



Request No.: EQR2023-003
Date Received: _____
Received By: tml

State Health Planning and Development Agency
100 NORTH UNION STREET, SUITE 870, MONTGOMERY, ALABAMA 36104

RECEIVED

Jul 06 2023

STATE HEALTH PLANNING AND
DEVELOPMENT AGENCY

**REQUEST FOR DETERMINATION OF EXEMPTION STATUS
FOR REPLACEMENT OF EXISTING EQUIPMENT**

A filing fee in the amount of \$1,285.62 ^{tml} has been submitted with this application.

I. REQUESTER IDENTIFICATION (Check One) HOSPITAL (XX) NURSING HOME (____)
OTHER (____) (Specify) _____

A. East Alabama Medical Center

Name of Requester

<u>2000 Pepperell Parkway</u>	<u>Opelika</u>	<u>Lee</u>
<i>Address</i>	<i>City</i>	<i>County</i>
<u>Alabama</u>	<u>36801</u>	<u>(334) 528-1310</u>
<i>State</i>	<i>Zip Code</i>	<i>Phone Number</i>

B.

Name of Facility/Organization (if different from A)

<u>Address</u>	<u>City</u>	<u>County</u>
<u>State</u>	<u>Zip Code</u>	<u>Phone Number</u>

C. The East Alabama Health Care Authority

Name of Legal Owner (if different from A or B)

<u>2000 Pepperell Parkway</u>	<u>Opelika</u>	<u>Lee</u>
<i>Address</i>	<i>City</i>	<i>County</i>
<u>Alabama</u>	<u>36801</u>	<u>(334) 749-3411</u>
<i>State</i>	<i>Zip Code</i>	<i>Phone Number</i>

D. Laura Grill, President/CEO

Name and Title of Person Representing Proposal and With Whom SHPDA Should Communicate

<u>2000 Pepperell Parkway</u>	<u>Opelika</u>	<u>Lee</u>
<i>Address</i>	<i>City</i>	<i>County</i>
<u>Alabama</u>	<u>36801</u>	<u>(334) 528-1310</u>
<i>State</i>	<i>Zip Code</i>	<i>Phone Number</i>

DESCRIPTION OF EQUIPMENT TO BE REPLACED		DESCRIPTION OF PROPOSED NEW EQUIPMENT
A. Manufacturer:		
Siemens Medical Solutions USA, Inc.		Siemens Medical Solutions USA, Inc.
B. Serial Number:		
35410		n/a
C. Model:		
Axiom		Artis zee floor 14445994
D. Name of Equipment:		
Artis dFC		Artis zee floor Combo Radiology/Cardiology

- E. Fair market value of equipment to be replaced at present:** \$10,000
- E. Cost of equipment (include written price quote):** \$642,808.00 (*includes training*)
- F. Describe use of current equipment:**
The current equipment has been used to perform diagnostic and interventional cardiac catheterizations and radiology procedures on adult patients.
- G. Describe use of proposed equipment:**
The proposed equipment will be used to perform diagnostic and interventional cardiac catheterizations and radiology procedures on adult patients.
- H. List any attachments or additional procedures associated with this new equipment not performed by old equipment:**
The proposed equipment will not be able to perform any additional procedures from what the current equipment can perform.
- H. Can any procedures be performed with the proposed new equipment that cannot be performed with the replacement equipment? If yes, describe in detail:**
The proposed equipment will not be able to perform any additional procedures from what the current equipment can perform.
- I. Location of existing equipment (include room number):**
The existing equipment has been located on the first floor of East Alabama Medical Center's outpatient building. More specifically, the equipment has been in Room #4 in the cardiology department.
- J. List specialty trained or qualified personnel necessary for operation of equipment:**
The current cardiovascular and radiology technicians, the RNs that work in the cath lab, and the cardiologists are all trained to operate this equipment.
- K. What use will be made of old equipment when replaced?
(Trade in on new equipment, used as back up, save for parts, etc.)**
The old equipment will be a trade in on the new equipment.
- L. List job titles of any additional personnel that will be required to operate the new equipment.**
Not applicable.

M. Describe any renovation or new construction that will be necessary for the installation of the replacement equipment and cost.

For the installation of the replacement equipment, minor alterations will need to occur. These alterations include replacing and adding new cabinetry in the room, replacing the floor, replacing the ceiling, electrical work, and some rework of the HVAC in Room #4. The renovation cost should not exceed \$300,000.

N. Describe any new annual operating cost associated with this project such as maintenance contracts, salaries of new employees hired due to equipment, etc.

There should not be any new annual operating cost associated with this replacement.

III. COST

- A. Equipment Costs \$ 642,808.00
(Costs have to be supported by price quote on manufacturer's stationery or letterhead.) Cost of equipment only; do not list lease cost.
- B. Less trade-in of old equipment 0.00
- C. Total cost of equipment \$ 642,808.00

Calculation of fee for this determination:

Multiply dollar amount in COST section (C. Total Cost of Equipment) by one percent (1%) (the application fee for a Certificate of Need).

- Non-Rural Hospitals:
Twenty percent (20%) of the calculation above.
- Rural Hospitals:
Twenty-five percent (25%) of the calculation above.

Include manufacturer's literature on old equipment, if available, and on the new equipment.

Include any other information pertinent to the determination.

The Executive Director may request any other information which is relevant to his decision.

IV. CERTIFICATION

I certify that the information provided herein is true and correct and that there is no additional information which would be pertinent to this application which has not been provided. Further, I understand that any misrepresentation on this application or failure to include relevant information may void any favorable determination secured by such misrepresentation or omission.



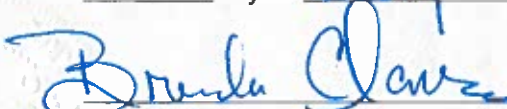
Signature of Applicant

Laura Grill, President/CEO

*Applicant's Name and Title
(Type or Print)*

Sworn to and subscribed before me this

6th day of July, 2023.



Notary Public (affix seal on original)

My commission Expires

4



Brenda Clarke
NOTARY PUBLIC
Alabama State At Large
My Commission Expires
January 13, 2026

Siemens Medical Solutions USA, Inc.
40 Liberty Boulevard, Malvern, PA 19355

SIEMENS REPRESENTATIVE
Rob Harrison
robert.harrison@siemens-healthineers.com

Customer Number: 0000005937

Date: 07/05/2023

THE EAST ALABAMA HEALTHCARE AUTH
2000 PEPPERELL PKWY
OPELIKA, AL 36801

Siemens Medical Solutions USA, Inc. is pleased to submit the following quotation for the products and services described herein at the stated prices and terms, subject to your acceptance of the terms and conditions on the face and back hereof, and on any attachment hereto.

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Software License Schedule	17
Trade-In Equipment Requirements	20
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Contract Total: \$ 642,808
(total does not include any Optional or Alternate components which may be selected)

Proposal valid until 09/30/2023

Estimated Delivery Date: 03/2024

Estimated delivery date is subject to change based upon factory lead times, acceptance date of this quote, customer site readiness, and other factors. A Siemens representative will contact you regarding the final delivery date.

The parties hereby expressly agree that the Premier Healthcare Alliance, L.P. Group Purchasing Agreement—Imaging Products and Services effective October 1, 2015 (Contract Number(s) PP-IM272) and Siemens Terms and Conditions of Sale and Software License Schedule attached hereto shall govern the purchase of Products pursuant to this Quotation.

This offer is only valid if a firm, non-contingent order is placed with Siemens and a signed POS contract must accompany the equipment order.

This proposal includes the trade-in of equipment referenced in Trade Sheet Project # 2019-1044.

Factory recommended applications training has been modified at Purchaser's request. Purchaser takes responsibility for the system's proper use and application. The Customer will be required to purchase any unordered training classes that have been options and/or removed at the purchaser's request, should the need arise.

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40 Liberty Boulevard, Malvern, PA 19355

SIEMENS REPRESENTATIVE
Rob Harrison
robert.harrison@siemens-healthineers.com

Accepted and Agreed to by:

Siemens Medical Solutions USA Inc.

THE EAST ALABAMA HEALTHCARE AUTH

By (sign): _____

By (sign): _____

Name: Rob Harrison

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

***By signing below, signor certifies that no modifications or additions have been made to the Quotation.
Any such modifications or additions will be void.***

By (Sign): _____

Quote Nr:	CPQ-571503 Rev. 1
Terms of Payment:	00% Down, 80% Delivery, 20% Installation Free On Board: Destination
Purchasing Agreement:	PREMIER PURCHASING PARTNERS LP PREMIER PURCHASING PARTNERS LP terms and conditions apply to Quote Nr CPQ-571503 Customer certifies, and Siemens relies upon such certification, that : (a) PREMIER PP-IM-272 IR-CV is the sole GPO for the purchases described in this Quotation, and (b) the person signing this Quotation is fully authorized under the Customer's policies to choose and indicate for Customer such appropriate GPO.

Artis zee floor Combo Rad./Card.

