



**PHILIPS**

Image Guided Therapy

Vascular suite

# Vascular suite

Redefining the outcome of vascular treatment

# Defining the future

## of Image Guided Therapy

### Innovative solutions across the health continuum

At Philips, we look beyond technology to the experiences of patients, providers and caregivers. We unlock insights leading to meaningful innovations from hospital to home.

Our integrated solutions – packaged suites of systems, smart devices, software and services – combine broad and deep clinical expertise, technology and services, actionable data, consultative new business models and partnerships. Together, with our customers, we can transform how care is delivered and experienced, to deliver upon the Quadruple Aim: improved patient experience, better health outcomes, improved staff experience, and lower cost of care.

At Philips Image Guided Therapy, we have played a pioneering role in image-guided minimally invasive therapy for cardiovascular disease since the inception of the field back in the 1950s, thanks to our expertise in X-ray imaging systems. We aim to both improve existing procedures and introduce new procedures so that more patients can benefit from image-guided therapy. We also develop new business models to cater for new care settings, such as ambulatory surgery centers and office-based labs, and drive improved lab performance. Today our clinical partners benefit from complete procedural solutions to treat a wide range of diseases – from cardiovascular disease to stroke, cancer, and spine conditions.



### Clinical demands are getting more specific. So are we.

During an interventional procedure you are focused on making the best decisions you can for each patient. Each patient and each disease has very specific challenges, complexities, and needs. As the number of procedures and patients goes up, you can see the need for better forms of image guidance and interventional devices for effective treatment and decision making. At the same time, optimized workflows are key to improving efficiency. That’s why we created clinical suites; a flexible portfolio of integrated technologies, devices and services for a broad range of interventional procedures.

Each of our clinical suites offers specific image guided therapy solutions to provide more choice and flexibility for exceptional care. So you can be confident in your performance and in the fact your patients are receiving exceptional care. Together we aim to create the future of image guided therapy.

### Introducing clinical suites

Helping to bring across our comprehensive clinical propositions

<b>Coronary suite</b> Transforming complex PCI procedures into confident care	<b>EP suite</b> Greater insight and confidence in EP procedures	<b>SHD suite</b> Confidence and efficiency in structural heart interventions	<b>CHD suite</b> Gentle care with powerful insights	<b>Vascular suite</b> Redefine outcomes for vascular treatment	<b>Neuro suite</b> Neuro decisions are based on what you see, so see more	<b>Onco suite</b> Critical insights for superior care in Interventional Oncology	<b>Lung suite</b> All-in-one diagnosis and treatment of lung cancer	<b>Spine suite</b> Perform spine surgery with confidence and precision



## Key benefits

- Making therapy simpler, more informative, and less invasive to promote confident decisions
- Supports standardization and consistency of vascular lab workflow to save time, money and reduce variability
- Excellent visibility at ultra low X-ray dose levels for a comprehensive range of clinical procedures with ClarityIQ technology.<sup>1</sup>



# Vascular suite

## Redefining the outcome of vascular treatment

As a physician, you are confronted with an increasingly demanding and diverse landscape – inside or outside your treatment room.

To treat the growing epidemic of peripheral artery diseases, we see a clear need for standardization of endovascular treatment strategies. Real-time guidance is imperative during the procedure in selecting the correct vessel, device and pathway, but also to precisely position devices to improve clinical outcomes and expand adoption of these interventions. For aortic disease, radiation exposure and contrast medium are a concern for elderly and otherwise frail patients. These procedures are lengthy and often unpredictable. Shorter procedures could reduce contrast medium and radiation exposure.

The Vascular suite has been designed to support diverse peripheral, aortic, visceral, arterial, and venous procedures. From restoring vessel patency and implanting a device, to treating an aneurysm or occlusion – Vascular suite enables clinicians to deliver fast, effective, and simplified procedures.

Based upon the Azurion platform, Vascular suite supports increased confidence in decision-making and deployment of devices through dedicated interventional tools and a rich portfolio of relevant devices.

The tools provide remarkably detailed insights into anatomy and pathology during each phase of procedures as you decide, guide, treat, and confirm. Workflow innovations can support interventional teams in dramatically reducing overall procedure time and our technology enhances staff and patient safety by managing radiation and contrast dose efficiently.

With the Vascular suite, you have the innovations at hand that empower you to redefine outcomes for your vascular patients.



