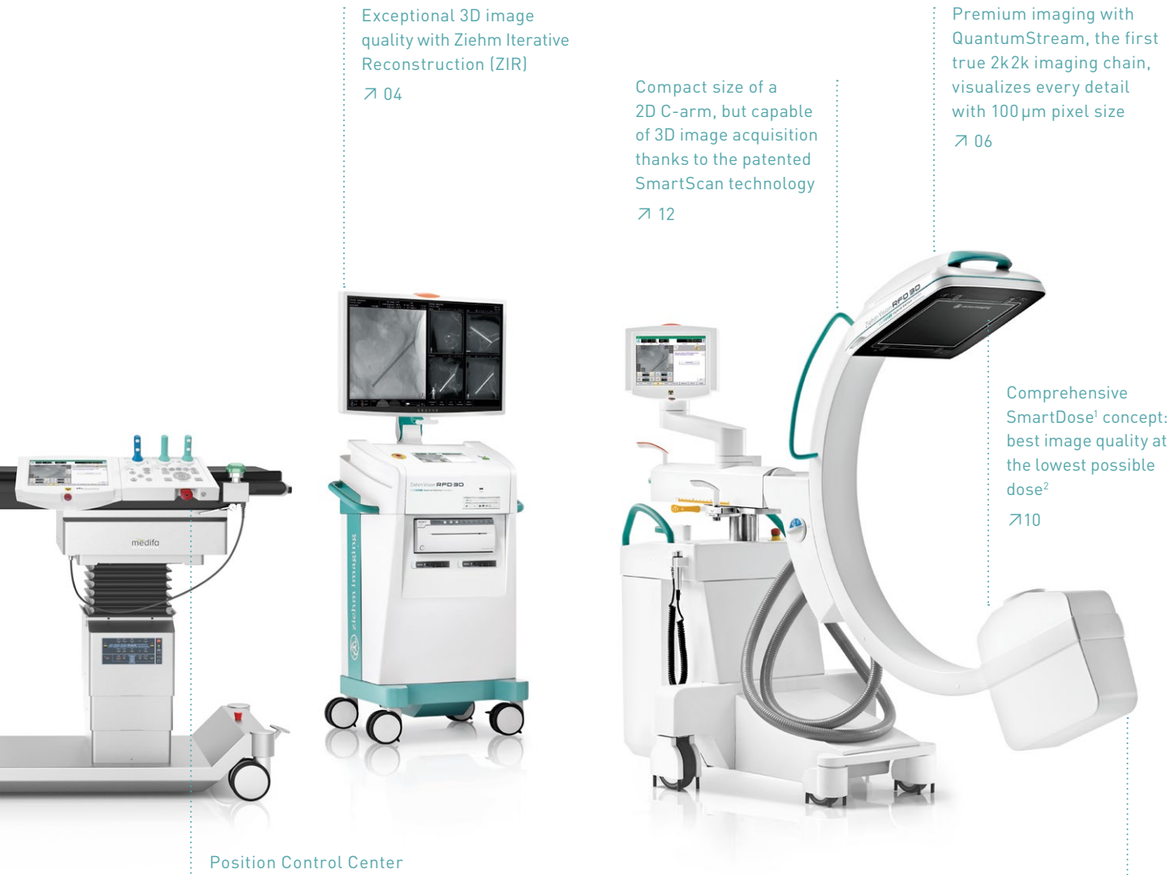
ziehm imaging

Ziehm Vision RFD 3D

Exceptional clarity at minimum dose

CMOSLINE



Ziehm Vision RFD 3D. With more than 2,500 installed systems worldwide and nearly two decades of expertise in 3D imaging, this C-arm sets a benchmark for mobile intraoperative imaging. The system delivers exceptional image quality in 2D and 3D visualization, enabling clinicians to distinguish even the smallest anatomical details for reliable intraoperative control – all at a minimized dose. This leads to consistent quality assurance in the OR and reduces the need for post-operative CT scans and corrective interventions. As a result, the Ziehm Vision RFD 3D supports cost efficiency through enhanced surgical precision. Its intuitive operation streamlines daily workflows and supports smooth handling in demanding surgical environments. It is ideal for advanced orthopedic procedures as well as highly specialized cochlear, maxillofacial, and bronchoscopy interventions.

01 / Exceptional 2D and 3D image quality at the lowest possible dose

Continuous algorithm development delivers outstanding image quality at the lowest dose in its class. The Ziehm Vision RFD 3D enables sharp, detailed 2D and 3D visualization that supports greater confidence in every procedure. The intelligent dose management ensures a consistently clear depiction of anatomical structures without compromising patient safety.

Maximized precision and clarity in 3D

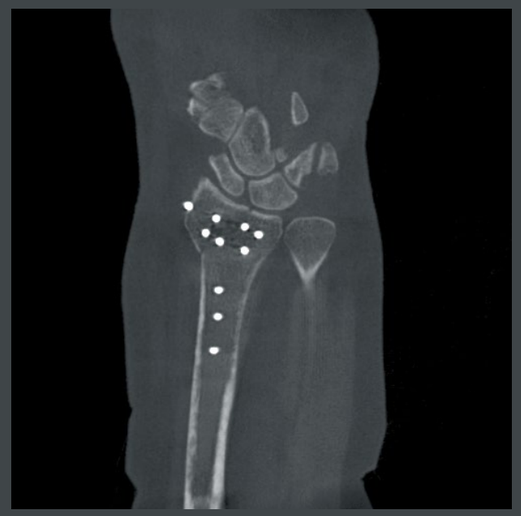
Using cone-beam CT technology, the Ziehm Vision RFD 3D delivers high-definition volumetric datasets, providing detailed spatial information for reliable intraoperative orientation. The precise visualization of anatomical structures supports confident, image-based decision-making directly in the OR. By enabling accurate assessment exactly when it matters, the Ziehm Vision RFD 3D supports an optimal balance between image quality, radiation exposure, and surgical efficiency.

→ More distinguishable anatomy in 3D reconstructions

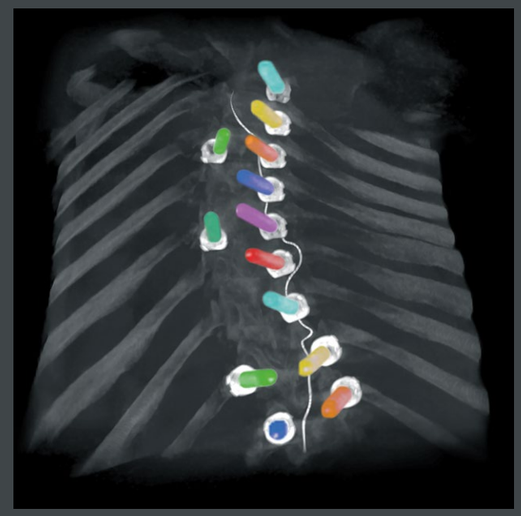
The specially developed algorithm Ziehm Iterative Reconstruction (ZIR) optimally minimizes fan and metal artifacts in 3D reconstructions. ZIR is integrated in the workflow and – without any additional effort – leads to significantly more distinguishable anatomy, defined bone structure and optimum slice views in coronal, axial and sagittal planes. For every procedure, there are individual settings to improve the clinical decision-making by reducing fan and metal artifacts.

