliac Branch Devices), CERAB (Covered Endovascular Reconstruction of the Aortic Bifurcation), kissing as well as renal arteries stenting

Endovascular Navigation Peripheral allows for extensive panorama creation and navigation of the lower limb for PAD (Peripheral Artery Disease) conditions. The software is optimized for the cases of stenosis and thrombosis including:

- Balloon dilation
- Stent implantation
- Artherectomy

Artificial intelligence-based algorithms automatically match and display image fusion – adapting in real time to patient, table, or C-arm movement. Surgeons can precisely guide tools and implants in the live images while seeing the details of the anatomy – even in challenging anatomical regions. This improves accuracy while helping to reduce contrast medium and radiation.

Open here to discover the



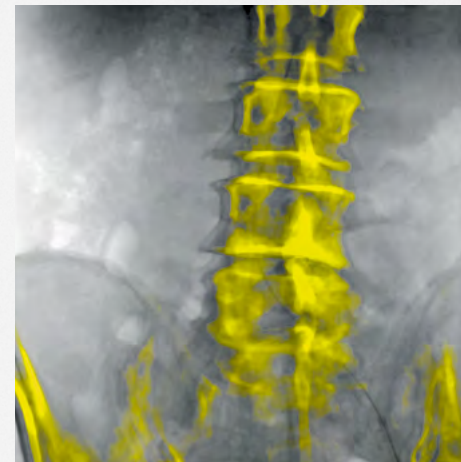
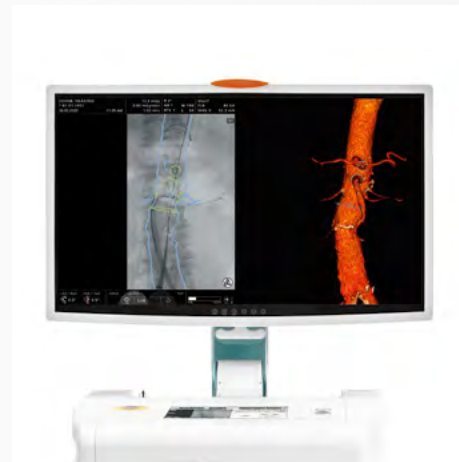
&



Stand-alone navigation option with EndoNaut⁷
This plug & play system can be easily added to existing Ziehm Imaging C-arms. It is available for aorto-iliac interventions and procedures on the lower extremities.



Endovascular Navigation Aorto-iliac workflow



1 Plan in minutes with EndoSize

Using AI-based image processing, the planning process becomes fast and highly automated. With just a few inputs, EndoSize analyzes preoperative CT datasets and prepares them for procedural guidance, including:

- Centerline and vessel segment identification
- Indication of precise measurements of diameters and lengths
- Proposal for an appropriate endograft from a uniquely comprehensive catalog
- Simulation of stent placement and deformation behavior

Planning can be completed in just a few minutes – providing a reliable foundation for the intervention.

2 Import data and review the intervention planning directly on the C-arm

The completed planning data is seamlessly transferred to the C-arm. The 3D volume and key planning elements are immediately available on the surgical monitor, such as:

- Measurement overlays
- Planned C-arm angles
- Annotated vessel pathways
- Keypoints (e.g. landing zones, bifurcations)

This ensures a high level of confidence for the surgery, as the OR team has all critical data at hand.

3 Fusion imaging in real time with automatically updated overlay

During the procedure, image fusion matches the preoperative 3D data with live fluoroscopy – and adapts continuously to patient or equipment movement. The fusion imaging is:

- Dynamic, updating based on changes in table, C-arm, or patient position
- Precise, even in complex anatomical areas
- Predictive, since deformed vascular structures can be shown

This real-time fusion provides visual guidance with anatomical accuracy – potentially reducing contrast media use and helping to minimize radiation dose.

4 Navigate and review directly from the OR table

All navigation tools are directly accessible from the main system interface, enabling the physician to:

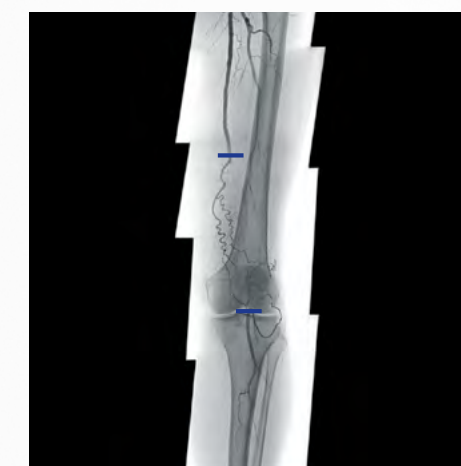
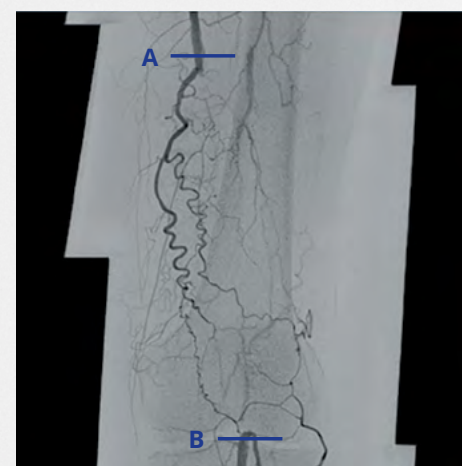
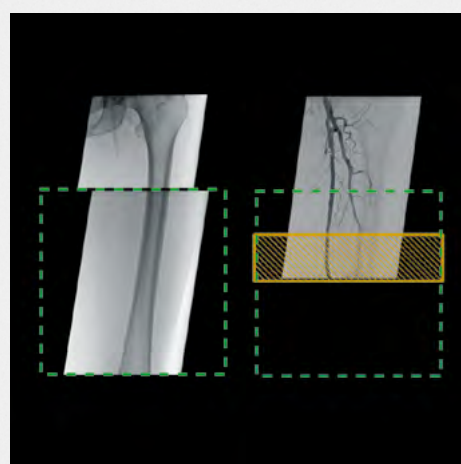
- Interact with the preoperative planning data directly from the sterile field
- Navigate intuitively using overlaid anatomical landmarks
- Track device positioning during stent or graft deployment

Navigation is performed directly at the table without the need for an additional workstation or monitor.