# Peripheral artery disease

## Focusing on standardization to redefine PAD outcomes

The number of people living with diabetes continues to climb,<sup>2</sup> bringing peripheral artery disease (PAD) and critical limb ischemia (CLI) interventions to epidemic levels. Today patients with PAD and CLI have more options, including endovascular interventions and below the knee procedures. This is in part due to new devices that are designed to make treatment more durable and facilitate retreatment – aspiring to leave nothing behind.

To standardize this fast evolving landscape, the medical community and manufacturers are working towards the creation of evidence to answer clinical dilemma's and define novel guidelines. Philips participates actively to further standardization of CLI procedures from both the imaging and device perspectives.

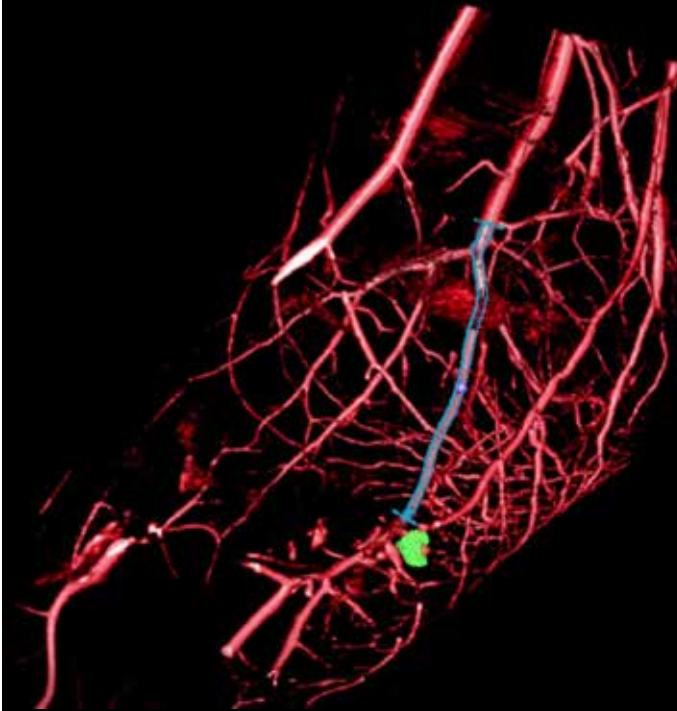
Our Vascular suite provides workflow options, dedicated interventional tools, and relevant vascular devices to support high levels of standardization and redefine outcomes for your PAD patients. They support each step of your procedure – as you decide, guide, treat, and confirm.

Decide

Guide

Treat

Confirm



## Workflow options that optimize lab performance and dose management

### ClarityIQ technology

Excellent visibility at ultra low X-ray dose levels for a comprehensive range of clinical procedures with ClarityIQ technology.<sup>1</sup>

### TSM and FlexVision Pro

External patient information (e.g. PACS database) readily at hand and controllable at table side

### Zero Dose Positioning

Helps you manage dose by positioning the system or table on Last Image Hold so you can prepare your next run without using fluoroscopy.

### Roadmap Pro

SmartMask provides a continuous real-time visualization of the leg as you navigate to the region of interest, making efficient use of contrast media and radiation dose.

### TSM and FlexVision Pro

Gives you full control of all system inputs including intravascular ultrasound (IVUS) at tableside to save time and unnecessary walking in and out of the sterile area.

With the ever growing number of PAD patients, Azurion offers a number of workflow innovations designed to help vascular teams work efficiently and consistently, while maintaining a single-minded focus on the patient and keeping radiation dose low during peripheral vascular interventions:

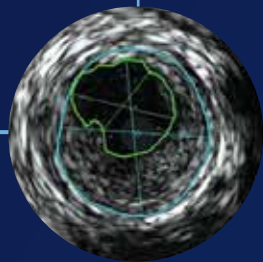
# Peripheral artery disease

Effective guidance in treatment and decision making

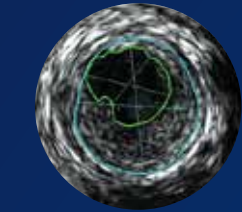
## Decide



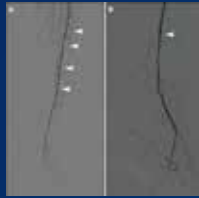
**Live X-ray guidance**  
Live X-ray guidance with ClarityIQ technology creates high definition images of vessels with exceptional vascular detail to support precise treatment strategies, navigation, and follow-up.



**Intravascular ultrasound (IVUS)** Identifying the correct vessel to treat is the goal during treatment planning. IVUS cross-sectional images compliment angiography and helps clinicians assess the presence and extent of disease, plaque geometry, and morphology.



