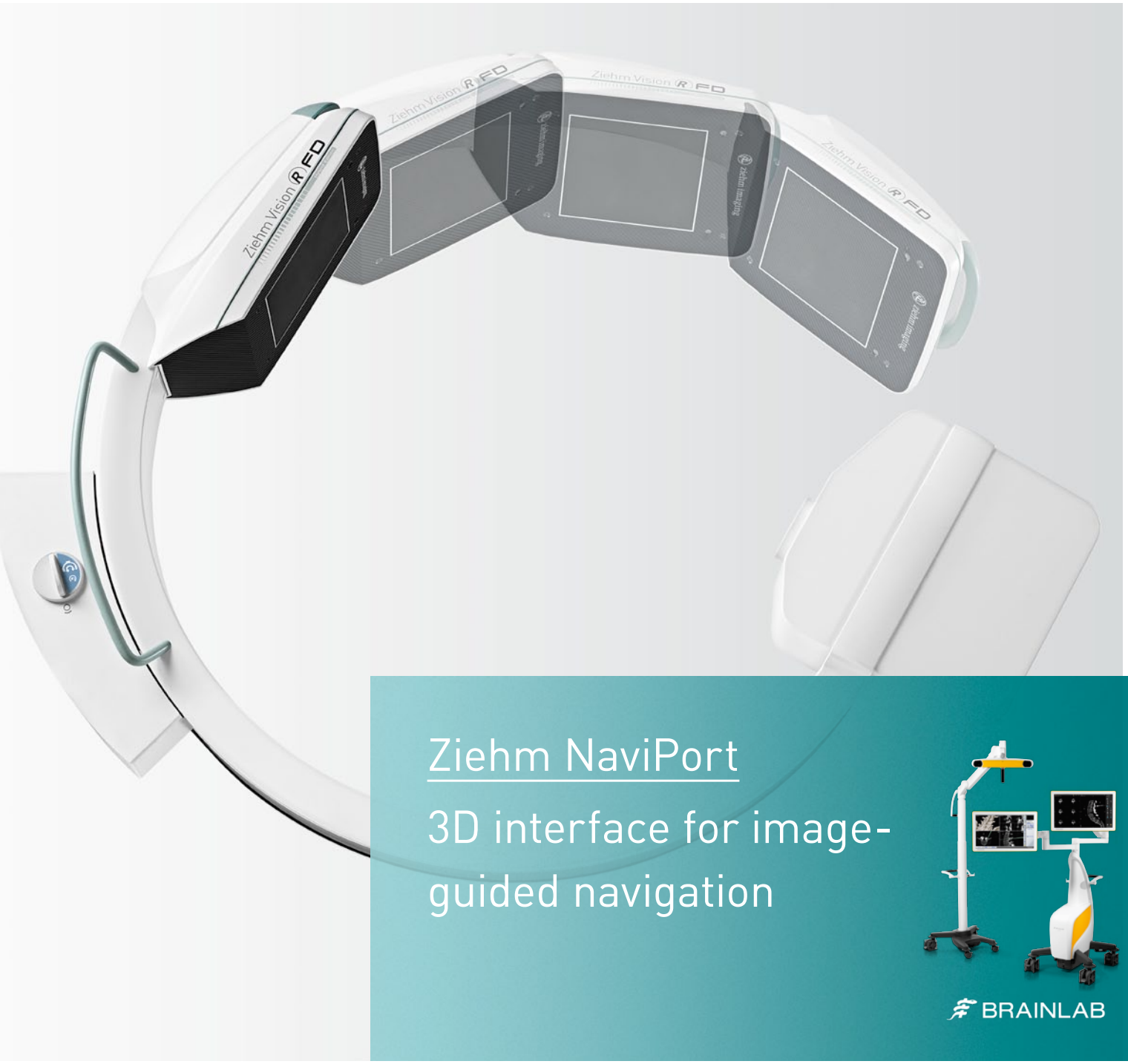
ziehmimaging




# Ziehm NaviPort

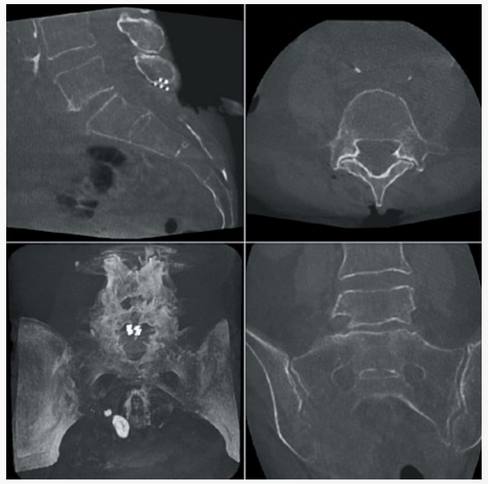
## 3D interface for image-guided navigation