Left image: without ZIR
Right image: using ZIR algorithms

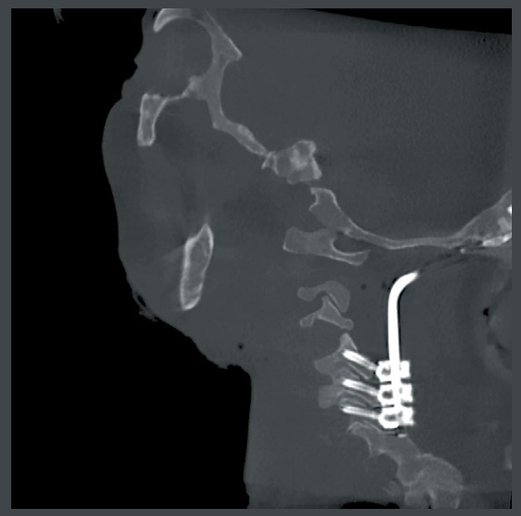
Stabilization of the superior pubic ramus with a screw placed in the sacroiliac joint for fixation.



Distal radius fracture with plate osteosynthesis. The cross-sectional view of the screws allows the verification of the screw placement.



Enhanced Screw Visualization for intuitive screw evaluation in 3D imaging.



Cervical spine decompression ventral C3-C5.

Maximized clinical precision in 2D with QuantumStream – the first 2k2k imaging chain

Although designed for advanced 3D imaging, the Ziehm Vision RFD 3D also stands out in intraoperative 2D imaging, setting a new standard in clarity and precision. With its advanced QuantumStream imaging chain in 2D imaging, it delivers a seamless resolution of 2k x 2k in 2D imaging – from acquisition to display. This allows for confident decision-making even in the most demanding 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

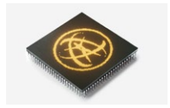


IMAGE PROCESSING
with a resolution of **2k x 2k**

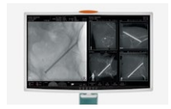


IMAGE OUTPUT
32" **4k** UHD monitor

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

Clinicians benefit from:
– Sharper image details due to higher resolution
– Improved visibility of important anatomical details such as bone edges and joints

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 every clinical field. The compact housing simplifies positioning at the OR table.

Image acquisition and processing within QuantumStream

High-resolution CMOS detector

Compared to conventional C-arm detectors, flat-panels within our premium line achieve higher spatial resolution with lower noise thanks to their 100 µm pixel size. Thanks to the volume of 512^3 voxels in 3D imaging combined with true 2k2k image processing, the system delivers exceptional imaging precision – especially noticeable in magnification modes.

Palpation of the posterior edge of the vertebral body with a micro-hook. The fine instrument of 1 mm diameter as well as the posterior edge of the vertebral body, which is being palpated to assess the extent of decompression, are clearly visible. This makes it very easy to evaluate whether the spinal cord is sufficiently decompressed and free.

Reduce exposure significantly in 3D with advanced measures and tailored dose modes

The Ziehm Vision RFD 3D offers dedicated dose modes tailored to different patient groups and anatomical regions. Each mode is designed to balance radiation exposure and image quality, ensuring that the C-arm delivers consistent, reliable visualization across pediatric, adult, and obese patients alike. With a specially developed algorithm for minimized metal artifacts, a variable isocenter, intelligent current (mA) adjustment, optimized voltage (kV) settings, and a removable grid, the system easily adapts to body region and size, complexity, and procedural demands, providing the best image quality at the lowest dose needed.

ZIR
minimizes fan and metal artifacts in 3D reconstructions

Variable isocenter
for centered view of the region of interest (ROI)

Body sizes and regions
optimized dose settings for all body regions and sizes

Current adjustment
for best image quality at lowest possible dose

Removable grid
for pediatric and dose-sensitive procedures

Low Dose

The advanced Low Dose mode reduces radiation by up to 57 %*. The system allows effortless scanning of everyone – from infants to patients up to around 60 kg. Designed for pediatric procedures such as scoliosis, this mode ensures minimal radiation dose while maintaining excellent image quality.

Adult

Optimized for patients weighing approximately 60 kg to 120 kg, this mode is designed to deliver outstanding image quality with dynamically customized dose management.

Adult HQ

For challenging applications requiring high penetration and maximum resolution – such as the cervical-thoracic junction, complex tumor cases, hip imaging, or lumbar spine.

Obese Patient

Specifically designed for patients with larger body habitus, this mode combines high X-ray penetration with effective noise control to ensure consistent and reliable image quality.

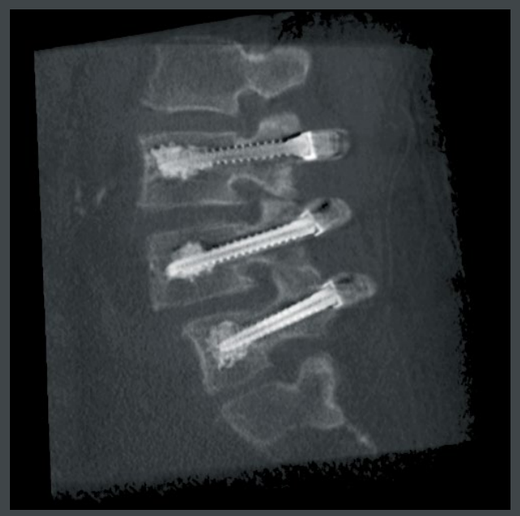
*Compared to Adult mode.

IMPROVED ALGORITHM.
LESS DOSE.

Low Dose: female, 32 years, 60 kg
Navigated spinal fracture

Adult: male, 53 years, 83 kg
Kyphoplasty of the thoracic spine

Adult HQ: male, 42 years, 76 kg
Navigated lumbar spine scan



Obese Patient: male, 72 years, 150 kg
Lumbar spine stabilization

Reduce exposure significantly in 2D with the next-generation SmartDose concept

The Ziehm Vision RFD 3D 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 the device perfect for dose-sensitive 2D 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. SmartDose[1] 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 surgery[2].