IVUS



Live X-Ray guidance



**3D image guidance**  
3D Image guidance provides an intuitive and continuous 3D roadmap based on existing CTA and MRA dataset or a 3D rotational angiography volume acquired in the angio suite overlayed on a live X-ray image. It provides insight into the exact position of the guide wire and catheter within the vessel during navigation. It offers a high level of precision thanks to real-time compensation for gantry, table, and small patient movements.

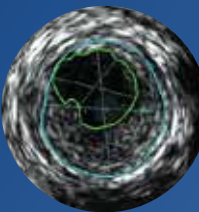
## Treat



**Philips IGT Devices**  
During treatment, you have to decide if it is safe to treat the lesion, and size and type of device should be used, and where to place the stent for best long term patency. Philips IGT Devices provides a portfolio of peripheral device solutions that allow you to personalize treatment decisions for each patient.



Live X-ray guidance



IVUS

## Confirm



**See clearly, treat optimally**

Philips offers advanced visualization and specialized therapies that enable clinicians to tailor treatments in even the most complex patients.

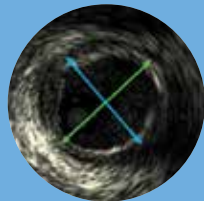
Choosing the best path forwards starts by seeing clearly. IVUS provides the visualization guidance essential for assessing clinical challenges quickly and precisely to guide treatment decisions.

The Philips portfolio of therapeutic devices offers the versatility needed to treat the majority of PAD cases, including complex lesions.

# See clearly

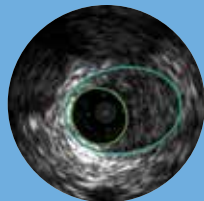
critical lesion characteristics

## Vessel size



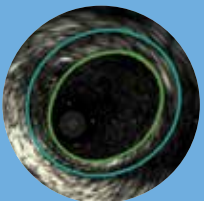
Guides device sizing to ensure precise wall apposition, drug delivery, and placement

## Plaque morphology



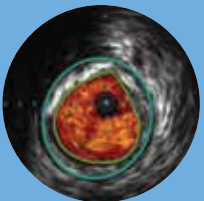
Understand plaque type and severity to help guide proper device selection

## Plaque geometry



Visualize plaque burden location for precise treatment

## Guidewire position



Confirm true lumen or sub-intimal guidewire location

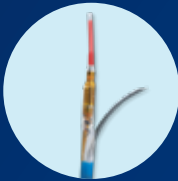
# Treat optimally

with versatility

## Crossing



Quick-Cross catheter



Pioneer Plus catheter

Cross your toughest lesions

## Vessel prep



Turbo-Elite laser atherectomy

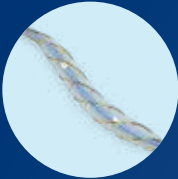


Turbo-Power laser atherectomy

Prepare multiple lesion morphologies, locations and characteristics, including CTOs, ISR, thrombus, calcium, neo-intimal hyperplasia, mixed morphologies and ostial lesions



Phoenix atherectomy



AngioSculpt scoring balloon

## Definitive treatment



Stellarex drug-coated balloon

Treat lesions without leaving metal behind



# Aortic disease

## Targeting efficiency to redefine aortic outcomes

Endovascular treatments of aortic diseases are becoming longer and addressing more complex anatomy. Radiation and contrast medium usage are a concern, specifically for elderly and health-impaired patients.

Contrast-induced nephropathy (CIN), in particular, has been associated with an increase in complications and prolonged hospital stay.<sup>2</sup> At the same time, modular stents are replacing expensive tailored stents to increase availability and cost-effectiveness of suitable grafts. Integrated imaging modalities are driving higher precision in treatment planning, guidance, and follow-up. In this dynamic area, there is a clear need for imaging technologies which improve accuracy, efficiency, and patient safety. Our Vascular suite offers premium workflow improvements and dedicated pre-procedural and interventional tools to improve procedural efficiency and redefine outcomes for your patients with aortic disease.



## Workflow options that optimize lab performance and dose management

**ClarityIQ technology**  
Excellent visibility at ultra low X-ray dose levels for a comprehensive range of clinical procedures with ClarityIQ technology.<sup>2</sup>

**Zero Dose Positioning**  
Helps you manage dose by positioning the system or table on Last Image Hold so you can prepare your next run without using fluoroscopy.

**Flexible workspots**  
Allow team members to access all information from any workspot to save time, improve consistency, and decrease delays.