All items listed below are included for this system:

Qty	Part No.	Item Description	Extended Price
1	14445994	Artis zee floor Combo Rad./Card. Artis zee floor for radiology and cardiology now features PURE®. PURE adds smooth interaction to Siemens' smart technologies. It is designed to boost productivity and enhance outcomes for certain clinical applications while increasing image quality and reducing dose. The floor-mounted C-arm offers highly flexible positioning. The motorized rotation of the C-arm from a head-end position to a lateral position allows for free head access and full patient coverage. The patient table is fitted with a freely movable patient positioning tabletop. The Megalix Cat Plus X-ray tube with flat emitter technology enables small focus sizes and strong, short X-ray pulses. With our new Artis version we now deliver: as40HDR* flat detector instead of as40 flat detector. The digital high-resolution dynamic flat detector with integrated removable grid is especially designed to fulfill the requirements of interventional imaging. *Disclaimer: The products/features in combination with Artis zee (here mentioned) are not commercially available in all countries. Due to regulatory reasons their future availability cannot be guaranteed. Please contact your local Siemens organization for further details. Frame rates up to 30 f/s and functions for displaying and storing ECG curves are included. Digital acquisition technology and digital subtraction angiography with up to 7.5 f/s in 1k/12-bit matrix are available. With new computer hardware and smart algorithms CLEAR MAX offers maximized image quality. The complete CARE+CLEAR package offers optimal image quality at the lowest reasonable dose.	\$ 444,092

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Qty	Part No.	Item Description	Extended Price
		Live and reference images are displayed on two 19" flat screens in the exam room. In the control room live images are displayed on a third screen.	
1	14432949	MULTISPACE.F Manual stand rotation for additional work positions.	\$ 2,069
1	14432948	Automap Automatic stand positioning depending on the selected reference image and automatic reference image selection depending on the stand positioning.	\$ 1,046
1	14432897	Head-end table tilting Motorized tilt and stepping of the patient table in longitudinal direction for electrophysiological or peripheral examinations, for example, as well as for stabilizing a patient. Includes a power-assisted tabletop control module.	\$ 7,088
		Notes: Table tilting reduces the maximum patient weight to 200 kg. As before however, it is possible to install up to 40 kg of additional accessories.	
		Note: It is mandatory to provide UPS back up with this table option in order to comply with IEC 60601-2-43 CL. 201.15.101. Reason: In the event of power failure a neutral table position suitable for CPR must be reachable within 15 seconds. A suitable UPS from Siemens as required must be included in your order unless an existing / planned UPS provision for your installation site will satisfy the requirement.	
1	14446034	Shielding kit, as40 Special Kit for shielding of electromagnetic fields (180 Hz) of the X-ray tube to avoid interference with the EP Measuring system, as well as for shielding of the flat detector.	\$ 1,298
1	14432947	Fluoro Loop Storage and review of dynamic fluoroscopic sequences. This saves an additional acquisition and helps to reduce dose. The maximum storable fluoroscopic time is limited by the maximum DICOM file size of 4 Gbyte.	\$ 6,936
1	14434169	CLEARstent Live CLEARstent Live is a real-time stent enhancement tool and provides a stabilized view of the moving stent which is displayed on the Assist/Reference Monitor. CLEARstent Live allows real-time verification of stent positioning while moving the device. This enables the physician to precisely position the stent in relation to the anatomy of the heart and stents that already have been implanted. Contains both CLEARstent Live license and CLEARstent license. The CLEARstent imaging function allows an improved display of fine stent structures, i.e. the grid of inflated stents. CLEARstent is a post-processed stent enhancement and may be used also on previously acquired images. Using the CLEARstent function special reference images from any scene or fluoroscopy scene acquired natively will be generated. Composite images are created by averaging several frames of a scene and by considering the alignment of balloon markers. If an ECG signal is available, the heart phase will also be considered.	\$ 7,313
1	14432915	2K acquisition Acquisition and storage of single images and series with a resolution of up to 4.76 megapixels (2480 x 1920) at up to 7.5 f/s.	\$ 4,875
1	14432925	The 2k acquisition is valid for DR, DSA, 3D acquisitions and PERIVISION, and affects full format, Zoom 1, and Zoom 2. PERISTEPPING / PERIVISION Motorized stepping for real-time bolus chasing. C-arm stepping with ARTIS pheno and ceiling mounted systems, table stepping with floor mounted and biplane systems.	\$ 17,076

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Qty	Part No.	Item Description	Extended Price
1	14432943	Peripheral digital angiography with stepping and online subtraction display. Vascular analysis Vessel analysis with determination of degree of stenosis, distance measurement and calibration.	\$ 4,072
1	14432953	Lower body radiation protection This radiation shield protects the user from scattered radiation when standing at the table side. It can be attached to the accessory rails either on the right or on the left side of the patient positioning table. It provides the user an additional accessory rail. It includes a basic unit (l x w) - 71.5 cm x 75 cm / 28.2" x 29.5"; 7.7 kg / 16.98 lbs One lower body radiation protection pivot swivel element (l x w): - 77 cm x 48 cm / 30.3" x 18.9"; 3.8 kg / 8.4 lbs Three clip-on units (l x h) - 57 cm / 22.4" x 33 cm / 12.99"; 2.2 kg / 4.85 lbs - 27 cm / 10.6" x 33cm / 12.99"; 0.9 kg / 1.98 lbs - 27 cm / 10.6" x 25cm / 9.8"; 1 kg / 2.2 lbs with a lead of 0.5 mm / 0.02" Pb The maximum weight of the accessory rails is 40 kg (88.2 lbs)	\$ 3,720
1	14440411	Intended only for use with Artis / ARTIS tables. Intercom - Comfort Intercom system for communication between examination room and control room. It includes: - A microphone with a control box for the control room. - A microphone with an adaptive acoustic filter for background noise suppression for the examination room. - A footswitch for conversation selection for the examination room.	\$ 730
1	14440465	Tabletop extension Provides additional arm support for large / obese patients. Slides underneath the patient mattress and is held in place by the patient's weight. Patient arms can be fixed with Velcro straps. The kit includes a board made of radiolucent carbon fiber material, four arm pads (two pairs with two different heights) made of washable plastic foam material and Velcro straps of two different lengths. The maximum weight per side is 20 kg (44.09 lbs.). Length: 45 cm / 17.7" Width: 85 cm / 33.5" Weight: 2.3 kg / 5.07 lbs. Dimension thick cushion: 10 cm x 34.5 cm x 7 cm / 3.9" x 13.58" x 2.76" (l x w x h) Weight thick cushion: 0.25 kg / 0.55 lbs. Dimension thin cushion: 10 cm x 34.5 cm x 4 cm / 3.9" x 13.58" x 1.57" (l x w x h) Weight thin cushion: 0.15 kg / 0.33 lbs. Intended only for use with Artis / ARTIS tables.	\$ 2,712

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Qty	Part No.	Item Description	Extended Price
1	14440474	Body strap set Can be used to secure patient to the patient table and to compress patient anatomy. It consists of two belts with Velcro straps (l x w: 185 cm x 10 cm / 72.8" x 3.94"). Intended only for use with Artis / ARTIS tables.	\$ 66
1	14434205	Secondary operation on table Second control at tableside.	\$ 279
1	14434208	Table secondary operation Second control module to remote-control the patient table in the examination room. Table control within the degrees of freedom supported by the motor drive. Release knob in connection with the standard table for the table with stepping. Joystick in connection with the operating table or the table with tilting.	\$ 905
1	14432950	DICOM RIS-Modality Worklist Import of patient/examination data from an external RIS/HIS patient management system with DICOM MWL (Modality Worklist).	\$ 621
1	14432951	DICOM MPPS Feedback of examination status via DICOM MPPS (Modality Performed Procedure Step) to an external RIS/HIS patient management system. Data such as the dose-area product can be transferred to the RIS.	\$ 4,097
1	14434232	Injector conn. in the control room Interface for controlling the contrast medium injector in the control room. Injectors can be offered by Siemens Healthcare Accessory Solutions	\$ 2,289
1	14434143	wide TT thick mat. ins. of std. TT Patient positioning tabletop made of carbon fiber in wide, straight design for interventional, radiological examinations. The tabletop is straight all the way to the head area. Matching the wide patient positioning tabletop, special-foam mattress, 7 cm, made of open-pore polyurethane material and a latex-free cover. Note: The wide patient positioning tabletop with the thick mattress replaces the narrow or wide tabletop with the thin mattress described in the basic configuration. The head-end holder, handles, and shoulder supports (if part of the basic configuration) are eliminated because they can only be used with the narrow tabletop.	\$ 0
1	14440447	Acc. rail module, wide tabletop This is an attachable module with accessory rails for placing the control modules near the patient's abdomen. It includes a carbon fiber module with accessory rails (45 cm / 17.7") attached to the right and left slides over the outer edges of the patient positioning tabletop. Length: 48 cm (18.9 ") Width (without accessory rails): 55 cm / 21.65" Width (with accessory rails): 61.8 cm / 24.33" Weight: 5.9 kg (13 lbs.) Maximum weight: 40 kg (88.19 lbs.).	\$ 2,056
1	14440448	Intended only for use with Artis/ ARTIS wide tabletop. Bendable anesthesia screen This flexible anesthesia screen holder serves as a holder for sterile drape (anesthesia screen) placed between the head and abdomen of the patient. It includes one anesthetic arm and brackets for mounting it onto the accessory rails.	\$ 379

