

Artis one

Designed around you

siemens-healthineers.com/artis-one

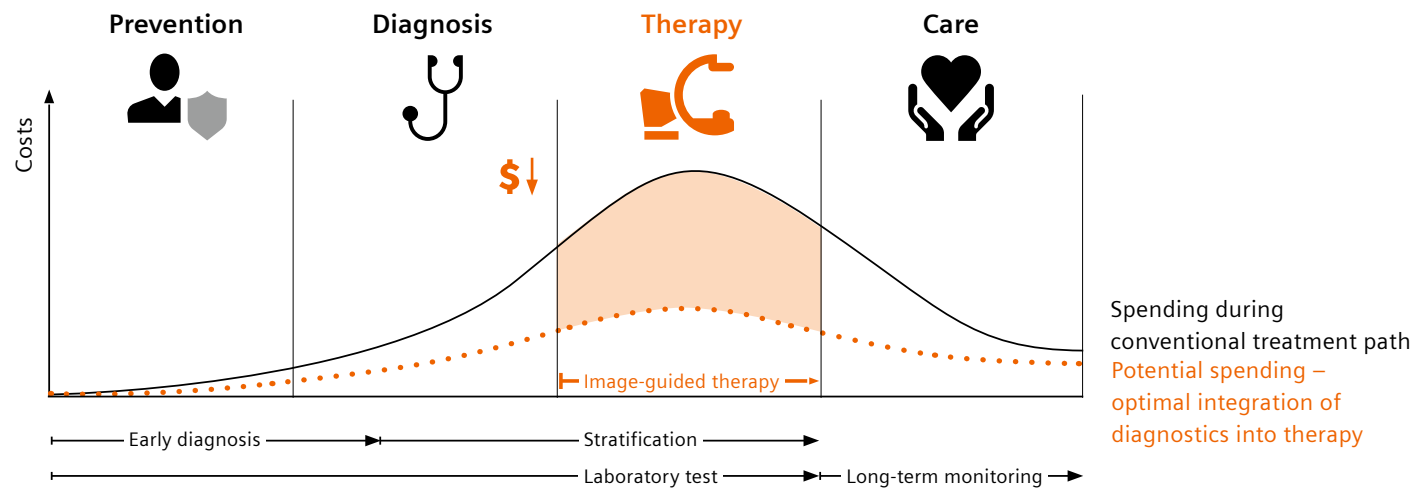


SIEMENS
Healthineers

Investing intelligently for long-term sustainability

Healthcare today faces a predicament. Simply put, costs are increasing, budgets are not. In light of declining reimbursement rates and evolving technology, it is clear that an investment such as an angiography system must be not only cost effective; ideally, it should also serve you reliably for many years to come.

Imaging is essential in therapy and can result in better patient care and lower cost



Only when they deliver correct and reliable results, medical imaging and clinical lab tests can support optimized and individualized treatment – and help lower costs.

Source: United Nations. World Population Prospects: The 2010 Revision, http://www.who.int/ageing/publications/global_health.pdf

All set for future trends?

New technical developments and techniques are constantly changing the face of care delivery. What's customary today can be outdated tomorrow. Only a flexible angiography system that can easily adapt to new ways is a future-safe investment.

Trends in Interventional Radiology



Stroke

Increase of interventional stroke treatment due to superiority of mechanical thrombectomy.



TACE

New and established embolization procedures are on the rise, ranging from, e.g., TACE to PAE.



CLI

Use of endovascular recanalizations to minimize amputations in patients with CLI.

Trends in Cardiology



Demographic changes

An older population means an increasing number of patients call for better, faster, and more effective care. Furthermore, new and more complex procedures and devices result in ever-changing workflows and advanced treatment methods.



CAD

More than 18 million CAD* procedures are performed worldwide per year with an increase of over 5%.**



Procedure mix

The procedure mix in the cath lab is getting broader: 2/3 of all cath labs are used for noncardiac procedures, and the treatment of resistant hypertension is one of the biggest challenges.

*CAD procedures include PCI and diagnostic cardiac catheterizations

**Source: DRG Medtech 360 Data Extraction: Cardiovascular Procedure Data, 2018, world figures and growth rates calculated



Artis one

Different in any ways

A proven approach to
interventional imaging

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What's different?