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 FILTRATION[3]
for reduced entrance skin dose without compromising on image quality

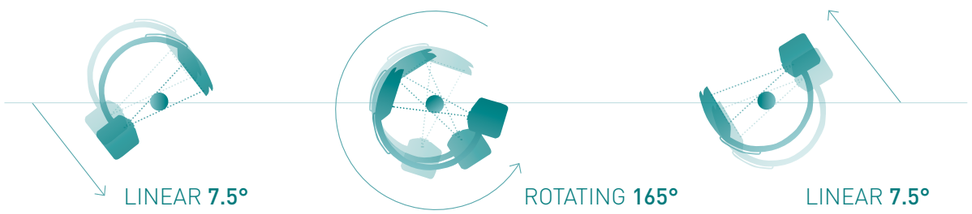
02 / Advanced 3D imaging through intelligent scan mechanics and tailored volume sizes

Advanced 3D imaging requires intelligent scan mechanics that capture fine anatomical details while covering larger surgical areas. SmartScan provides high-resolution 3D visualization within the compact geometry of a conventional 2D C-arm. The variable isocenter enhances flexibility by allowing consistent centering of the region of interest and supports a larger field of view in comparison to other 3D C-arms. With a broad range of 3D volume sizes, the Ziehm Vision RFD 3D delivers the right level of detail for every clinical procedure.

→ Full 3D image information without compromise thanks to SmartScan

Ziehm Imaging's SmartScan is a revolutionary concept that enables the Ziehm Vision RFD 3D to generate the complete 3D information of even the smallest anatomical structures while keeping the geometry of a conventional 2D C-arm. The intelligent combination of linear and rotating movements allows 180 degrees of scanned information – at every point in the field of view. Fine details, like bone edges, joints, pedicle diameters or even orbital floor, are optimally visualized.

With this benchmarking enhancement, surgeons can create full 3D datasets while retaining the benefits of our C-arms: the most compact 3D devices with an up to 31 cm x 31 cm flat-panel, generous C-arm opening, and the advantages of a variable isocenter.

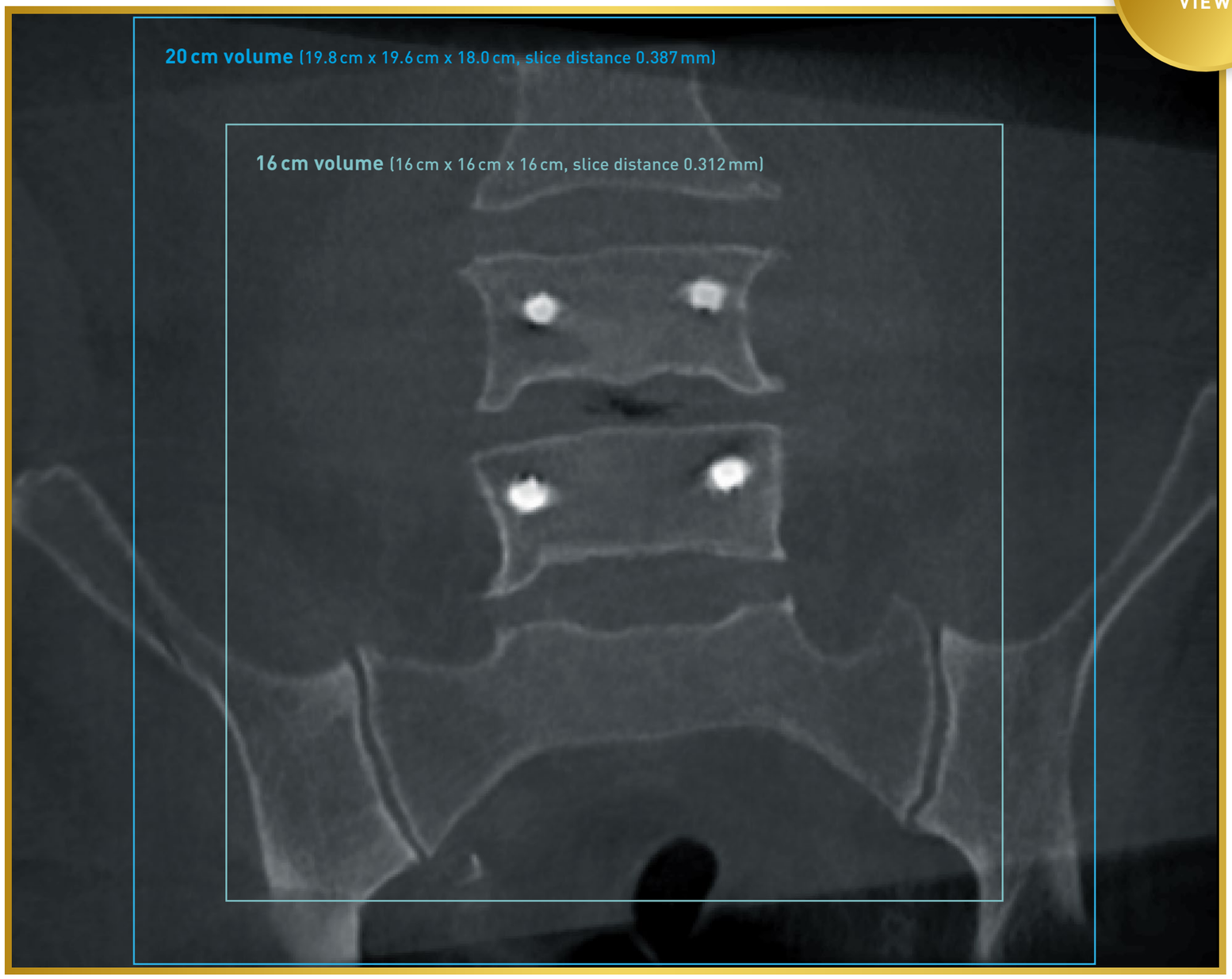


→ Unmatched flexibility thanks to variable isocenter in 3D

The variable isocenter allows precise and consistent centering of the region of interest (ROI) throughout the complete 3D scan and makes it possible to use two specially developed scan paths. As a result, not only body-centered but also lateral applications such as hip and shoulder procedures can be covered. These patented trajectories lead to the valuable clinical benefit of a collision-free 3D scan covering even patients with a larger body habitus – without compromising the workflow. This concept provides exceptional versatility and opens up multi-disciplinary applications.

When performing a 3D scan, the detector rotates as close to the patient as possible. Thanks to its sophisticated scan movements, the Ziehm Vision RFD 3D achieves the biggest anatomical coverage on the market to be visualized within a single scan.

With two uniquely engineered scan movements, both body-centered anatomy (left) and hip, shoulders, and extremities (right) can be visualized – always with a perfectly centered ROI and collision-free.