Algorithm based on artificial intelligence

Endovascular Navigation Peripheral workflow



1 Instantly create your intraoperative panorama

Angiographic and fluoroscopic images of the lower limb are added and stitched automatically:

- Optimizing the overlap of the images using the live control view
- Only using the footswitch for easy operation
- With the complete vascular tool kit in one workflow

The Endovascular Navigation Peripheral application is seamlessly implemented into the well-established SmartVascular workflow. The live control view helps to save contrast media by optimizing the number of layers and reducing the number of images acquired.

2 Identify and mark the lesions

Up to four lesions can be color coded in the panorama. This ensures:

- Intuitive differentiation between lesions
- Clear picture of the treatment strategy
- Facilitation of the clinical workflow by targeting the individual lesions that have been marked

Plan your treatment strategy by identifying and marking thrombotic and stenotic areas within the panorama.

3 Automatic matching and displayed fusion in real time

Your current position can be located effortlessly through image fusion with live fluoroscopic images:

- With dynamic updating based on changes in table or patient position
- Allowing for precise anatomical orientation
- To optimally position the table and patient for the intervention

The fusion imaging serves as a guide and a map for navigation without the need of additional contrast media and helps to minimize radiation dose.

4 Navigate with ease and optimal overview

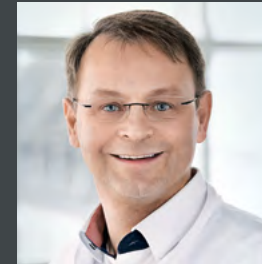
Be more flexible and increase your ease of use as Endovascular Navigation Peripheral ensures:

- Complete and up-to-date overview of the extremity
- Navigation directly at the table without the need for an additional workstation or monitor
- Accurate tracking of guidewire insertion and device positioning

Navigation is performed on a single user interface with a streamlined workflow for both imaging and vascular intraoperative navigation.



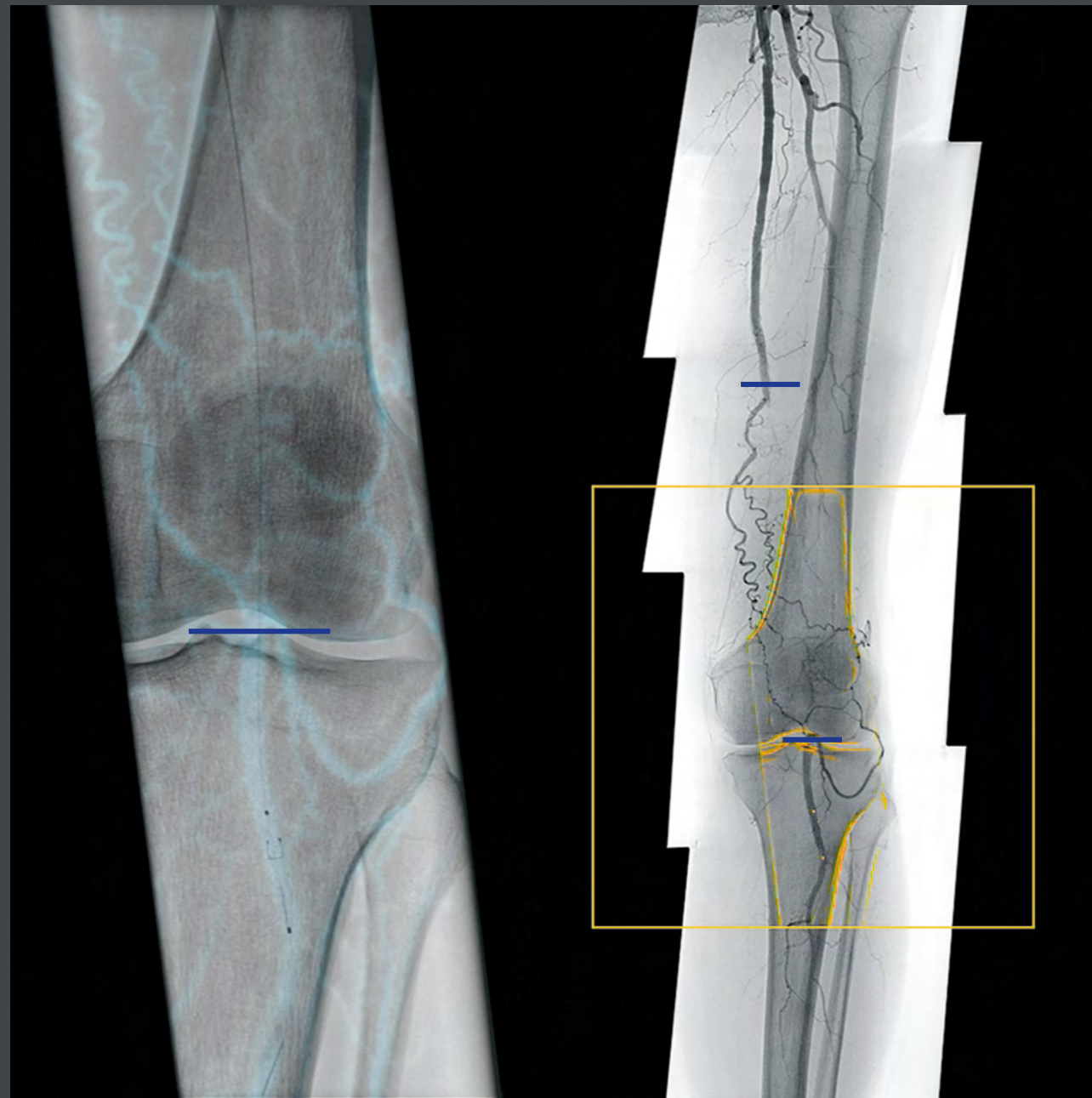
Algorithm based on artificial intelligence