- 1 as30 flat detector
- 2 Artis one collimator
MEGALIX Cat Plus 2-focus tube
- 3 System stand
- 4 Artis one user interface
- 5 Artis one table
- 6 Panoramic display





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CQI/SHADE/SURF
LAO/RAO 27
CRAN/CAUD 26

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A proven approach to interventional imaging

Excellent imaging

- State-of-the-art technology
- Next-generation imaging tools
- Embrace the 3rd dimension
- Full 2.10 m head-to-toe coverage

**Artis one –
Designed around you**

Intuitive interaction

- Always knows where to go
- Intelligent controls keep your attention focused
- Large and crisp images with configurable layouts

Positive impact

- Small footprint, large returns
- Easy to understand, easy to deploy
- One for all your everyday challenges

Excellent imaging

How to ensure that you see the full picture?

-
- MEGALIX Cat Plus X-ray tube with flat emitter technology and as30 flat detector
 - Ceiling-like flexibility and 2.10 m longitudinal coverage, 1.90 m lateral
 - Static and real-time stent enhancement with ClearStent and ClearStent Live
 - CARE+CLEAR included
 - Optional 3D imaging
-

Great contrast resolution



MEGALIX Cat Plus angiography X-ray tube with flat emitter technology

The MEGALIX Cat Plus X-ray tube is already used by many satisfied customers. As the first angiography tube in the world, it introduced the unique flat emitter technology that allows a tube current of 250 mA during fluoroscopy while keeping the voltage low. This provides great contrast resolution even at the steep angulations required during cardiac procedures. To achieve these steep angulations, Artis one® comes with a redesigned conically-shaped collimator. In addition, the collimator features StraightView to always see upright images of objects that are not aligned with the table and regardless of the C-arm position. Furthermore, you have the option to equip your system with a special tube shielding to reduce potential interferences with other modalities in the cath lab.

Comfortable coverage



as30 flat detector for a broad range of examinations

Artis one comes with the as30 midsized format flat detector, based on amorphous silicon. Its active detector matrix of 29 cm x 26 cm allows enough coverage for peripheral examinations while not limiting C-arm angulations during cardiac procedures. The detector resolution of 1560 x 1420 pixels enables native 1.5K imaging and display for depiction of fine vessel or stent structures.

Uncompromised imaging also at steep angulations:
MEGALIX Cat Plus X-ray tube with slimline collimator and as30 flat detector

Excellent image quality at lowest reasonably achievable dose

CARE+CLEAR is our comprehensive portfolio of image quality and dose-saving tools – standard with Artis.

Image quality is key to successful procedures. Yet there is increasing awareness and demand for dose reductions to protect both patients and staff.

These two areas seem to conflict. With CARE+CLEAR, however, Artis one, like any other Siemens Healthineers angiography system, features a comprehensive portfolio of image quality improvement and dose-saving tools. For optimal image quality at low dose following the ALARA principle.

CARE+CLEAR supports you in making confident decisions in diagnosis and treatment while also increasing the safety of both your patients and staff.

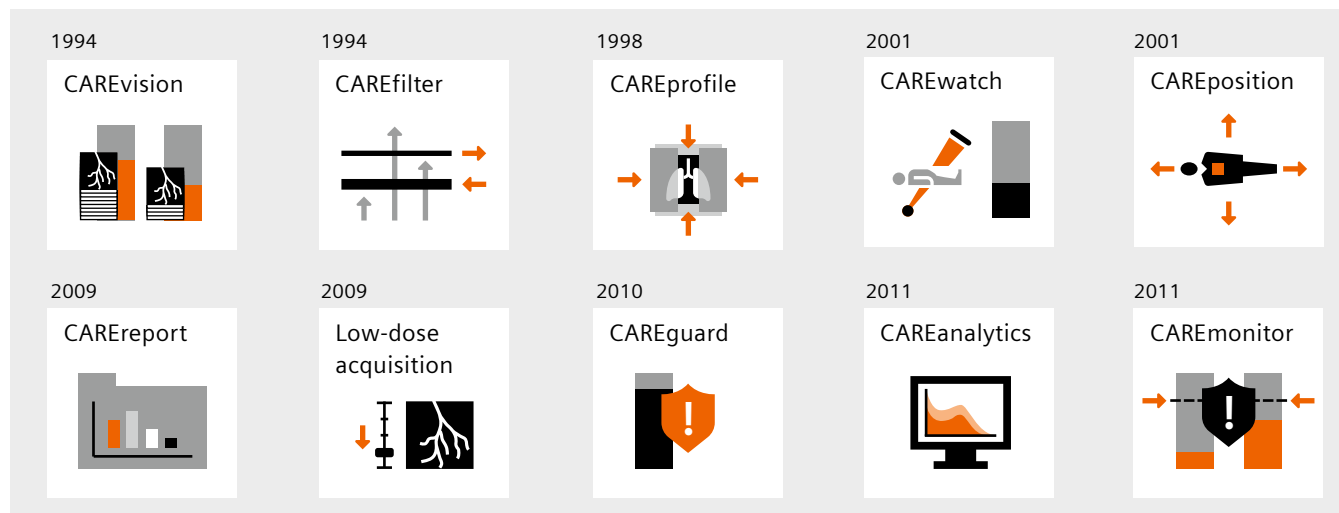
A Siemens Healthineers exclusive: CARE+CLEAR is standard with every Artis angiography system since 1994.