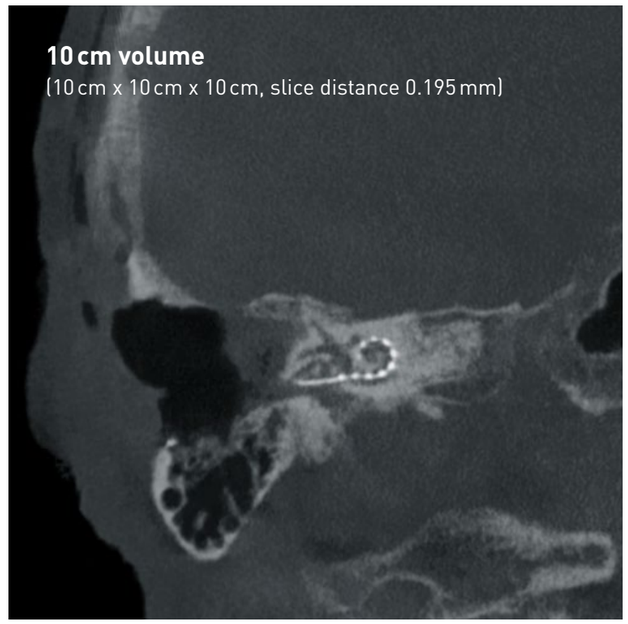


LARGER FIELD OF VIEW

→ Benefit from the right volume size for each application

Ziehm Imaging offers a wide selection of 3D volume sizes to meet diverse clinical needs. Beyond the standard 16 cm volume, the Ziehm Vision RFD 3D provides three additional options for specialized applications. A larger field of view with a 20 cm volume or even a 25 cm volume[4] with 512^3 voxels covers larger anatomical regions, supporting procedures such as pelvic or spine surgeries. Therefore, e.g., six thoracic or lumbar vertebrae or the entire cervical spine including three thoracic vertebrae can be displayed. Moreover, the 25 cm volume enables the visualization of the patient tracker, even in patients with larger body habitus. This makes it not only ideal for seamless navigation, but also for clinical imaging.

With a high resolution of 512^3 voxels and a slice distance of just 0.195 mm, the Zoom-in / Cochlea package offers a volume of 10 cm and is purpose-built for complex anatomical regions and delicate bone structures, making it ideal for intraoperative imaging during cochlear implantations. Unlike digital zoom, Ziehm Imaging's advanced ZIR algorithm generates a new reconstruction of the data to deliver high-resolution images.



03 / Intuitive control for faster and safer workflows

The Ziehm Vision RFD 3D sets new standards for intraoperative imaging, combining superior image quality with ease of use. The intuitive workflow wizard supports clear communication in the OR and enables efficient, streamlined procedures. Engineered for reliability and speed, the Ziehm Vision RFD 3D features a compact design with remarkably low space requirements. It is the ideal system for precise, efficient, and future-proof surgical workflows.

→ Fast and reproducible positioning workflow with PositionPilot

The Ziehm Vision RFD 3D can be positioned quickly and effortlessly during all kinds of procedures. With PositionPilot[4], the surgeon can control the C-arm and the OR table directly from the sterile field: All table movements and the four motorized axes of the C-arm are easily managed via Position Control Center plus. On a single user interface, C-arm and table can be moved into the exact positions needed within seconds. The operator has the freedom to rapidly save and recall up to three synchronized positions enabling fast switches between different views, supporting time efficiency and high procedural precision.

→ Smooth workflow without collisions

Our motorized C-arms are equipped with Distance Control – an assistance system supporting non-contact patient collision protection. Furthermore, the Ziehm Vision RFD 3D avoids collisions with the OR table thanks to the variable isocentric movement of the C-arm. This results in a smooth workflow and a high level of patient safety.

FULL
CONTROL OF THE
OR TABLE

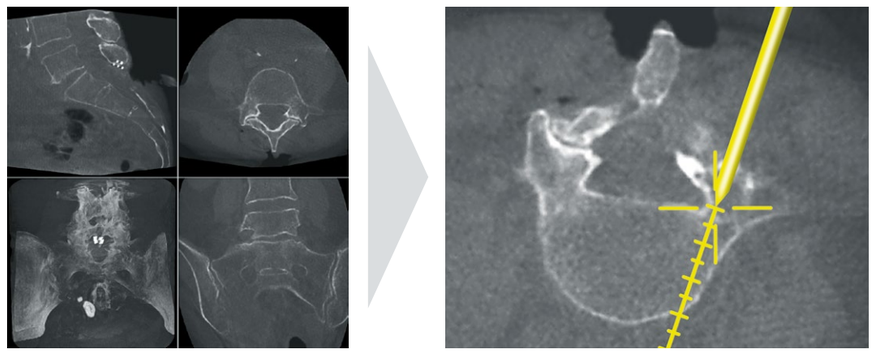
The capacitive joysticks require two-finger operation to prevent accidental touches and unintended C-arm or table movement.

→ Easy and reliable image-guided surgery

Powered by Ziehm Imaging's CMOS flat-panel technology, advanced SmartScan algorithms and ZIR, the system delivers exceptional contrast resolution and minimizes artifacts, even in complex spinal anatomy or in the presence of metal implants. The high-quality intra-operative imaging is the basis for the seamless combination with leading navigation and robotic guidance systems. The proven Ziehm NaviPort 3D interface ensures the safe and automated transfer of high-resolution 3D data, typically removing the need for intraoperative patient registration.

The enlarged 3D volume enables navigation of multi-level spinal segments in a single scan – even for patients with a larger habitus – and reduces additional acquisitions.

By combining advanced 3D imaging with image-guided surgical technologies, clinicians can minimize invasive approaches, reduce revision surgeries as well as postoperative CT scans, and gain greater confidence in intraoperative decision-making. Seamless integration, long-term investment security, and continuous improvements help systems to remain prepared for future clinical demands.[5,6,7]



Ziehm Vision RFD 3D

Image-guided navigation

→ From setup to result in less than three minutes

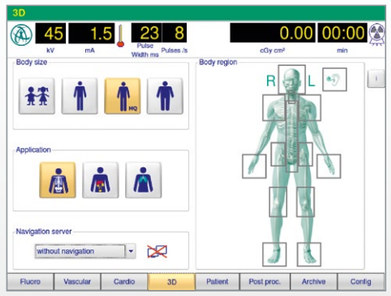
Thanks to the wizard-guided workflow, the Ziehm Vision RFD 3D leads effortlessly through every step leaving no questions. Engineered for clarity and ease, our workflow reduces unnecessary and time-consuming steps. All Ziehm Imaging C-arms share the same intuitive user interface, so that the surgical staff can easily use any system from the portfolio, which helps to save valuable OR time. The Ziehm Vision RFD 3D performs a complete 3D scan in less than three minutes, which translates into reduced surgery time and optimized clinical work.

→ Prolonged use with intelligent heat management

When other C-arms stop performing due to overheating, the Ziehm Vision RFD 3D is still ready for further imaging. The reliable C-arm is equipped with Advanced Active Cooling (AAC) to ensure consistent system temperature. This is especially important during lengthy, demanding procedures, such as cardio and vascular interventions, for repeated 3D scans of patients with larger body habitus or for tool-in-lesion confirmation in the field of bronchoscopy.

approx.

2 min.