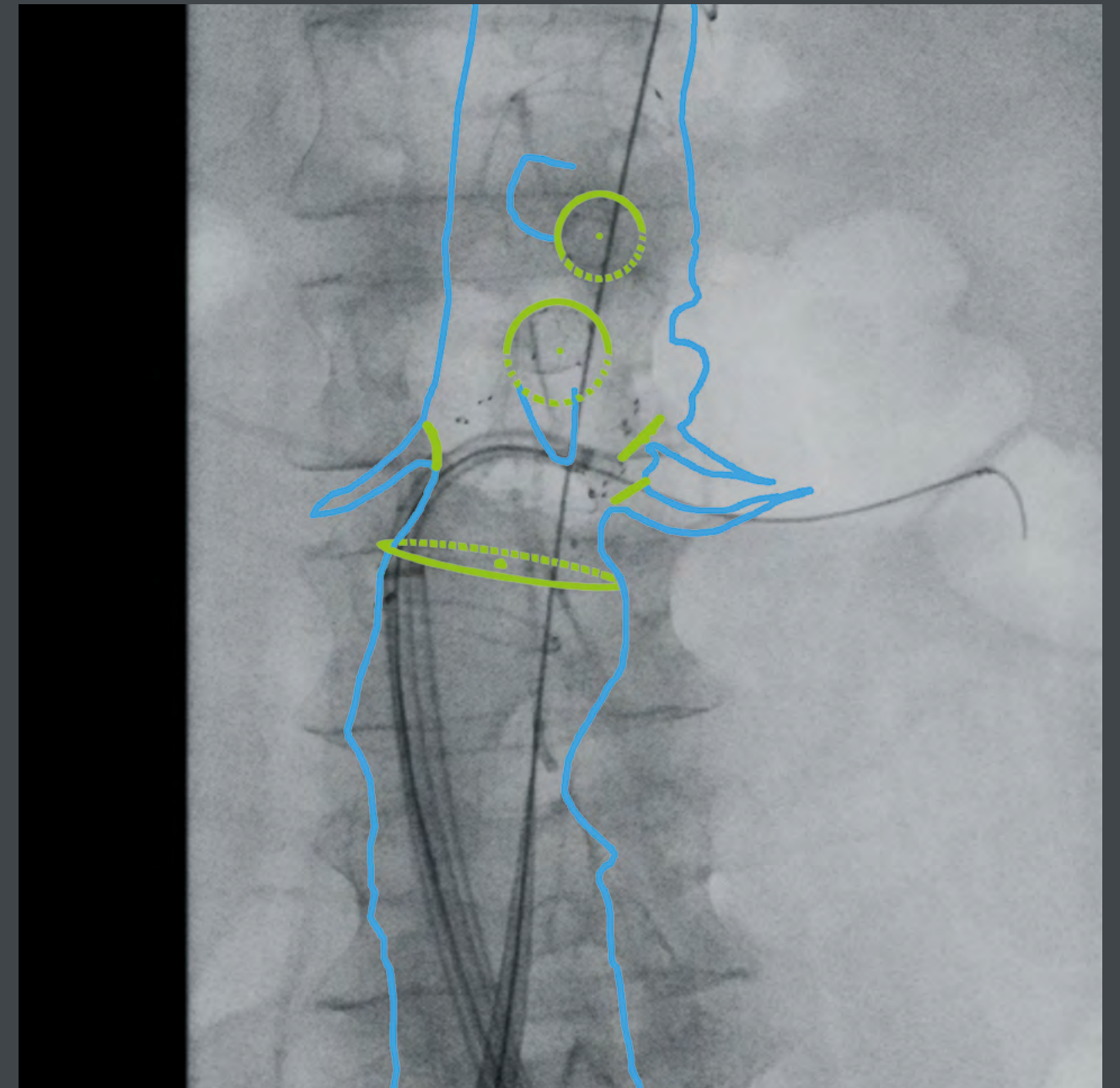
"... We are particularly impressed by the automatic re-registration after changing the position of the C-arm. The savings in procedure time and expected reduction in contrast agent and radiation dose make a real difference for us and our patients in the further course of care."⁵

Prof. Dr. Johannes Kalder

University Hospital Giessen and Marburg, Giessen, Germany



Automatic matching and displayed fusion using Endovascular Navigation Peripheral



Overlay without centerline of a fenestrated endovascular aneurysm repair (FEVAR) using Endovascular Navigation Aorto-iliac

Ziehm Vision RFD Hybrid Edition Cardio

Mobile CathLab solution for coronary, electro-physiological, and structural heart interventions

The Ziehm Vision RFD Hybrid Edition Cardio is designed to increase capacity and provide a cost-efficient entry point into interventional cardiology. As an alternative to conventional cath lab infrastructures, this mobile setup is ideal for hospitals with limited space or budget, especially in decentralized care structures or emerging markets.

Key features of the Mobile CathLab:

→ Modular configuration

Adaptable and fast setup for different OR layouts and clinical workflows

→ Specialized Anatomical Programs (APR)