CARE

Siemens Healthineers has always been a pioneer in reducing radiation dose for patients and staff. The philosophy behind our Combined Applications to Reduce Exposure (CARE) is simple: They are designed to help you deliver better care at the lowest reasonably achievable dose.

CLEAR

Whether your patients are tall or short, heavy or light – you want to have optimal image quality. Our CLEAR image processing automatically enhances image quality and thus helps increase certainty during interventions.



Almost 20 years of Siemens innovations to reduce, monitor, and report dose in angiography

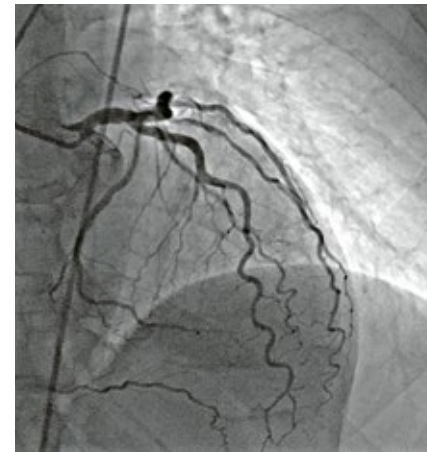
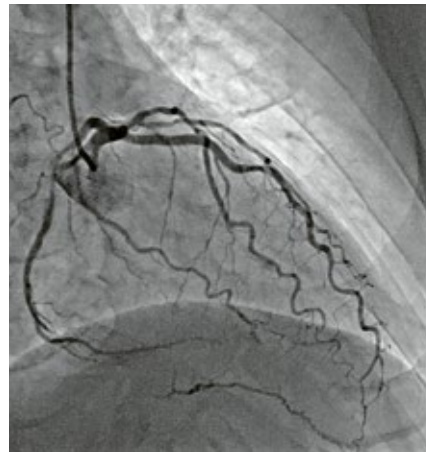
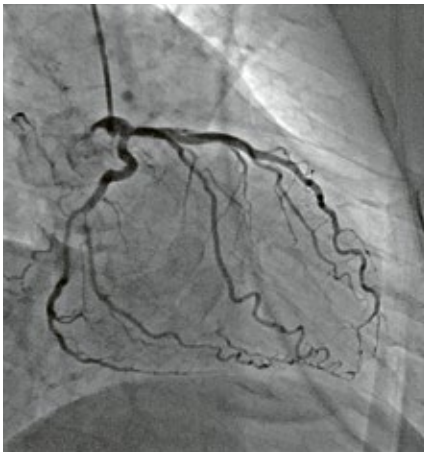
All standard projections in one sweep

Dual-axis rotational angiography with HeartSweep

Imagine being finished with a diagnostic coronary examination after only 5 seconds and using just a single contrast injection. In one run, HeartSweep covers all standard coronary diagnostic projections, allowing you to quickly assess the coronary vessels. After identifying a coronary lesion, the HeartSweep scene can be stopped at the ideal view and the C-arm can be automatically moved to the corresponding projection using the Automap feature.



HeartSweep acquires all cardiac diagnostic standard projections in a single movement



HeartSweep images of the left coronary artery showing significant stenosis in the LAD.