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Qty	Part No.	Item Description	Extended Price
1	14434176	<p>It requires the presence of accessory rail modules to which it will be mounted.</p> <p>Large Display video controller 18</p> <p>Large Display Video Controller 18 is the middle of three different video controller sizes. A maximum of 18 video signals can be connected and displayed simultaneously on the Large Display.</p> <p>The Large Display video controller 18 receives various internal and external video signals for presentation to scale on the Large Display.</p> <p>Up to 18 external and internal video sources can be connected (max. 14 DVI-D and 4 analog (VGA) channels).</p>	\$ 24,336
1	14440573	<p>Add 19" display for LD (rear mount)</p> <p>19" TFT display including 36 m cable with DVI-D connection and transceiver for display installation on the rear of the DCS in combination with the Large Display.</p>	\$ 4,015
1	14434174	<p>1st Large Display w/o holder</p> <p>Preparation for a primary large color flat screen display installed on a third-party display holder for the examination room.</p> <p>Note: For safety reasons, third-party display holders in combination with large display must meet the following criteria:</p> <p>To prevent injuring the patient when positioning the display holder above the table, it has to be possible to manually move the third-party display holder vertically with a force of up to 85 N.</p> <p>In the event that the angiography system comes into contact with the third-party display holder, it must be possible to push away the holder in a horizontal direction with a force less than 50 N. Otherwise, there is a risk of crush injury to persons or material damage.</p> <p>Please note that components supplied by Siemens (displays, cables) can be installed on an existing third-party display holder only by the manufacturer of that holder.</p> <p>Note: If a large display is selected, the Artis basic configuration includes a connection kit for the large display instead of the displays for the examination room.</p>	\$ 39,343
1	14443012	<p>The type of large display can be chosen with a separate position.</p> <p>LD High Contrast panel size 55"</p> <p>Large color flat screen display (including cables) for the examination room, with a panel diagonal of 55". This large display version provides an excellent clinical image quality due to its new IPS panel technology.</p>	\$ 0
1	14465217	<p>Large Display diagn. protection</p> <p>55" laminated glass protective screen for the monitor panel.</p>	\$ 4,940
1	EPW935515UPS	<p>Eaton Powerware 9355 15 kVA UPS</p> <p>Includes UPS, battery, maintenance bypass panel, and one year on-site parts and labor coverage (24x7) by Eaton Powerware. This UPS is recommended when protection and uninterruptible power is required for the Artis' C-arm and table. Emergency fluoroscopy is not available with this UPS. If emergency fluoroscopy is required, the 9390 - 160 kVA UPS is recommended for the full system. One UPS per lab.</p>	\$ 23,816
1	AXA_RIG_ZEES P_STD	<p>Additional seismic brackets are required to make this system OSHPD approved.</p> <p>Standard Rigging zee SP</p>	\$ 14,040
4	AXA_ADD_8	Additional onsite training 8 hours	\$ 15,140

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Qty	Part No.	Item Description	Extended Price
		Up to (8) hours of on-site clinical education training, scheduled consecutively (Monday – Friday) during standard business hours for a maximum of (4) imaging professionals. Training will cover agenda items on the ASRT approved checklist if applicable. This educational offering must be completed (12) months from install end date. If training is not completed within the applicable time period, Siemens obligation to provide the training will expire without refund.	
1	GEL1040136601 278	Black anti-fatigue mat 36x60 Black NewLife EcoPro anti-fatigue mat (36 inches x 60 inches), 3/4 inch polyurethane foam, fluid and dirt resistant with anti-microbial properties, matte textured surface.	\$ 260
		The ultimate employee benefit for workers who stand, are ergonomically designed to provide the perfect balance of premium comfort and optimal support. Proprietary Cellulon®Polyurethane Technology stands up to the tough demands of commercial environments while providing lasting comfort that won't bottom out over time. This eco-friendly line of anti-fatigue mats is certified by the National Floor Safety Institute for its high traction bottom surface.	
1	AXA_ADDL_RIG GING	Additional Rigging AXA \$3,200	\$ 3,200
1	AXA_TRADE_IN _ALLOW	Trade in Artis dFC, project #2019-1044, deinstall/expire date 11/2023 (\$0)	\$ 0
1	AXA_O_SINGLE _PLANE	Elevate O Single Plane	\$ 0
1	AXA_ELVOFCM P_DEINS	Elevate O Deinstallation Ceiling-Flr-MP	\$ 15,600
1	AXA_ELVOFCM P_DEOFF	Elevate O Deinstal Ceiling-Flr-MP Offset	- \$ 15,600
System Total			\$ 642,808

SIEMENS

Artis zee with PURE[®]

Tackle every challenge

siemens.com/artis-zee

Artis with
PURE[®]





Ready for whatever comes your way



Every imaging system is an investment in the future. We believe that the best systems are those that grow with your needs. Systems that expand your possibilities now – and in the future. We, therefore, innovate with sustainability in mind. This is why Artis zee is designed for versatility and flexibility. In line with the growing demand in angiography, the system supports you in meeting all your challenges. And it allows you to upgrade the system as your requirements evolve.

Artis zee is a proven and reliable system that delivers optimal image quality at the lowest dose, enabling you to optimize your procedure mix and invest with confidence. It is equipped with industry-leading imaging technology, unique dose management tools, and an extensive application portfolio.

Both for routine and complex procedures, Artis zee gives you the flexibility and confidence you need to tackle an increasingly diverse case mix. It supports you in making the right decisions for individual patients and allows you to grow with future developments. Simply put, it is a system that prepares you for whatever comes your way.

Artis zee. Tackle every challenge.

Deliver optimal image quality

Regardless of the kind of patient you treat, regardless of procedure, Artis zee helps you address all clinical challenges with excellent image quality at lowest dose.

Procedures in interventional angiography are becoming increasingly diverse and complex. In order to provide optimal care, optimal image quality is more important than ever.

It is essential that your system not only prepares you for a broad variety of patients and clinical challenges but also offers dedicated features for the ideal balance between image quality and dose. To this end, the Artis zee system supports you with automated dose management in combination with technology that delivers outstanding image quality.

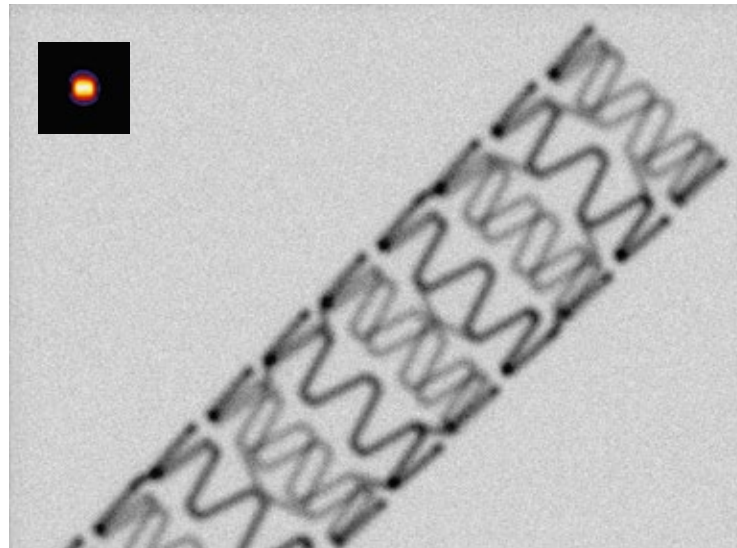
You profit from diagnostic confidence and excellent image quality both for everyday use and for complex cases. Industry-leading technology and unique dose management tools prepare you always to deliver optimal images – and tackle all challenges.

Technology for optimal image quality

It all starts with the tube

Image quality starts with the X-ray tube. This is why the **MEGALIX Cat Plus** tube has been designed to combine durability and power to deliver sharp images no matter what. With up to 40% greater fluoro power and higher current, it is best equipped for larger patients and steeper angles.

The unique **flat emitter technology**, which the MEGALIX Cat Plus tube provides on the small focus, gives you sharper images due to a smaller focal spot. Its quadratic shape makes it possible to obtain sharper images in all directions – for enhanced image quality even in challenging situations.

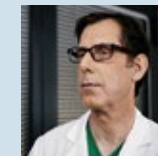


Tackle every challenge ...

“We are performing increasingly complex procedures: Patients are getting older, and the guidelines allow us to perform more complex procedures. So it’s important to have the right software to ensure that such complex cases can be properly treated with suitably high image quality.”

... with Artis zee

“With the Artis zee, image quality is truly outstanding. It’s improved again significantly. The radiation dose is also considerably lower.”



Prof. Matthias Pauschinger, MD
Medical Director of Cardiology,
Nuremberg General Hospital,
Germany

...and applications to take it further

Reduce dose but still maintain image quality

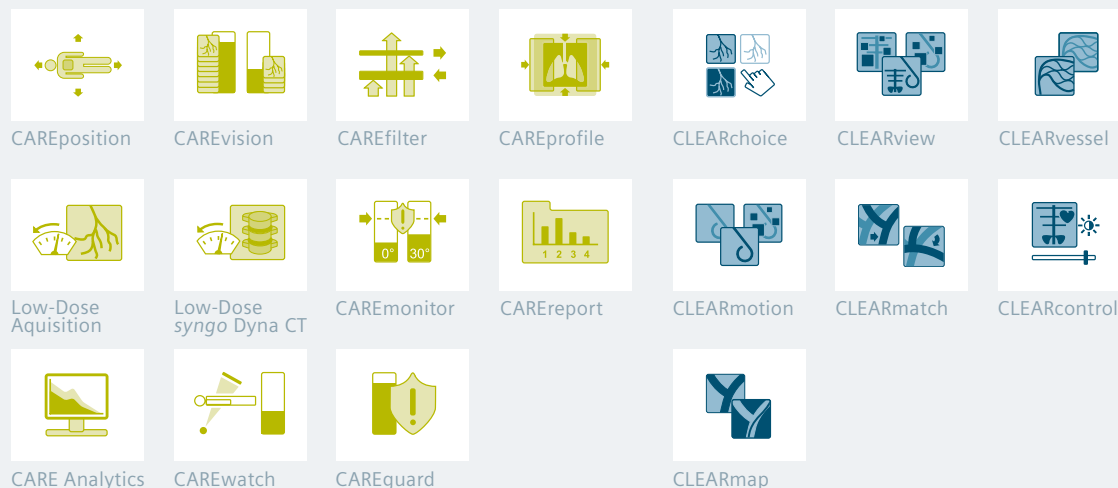
Every Artis system comes with a standard comprehensive portfolio of applications for dose saving and image quality enhancements: Siemens' Combined Applications to Reduce Exposure (CARE) and CLEAR. This continues Siemens' strong legacy of developing technologies that allow users to reduce dose without compromising image quality.