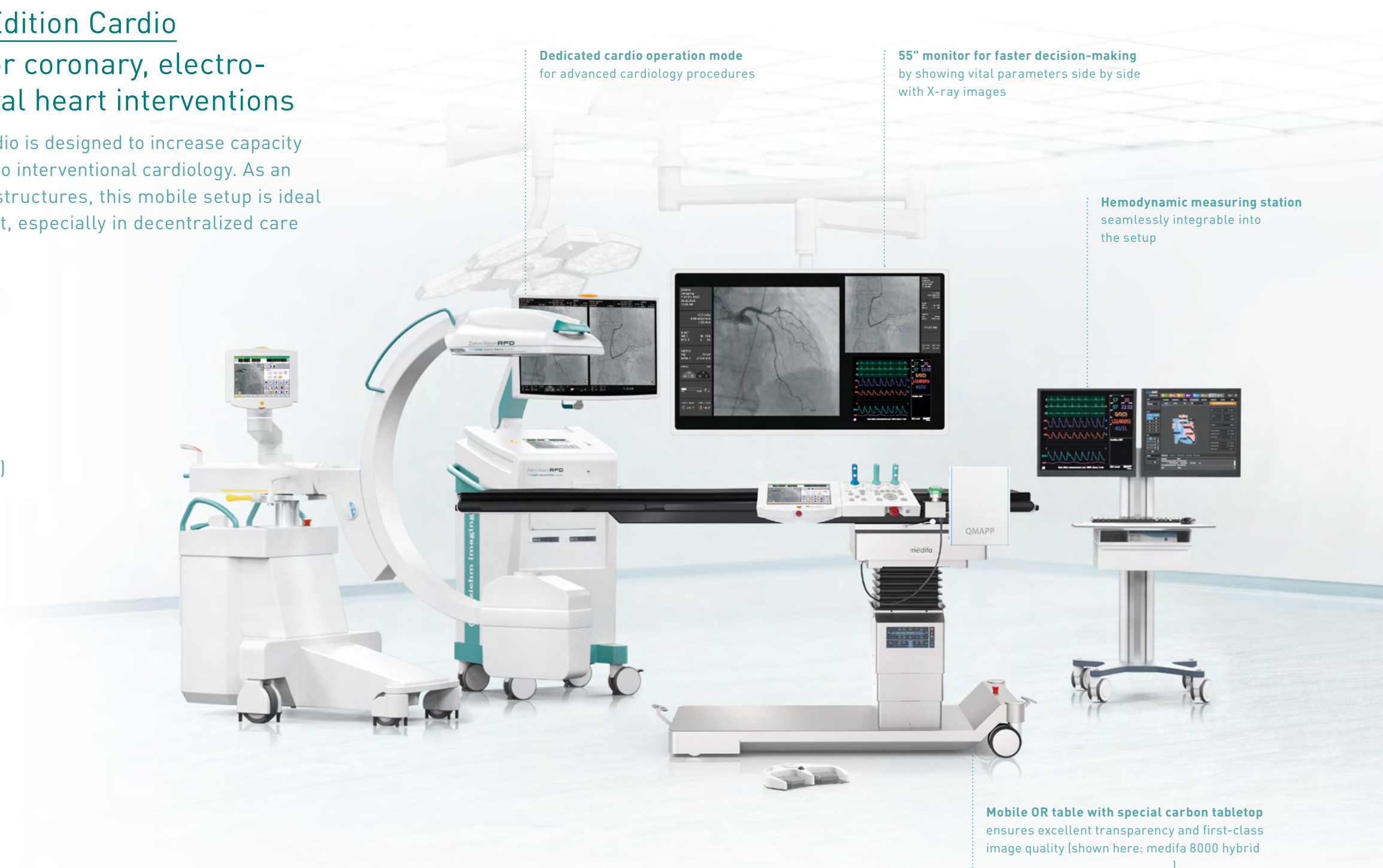
Dedicated cardio package optimized for cardiac imaging

→ Intelligent heat management

Prolonged use due to Advanced Active Cooling

→ EndoSize Structural Heart

Advanced preoperative planning of structural heart interventions



→ Space-saving and cost-efficient alternative to fixed cath labs

Flexibility is the main focus of the Mobile CathLab. Its modular design lets hospitals select only the components they truly need – from imaging and table options to advanced monitoring or diverse monitor options.



Ziehm Vision RFD Hybrid Edition Cardio

This C-arm is specially optimized for the needs of modern interventional cardiology, electrophysiology and structural heart procedures. It ensures high image quality even during long and demanding procedures. Combining the market's highest generator capacity (IEC 60601-2-54) with a dedicated cardio tab, clinicians benefit from specialized anatomical programs (APRs) designed to support optimal imaging in coronary and electrophysiological procedures. Whether in high-volume cath lab settings or mobile hybrid ORs, these dedicated cardiology functionalities ensure faster setup, more predictable outcomes, and better support for the entire cardiac team.

Dedicated cardio operating mode enables:

- **Consistently excellent image quality** even in high-motion or steep-angle projections
- **Optimized dose exposure** for sensitive cardiac structures or congenital heart diseases
- **Improved workflow** with all required features available at a single glance

To complete the setup, we offer a broad range of devices from our partners. A selection is shown below.



OR tables

Our selection of mobile OR tables (STILLE imagiQ3 Legacy and medifa 8000 hybrid) with radiolucent carbon fiber tabletop ensure excellent image quality.



Advanced preoperative planning

EndoSize Structural Heart Edition enables planning of the structural heart interventions TAVI and TMVR with AI-based measurement tools and 3D simulation for optimized treatment strategies.



Hemodynamic monitoring

The Fysicon QMAPP[®] solution is seamlessly integrated into the Mobile CathLab setup. Patients' vital signs are displayed side by side with live X-ray images on the 55" 4k monitor. QMAPP features automated report generation and full PACS/EPR connectivity.



55" 4k monitor

Dedicated viewing options simultaneously display cardiac images and vital signs. This supports faster decision-making by showing everything at a glance, including pressure and ECG data from the hemodynamic measurement system, real-time fluoroscopic images from the C-arm, and stored reference images.

Depending on the clinical focus, system components can be tailored accordingly:

– **Interventional Cardiology**

The 21 cm x 21 cm detector enables precise positioning during coronary angiograms enabling the physician to visualize ideal projections during left and right heart catheterization or coronary interventions. The hemodynamic monitoring and the mobile OR table complete the Mobile CathLab setup.

– **Electrophysiology and Rhythmology**

Electrophysiologists benefit from the larger detector with 31 cm x 31 cm which enables them not only to see the placement of the electrodes in the heart but also the placement across the chest. With two magnification modes, physicians can decide throughout the procedure whether they want to see details or the big picture without increasing the dose. The additional 55" monitor makes it possible to see X-ray images, cardiac mapping and intravascular ultra-sound all on one screen which makes the setup ideal for pacemaker implantations, electrophysiological studies or PFO closures.