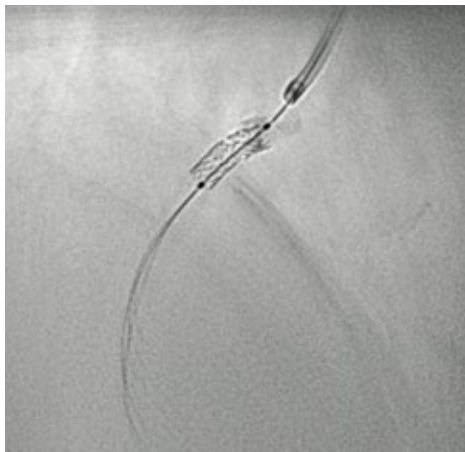
Courtesy of University Hospital Erlangen, Germany

Clear device imaging

Static stent enhancement with ClearStent

ClearStent provides support for assessing and documenting the fit of an implanted stent. It can also be used to get an overview of previously implanted stents, e.g., in the case of fracture or in-stent restenosis.

Depending on the presence of contrast agent, you can get a high-quality enhanced image of the stent or a ClearStent Dynamic view alternating between stent and contrast-filled vessel. ClearStent uses dedicated acquisitions or previously acquired scenes. The results are saved in DICOM format for review using any DICOM viewer, for instance on the physician's office PC for use during patient conversations.



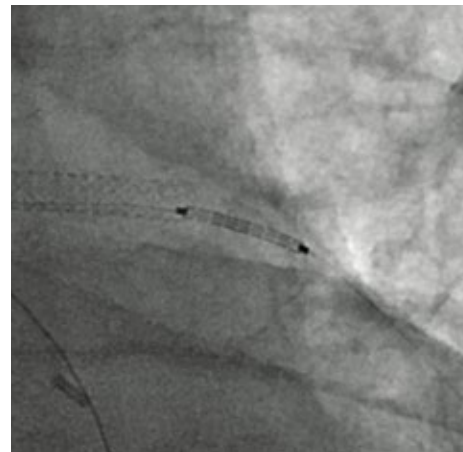
ClearStent image of stent fracture causing in-stent restenosis

Courtesy of University Hospital Erlangen, Germany

Real-time stent enhancement with ClearStent Live

With ClearStent Live, stent enhancement takes place in real time, eliminating cardiac motion in the image during an ongoing acquisition. This allows you to verify the stent position relative to cardiac anatomy or to stents deployed previously. The ClearStent Live enhanced images are displayed side by side with the acquisition, and the operator can still move the device, facilitating bifurcational stentings or long lesion treatments.

Besides supporting you to verify accurate stent positioning, ClearStent Live can help speed up procedures and lower the amount of contrast agent needed.* There is no additional workstation required for ClearStent Live and the results are saved according to the DICOM standard for external review.



ClearStent Live used in long lesion treatment to minimize stent overlap

Courtesy of University Hospital Erlangen, Germany

* This is the experience of individual users. Results may vary.

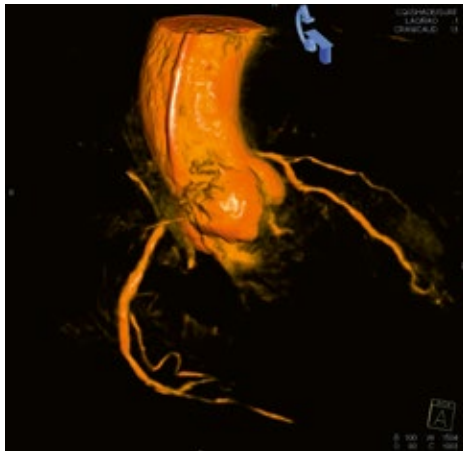
3D imaging: overview in three dimensions

Embrace the third dimension

Artis one features two different five-second protocols for acquisition of high-contrast 3D images. The first dose-saving protocol acquires 133 images suitable for larger high-contrast vessel structures. The second was optimized for quality and acquires 248 images. This can have advantages for imaging of finer vessels.

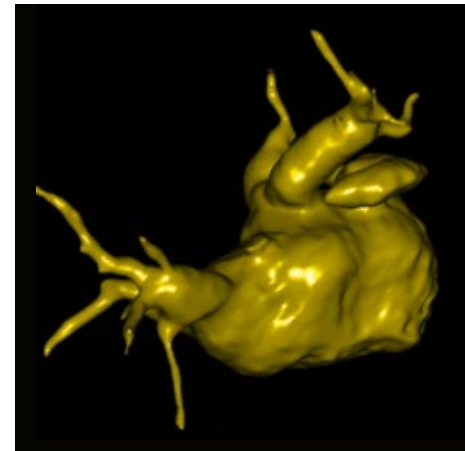
Artis one is also capable of opening and displaying 3D images from other modalities, e.g., syngo DynaCT®, multislice computed tomography, or MRI.