CARE applications are designed to help you deliver better care at the lowest possible dose, thus reducing exposure both to patients and staff. CAREposition, for example, avoids fluoroscopy during repositioning, and CAREvision reduces dose by adapting the frame rate. In addition, CARE features let you monitor radiation during procedures and easily compile structured dose reports.

CLEAR functions automatically enhance image quality – during acquisition and processing. For example, CLEARcontrol automatically enhances image brightness, and CLEARview reduces noise in low-dose images. Whether you want to optimize contrast or sharpness, or customize the image according to your preferences, the CLEAR portfolio helps you achieve optimal image quality to increase certainty during interventions.

“Within the last 10 years, Siemens has reduced the detector entrance dose for low-dose imaging significantly.”

Source: Siemens White Paper “Low-dose imaging is becoming a clinical reality” (2014)



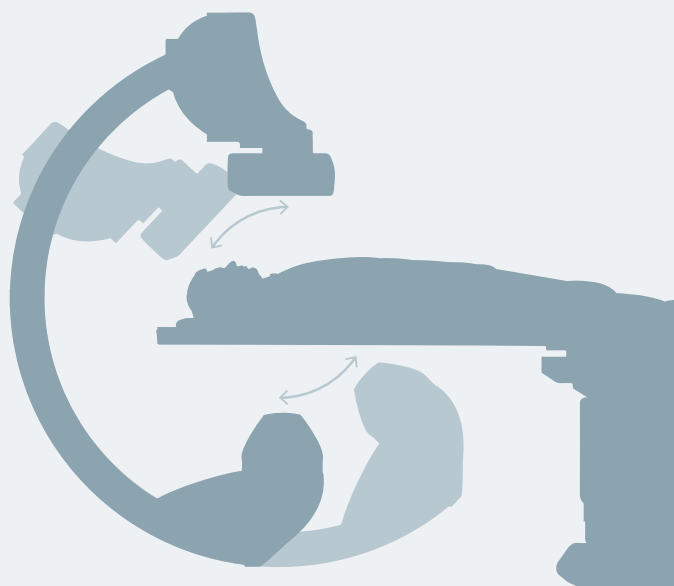
Intelligent dose optimization

Adjust to each individual patient and angulation

Automatic Exposure Control (AEC) automatically adjusts the following five parameters depending on the C-arm angulation: tube current, focal spot, filtration, exposure time, and tube voltage. This supports an optimal balance between image quality and dose – at all angulations.

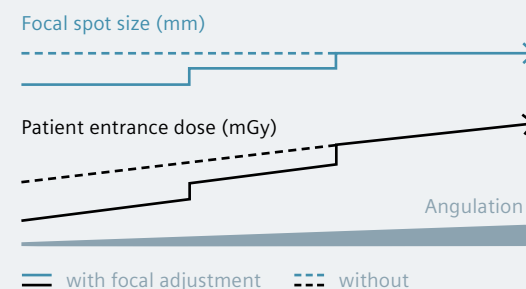
AEC estimates patient thickness in real time and adapts the parameters according to the current angulation – without manual selection or switching to a different program. AEC automatically provides the best possible spatial resolution and the lowest possible dose at any time and angle during the procedure.

Angulation-dependent AEC – Best ratio of image quality to dose for all angulations



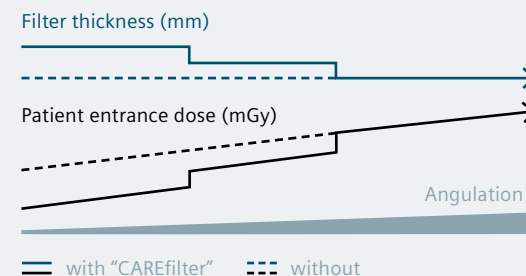
Siemens 5-parameter AEC		
Parameter adaption	-	+
kV	<div><div></div></div>	<div><div></div></div>
mA	<div><div></div></div>	<div><div></div></div>
ms	<div><div></div></div>	<div><div></div></div>
Focal spot	<div><div></div></div>	<div><div></div></div>
Filtration	<div><div></div></div>	<div><div></div></div>

Effect of focal spot size on patient entrance dose



Comparison of focal spot adjustment (blue arrow) with a fixed focal spot (blue dashed arrow) and the corresponding effects on dose.

Effect of copper filter thickness on patient entrance dose



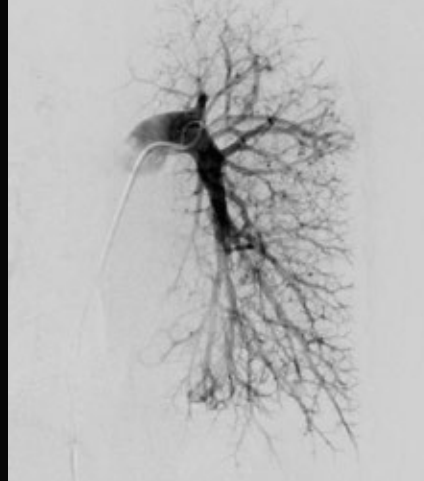
Comparison of CAREfilter (blue arrow) with fixed pre-filtration (blue dashed arrow) and the corresponding effects on dose (black arrow and black dashed arrow).

Excellent low-dose results

The dose area product (DAP) values for the following images show that Artis zee delivers excellent image quality at a low dose.

DSA of the lung. Courtesy of St. James's Hospital, Dublin, Ireland

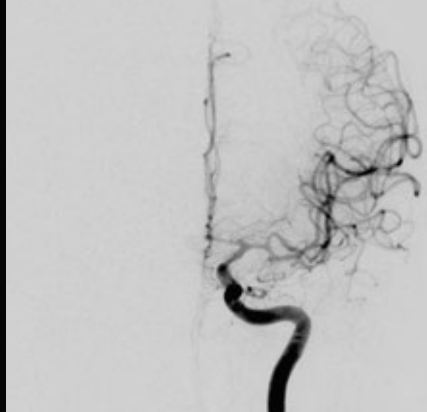
DAP: 3.10 $\mu\text{Gym}^2/\text{f}$



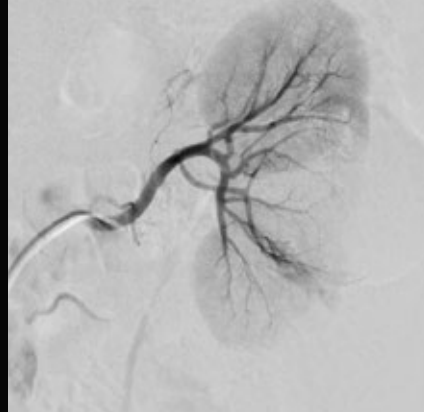
DAP: 13.07 $\mu\text{Gym}^2/\text{f}$



DAP: 7.32 $\mu\text{Gym}^2/\text{f}$



DAP: 12.07 $\mu\text{Gym}^2/\text{f}$



Anterior communicating artery aneurysm after treatment. Control DSA. Courtesy of University of Michigan Hospital, USA

DSA of the left renal artery. Courtesy of St. James's Hospital, Dublin, Ireland

DSA of the iliac arteries before uterine fibroid embolization. Courtesy of St. James's Hospital, Dublin, Ireland

Clearly better images

For angiographic and fluoroscopic procedures in neuro interventions or cardiology, CLEAR applications reduce noise, increase image sharpness, and compensate motion artifacts. From enhanced image quality in Roadmap and 2D guidance with Overlay Reference to real-time pixel shift, Artis zee systems equip you to achieve optimal image quality in 2D.



Without CLEARmatch

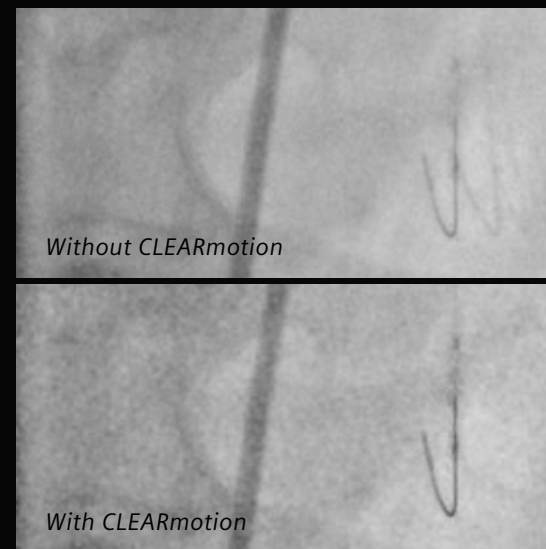
CLEARmatch compensates for patient movement with next-generation pixel shift in DSA and Roadmap. It retains the live image while pixel-shifting the mask image in real time.



With CLEARmatch

This delivers consistent image quality in Roadmap as well as sharper images and enhanced treatment even in challenging situations.

Clinical images courtesy of Alfried Krupp Hospital, Essen, Germany



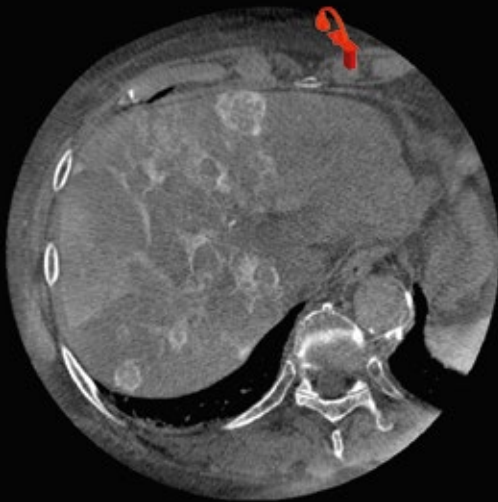
Without CLEARmotion

With CLEARmotion

CLEARmotion detects small moving objects, especially guidewires or fine vessels, and enhances the visibility of these structures. As a result, moving objects can be clearly visualized without motion artifacts.