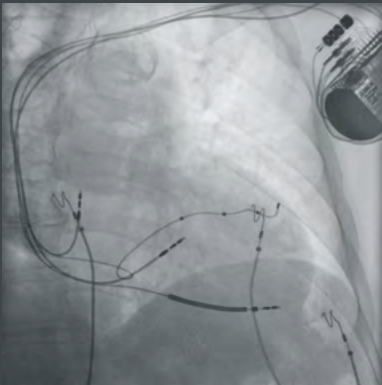
– **Structural heart procedures**

For cardiac surgery, the system can be equipped either with a 21 cm x 21 cm detector to focus only on cardiology, or a 31 cm x 31 cm detector to stay more flexible in the OR. Enhanced with EndoSize software for AI-based preoperative 3D planning and simulation of implant placement, the setup is ideally suited for transcatheter aortic valve implantations (TAVI), mitral clipping or transcatheter mitral valve replacements (TMVR).

Whether in high-volume cath lab settings or mobile hybrid ORs, these dedicated cardiology functionalities ensure fast setup, predictable outcomes, and comprehensive support for the entire cardiac team.



Angiography of the right coronary artery



Fluoroscopy of a biventricular cardioverter defibrillator



Fluoroscopy of a transcatheter aortic valve implantation (TAVI)

Ziehm Vision RFD 3D.⁴ One step further with advanced 3D imaging for multidisciplinary use

With the Ziehm Vision RFD 3D⁴, clinicians benefit from the high image quality and full range of features of the Ziehm Vision RFD Hybrid Edition (Cardio), complemented by an industry-leading 3D functionality. This enables multidisciplinary use, from vascular surgery to other applications. In particular, 3D imaging can support the precise assessment of the stent position and may help verify it with even greater precision, which may contribute to reducing revision procedures.

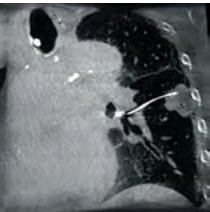
Multidisciplinary versatility with intraoperative 3D support

The Ziehm Vision RFD 3D⁴ offers unprecedented performance across the most varied and challenging application spectrum. This versatile system combines 2D imaging excellence with advanced 3D technology, delivering high-end multidisciplinary capabilities for complex vascular interventions. Published clinical data indicates that intraoperative 3D imaging may lead to adjustments in the treatment strategy and may contribute to reducing revision procedures and length of hospital stay.⁹ Beyond vascular applications, the Ziehm Vision RFD 3D⁴ also supports challenging procedures in orthopedic, trauma, and spine surgery, making it a versatile solution for multidisciplinary surgical environments.

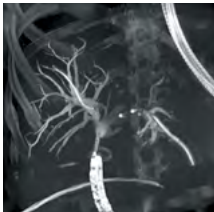
Clinicians benefit from:

- **One device** for multiple surgical disciplines
- **Intuitive user interface** for streamlined handling
- **Dedicated anatomical programs** with procedure-specific settings
- **Dedicated metal artifact reduction** for clear visualization

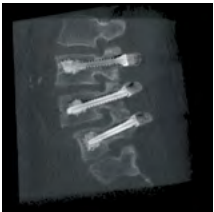
Specialized clinical applications beyond vascular surgery



Bronchoscopy



Endoscopic retrograde cholangiopancreatography (ERCP)



Orthopedics, trauma and spine surgery



The Ziehm Vision RFD 3D⁴ ensures precise stent positioning to minimize the risk of endoleaks. The system provides immediate confirmation that the stent has fully and correctly unfolded after deployment.

03/Plug in and start your hybrid procedure with zero room preparation

The Ziehm Vision RFD Hybrid Edition (Cardio) challenges the notion that hybrid ORs are typically space-intensive and costly. The mobile device requires zero modifications to the OR and is up and running in no time. Easy installation and reduced operating costs make the Ziehm Vision RFD Hybrid Edition (Cardio) efficient, flexible and competitive. Thanks to its small footprint and good maneuverability, this mobile solution enables convenient handling in any OR. Ergonomic features and the Ziehm Usability Concept¹⁰ contribute ideally to efficient clinical workflows – which is particularly important in demanding vascular procedures.

→ Best-in-class ergonomics

With a footprint of 0.8 m², the Ziehm Vision RFD Hybrid Edition (Cardio) is one of the most compact mobile C-arms on the market. With its easy-drive system and the fully motorized C-arm, the system can be maneuvered with minimal effort during long procedures. The big C-arm opening and 165° of orbital movement ideally support the workflow and provide easier patient coverage.



Easy handling

165° of orbital movement and an 84 cm C-arm opening provide ideal support for clinical workflows.

→ Motorization and isocentric movement

The Ziehm Vision RFD Hybrid Edition (Cardio) mobile C-arm is equipped with motorization that allows easy control of all four axes. The operator can either use the Remote Vision Center (touchscreen) or the Position Control Center (joysticks) to move the C-arm into the exact desired position. The orbital movement and angulation of the C-arm is stored and displayed on the Image Insights. This means that the C-arm can be precisely returned to a previous position at any time. For patient safety the C-arm is equipped with Distance Control – an assistance system supporting non-contact collision protection. With the freely selectable isocenter, any given anatomical structure can be displayed from different angles without having to re-adjust the C-arm. The isocenter is held during angulation and orbital movement. All of this with just one click.



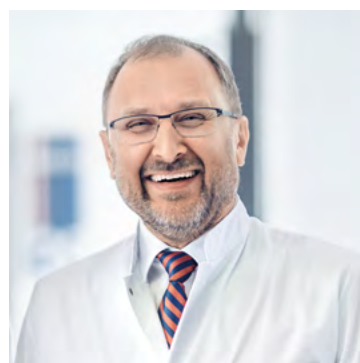
The stored and displayed C-arm positioning information of the reference image allows for the precise return to the same C-arm position at any time.