An automated LA segmentation allows one-click segmentation of the left atrium for EP procedures and, together with the integrated interface, automated transfer to a 3D mapping system from Abbott or Biosense Webster.



Three-dimensional image of aortic root and coronary arteries

Courtesy of University Hospital Erlangen, Germany



Three-dimensional segmentation of the left atrium

Courtesy of University of Insubria, Varese, Italy

Intuitive interaction

How to make sure to utilize your investment to the max?

-
- Ideal system positions for optimal patient access during every procedure
 - Display-driven user interface through on-screen menu and heads-up display for intuitive system operation and undistracted operator attention
 - Large, crisp images with configurable layouts in a single- or dual-display configuration
-

Optimal patient access



Motorized system positioning for optimal patient access

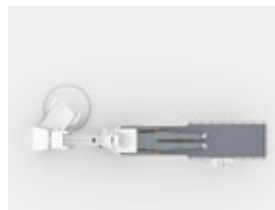
Artis one positioning around the patient is fully motorized and requires just the push of a button. This enables optimal patient access during all procedures.

For cardiac positions, the system can be positioned at the head – as needed most frequently – or on the left side if access to the patient's head is needed, for example for anesthesia or intubation.

For vascular procedures of the lower extremities, a left-side system position with a rotated table allows maximum patient coverage without table movement. And for pacemaker implantations, the system can simply be moved to the patient's right side to allow access from the left.



Park position



PCI position



TACE position



Abdominal position



CRT position

Large and crisp images

Artis one panoramic display with selectable layouts

Artis one features a 30-inch display with user-selectable layouts displaying up to three internal (Live, Reference, 3D) and four external image sources as standard. As an option, with the panoramic display, consisting of two 30" displays, you can view up to 9 additional external image sources. Alternatively, a 21" display for an extra external source, e.g. a hemodynamic system, can be added to the standard 30" display.

With these options, the Artis one also meets the needs for more complex procedures and makes it a perfect fit for a broad procedural spectrum.

The display is also home to the heads-up display, allowing you to keep constant track of the most important system parameters, such as C-arm position or image settings. The combination of the on-screen-menu and the tableside control allows intuitive interaction with the system – without the need to look down. This way, the user's attention stays where it's needed.

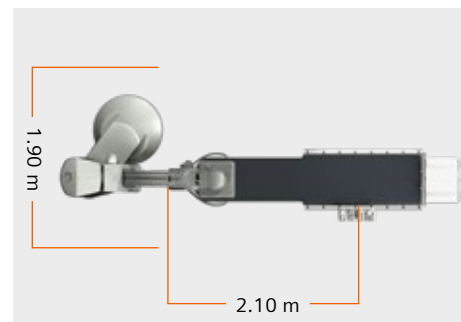


Ceiling-like movements, floor-mounted

Full head-to-toe patient coverage

Artis one can cover 2.10 m (6 ft 10 in) along and 1.90 m (6 ft 3 in) across the table – patient coverage rivaling that of a ceiling-mounted system. With motorized stand movements, this allows peripheral run-offs without the need to move the patient.

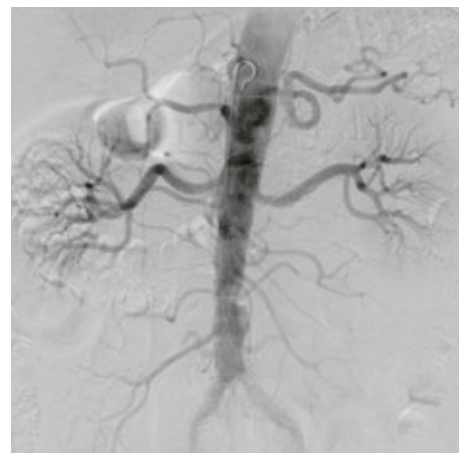
The excellent patient coverage also allows you to acquire images of objects next to the table, for instance an outstretched arm during a dialysis shunt revision, often increasing patient comfort.



Ceiling-like coverage of 2.10 m along and 1.90 m across the table on a floor-mounted system



Motorized gantry stepping for peripheral bolus chase without moving the table or patient



Bilateral angiogram of renal arteries

Courtesy of University Hospital Erlangen, Germany

Positive impact

How to become more effective?