Excellent soft tissue differentiation

With *syngo* DynaCT, an application from the company that first brought to market cone-beam CT (CBCT) in angiography, you can be sure to get state-of-the-art 3D imaging and soft tissue visualization. The exquisite 3D image quality and the high level of detail provided by *syngo* DynaCT allow you to tackle any challenge and increase your confidence in treatment decisions.

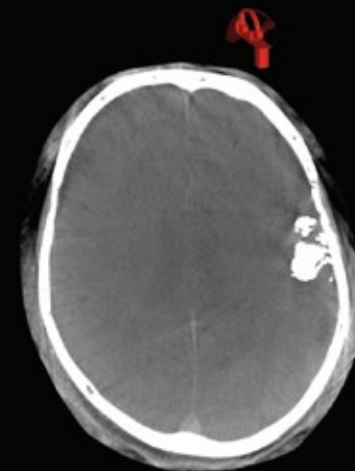


Without syngo DynaCT SMART

***syngo* DynaCT** enables CT-like cross-sectional imaging. It can provide information not apparent in DSA and therefore supports sounder decision-making during interventions. Visualize soft tissue and high-contrast objects such as stents, clips, bones, and contrast-filled vessels.

Clinical images courtesy of Osaka City University Hospital, Japan

***syngo* DynaCT SMART** reduces metal artifacts. It visualizes the regions in close vicinity of metal coils or clips and thus helps reveal important diagnostic information, such as bleedings close to metallic



With syngo DynaCT SMART

objects. The improved information content of the images thus helps reduce the probability of erroneous decisions.

Clinical images courtesy of Alfried Krupp Hospital, Essen, Germany



Broaden your procedure mix

Thanks to Artis zee's extensive range of applications and positioning flexibility, you will be able to perform angiography procedures that may not have been possible before.

As interventional angiography is evolving and new procedures are gaining wider acceptance, the demands on angiography suites are increasing. A consequence of the rapidly expanding spectrum of clinical cases is not only a higher number of procedures per day, but also the need to accommodate multiple specialists in the room. This calls for a system that helps you optimize your procedure mix – a system that is versatile and easy to use.

Artis zee prepares you with an extensive range of applications and increased positioning flexibility. This enables you to use the room for multiple procedures – with various working positions and optimal patient access. At the same time, Artis zee is equipped with optimized user guidance for smoother processes.

For you, this means expanded capabilities, smoother procedures, and freedom of choice. Whether in Interventional Radiology, Interventional Cardiology, Neuroradiology, or Surgery, with Artis zee you are better prepared to tackle whatever challenge comes your way.

Adapt the system to your needs

Flexible positioning is key

A versatile system is not simply a broad application portfolio – the system itself needs to be flexible. Artis zee is therefore available with unique features that expand your flexibility (such as MULTISPACE.F, IsoTilt, or InFocus) and in several different configurations: floor-mounted, ceiling-mounted, and biplane. Depending on your needs, you can tailor your system for more working positions, optimal patient access, or room to accommodate extra staff such as an anesthetist (for more about the different setups, see pp. 20–25).

Ensuring upright images during radial access

StraightView enables the synchronous rotation of flat detector and X-ray collimator. For instance, you can view the patient's arm in upright orientation while exactly collimating the arm. StraightView has now been optimized for radial access: No matter how you position the C-arm or the patient table, StraightView automatically maintains images in the natural orientation.

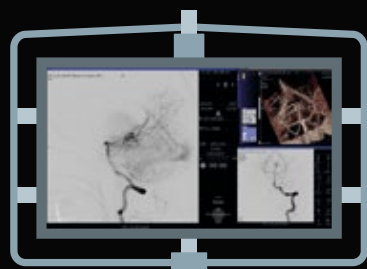


MULTISPACE.F:
Additional system
positions for
Artis zee floor

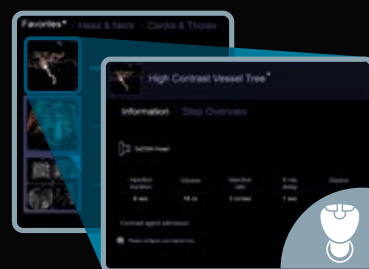


User guidance with PURE[®]

To expand your range of procedures and make them run more smoothly, Artis zee comes with optimized user guidance, especially for 3D. With PURE[®], you increase your process efficiency in the angio suite, enable all your staff members to get the full potential from the system, and enhance your patient treatment outcomes – adding smooth to smart.



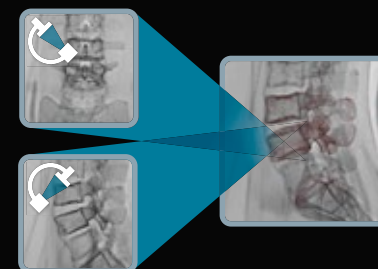
The **Heads-Up Display** helps keep the user's attention where it is needed. The context-sensitive on-screen menu allows intuitive interaction with the system – without the need to look down when manipulating 3D volumes.



The **3D Wizard** offers step-by-step guidance to allow even non-experienced users achieve the 3D imaging results they want. Choose the desired image from a predefined pool and let the system guide you through the 3D scan.



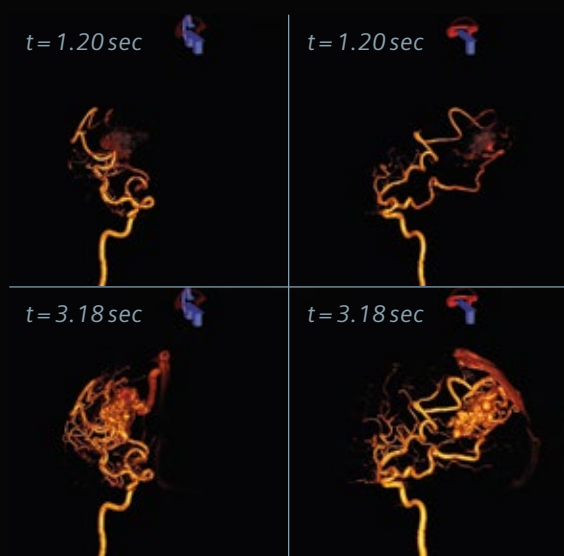
QuickZoom speeds up your workflow by letting you focus and zoom within a 3D volume at tableside with just one click. Just click on your region of interest – and QuickZoom centers and zooms automatically.



The **syngo Fusion Package** lets you integrate pre-op CT, MR, or PET volumes for live image guidance. With only two fluoro projections, you can easily fuse 3D volumes – and save both dose and contrast media.

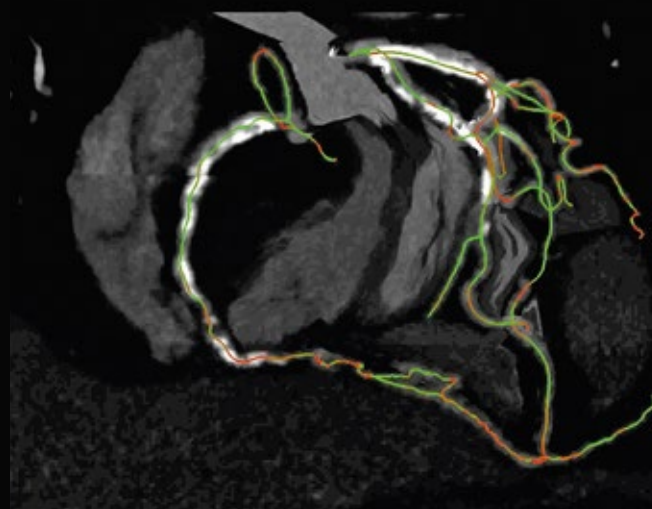
Develop your clinical scope

Whether you want to expand your procedure mix or speed up workflows, Artis zee offers a wide range of applications that give you the flexibility to meet different demands and challenges. Both for 2D and 3D, these applications provide relevant information and guidance that increase your confidence, especially in complex procedures.

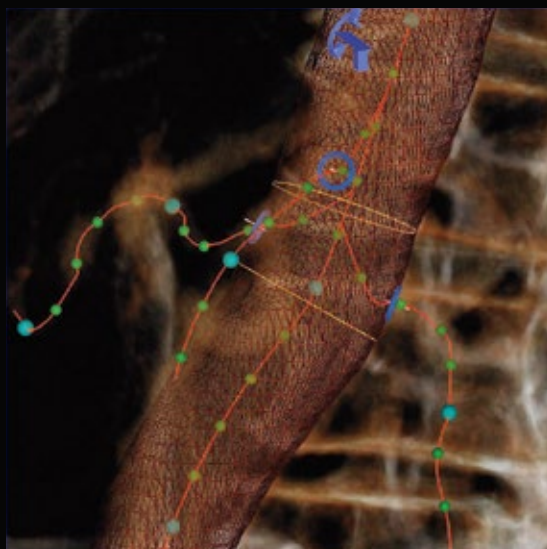


syngo Dyna4D lets you expand your angio suite's capabilities. It helps you see flow patterns in 3D, providing a virtually unlimited number of DSA runs at no additional dose or contrast media. Optimize patient selection and individualize treatment strategies.