→ PositionPilot – handling of C-arm and OR table

The innovative PositionPilot allows for straightforward handling of the mobile C-arm and OR table with the intuitive Position Control Center plus (PCCplus). The PositionPilot enables fast, reproducible, and reliable intraoperative positioning directly from the sterile field. The surgeon has everything at hand and can operate both devices easily with the PCCplus. Two joysticks allow for an easy control of all four axes of the C-arm. Table height, longitudinal and lateral sliding can all be controlled with one separate joystick. In addition, Trendelenburg and lateral tilt position can be easily accessed via specific buttons.

PositionPilot facilitates the recall of anatomical positions. For smoother workflows up to three synchronized C-arm and mobile OR table positions, and one additional table position can be saved with the PCCplus and recalled at any time during the procedure. Dedicated zero position buttons return the C-arm and the table to the neutral position.



“With PositionPilot, Ziehm Imaging has taken a significant step forward in mobile imaging. [...] It is a genuine leap forward that both mobile C-arm and imaging OR table can be controlled from a single device. With up to three synchronized positions that can be saved and recalled, it is a great advantage in comparison to traditional fixed installed angio systems. The handling is straightforward and intuitive.⁵

Dr. Sven Seifert
Hospital Chemnitz, Germany

Precise control via Position Control Center plus

Fast and reliable positioning of the table

Easy control of all four axes of the C-arm

Saving and recall of up to three synchronized C-arm and table positions



FULL
CONTROL OF THE
OR TABLE

→ Prolonged use with intelligent heat management

C-arms need to be in continuous use during lengthy, demanding procedures, such as vascular interventions. To ensure consistent system temperature and prevent system failure due to overheating, the Ziehm Vision RFD Hybrid Edition (Cardio) is ideally equipped with Advanced Active Cooling (AAC). Even during complex applications, such as TAVI, angioplasties and FEVAR, this C-arm delivers reliable results for the duration of the entire procedure. In the event of a temperature increase, the pulse frequency is automatically reduced until the generator's temperature has cooled down.

→ Lower cost for faster ROI

Ziehm Imaging's mobile C-arm eliminates the need for a separate control and technical room typically required for fixed installed angio systems. This means lower purchase and operating costs leading to a faster return on investment (ROI).



“We want our doctors to work in the best conditions and have access to the latest technology. With the Ziehm Vision RFD Hybrid Edition we can convert any operating room into a hybrid room. In retrospect, it was exactly the right investment for us.”

Florin Andronescu
Development Manager,
Sanador Clinic, Bucharest, Romania

Sophisticated system to avoid generator overheating

Advanced Active Cooling keeps generator temperatures down through automatic adaptation of the pulse rate combined with a powerful liquid cooling system.



→ Ziehm Usability Concept

Heavy case loads and a large number of different users call for OR equipment with a highly standardized and ergonomic design. Ziehm Imaging supports this need with the unique Ziehm Usability Concept. Seamlessly integrated workflows offer unmatched levels of usability – anytime, anyplace.

As an innovation and technology leader, Ziehm Imaging has developed the sophisticated yet intuitive Ziehm Usability Concept that combines a unique and finely tuned set of hardware features with seamlessly integrated software functionalities. In a challenging clinical environment, the entire concept is geared toward increasing ease of use in daily tasks. It improves process efficiency and ensures standardized quality levels in the OR for optimized patient outcomes.



**COLOR-CODED
SCALES AND HANDLES**
to ensure clear communication
in the OR



**WIRELESS DUAL-
PLUS FOOTSWITCH**
to control all imaging functionalities
without any disturbing cables



**MOST COMPACT
FOOTPRINT WITH 0.8m²**
to fit in even the smallest
treatment scenarios



ZIEHM NETPORT
with WLAN enables easy
integration into IT networks



**UP TO 165° OF
ORBITAL MOVEMENT**
to support easier patient
coverage



WIRELESS VIDEO
transmitting live X-ray images
to external monitors



ZIEHM VISION CENTER
featuring an intuitive
touchscreen user interface



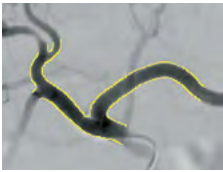
CONTROL MODULES
for a fast and flexible setup
in the sterile field; optionally
available with PCCplus



SMARTEYE
enabling users to keep
track of orientation and
object position



**VERSATILE
VIEWING OPTIONS**
with various monitor sizes plus
ceiling- and trolley-mounted
options for maximum flexibility
in the OR



**ANATOMICAL
MARKING TOOL**
to easily apply markings
and labels to fluoroscopic
images

04 / Reduce exposure significantly with the next-generation SmartDose concept

The Ziehm Vision RFD Hybrid Edition (Cardio) is designed to meet growing demand among surgeons and their staff for minimized dose exposure without compromising on image quality. Optimal filtration and advanced anatomical programs deliver on these demands, making this device perfect for dose-sensitive applications.

→ Best image quality. Minimized dose.

The comprehensive concept consists of a broad, clinically proven application portfolio to address daily challenges of low dose and high image quality. With significant dose savings, Ziehm Imaging sets the benchmark in user-friendly adjustments of dose exposure. SmartDose¹¹ helps display even the smallest details of complex anatomical areas and reduce dose with intelligent pulse regulation and optimized anatomical programs. Furthermore, dedicated SmartDose functions significantly reduce exposure in pediatric surgery¹².