**TSM and FlexVision Pro**  
External CT/MR/US patient information (e.g. PACS database) readily at hand and controllable at table side

**Hybrid OR solution featuring FlexArm**  
This innovative surgical environment offers unmatched procedural flexibility and ease of use, while meeting the highest standards for surgical infection control and hygiene.

**FlexVision Pro**  
Gives you full control of all system inputs including intravascular ultrasound (IVUS) at tableside to save time and unnecessary walking in and out of the sterile area.

**ProcedureCards**  
Select the EVAR ProcedureCard and the system is set-up the way you want. Hospital specific protocols and/or checklists can be added to ProcedureCards and displayed on monitors.

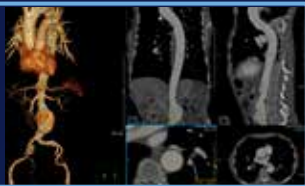
With Azurion, a breakthrough in workflow improvement has been realized, resulting in proven efficiency.



# Aortic disease

Superior care in Aortic procedures

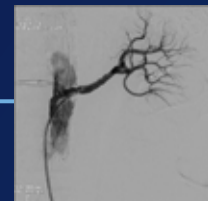
**Multimodality Advanced Vessel Analysis**  
Visualization, assessment and quantification of vessels in CTA and MRA data



## Decide

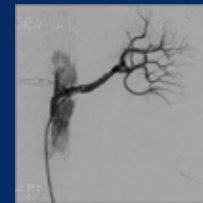


**VesselNavigator**  
Pre-operative CTA or MRA imported into VesselNavigator

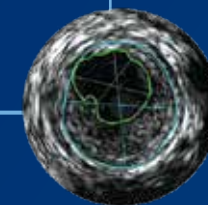


**Live X-ray guidance with ClarityIQ technology**  
Each patient has unique requirements when it comes to choosing the right device. 2D DSA with ClarityIQ technology generates high definition images of vessels with outstanding vascular detail to support precise treatment strategies, navigation, and follow-up.

## Guide

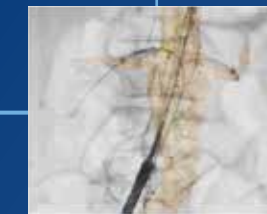


Live X-Ray guidance



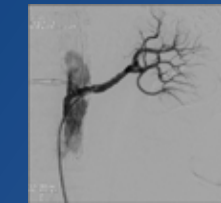
**Intravascular ultrasound (IVUS)**  
IVUS cross-sectional images compliment angiography and helps clinicians assess the presence and extent of disease, plaque geometry, and morphology.

## Treat

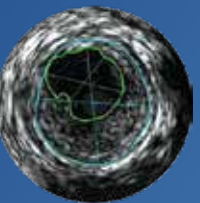


**VesselNavigator**  
The goal during aortic procedures is to place endovascular stentgrafts, quickly and precisely, while using minimal radiation and contrast. VesselNavigator provides an intuitive and continuous 3D roadmap to guide you through vasculature during the entire procedure. This reduces the need for a contrast enhanced run to create a conventional roadmap. One study showed an average of 170 ml contrast reduction during endovascular repair of complex aortic aneurysms with the use of VesselNavigator CTA image fusion guidance.<sup>3</sup> A reduction in average procedure time from 6.3 to 5.2 (1.1) hours during FEVAR/BEVAR with VesselNavigator CTA image fusion guidance has been shown in a recent study.<sup>4</sup>

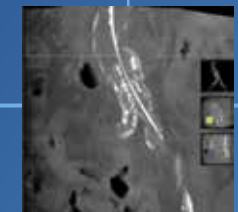
## Confirm



Live X-Ray guidance



Ivus



**SmartCT Soft Tissue**  
With aortic repair, the detection and management of endoleaks and structural defects is important while the patient is still on the table. SmartCT Soft Tissue can detect post-EVAR complications intra-operatively, that cannot be detected on DSA. This allows for immediate intraoperative correction of detected complications.



# Multimodality Advanced Vessel Analysis (AVA)

## For comprehensive vascular analysis

### Multi Modality Advanced Vessel Analysis (AVA)

AVA is intended for visualization, assessment and quantification of vessels in CTA and MRA data with a unified workflow for both modalities. It provides both automatic and manual bone removal and vessels segmentation including extraction of vessel centerlines, lumen contours and vessel contours.

MM AVA offers inspection views for selected vessels centerlines and local analysis. It allows creating, capturing, and reviewing of basic user selected endovascular measurements (and calculations when applicable), as well as predefined measurements sets and measurements correlations.