Clinical images courtesy of University of Wisconsin School of Medicine and Public Health, USA



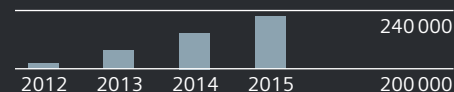
syngo CTO Guidance helps you plan the treatment of chronic total occlusions. It automatically segments CTAs and provides color-coded guidance during the procedure. Avoid foreshortening, enhance your planning, and treat more complex cases.



syngo EVAR Guidance automatically segments, marks, and labels the important vessels in a CT dataset. It calculates the vessel wall and places ostia rings on the main branching vessels for 3D image guidance during EVAR cases – typically in less than a minute. In addition, it suggests the optimal C-arm angulation for precise deployment. Reduce procedure time and save dose.

Tackle every challenge ...

The number of abdominal and thoracic aortic repair procedures is constantly increasing at a growth rate of 5.2% per year. More and more often, clinicians perform complex fenestrated aortic stent graft placements in their daily routine.



Abdominal and thoracic aortic repair procedures: world estimates 2012–2015

... with Artis zee

Artis zee offers dedicated applications to support clinicians in complex procedures: *syngo* EVAR Guidance, for instance, is a complete automated workflow for endovascular aortic repair. Not only does it make the procedure easier, it is also more precise and saves time, contrast medium, and dose.

Source: Millenium Research Group, Frost & Sullivan



Invest with confidence

Artis zee is a smart investment that grows with your requirements. Whether you are looking for a rapid return on investment, shared use, access to latest clinical applications, or future upgradability – Artis zee is ready.

Simply put, healthcare today faces a predicament: 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 for many years to come.

Designed for this purpose, Artis zee is a proven and reliable system that achieves sustainable performance. With unique and pioneering features, over 8 years of experience, it provides an uptime of up to 99%. But Artis zee is more: it is upgradable whenever you want, giving you access to the latest technology for optimal care to your patients.

Artis zee is a smart investment that grows with your needs. It helps you minimize downtime, stay on top of technological developments, and effectively utilize the angio suite, as the flexibility of the system allows many specialties to use and share the lab. Invest confidently in a sustainable system that prepares you for the challenges that lie ahead.

Customize it

Optimize your angio lab for shared use

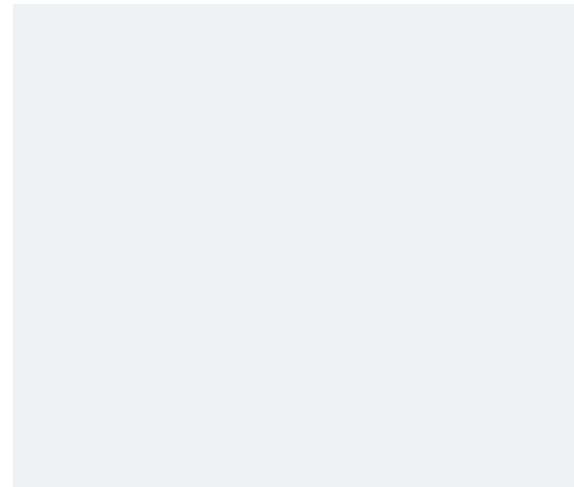
Artis zee supports a broad range of applications for cardiac, interventional radiology, neuro, and surgical procedures. In order to accommodate various clinical disciplines in one room, a high degree of flexibility is needed. Artis zee is therefore available as a floor, ceiling, or biplane system (in combination with either a large or small detector) and also as a multi-purpose system (with a large detector). In addition, Artis zee works with three different angio tables and a breakable OR table from Trumpf*. Artis zee offers the perfect configuration to optimize your procedure mix.

*Artis zee ceiling only



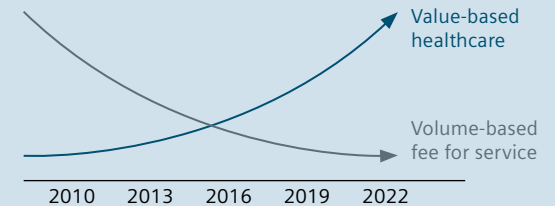
Customize and upgrade your system

The Artis PURE® platform is just one example of the innovations available for the Artis zee product family. To maximize your versatility and flexibility, Artis zee is individually customizable and can be upgraded with the latest Siemens software available. The system can grow with your needs and gives you access to evolving technology.



Tackle every challenge ...

Despite decades of cost containment and operational improvement, healthcare costs continue to rise, putting unrelenting pressure on hospital budgets. Strategic organizations focus on better health outcomes and greater healthcare value to differentiate themselves from their peers.



... with Artis zee

Artis zee is key to increasing the value of your interventional services. It takes the pressure off your budget and allows you to grow your angiography services as your business grows.

Source: HHS Press Release, January 26, 2015

Rely on it

Up to 99% uptime with Siemens service

With thousands of angiography systems in use around the world, Siemens is known as a provider of top-quality products and global support. An investment in Siemens is an investment in proven reliability for years to come. Depending on your chosen contract, we can deliver up to 99% uptime.

A broad portfolio of service contracts with different levels of coverage helps you protect and maintain your investment. With a Siemens service contract, you will be connected to the Siemens Service Center

via **Siemens Remote Service**, our efficient and comprehensive infrastructure for the complete spectrum of remote support. Many services, updates, and even immediate repairs that previously required on-site visits are now performed remotely.

Our **Siemens Guardian Program™**, for example, provides real-time remote system monitoring to detect and resolve system errors before malfunctions occur. Should a spare part be needed, we are able to deliver 97% of all parts within 24 hours.

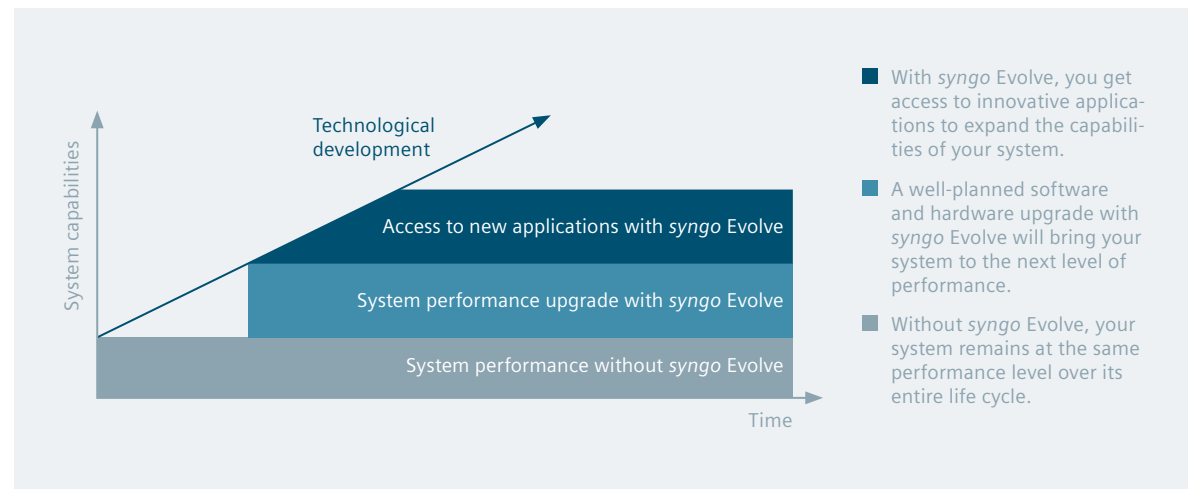
Maximize uptime and minimize downtime with syngo Evolve for Artis zee

Innovation cycles keep getting shorter – and efficiency and performance of modern systems are expected to grow over time. *syngo Evolve* for Artis zee gives customers the ability to participate in future technological developments. With *syngo Evolve*, you can count on a planned upgrade of your Artis zee system about three years after system delivery.

“We chose Artis zee for its good image quality, reliability, and its intuitive platform that allows us to take complete advantage of the system.”



Martha Elizalde, MD
Chief of Radiology,
Star Medica Infantil Privado,
Mexico City

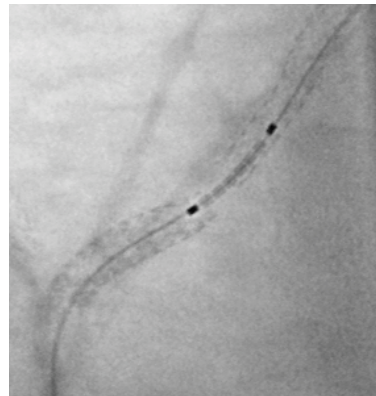


Artis zee in Cardiology

Artis zee is a versatile solution for routine and complex procedures, helping you tackle every challenge.

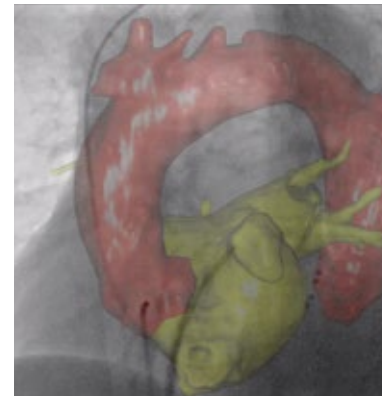
Cardiology is not only expanding, it is also changing. There is a continuous influx of new procedures and devices, resulting, of course, in ever-changing workflows. Meanwhile, the demands are consistently high: Patients and staff want the lowest possible dose during procedures as well as steady improvement of clinical outcomes, while costs should be kept as low as possible.

In this increasingly competitive environment, you need versatile solutions that help you deliver better, faster, and more effective care – both in complex procedures and in your daily routine. The versatile Artis zee family combined with dedicated applications such as CLEARstent and CLEARstent Live or IVUSmap help you tackle the toughest challenges in treating coronary artery disease. In cases of structural heart disease, syngo DynaCT Cardiac and syngo Aortic Valve Guidance seamlessly fit into your workflow.