PREPARATION

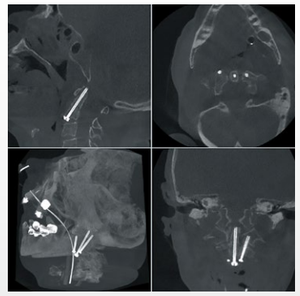
The workflow wizard assists in preparing the scan and guiding to the ideal dose setting. After positioning the 3D C-arm and performing a collision check in a period of approximately two minutes, the system is ready to scan.

48 sec.

180° SCAN FOR COMPLETE 3D INFORMATION

The refined motorization of the system and the intelligent combination of linear and rotating movements allow for 180 degrees of scanned information in only 48 seconds.

8 sec.



RECONSTRUCTION AND DISPLAY OF 3D DATASET

Our iterative reconstruction techniques – most commonly seen in CT imaging – create crystal-clear images in only eight seconds. Moreover, ZIR including metal artifact reduction automatically applies without extending reconstruction time.

→ 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[8]. 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.

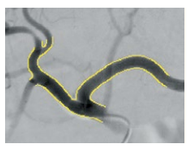
COLOR-CODED SCALES AND HANDLES
to ensure clear communication in the OR

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

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

ZIEHM VISION CENTER
featuring an intuitive touchscreen user interface

SMARTEYE
enabling users to keep track of orientation and object position



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

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

ZIEHM NETPORT
with WLAN enables easy integration into IT networks

WIRELESS VIDEO
transmitting live X-ray images to external monitors

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

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

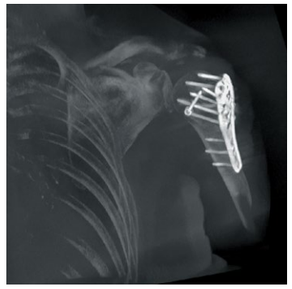
04 / Broaden your clinical perspective with multidisciplinary 2D and 3D imaging

Modern surgical environments require imaging systems that adapt seamlessly to a wide range of clinical workflows. The Ziehm Vision RFD 3D is engineered to support these evolving needs, offering flexibility and the capability to integrate smoothly across disciplines.

The Ziehm Vision RFD 3D offers unprecedented performance across the most varied and challenging application spectrum. This versatile device combines 2D excellence with advanced 3D technology, delivering high-end multidisciplinary capabilities for applications and specialized procedures such as bronchoscopies and cochlear implantations or even complex cardio-vascular interventions.

Clinicians benefit from:

- **One device** for all surgical fields
- **Intuitive user interface** for easy handling, consistent across the entire C-arm portfolio
- **Specialized anatomical programs** with corresponding settings
- **Dedicated metal artifact reduction** for clear visualization