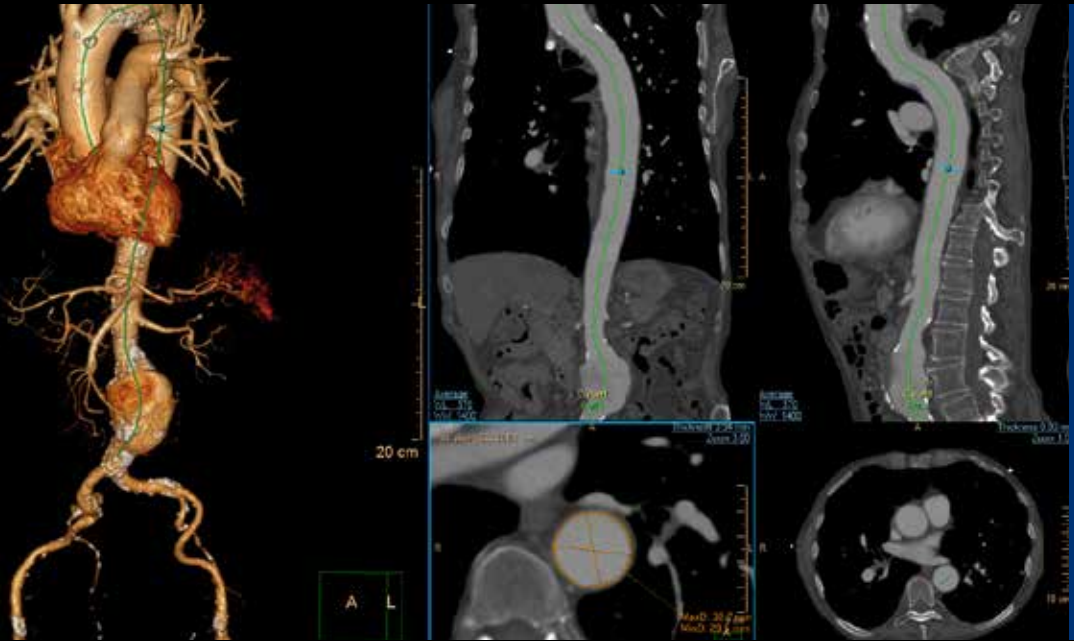
### Pre-procedural Stent Planning

Stent Planning offers multiple preset and user-defined options to generate predefined stent and access route protocols. The application allows you to export customized results to external reporting systems.

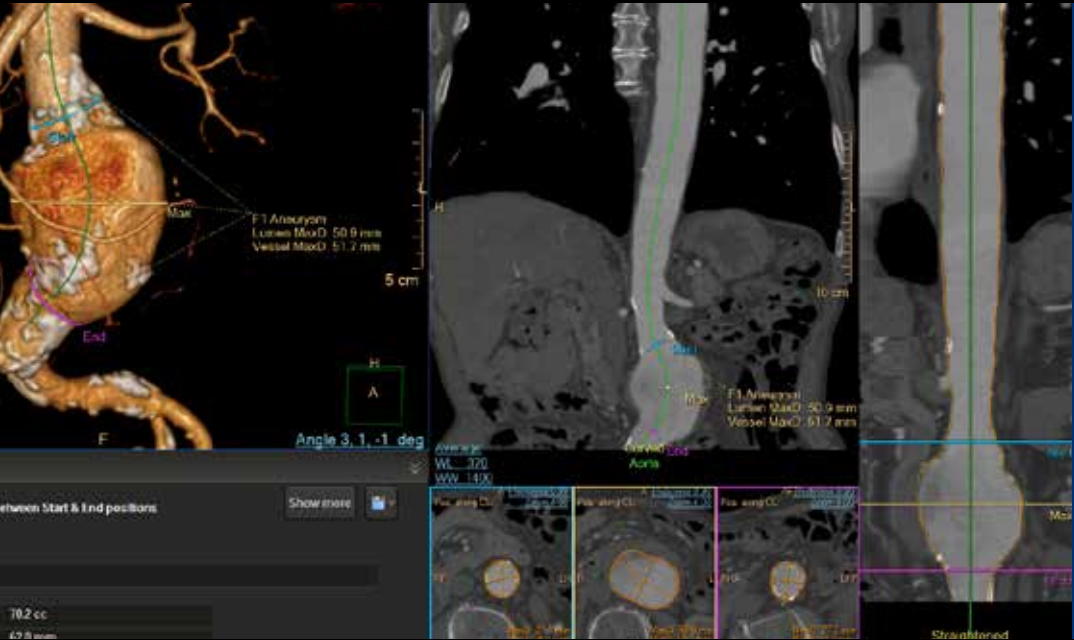
MM AVA as part of the IntelliSpace Portal offers Planning Anywhere capability.<sup>4</sup> It brings advanced diagnostic imaging closer to the Angio suite by integrating with Azurion, to automatically launch analysis results directly into the interventional suite.