LASER POSITIONING DEVICE
integrated in flat-panel and generator housing for accurate and dose-free positioning of C-arm



REDUCTION OF PULSE FREQUENCY
manually or fully automatically to lower the accumulated dose



OBJECT DETECTED DOSE CONTROL (ODDC)
to automatically analyze the area of interest and minimize dose while optimizing image quality



ANATOMICAL PROGRAMS
with automatic optimization of dose and image quality for best results



HIGH-SPEED ADR
for intelligent, fast regulation of pulse rate to lower the dose level



ZAIP ALGORITHM AND FILTERS
to display fast-moving objects like guide wires and even the smallest vessels in razor-sharp image quality



LOW DOSE MODE
in all anatomical programs for particularly dose-sensitive procedures, e.g. in pediatrics



PREMAG
for exposure-free magnification of X-ray images



AUTOMATIC ADJUSTMENT
for large patients – with no additional increase in dose



REMOVABLE GRID
to reduce dose in pediatric and other dose-sensitive procedures



VIRTUAL COLLIMATORS
for exposure-free positioning of collimators

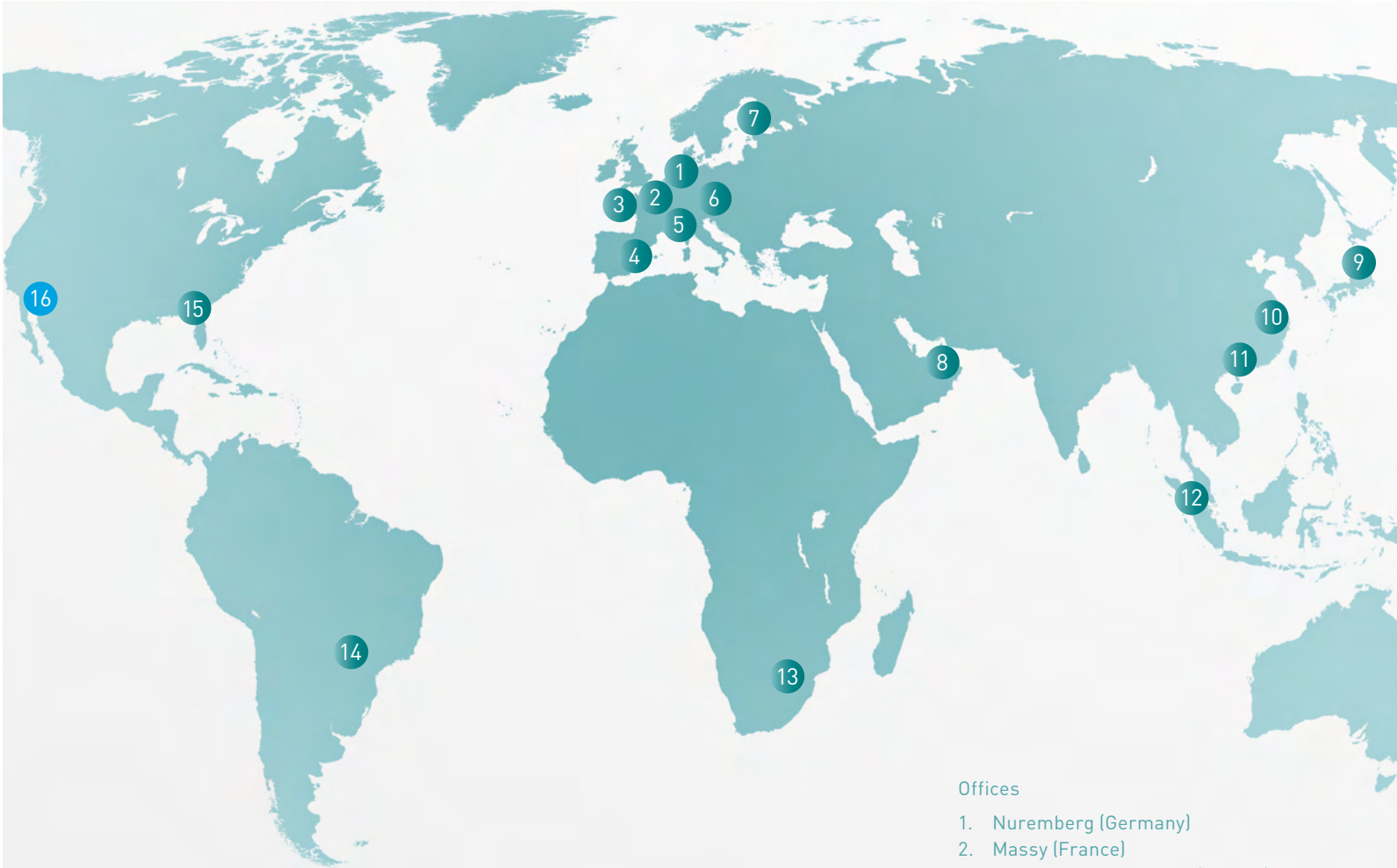


BEAM FILTRATION¹³
for reduced entrance skin dose without compromising on image quality



FEATURES	Ziehm Vision RFD Hybrid Edition	Ziehm Vision RFD Hybrid Edition Cardio	Ziehm Vision RFD Hybrid Edition
Flat-panel technology	CMOS, 21 cm x 21 cm / 31 cm x 31 cm	CMOS, 21 cm x 21 cm / 31 cm x 31 cm	a-Si, 30 cm x 30 cm
Detector resolution	2k x 2k / 3k x 3k	2k x 2k / 3k x 3k	1.5k x 1.5k
Imaging chain	2k x 2k (QuantumStream)	2k x 2k (QuantumStream)	1k x 1k
Image Insights	■	■	–
Power generator	30 kW, pulsed monoblock generator	30 kW, pulsed monoblock generator	25 kW, pulsed monoblock generator
Ziehm Usability Concept	■	■	■
SmartDose	■	■	■
Advanced Active Cooling (AAC)	■	■	■
Orbital movement	165°	165°	165°
Motorization	Full control of the 4 motorized axes	Full control of the 4 motorized axes	Full control of the 4 motorized axes
Vascular Image Fusion	Stand-alone solution: EndoNaut ⁷ Integrated solution: Endovascular Navigation ³	Stand-alone solution: EndoNaut ⁷ Integrated solution: Endovascular Navigation ³	Stand-alone solution: EndoNaut ⁷
Hemodynamic workstation	–	Fysicon QMAPP ⁸	–

available ■ | not available –



- Offices
- 1. Nuremberg (Germany)
 - 2. Massy (France)
 - 3. Rennes, Therenva SAS (France)
 - 4. Valencia (Spain)
 - 5. Reggio Emilia (Italy)
 - 6. Tulln an der Donau (Austria)
 - 7. Kerava (Finland)
 - 8. Dubai (UAE)
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 - 11. Guangzhou (China)
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PASSION FOR SERVICE



Ziehm Global Service

WORLDWIDE COVERAGE | TAILORED SOLUTIONS | KNOWLEDGE BASE | SMART SERVICES

Rely on Ziehm Imaging for flexible and fast service to stay on the cutting edge of technology. Tailored service packages, remote service and individual upgrade paths keep you competitive in your daily hospital routine.