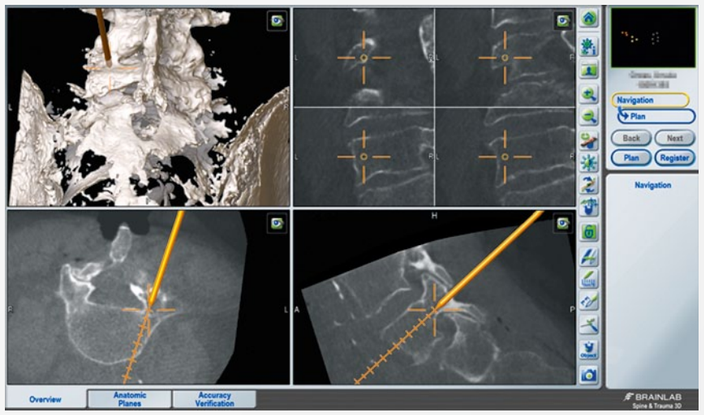
BRAINLAB

# INCREASING CONFIDENCE IN THE OR

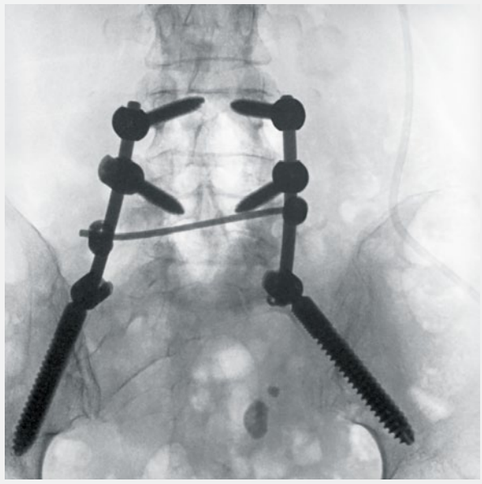
In more than 21 % of complex anatomical osteosynthesis procedures, an intraoperative improvement of the implant position or a revision of reduction has to be performed.[1] Image-guided surgery is gaining relevance as a method to increase confidence in these complex procedures. Navigation enables clinicians to improve patient outcomes with higher precision and reduced X-ray exposure.[2,3] Gain new levels of efficiency in the OR by optimizing the clinical workflow.



Intraoperative 3D scan for vertebrae-pelvic support of L4/L5/S1.




Brainlab Spine & Trauma 3D software showing navigated screw planning in L4.



2D control image to evaluate successful screw placement in L4/L5/S1.

"The combination of the Ziehm Vision RFD 3D and Brainlab navigation allows us to achieve high accuracy in complex surgical procedures. Moreover, the possibility to perform intraoperative control scans enables us to significantly reduce the need for postoperative CT scans."

**PROF. DR. JOSTEN,** UNIVERSITY HOSPITAL LEIPZIG, LEIPZIG, GERMANY


## INCREASING ACCURACY IN SURGICAL PROCEDURES

Overcome the challenges of demanding procedures in areas like the cervical and upper thoracic spine as well as pelvis, or minimally invasive surgeries with Brainlab Spine & Trauma 3D software. Navigate on intraoperative 3D images with Brainlab Spine & Trauma navigation software, contributing to increased accuracy and reduced X-ray exposure.[2,3]

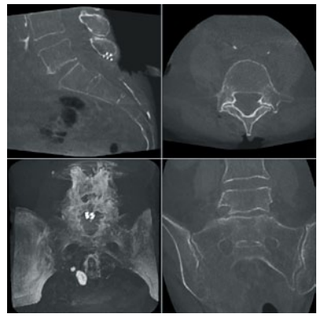
## IMPROVING PATIENT OUTCOMES

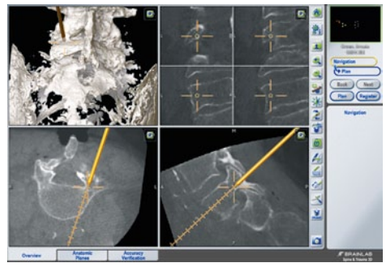
Deliver high-quality care and manage less-invasive approaches to shorten patients' hospital stays. Increased accuracy of procedures using navigation with intraoperative high-end 3D imaging potentially improves patient outcomes and reduces the need for revision surgeries, thereby improving overall efficiency.

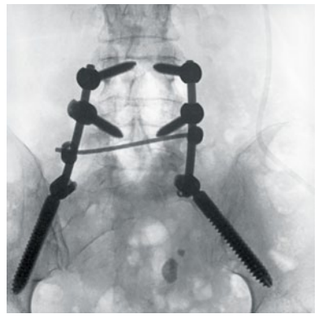
## OPTIMIZING CLINICAL WORKFLOWS

Utilize preferred, navigation-ready instruments from different implant companies. Automatic registration of images for navigation and intraoperative 3D control scans allow quick progress checks and documentation at all times to ensure efficient clinical workflows.