### Key benefits

- Visualization, assessment and quantification of vessels in CTA and MRA
- Automatic bone removal, vessels extraction and labeling
- Automatic lumen and centerline calculation
- Template-based measurements tailored to various pathologies and Stent planning
- Enhanced patient centric workflow, allows the communication with the Azurion interventional suite



Automatic vessels' extraction, centerline, and lumen segmentation, while the user is always in control to modify the automatic results



Dedicated layouts and views for different type of endovascular measurements in AVA

# VesselNavigator

## Reduce your need for contrast medium

VesselNavigator allows image fusion of existing CTA or MRA vascular anatomical information with X-ray, to serve as a live 3D roadmap

### VesselNavigator real-time navigation

VesselNavigator can be used for any type of endovascular procedure. It is especially beneficial for complex and tortuous vasculature where it is challenging to accurately navigate and place stents or for procedures where contrast use should be minimized.

### Contrast medium usage and procedure efficiency

VesselNavigator's roadmap covers the entire MR or CT volume, so you can navigate through the entire vessel without needing to make contrast runs at each step of the procedure. A study of 23 patients<sup>2</sup> has shown to reduce average contrast medium usage from 235 to 65 ml (72%) during endovascular repair of complex aortic aneurysms with the use of Philips CTA image fusion guidance. No intraprocedural contrast agent injection was required to create a roadmap. Besides reducing contrast, VesselNavigator can reduce procedure time significantly.

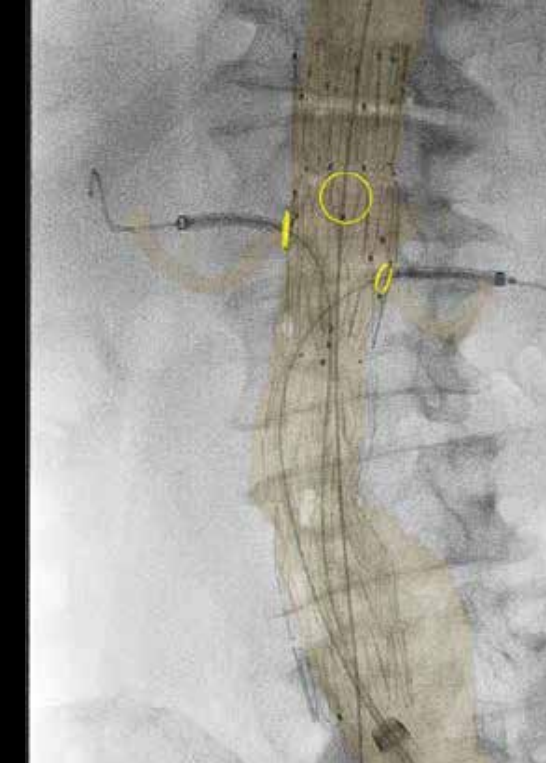
A study of 62 patients<sup>5</sup> showed an average reduction in procedure time from 6.3 to 5.2 hours during FEVAR/BEVAR procedures with the use of Philips CTA image fusion guidance.

### Key benefits

- Supports navigation through complex vessel structures, enhancing clinical outcomes
- A pre-acquired CTA or MRA reduces the need for contrast enhanced runs
- CTA Image Fusion Guidance may lead to shorter procedure times
- Intuitive and easy to use with step-by-step workflow guidance



69Y/M, Endovascular aortic aneurysm repair  
Contrast medium: 36 ml  
Air Kerma: 410 mGy  
Fluoro time: 11 min  
Procedure time: 45 min  
Courtesy of Prof. Dr. M. Schermerhorn



70Y/M, Endovascular repair of juxtarenal abdominal aortic aneurysm  
Contrast medium: 115 ml  
Air Kerma: 2165 mGy  
Fluoro time: 57 min  
Procedure time: 2:14 hours  
Courtesy of Prof. Dr. M. Schermerhorn



71Y/M, lower left peripheral in stent restenosis  
Contrast medium: 40 ml  
Air Kerma: 86 mGy  
Fluoro time: 7 min  
Procedure time: 1:30 hours  
Courtesy of Prof. Dr. F. Vermassen

VesselNavigator provides three dimensional views of vasculature that allow you to easily define the right projection angle for optimal navigation and stent placement. With the use of ring markers you can easily indicate the ostia and landing zones.