-
- One system for all everyday challenges thanks to dedicated 2D and 3D tools
 - Small footprint of 25 sqm enables efficient room usage
 - Cover a broad procedure mix from cardiac and general vascular through to peripheral procedures
-

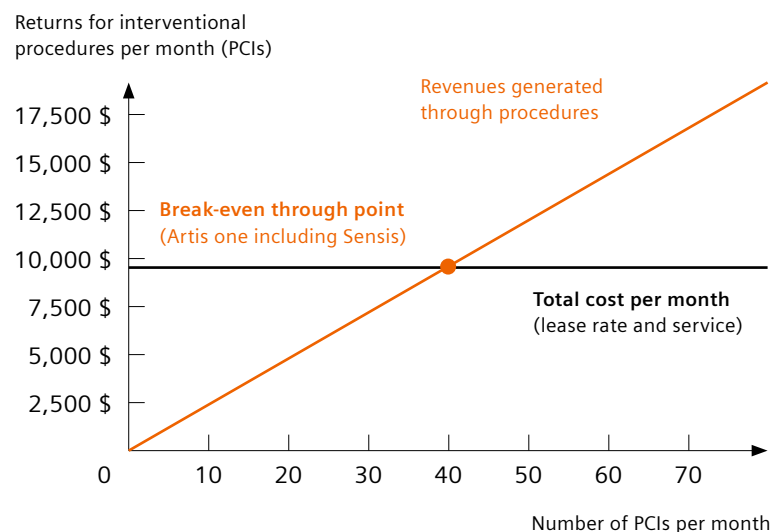
One for all everyday challenges

Business case Germany

Generate returns with only 40 PCIs a month

Artis one allows you to break even with only 2 PCIs per working day.

Calculation based on German reimbursement schemes and operating costs of Artis one including Sensis recording system and service contract (data on file).

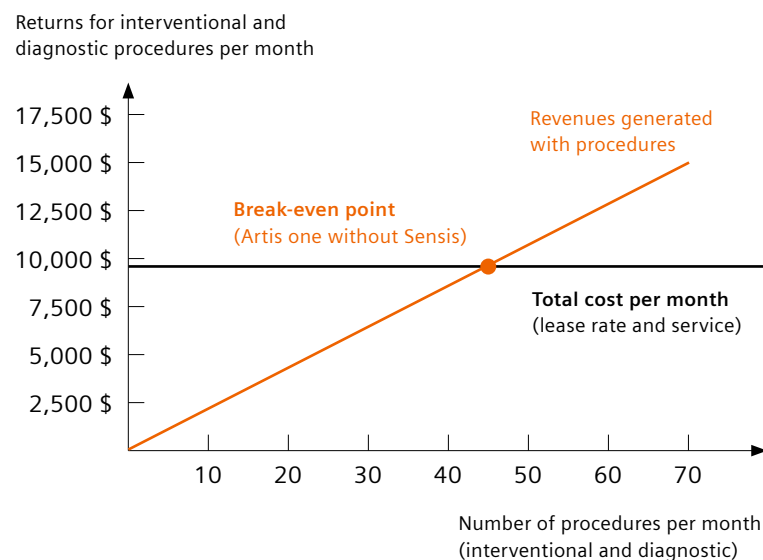


Business case India

Break even with 47 procedures a month

Artis one allows you to break even with only 13 interventional cardiology and 34 diagnostic angiography examinations a month.

Calculation based on Indian reimbursement schemes and operating costs of Artis one including service contract (data on file).



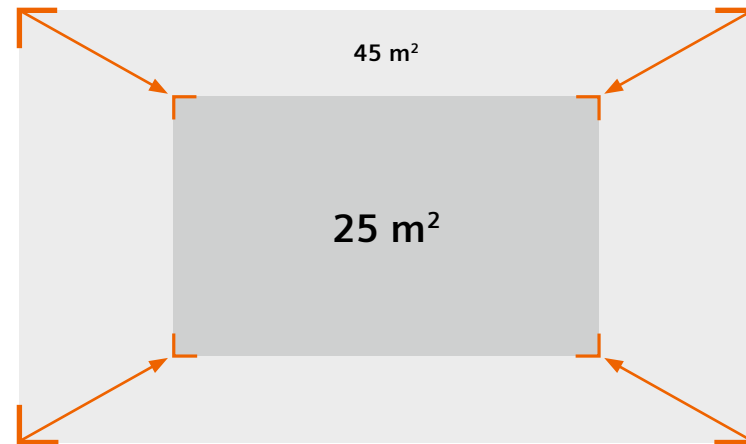
Small footprint, large returns

Only 25 square meters required

Artis one enables ceiling-like flexibility with a floor-mounted system. This means there is no need for a reinforced ceiling, and the unit can fit into rooms of only 25 m² instead of the 45 m² commonly required for a ceiling stand.