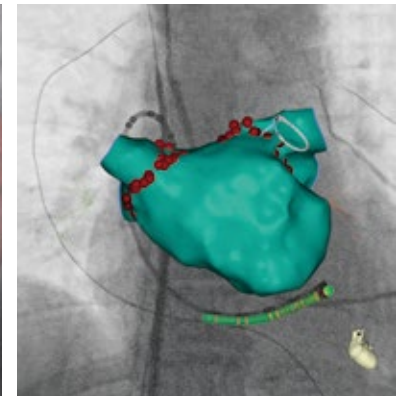
CLEARstent Live: Real-time verification of stent positioning while moving the device, eliminating cardiac movement.

Clinical image courtesy of University Hospital Erlangen, Germany



syngo LA Segmentation: Acquisition of anatomical data of the left atrium with one step on the footswitch. High-quality 3D results within seconds.

Clinical image courtesy of University of Insubria, Varese, Italia



Integration with EP Mapping systems: Artis zee is compatible with EP mapping systems from Biosense Webster and from St. Jude Medical.

Floor-mounted system

The **floor-mounted** Artis zee is the ideal solution for routine Interventional Cardiology, providing fast movement and steep angulations for all cardiac exams. Its C-arm can be conveniently positioned around the table – for head-to-toe coverage of the patient: right-side for pacemaker implantation, head-side for abdominal procedures, and left-side for standard peripheral procedures. Its compact and slimline C-arm design has a small footprint, requires minimal room preparation work, and can fit into an examination room size of only 25 m².



The floor-mounted system is available with both a small and a large detector.



Artis zee biplane with large display for electrophysiology

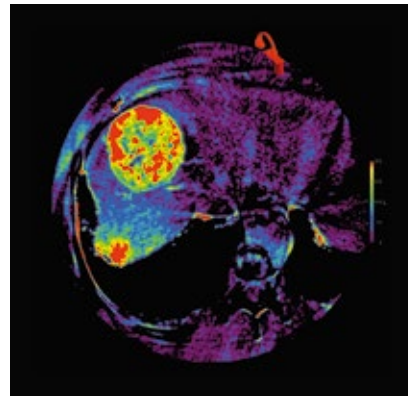
For electrophysiology, Artis zee biplane offers integrated solutions for enhanced patient care – covering everything from imaging to 3D guidance and co-registration. Profit from the latest mapping and navigation systems and low-dose imaging for highly complex procedures.

Artis zee in Interventional Radiology

Artis zee systems support your specific needs for interventional procedures: convenient positioning and uncompromised imaging.

Interventional Radiology is rapidly becoming an integral part of patient treatment. Interventional radiologists help in fight the most threatening diseases, prolong patients' lives, and improve their quality of life. Fundamental to all procedures – from routine to innovative endovascular and percutaneous treatments – are efficient imaging techniques.

With the Artis zee product line, Siemens offers the most extensive system portfolio to support your specific needs in the angio suite. Profit from a broad scope of dedicated innovative applications and workflows – for example, *syngo* DynaPBV Body and *syngo* Needle Guidance.



syngo DynaPBV Body: 3D functional imaging application to check distribution of blood in lesions and surrounding tissue. Personalize therapy and control the optimal endpoint of interventions.

Clinical image courtesy of Hacettepe University School of Medicine, Ankara, Turkey



syngo Needle Guidance: Unique integrated cross-hair laser light visualizes skin-entry point and allows for radiation-free needle advancement for easy needle positioning.

Clinical images courtesy of Hôpital européen Georges-Pompidou, Paris, France



Ceiling-mounted system

Ideally suited for body Interventional Radiology, Artis zee **ceiling-mounted** systems provide the highest positioning flexibility with the largest patient coverage. The C-arm can be conveniently positioned around the patient's left-, right-, or head-side – and any angle in between. This enables optimum patient access. Siemens' unique InFocus and IsoTilt maintain the projection angle during stand rotation and during table tilting. In addition, the system provides the uncompromised soft-tissue imaging of syngo DynaCT from the left-side to also cover the patient's lower abdomen.



Artis zee multi-purpose – your Diagnostic Radiology solution

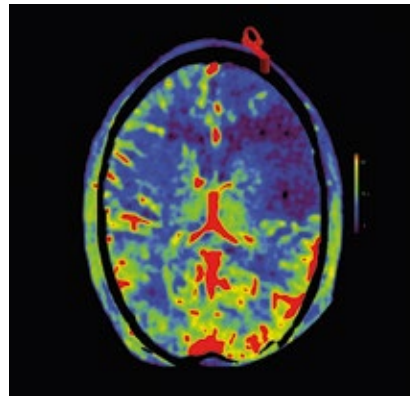
The Artis zee multi-purpose system features flexible architecture with versatile clinical applications for angiography and fluoroscopy examinations.

The ceiling-mounted system is also available for Cardiology with a small detector.

Artis zee in Neuro Interventions

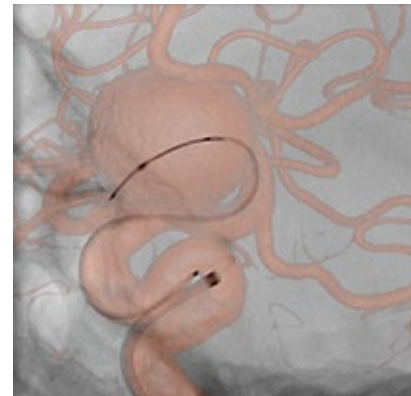
Artis zee offers an ideal solution for your neuroradiological imaging needs, enabling optimal patient access and extensive coverage.

The introduction of new techniques and devices in neuro interventions not only opens up more possibilities for physicians – it also creates new challenges. With the Artis zee family, Siemens has set the bar in interventional imaging and prepares you for whatever challenge comes your way. Its cutting-edge technology, such as flat-emitter X-ray tubes, and innovative features such as syngo DynaPBV Neuro and syngo Dyna4D enable you to shape the future of Neuroradiology.

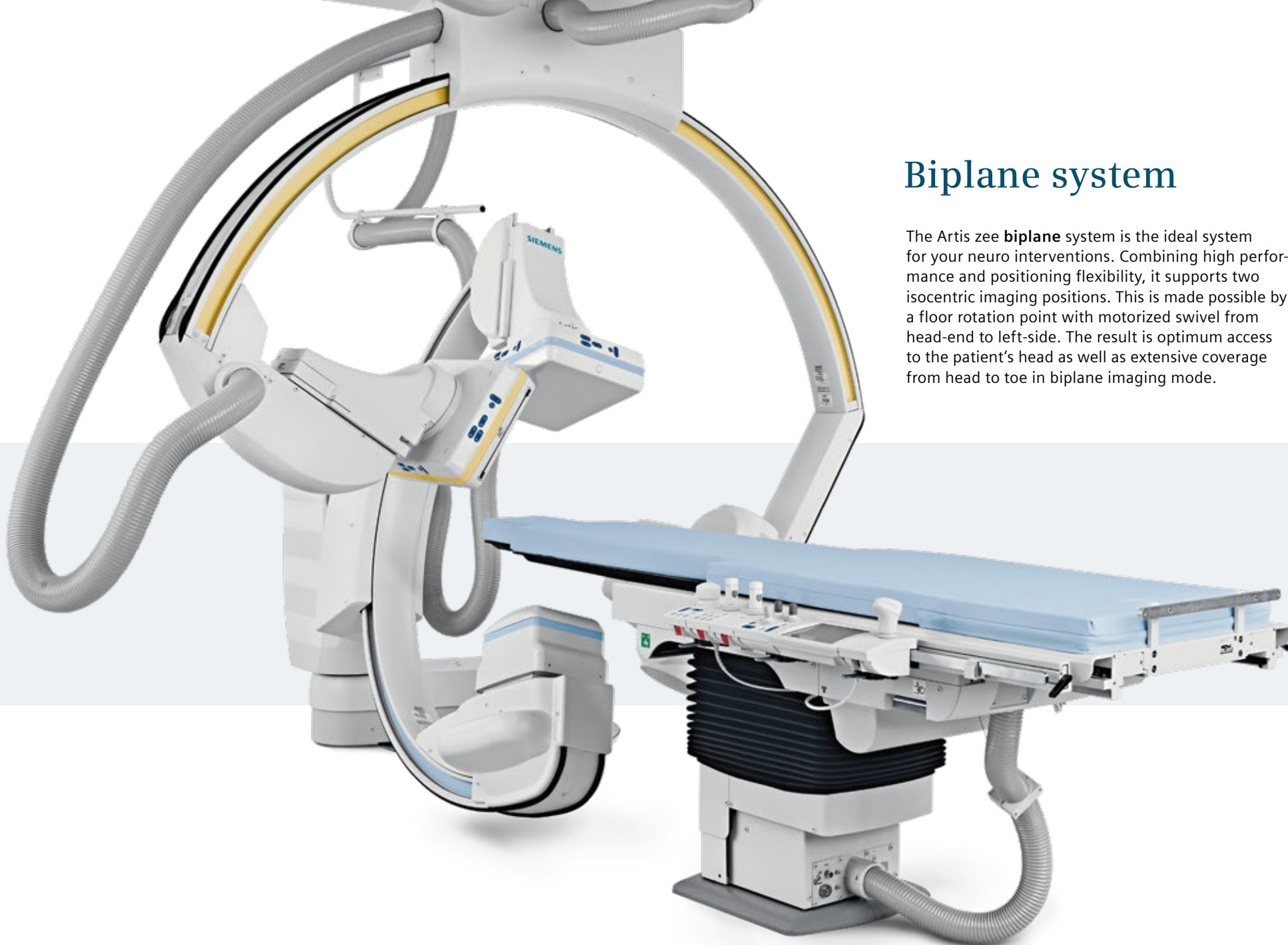


syngo DynaPBV Neuro: Visualizes the parenchymal blood volume of the entire brain in one acquisition. It helps you monitor the functional state during, for example, endovascular stroke treatment.