“After one month of usage, we have passed the point where the clinical value of VesselNavigator outweighs the investment we made.”

Prof. Dr. F. Vermassen, University Hospital Ghent.



# Discover the potential of CO<sub>2</sub> angiography

## For comprehensive vascular analysis

### Imaging without Iodine

Angiography using CO<sub>2</sub> offers a genuine and powerful alternative to the use of iodinated contrast medium (ICM), whilst helping ensure that clinicians see what they need to see. By minimizing the use of ICM, CO<sub>2</sub> facilitates longer, more complex procedures while also protecting the patient's kidneys – a particularly important factor when physicians are analyzing the body profiles of patients with weak kidney function.

There are numerous specific use cases for CO<sub>2</sub> angiography, including:

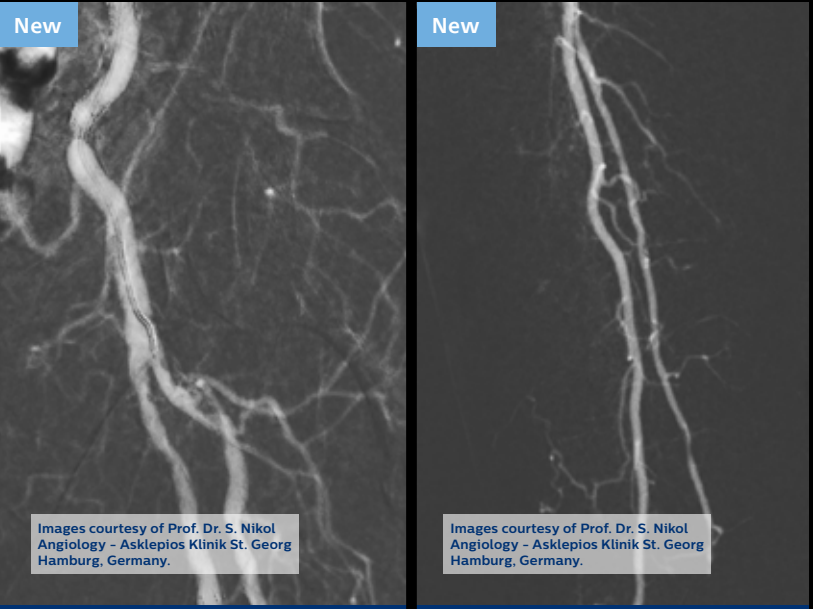
- **For patients at a high risk of contrast-induced nephropathy (CIN)** – CIN is the third-leading cause of hospital-acquired renal failure, carrying a severalfold increase in short-term and long-term mortality.
- **For patients with known iodine allergies** – allergies range from mild rash to anaphylaxis, and many patients would benefit from avoiding the use of ICM – particularly in situations where urgent angiography is needed or in patients with a history of anaphylaxis.

- **For applications where CO<sub>2</sub> outperforms conventional ICM<sup>6,7</sup>** – allowing better diagnostic information in applications such as:
  - Demonstration of acute arterial and venous hemorrhage
  - Demonstration of collateral arteries
  - Observation of arteriovenous shunting in tumors and arteriovenous (AV) malformations (non-neuro)
  - Visualizing type 2 endoleaks in aortic repair

### Enhanced imaging at lower doses – with ClarityIQ CO<sub>2</sub> – optimized imaging

Advanced ClarityIQ image processing helps you see clearly and treat optimally – while managing dose levels for your patients. ClarityIQ includes features such as Automatic Pixel Shifting and a flexible, digital imaging pipeline. ClarityIQ image processing has been expanded to all CO<sub>2</sub> imaging protocols with new exposure settings and increased pre-filtration to dramatically reduce radiation dose.

According to a study, using ClarityIQ can reduce **patient dose levels by 83%** for vascular applications, while obtaining equivalent or **enhanced image quality<sup>8</sup>**



ClarityIQ image processing for CO<sub>2</sub> imaging protocols offers significant potential for enhanced image quality

### Optimized workflow – with Angiodroid CO<sub>2</sub> Power Injector compatibility

Inject CO<sub>2</sub> through this automatic pre-settable constant pressure and volume injector to completely fill the vessel. At all times, the user retains complete control and management of the CO<sub>2</sub> volume and injection pressure.