Siemens-built industry-proven components are expected to have lower failure rates resulting in significant servicing advantages*. Besides, during routine examinations, Artis one uses over 20 percent less energy than Artis zee floor.

And because hardware options that drive complexity have been reduced, the system can be installed more quickly than the Artis zee floor. During system replacements, this means the room can be used to generate revenue faster than before.



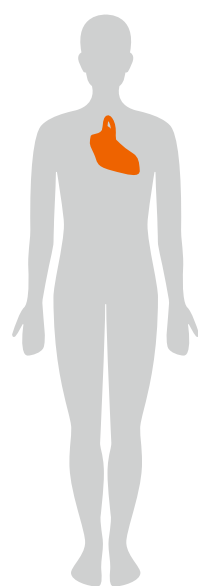
Artis one fits into rooms as small as 25 m²

* Compared with previous Artis generation

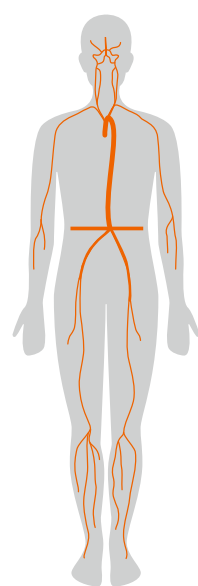
Cover a broader procedure mix

From cardiac and general vascular through to peripheral procedures

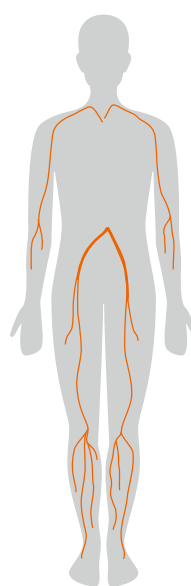
Artis one offers dedicated tools in 2D and 3D to support cardiac, general vascular, and peripheral procedures. For example, it covers the whole coronary workflow, from diagnosis and real-time image guidance to assessment of procedural outcome using ClearStent, ClearStent Live, and HeartSweep. This eases procedures with the potential to time and contrast savings.



Cardiovascular Care



General Vascular



Peripheral

3D imaging and visualization help during cardiac and vascular procedures. 1.5K imaging and ceiling-like patient coverage are beneficial features for general vascular and peripheral procedures. The flexible system positioning enable optimal patient access and even leave enough space for larger, multidisciplinary teams.

	Cardiovascular Care	General Vascular	Peripheral
ClearStent*	●		●
ClearStent Live*	●		
HeartSweep*	●		
LA segmentation with mapping system interface*	●		
Slimline collimator	●	●	●
StraightView	●	●	●
Integrated 3D*	●	●	●
as30 flat detector	●	●	●
Flexible stand positioning	●	●	●
Peristepping without table movement*			●
2.1 m longitudinal coverage			●