Clinical image courtesy of Hacettepe University School of Medicine, Ankara, Turkey



syngo 3D Roadmap: Provides visualization and fading between the live 2D fluoro image and the matching 3D dataset – for effective guidance during interventional procedures.



Biplane system

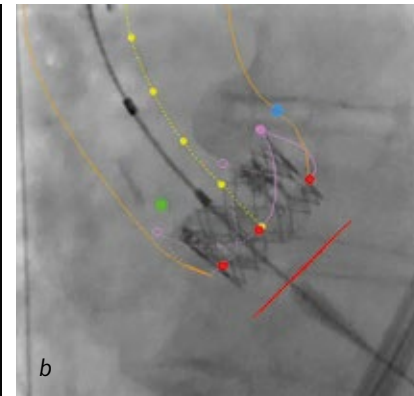
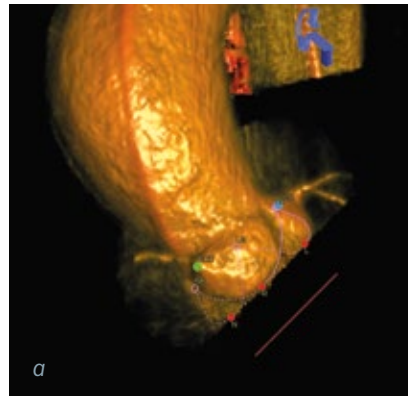
The Artis zee **biplane** system is the ideal system for your neuro interventions. Combining high performance and positioning flexibility, it supports two isocentric imaging positions. This is made possible by a floor rotation point with motorized swivel from head-end to left-side. The result is optimum access to the patient's head as well as extensive coverage from head to toe in biplane imaging mode.

Depending on your intended use, the Artis zee biplane system is also available with a small detector.

Artis zee in Image-Guided Surgery

Artis zee also supports surgery in hybrid operating rooms:
3D guidance and excellent image quality for complex procedures.

Worldwide, demographic change is marked by increased life expectancy. This results in an aging population with a higher prevalence for complex aortic diseases. A significant percentage of patients also suffers from renal insufficiency and obesity. Hybrid operating rooms (OR) help to treat these patients with greater confidence. Compared to a conventional operating room with a mobile C-arm, the advanced imaging capabilities of fixed systems allow 3D guidance and excellent image quality at low dose levels. Advanced workflow capabilities in the hybrid OR make complex endovascular procedures possible at reduced procedure times.



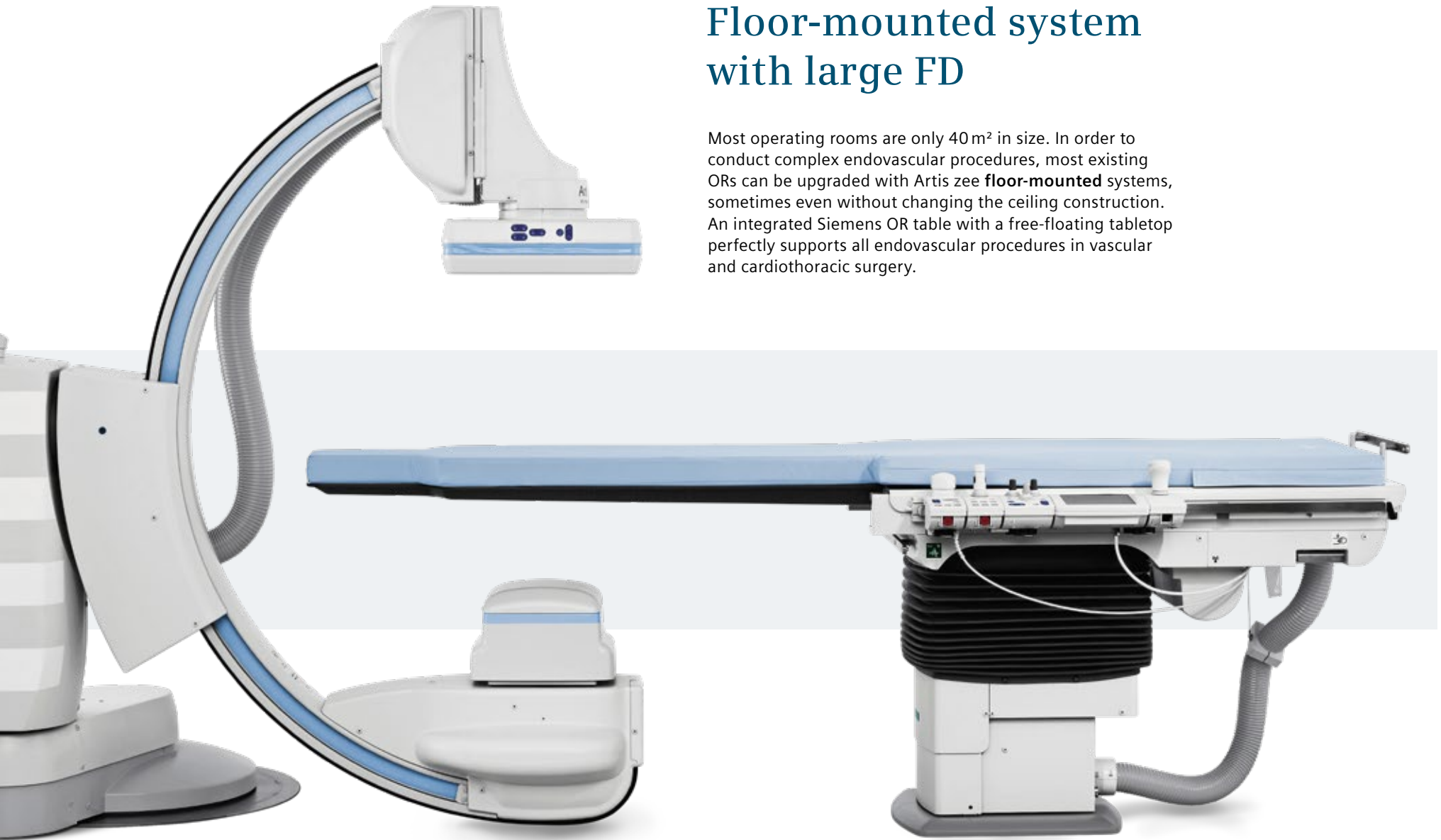
syngo Aortic Valve Guidance: a) Segments the aortic root and color-codes landmarks for the coronary ostia or the valve commissures.
b) In combination with syngo 3D Roadmap, the 3D valve image can be overlaid on live fluoroscopy either in solid or in contour mode.

Clinical image courtesy of Herz- und
Kreislaufzentrum, Rotenburg a. d. Fulda,
Germany

Clinical image courtesy of Kerckhoff-Klinik
Bad Nauheim, Germany

Floor-mounted system with large FD

Most operating rooms are only 40 m² in size. In order to conduct complex endovascular procedures, most existing ORs can be upgraded with Artis zee **floor-mounted** systems, sometimes even without changing the ceiling construction. An integrated Siemens OR table with a free-floating tabletop perfectly supports all endovascular procedures in vascular and cardiothoracic surgery.



The floor-mounted system is available with both a small and a large detector.

Tailor your system

Choose from the following options and upgrades to customize your Artis zee system even further – to help you tackle your specific challenges.



Tables

Choose the table that works best for you. Our selection of free-floating tables have easily exchangeable table-tops, so they can be conveniently adapted to the different needs of clinical procedures within minutes. Users can also switch table accessories.

- **Standard table:** Free-floating table-top with customizable tableside control module and rotation up to 120°.
- **Tilting table:** Additional tilting capability, which is useful for increasing patient blood pressure.
- **OR Table:** Designed for easy patient access, superb positioning, and total body coverage, the integrated Artis OR table is a proven and reliable interventional table which is motorized in all directions and provides tilt and cradle functionality.



Artis Large Display

See the whole picture on one monitor. Seeing more can increase diagnostic and therapeutic confidence. Our Artis Large Display features a full-color 55- or 60-inch medical-grade screen that gives you a view of multiple inputs simultaneously.

- High-definition consolidated display
- Customized views
- Optimal resolution in any window size
- Fast, intuitive handling, tableside control
- Integrated emergency backup



Artis Cockpit

Clear up your control room: Artis Cockpit offers more efficiency in the control room, so you can focus on your procedures and patients.

- Streamlined setup and workflow
- Control up to nine systems from one single workplace
- Reduce monitor and cabling clutter in the control room
- Configure the Artis Cockpit to your needs with one or two keyboards and monitors
- Customize layout quickly with drag & drop



Sensis

Sensis is an integrated recording and information system that can serve as your central point of data handling – from patient registration to reporting. Bidirectional communication with your Artis zee system allows automatic exchange of demographic patient data.

- One-stop patient registration and comprehensive reporting
- Seamless amplifier integration
- Flexible handling with tableside control
- Excellent signal quality for hemodynamic and electrophysiology application
- Investment confidence due to scalability

On account of certain regional limitations of sales rights and service availability, we cannot guarantee that all products included in this brochure are available through the Siemens sales organization worldwide. Availability and packaging may vary by country and are subject to change without prior notice. Some / All of the features and products described herein may not be available in the United States.

The information in this document contains general technical descriptions of specifications and options as well as standard and optional features which do not always have to be present in individual cases.

The relative statement "Tackle every challenge" assumes typical treatment and patient morphology and refers to procedures within the scope of the cleared intended use.

The statements by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e. g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.

The customers cited are employed by an institution that might provide Siemens product reference services, R&D collaboration or other relationship for compensation pursuant to a written agreement.

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