- Ziehm Imaging and Therenva are constantly improving their products and reserve the right to change the specifications without notice. Presented data are subject to tolerances. The product descriptions and images mentioned herein may include optional hardware and software features, which may vary by country. The products/features mentioned herein may not be commercially available in all countries and/or may not be available for sale in the United States due to lacking FDA clearance. Some of them may currently be under development. Due to regulatory reasons future availability cannot be guaranteed. Therenva SAS is a subsidiary of Ziehm Imaging GmbH. Please contact your local Ziehm Imaging sales representative for detailed information.
- ¹ The Ziehm Vision RFD Hybrid Edition represents a group of optional hardware and software that creates an option package on the device named Ziehm Vision RFD.
- ² CMOSline represents a system configuration that is based on a Ziehm Imaging CMOS flat-panel detector.
- ³ Endovascular Navigation represents an optional medical device software package owned by Therenva SAS. Planning is performed with the software EndoSize, also owned by Therenva SAS. The EndoSize license is included in the Endovascular Navigation software package.
- ⁴ The device Ziehm Vision RFD 3D is a different device than the Ziehm Vision RFD and its option package, that creates the Ziehm Vision RFD Hybrid Edition (Cardio). For 3D imaging, the device Ziehm Vision RFD 3D must be ordered.
- ⁵ The statement described herein is based on results that were achieved in the customer's unique setting. There can be no guarantee that other customers will achieve the same result.
- ⁶ EndoSize® is a registered trademark of Therenva SAS.
- ⁷ EndoNaut® is a registered trademark of Therenva SAS.
- ⁸ QMAPP® is manufactured by Fysicon B.V..
- ⁹ Mezzetto L. et al., Ann Vasc Surg. 2022;78:132–140.
- ¹⁰ The Ziehm Usability Concept includes a variety of hard- and software features.
- ¹¹ SmartDose includes a variety of hard- and software features. Due to regulatory reasons the availability of each feature may vary.
- ¹² Gosch D. et al. "Influence of grid and ODDC on radiation exposure and image quality using mobile C-arms – First results," RöFo, 09/07
- ¹³ Beam Filtration reduces dose exposure for Ziehm Imaging flat-detector systems in comparison with conventional filtration techniques. Data on file. Results may vary.

HEADQUARTERS

Germany

Ziehm Imaging GmbH
Lina-Ammon-Strasse 10
90471 Nuremberg, Germany
Phone +49 911 660 67 0
Fax +49 911 660 67 390
info@ziehm.com

USA

Ziehm Imaging
A division of Ziehm-Orthoscan, Inc.
6280 Hazeltine National Dr
Orlando, FL 32822, USA
Toll Free +1 800 503 4952
Phone +1 407 6 15 8560
Fax +1 407 6 15 8561
mail@ziehm.com

Brazil

Ziehm Medical do Brasil
Av. Roque Petroni Jr.,
1089 cj 904
04707-000 São Paulo, Brazil
Phone +55 11 30 33 59 99
Fax +55 11 30 33 59 97
brazil@ziehm.com

Austria

Ziehm Imaging Austria GmbH
Ziegelfeldstrasse 10
3430 Tulln an der Donau
Austria
Phone +43 2272 66441
austria@ziehm.com

Italy

Ziehm Imaging Srl
Via Paolo Borsellino, 22/24
42124 Reggio Emilia, Italy
Phone +39 05 22 61 08 94
Fax +39 05 22 61 24 77
italy@ziehm.com

Spain

Ziehm Imaging Spain SLU
Calle Oller 13, locales 15 y 16
Parque Empresarial Táctica
46980 Paterna (Valencia), Spain
Phone +34 960 911 152
spain@ziehm.com

France

Ziehm Imaging S.A.R.L.
2, rue du chemin des Femmes
91300 Massy, France
Phone +33 1 69 07 16 65
Fax +33 1 69 07 16 96
france@ziehm.com

Finland

Ziehm Imaging Oy
Kumitehtaankatu 5
04260 Kerava, Finland
Phone +358 4 49 75 75 37
finland@ziehm.com

China

Ziehm Medical Shanghai Co., Ltd.
GUBEI SOHO
Rm 3101A, Building 1
188 Hongbaoshi Road
Shanghai, China; 201103
Phone +86 21 62 36 99 03
Fax +86 21 62 36 99 16
china@ziehm.com

Singapore

Ziehm Imaging Singapore Pte. Ltd.
23 Serangoon North Ave 5
#05-04 BTC Center
Singapore 554530, Singapore
Phone +65 65 30 39 40
singapore@ziehm.com

Japan

Ziehm Imaging Japan KK
Room 5, TOC Ariake West Tower 16F
3-5-7 Ariake, Koto-ku
Tokyo 135-0063, Japan
Phone +81 3 5520 5507
Fax +81 3 5531 1011
japan@ziehm.com

Dubai

Ziehm Imaging
Middle East Trading L.L.C
The Regal Tower, Unit 3202
Al Mustaqbal St. Business Bay
P.O. Box 94706
Dubai, United Arab Emirates
Phone +971 55 79 98 370
Phone +971 58 27 55 811
info@ziehm.com