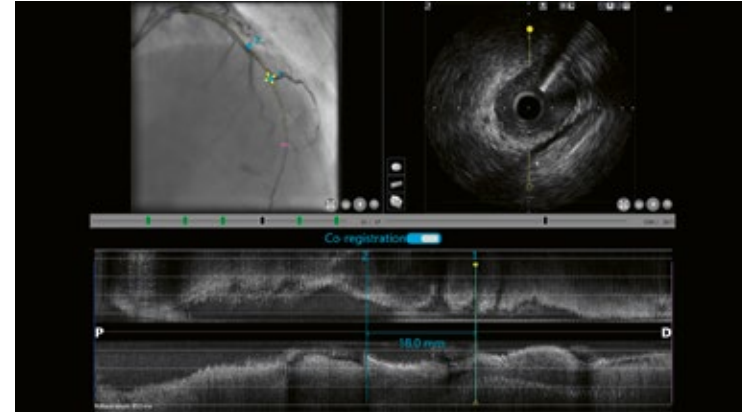
*Option

Additional products and services



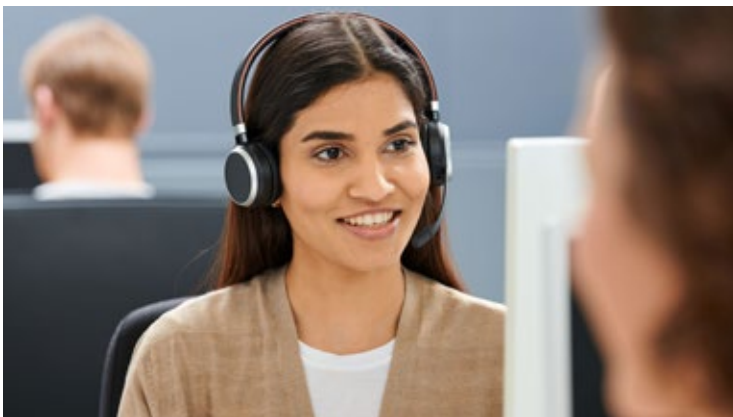
Sensis Vibe

Cath labs are busy places where many things are happening at once. Even if a procedure is routine, all moves need to be synchronized, and the entire team has to be on the same wavelength. Documenting the procedure must blend into this flow. Sensis Vibe® is the vital core where all events, decisions, measurements, and data from your procedures are captured. It reduces administrative effort and standardizes documentation and reporting across interventional entities. Sensis Vibe intuitively blends into the rhythm of the interventional floor and tunes up your workflow efficiency.



Caas IV-LINQ

This allows real-time co-registration between angiography and IVUS/OCT for a more detailed view of the lesion and its exact location in the coronary tree. Co-registration allows to perform an accurate assessment for precise stent placement. In addition, diameter and area measurements in cross-sectional view of IVUS and OCT can be performed.



Advanced system support

Artis one can be connected via our fast, secure and powerful data link, Smart Remote Service (SRS), to our experts, who provide you with proactive and interactive services that support you in your daily routine and bring speed to your running operations.



STARSystem*

STARBoard – Armboard for radial access

Crafted in carbon fibre for superior strength, radiolucency and durability, the STARBoard is extremely light weight and compact. The unique, one-piece, design makes it easy for nursing staff to handle and takes up minimal storage space.

STARTable

STARTable not only provides clinicians with an adjustable work surface, the vertical shield also reduces X-ray scatter at neck height by an additional 80%

*STARSystem is manufactured by and is a registered trademark of Adept Medical. Claims have not been verified by Siemens Healthineers.

Technical specifications

Installation

- Floor-mounted system with ceiling-like flexibility
-

C-arm

- Highly flexible and quick positioning
 - Single joystick for patient-angle-oriented C-arm and detector movements
 - Integrated computerized collision protection
 - C-arm depth 92.5 cm (36.4")
 - Stand rotation motorized programmable positioning
-

Detector

- Amorphous silicon flat detector with 39 cm diagonal entrance plane
 - Imaging size 29 cm x 26 cm
 - Image display matrix 1560 x 1420 pixels
-

X-ray tube

- MEGALIX Cat Plus tube with flat emitter technology
 - Max. exposure voltage (IEC 60613) 125 kV
 - Focal spot (0.4, 0.8)
-

Operating modes

- Digital pulsed fluoroscopy, at 7.5, 10, 15, 30 p/s
 - Acquisition at 7.5, 10, 15 and 30 f/s; acquisition, display and storage in original matrix, 12-bit
 - High-speed acquisition at 10/15/30 f/s for DR and DSA
-

Technologies

- CARE+CLEAR for dose reduction and image quality
 - ClearStent and ClearStent Live
 - HeartSweep – angulations required for coronary diagnostics in one single sweep
-

Display Set-up

- Single 30" display (up to three internal and four external image sources)
 - Single 30" display + additional 21" display for hemodynamics
 - Panoramic display: Two 30" displays (up to nine additional external image sources)
-

Integrated 3D imaging

- Two high-contrast acquisition modes
-

Intelligent controls

- Intuitive heads-up display combined with tactile system operation
-

Why Siemens Healthineers

At Siemens Healthineers, our purpose is to enable healthcare providers to increase value by empowering them on their journey towards expanding precision medicine, transforming care delivery, and improving patient experience, all enabled by digitalizing healthcare.

An estimated 5 million patients globally everyday benefit from our innovative technologies and services in the areas of diagnostic and therapeutic imaging, laboratory diagnostics and molecular medicine, as well as digital health and enterprise services.

We are a leading medical technology company with over 170 years of experience and 18,000 patents globally. With more than 48,000 dedicated colleagues in 75 countries, we will continue to innovate and shape the future of healthcare.



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