WIDE RANGE OF APPLICATIONS

Orthopedics, trauma and spine surgery

Craniomaxillo-facial surgery

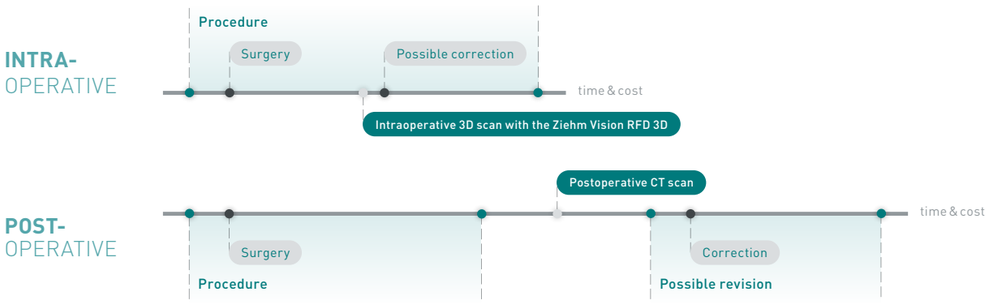
Cochlear implantations

Bronchoscopy

Vascular surgery

Cardiology

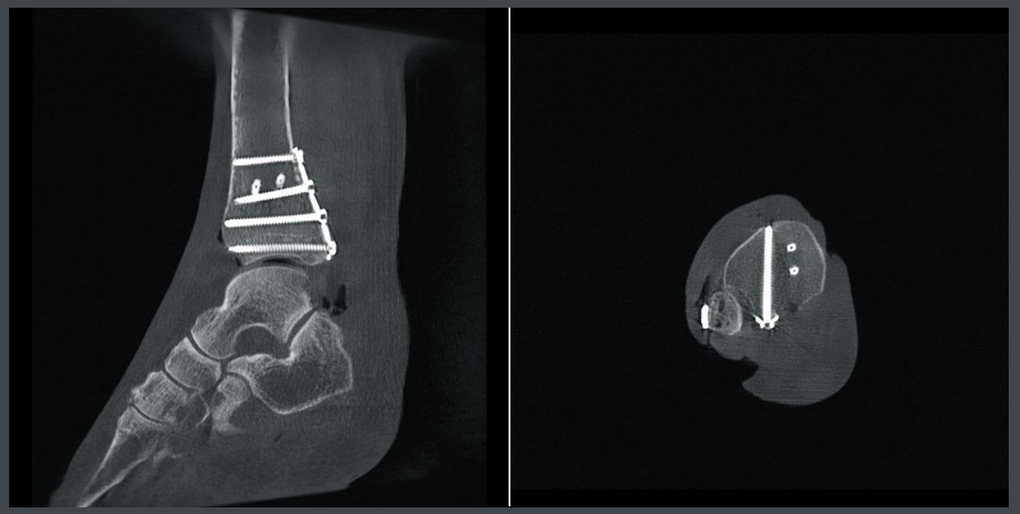
FEWER REVISION SURGERIES THANKS TO PRECISE IMAGE INFORMATION



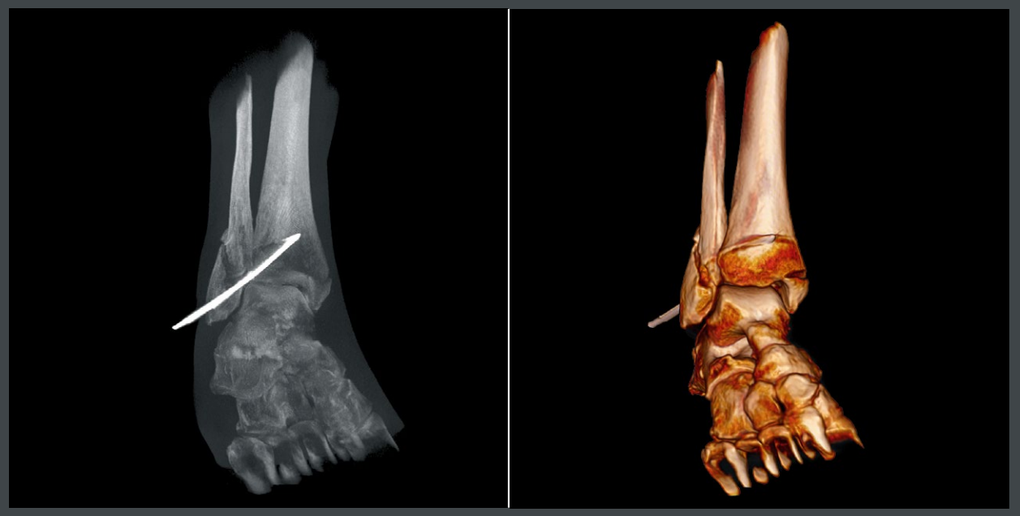
Orthopedics, trauma and spinal surgery

→ Visualize all critical information

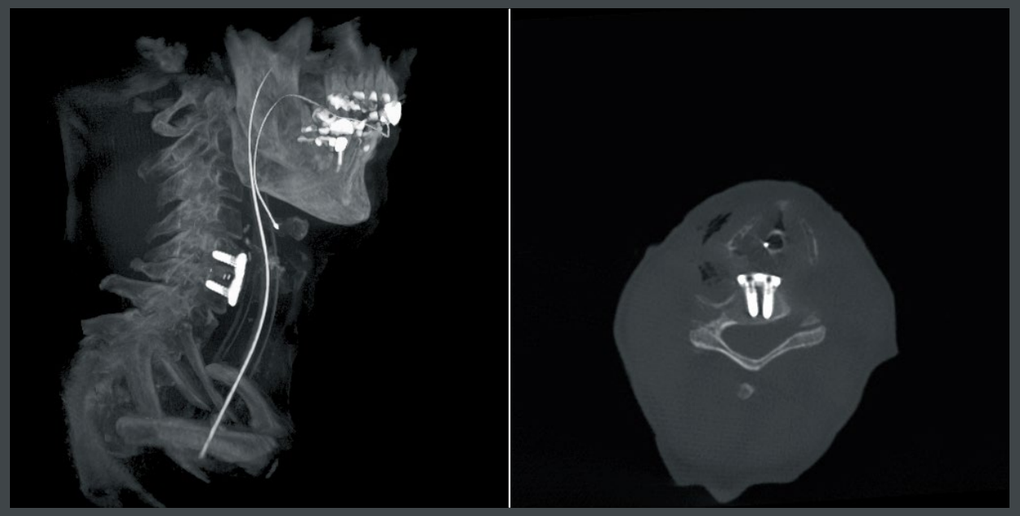
The Ziehm Vision RFD 3D reliably delivers intraoperative images that ensure accurate implant placement and accurate anatomical orientation to avoid malposition and costly revisions. Its seamless integration with navigation and robotic guidance systems supports efficient workflows. Surgeons benefit from artifact-free visualization of implants, clear assessment of complex fractures, and secure verification of screw length as well as screw direction. Thanks to its high generator power, the C-arm provides strong penetration in thoracic and abdominal regions, especially in obese patients. These dose and imaging optimizations with ZIR deliver outstanding image quality, even in the demanding area of the thoracic junction.



The pilon fracture is clearly visualized. Both stabilization plates and the surrounding bone structures are perfectly displayed. No metal artifacts are visible even near the implants.



The volume and surface rendering of the ankle fracture provide detailed information about the exact repositioning and alignment of the bone fragments.



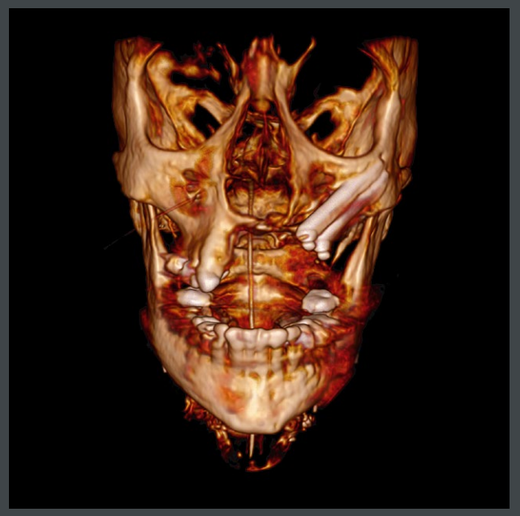
Volume rendering (left) and axial slice (right) of cervical spine.

Craniomaxillofacial surgery

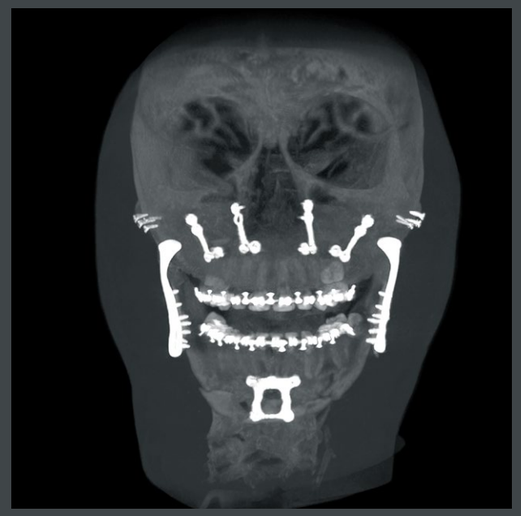
→ Highest precision even in demanding fields

Maintaining quality control throughout all phases of surgery is vital, especially in complex cases such as midface, orbital fractures or mandibular reconstructions. Intraoperative 3D imaging enables the individual alignment of axial, coronal, and sagittal views according to the patient's anatomy to analyze symmetry, which cannot be reliably assessed with conventional 2D imaging.

A 20 cm volume allows for visualization of the entire skull or both orbital floors in a single 3D scan, aiding in symmetry verification of reconstructed anatomy. Intraoperative imaging enables confirmation and adjustment of fracture reduction and implant placement and therefore provides maximum accuracy by comparing real-time data with preoperative plans. Surface rendering combined with multiplanar reconstruction enhances clarity, particularly during minimal incisions in oral and maxillofacial surgery, where precise positioning of screws and plates is crucial.