The Ziehm Vision RFD 3D combined with Brainlab Kick® navigation system







## STEP 1
## EASY SETUP

Brainlab navigation and the Ziehm Vision RFD 3D allow navigating the full clinical spectrum of spine and trauma procedures. The infrared camera is set up to track the registration kit on the C-arm as well as the reference clamp attached to the patient.

### ZIEHM VISION RFD 3D THE GAMECHANGER IN 3D

The Ziehm Vision RFD 3D is the only 3D C-arm worldwide with flat-panel technology that provides a 16 cm edge length per scan volume. Patented SmartScan technology generates 180° 3D image information of even the smallest anatomical structures. It combines 2D and 3D functionality in one system and therefore offers maximum ease-of-use.

### SPINAL NAVIGATION WITH BRAINLAB

Brainlab Spine & Trauma Navigation addresses the demand for meaningful visualization that helps surgeons effectively plan and execute spine and trauma procedures. Surgical instruments are continuously tracked by the infrared camera with their position visualized on the patient data. This allows for more accurate procedures compared to conventional surgical techniques.

## STEP 2
## SCAN AND REGISTRATION

The Ziehm Vision RFD 3D generates a high-resolution 3D dataset while the navigation camera tracks the position of the patient and the C-arm. The acquired 3D data is seamlessly transferred via Ziehm NaviPort to the Brainlab navigation system and automatically registered for navigation.

### ADVANTAGES

- Generate a whole 3D dataset in just 3 minutes*
- Visualize up to 7 cervical vertebrae in a single 3D volume
- Benefit from distortion-free images due to flat-panel technology

*Data on file. This time includes image acquisition and reconstruction of the 3D dataset.

## STEP 3
## NAVIGATION

Navigation begins right away with tracking of the surgical instruments and real-time visualization of their position on the acquired dataset.

### ADVANTAGES

- Increase accuracy and decrease X-ray exposure to the surgical team and the patient
- Use a broad range of navigated instruments
- Position camera and monitor cart separately to stay flexible in different OR setup scenarios

## STEP 4
## CONTROL SCAN (OPT.)

The Ziehm Vision RFD 3D gives the opportunity to either generate an entire 3D dataset or additional 2D images in the OR for final check and documentation.

### ADVANTAGES

- Gain more confidence with a final check within the OR
- Increase patient outcome with no need for additional X-ray exposure in post-operative CT scans

| ZIEHM VISION RFD 3D | | BRAINLAB | KICK® | CURVE™ |
|---|---|---|---|---|
| Flat-panel | 30 cm x 30 cm | Display size | 1 x 21.5" screen | 2 x 27" screen |
| Pulsed monoblock generator | 25 kW | System control | Touch-screen (resistive) | Touch-screen (capacitive) |
| Open navigation interface | Yes | Sterile concept options | Drape | Drape |
| Position Control Center | Yes | HD streaming/recording with web portal (option) | No | 1 x HD |
| Scanned information | 180° | Video in | Analog: 2 x CVBS, 1 x S-Video Digital: no | Analog: 2 x CVBS, 1 x S-Video Digital: 2 x SDI-in |
| Edge length | 16 cm x 16 cm x 16 cm (4,096 $cm^3$) | Video out | Analog/digital: 1 x DVI-I | HiRes digital: 1 x DisplayPort Analog/digital: 1 x DVI-I |
| Ziehm Remote Service | Yes | Camera height range | 132 - 223 cm | 67 - 254 cm |
| | | Camera volume/laser pointer | Extd. vol. (3000 mm)/yes | Extd. vol. (3000 mm)/yes |
| | | Setup flexibility | Separate camera cart for maximum flexibility | Separate camera cart (dedicated camera app for remote-controlled camera alignment) for maximum flexibility |
| | | Audio support | No | Compatible with all sizes of smartphones (phone jack) |
| | | Data transfer | LAN/USB/WLAN[5] b/g/n | LAN/USB 2.0/3.0/WLAN** b/g/n/ac, CD/DVD |
| | | Memory/storage | 4 GB RAM/HDD (160 GB) | 8 GB RAM/SSD (512 GB) |

**depending on country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## MAXIMIZE YOUR UPTIME

### Make sure to get the best service for your daily business.

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

[1] Recum von, J. et al., Unfallchirurg 2012, 115:196-201, Die intraoperative 3D-C-Bogen-Anwendung. State of the art
[2] Richter et. al., Cervical pedicle screws: conventional versus computer-assisted placement of cannulated screws. Spine (PhilaPa 1976). 2005 Oct 15;30(20):2280-7
[3] Gebhard et al., Does computer assisted spine surgery reduce intraoperative radiation doses? Spine (PhilaPa1976). 2006 Aug 1;31(17)


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