

Cutting-edge robotic imaging to drive minimally invasive procedures



No matter which patient

- Live 2k imaging that visualizes even the smallest details
- StructureScout optimizes the visibility of devices and contrast media at the right dose
- syngo DynaCT allows fast intraoperative 3D visualization of vessels with reduced usage of contrast medium
- Power-assisted tabletop allows precise patient positioning with virtually zero force even in tilted position up to 280 kg load

No matter which procedure

- 95.5 cm of free space with wide-space C-arm for more comfortable working and steep C-arm angulations
- syngo Aortic Valve Guidance – guided workflow for TAVI helps to potentially double quality in valve positioning* and reduce contrast media usage
- syngo TrueFusion - straight access to fusion of TEE and angio information via the integrated ACUSON SC2000 US system that facilitates complex interventions

Because infection control matters

- Antimicrobial covers and a ceiling-free design contribute to a better infection control in the Hybrid OR
- Pilot Module ensures intuitive tableside control with minimal training effort and can easily be cleaned
- No ceiling mounted components for optimal hygienic environment under the lamiar airflow field

* Poon et al., Eurointervention, 2012

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Better outcomes
in TAVI with
ARTIS pheno

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Keep pace with rapid change

The cardiac landscape for structural heart disease is changing rapidly. Since the first TAVI new generations of valves evolved and indications for transcatheter therapies adopted.

The heart team is facing high-risk patients suffering from frailty, renal insufficiency, respiratory problems and other comorbidities. Proper device selection and optimal implantation are key for superior outcome.

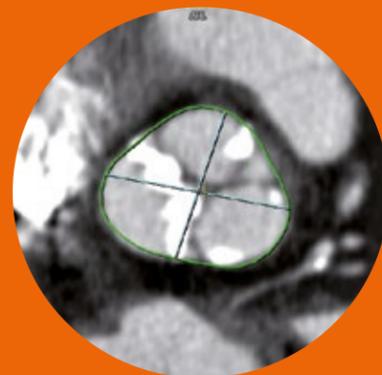
Demanding cases, the complexity of devices and therapy options are calling for the integration of different modalities in one hybrid suite. The imaging system needs to be easy to use, allowing full focus on the implantation by guided workflows and an excellent image quality at the lowest reasonable dose.

Ready for the world of cardiovascular interventions

Engineered to be truly patient-oriented, ARTIS pheno is a unique angiography system for individualized preprocedural planning, intraoperative guidance, and immediate assessment – regardless of patient condition or procedure complexity. It also helps keep the working environment clean at all times.



A guided TAVI workflow for higher procedural confidence and efficiency



Treatment of patients with comorbidities is no issue

A 79 years old male patient presented with a severe symptomatic high-grade aortic stenosis. As a relevant comorbidity, he suffers from chronic obstructive pulmonary disease. Implant selection, device sizing and access planning have been done preoperatively based on computed tomography. A transfemoral access and a Medtronic Evolut R have been chosen. The TAVI has been performed under conscious sedation.

> 3D acquisition – Short scan times for reduced contrast agent usage

Intra-operative 3D image acquisition is easier than ever before. The 3D Wizard provides protocols tailored to the procedure. A step-by-step guidance leads the user quickly to a perfect 3D image.

Patients with impaired kidney function benefit from fast intra-operative 3D imaging and less contrast media usage. *syngo* DynaCT acquires 3D images in less than five seconds. Compared to previous protocols this saves contrast agent*. Faster *syngo* DynaCT reduces also motion artefacts in the 3D image.

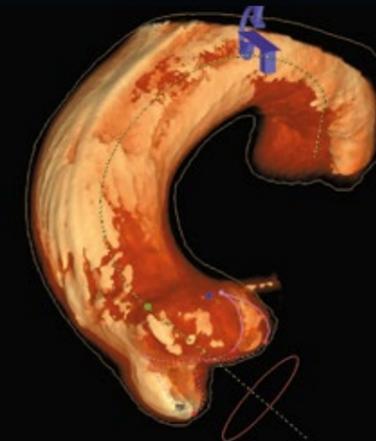


* We assume a flow rate of 15 ml/s and an X-ray delay of zero seconds.

> Automated planning saves time and increases confidence

syngo Aortic Valve Guidance provides 3D image reconstruction and automatic segmentation. The software indicates the most important anatomical landmarks such as the lowest cusp points, the coronary ostiae and the centerline.

The three lowest cusp points are defining a circle. By adjusting of the projection plane the circle is transformed into a straight line providing the optimal view. The C-arm travels into this view by a push of a button. The distance of the circle from the annulus can be changed to display the desired implantation height.



> Deployment of the valve

Fusion imaging provides continuous guidance throughout the deployment phase of the valve without additional contrast media usage*. A pre-operative CT can be fused with only two fluoro shots from different angles. Using fusion with preoperative CT, the overall amount of contrast media during the procedure can be reduced even more.



Krishnaswamy et al., Cath Cardiovasc Interv, 2015

> Verification through superior image quality in 2D and 3D

ARTIS pheno provides Live 2k imaging that visualized even the smallest details. StructureScout optimizes the visibility of devices, and contrast media at the right dose independent of procedure or material type.

As a final result the valve is clearly visible in the context of the heart.



> Verification through superior image quality in 2D and 3D

The final deployment of the valve can be assessed right away at the table. ARTIS pheno with *syngo* Aortic Valve Guidance potentially doubles the quality in valve positioning*. This could lead to less paravalvular leaks and less readmissions.

ARTIS pheno is also ready for *syngo* TrueFusion. The fusion of fluoroscopy with TEE landmarks to guide even to complex interventions such as paravalvular leak closures.



* Poon et al., Eurointervention, 2012; Maeda et al., J Card Surg, 2012

ARTIS pheno – As individual as your patients



"I am deeply convinced that all cardiovascular interventionalists will use such a system in a couple of years. With multi-modal imaging, innovative imaging chains, image fusion and different post-processing technologies in one system, we can manage more complex cases faster and less invasively."

Prof. Dr. med. Bernhard Schieffer, UKGM, 2017

A hybrid operating room for multi-disciplinary usage



- ARTIS pheno robotic angiography system
- Siemens multi-tilt table with power-assisted table top, Pilot Module and lower-body radiation protection
- Two large displays on each side of the table
- Integrated Sensus hemodynamic recording system

Multidisciplinary use:

- Interventional cardiology
- Structural heart disease
- EP
- Vascular surgery