Surface rendering of a mandibular reconstruction

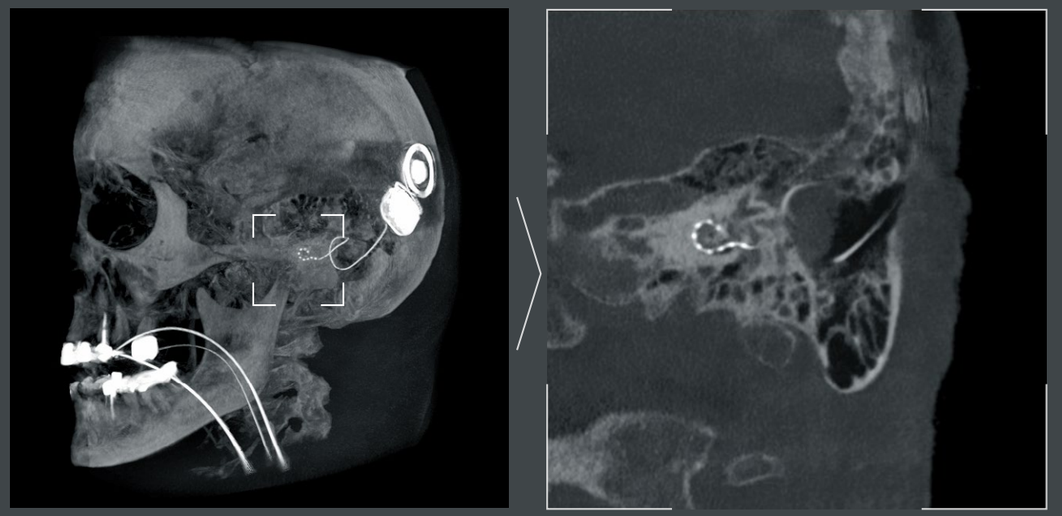


Mandibular condylar process fracture repair

Cochlear implantations

→ Visualization of the smallest structures

The Ziehm Vision RFD 3D offers exceptional precision for cochlear implantations. The specialized body region for cochlea with optimized dose settings and ZIR filter technology ensures superior image quality while intraoperative verification boosts confidence in complex cases involving malformations. Clinicians can detect critical details like tip fold-over or incomplete insertion, improving the patients' hearing performance and reducing revision risk. A 512^3 voxels dataset with 0.195 mm slice distance delivers unmatched visualization of the cochlear electrode array with diameters as small as 0.3 mm as well as the inner ear anatomy. Precise 3D imaging of the intracochlear electrode position also enables anatomy-based adjustment of the center frequencies of each electrode contact. This allows for optimization of speech intelligibility and sound quality, as well as the best possible use of residual hearing.

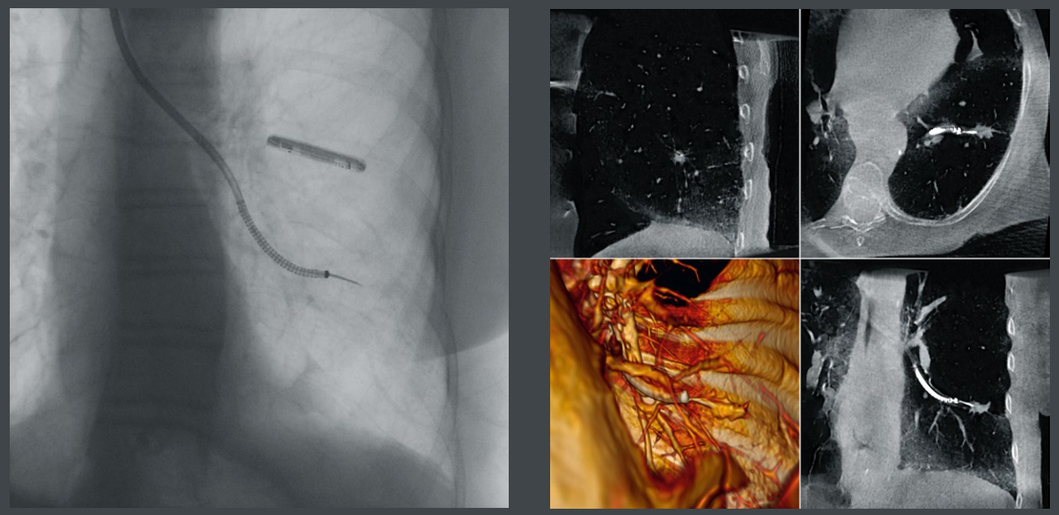


The Adult HQ mode shows the fine structure of the inner ear and provides precise visualization of the electrode array (electrode diameter 0.5mm).

Bronchoscopy

→ Biopsy on a moving organ

The Ziehm Vision RFD 3D is the first C-arm on the market with a specially developed anatomical program featuring optimized 2D and 3D settings and a dedicated workflow for bronchoscopy. Even the smallest lesions and finest lung structures are precisely visualized, enabling highly accurate intraoperative position control of the needle and the lesion, minimizing CT-to-body divergence – the difference between the location of a lesion in the preoperative CT image and its actual location during the biopsy. Thanks to Ziehm Iterative Reconstruction, metal artifacts from the bronchoscope are significantly reduced, making it clear whether the needle is positioned within the lesion. The variable isocenter ensures that even laterally located lesions appear centrally in the image.



Bronchoscopy of a peripheral lung lesion with tool-in-lesion confirmation. The large 19.8 cm × 19.6 cm × 18.0 cm 3D volume and minimized metal artifacts due to ZIR provide excellent visualization and precise localization of the tool tip.

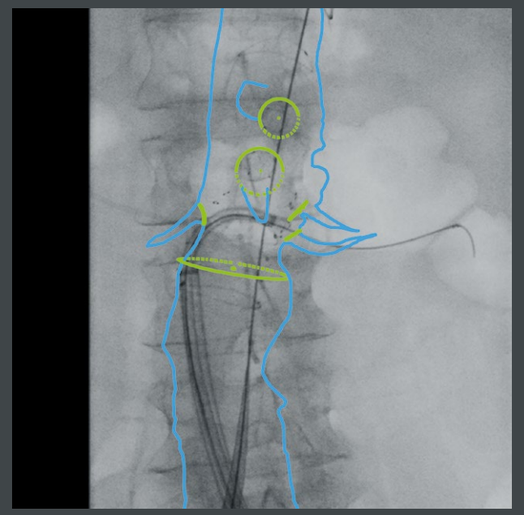
Cardiology & vascular surgery

→ Minimal motion artifacts on a mobile solution

The Ziehm Vision RFD 3D provides the detail-rich, motion-stable 2D imaging needed to visualize delicate coronary and cardiac structures. QuantumStream delivers razor-sharp images for coronary angiography, electrophysiology, and structural heart procedures. The system is a space- and budget-friendly alternative to a conventional cath lab. Advanced Active Cooling ensures reliable performance even during long, complex cases.

→ Intelligent workflow assistants and Endovascular Navigation

The Ziehm Vision RFD 3D combines advanced angiographic tools with a streamlined workflow tailored to endovascular demands such as 3D stent positioning. The SmartVascular workflow enables fast, touch-based switching between imaging modes such as Fluoro and RSA. With Endovascular Navigation[9], image fusion and navigation are fully integrated into the mobile C-arm – supporting precise planning and execution of complex vascular procedures.



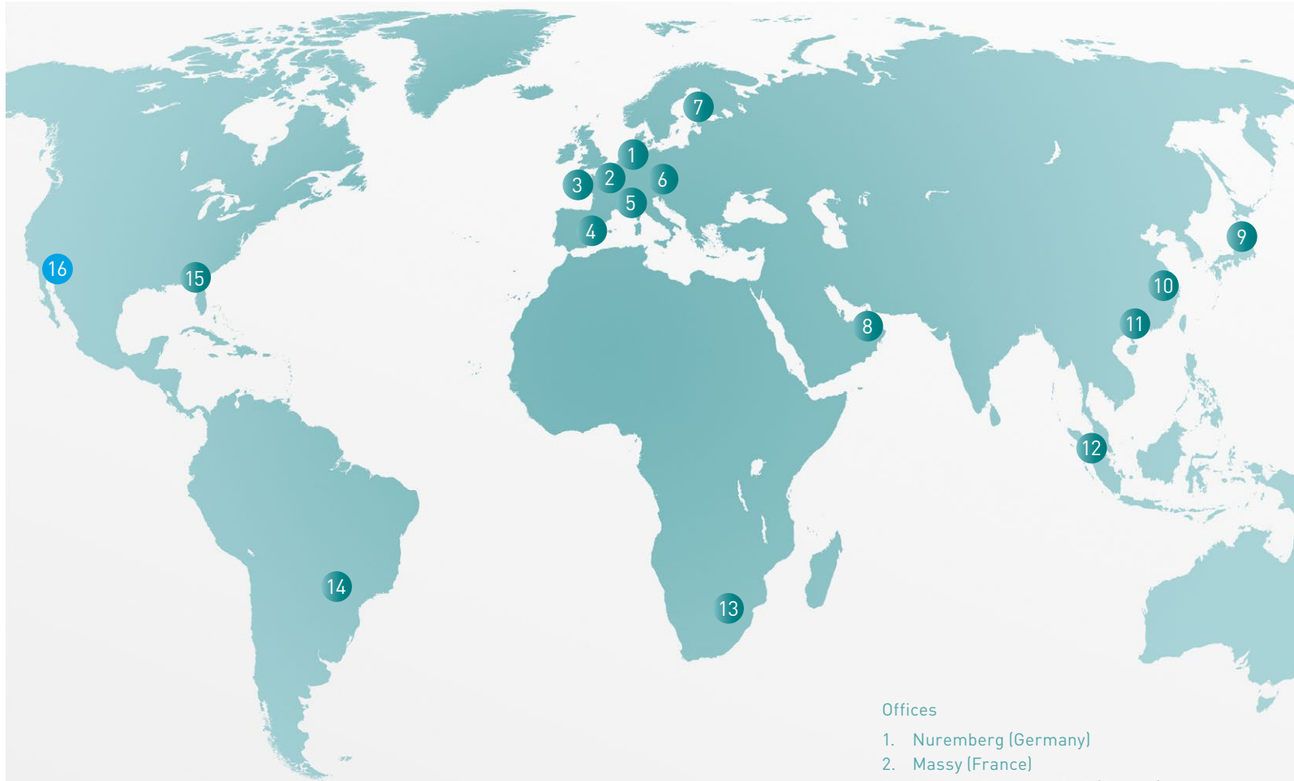
Overlay without centerline of a fenestrated endovascular aneurysm repair (FEVAR) using Endovascular Navigation.

The Ziehm Vision RFD 3D 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.

FEATURES

Flat-panel technology	CMOS, 31 cm x 31 cm	a-Si, 30 cm x 30 cm
3D volume size/voxels	16 cm x 16 cm x 16 cm; $320^3/512^3$ voxels opt.: 10 cm x 10 cm x 10 cm; $320^3/512^3$ voxels opt.: 19.8 cm x 19.6 cm x 18.0 cm; $320^3/512^3$ voxels opt.: 24.9 cm x 19.6 cm x 24.9 cm; $320^3/512^3$ voxels	16 cm x 16 cm x 16 cm; 320^3 voxels opt.: 10 cm x 10 cm x 10 cm; 320^3 voxels opt.: 19.8 cm x 19.6 cm x 18.0 cm; 320^3 voxels opt.: 24.9 cm x 19.6 cm x 24.9 cm; 320^3 voxels
Detector resolution	3 k x 3 k	1.5 k x 1.5 k
Image chain	2 k x 2 k (QuantumStream)	1 k x 1 k
Image Insights	■	–
Power generator	30 kW, pulsed monoblock generator	25 kW, pulsed monoblock generator
Ziehm Usability Concept	■	■
SmartDose	■	■
Advanced Active Cooling (AAC)	■	■
Motorization	Full control of the 4 motorized axes	Full control of the 4 motorized axes
3D scanned information	2D: 165°/3D: 180° (SmartScan)	2D: 165°/ 3D: 180° (SmartScan)
Open navigation interface (NaviPort 3D) Further partners and country specifications available, see www.ziehm.com/naviport for more details	Brainlab, Globus Medical, Medacta, Medtronic, NuVasive, Stryker	Brainlab, Globus Medical, Medacta, Medtronic, NuVasive, Stryker
Vascular Image Fusion	Stand-alone solution: EndoNaut[10] Integrated solution: Endovascular Navigation[9]	Stand-alone solution: EndoNaut[10]

available ■ | not available –



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www.ziehm.com/RFD3D

CMOSline represents a system configuration that is based on a Ziehm Imaging CMOS flat-panel detector.

[1] The SmartDose concept includes a variety of hard- and software features. Due to regulatory reasons the availability of each feature may vary. Please contact your local Ziehm Imaging sales representative for detailed information.

[2] Gosch D. et al. "Influence of grid and ODDC on radiation exposure and image quality using mobile C-arms – First results," RöFo, 09/07

[3] The technology Beam Filtration reduces dose exposure for Ziehm Imaging flat-detector systems in comparison with conventional filtration techniques. Data on File. Results may vary.

[4] The product/feature mentioned herein is currently under development. Its future availability cannot be guaranteed.

[5] Recum von, J. et al., Unfallchirurg 2012, 115:196-201, Die intraoperative 3D-C-Bogen-Anwendung. State of the art

[6] Richter et. al., Cervical pedicle screws: conventional versus computer-assisted placement of cannulated screws. Spine (PhilaPa 1976). 2005 Oct 15;30(20):2280-7

[7] Gebhard et al., Does computer assisted spine surgery reduce intraoperative radiation doses? Spine (PhilaPa1976). 2006 Aug 1;31(17)

[8] The Usability Concept includes a variety of hard- and software features. Due to regulatory reasons the availability of each feature may vary. Please contact your local Ziehm Imaging sales representative for detailed information.

[9] 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. Therenva SAS is a subsidiary of Ziehm Imaging GmbH. For more information please visit: www.ziehm.com.

[10] EndoNaut® is a registered trademark of Therenva SAS. In the USA, the EndoNaut® software obtained a substantial equivalence determination and FDA clearance through the CDRH premarket notification process (510(K)). In Europe, the EndoNaut® software is CE marked (class IIb), not eligible for reimbursement. The information provided in the labelling and manual is intended for Healthcare Professionals only. For the safe and successful operation and use of the device, always read the instructions.

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