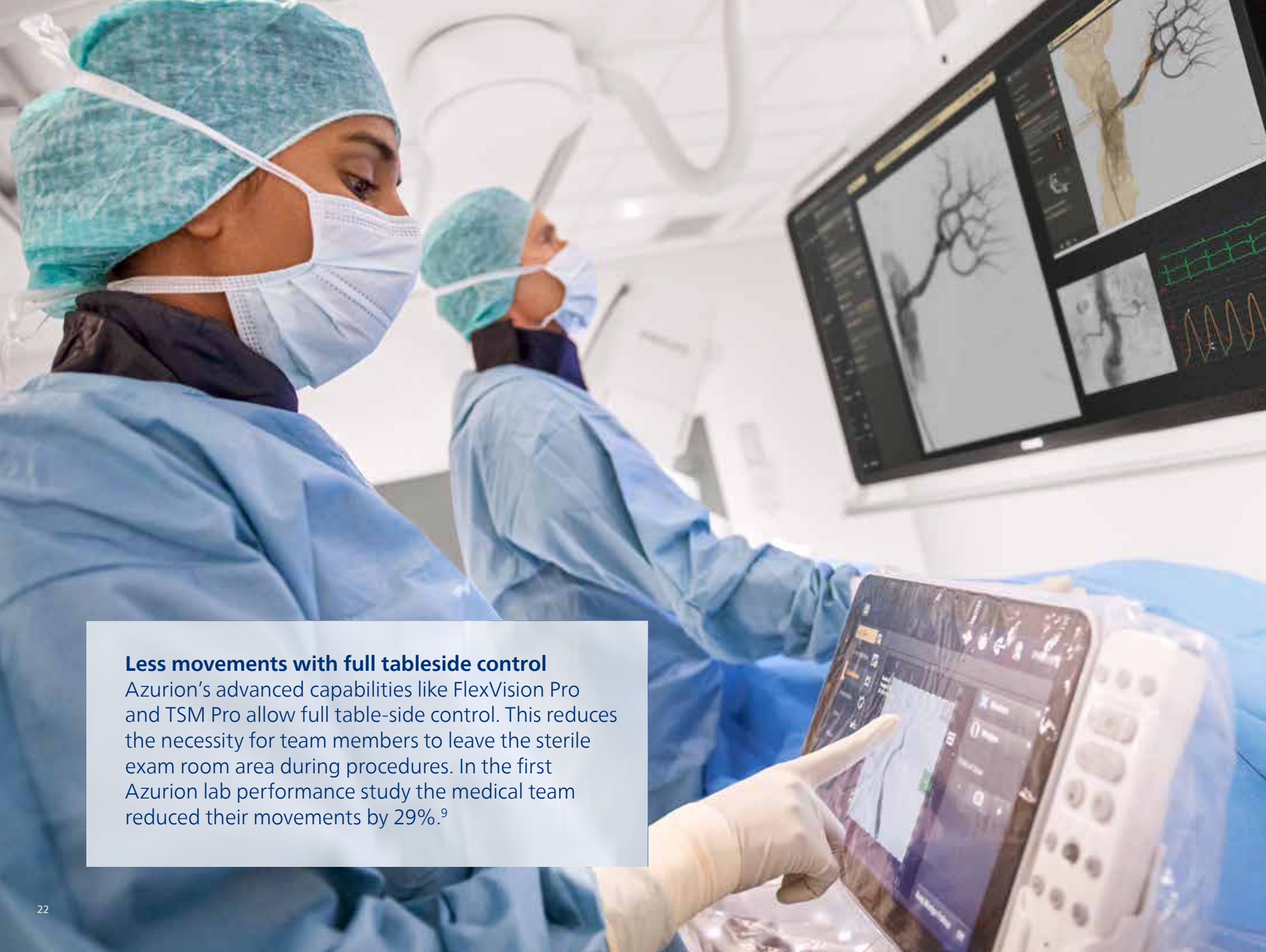
Simply couple the Angiodroid injector to your Philips Azurion system to start a series with accurately timed injections, in the same way you are used to with ICM – with a single switch to start the injection and exposure.

“We reviewed our radiation dose data and the new settings use about **75% less dose** compared to the old settings. The new CO<sub>2</sub> dose is even about **30% lower** than the normal iodinated contrast dose. We can really see the difference, and that’s just wonderful for us and for the patient.”

Dr. S. Seifert

## Key benefits

- **Increased ease of use**, with an enhanced user experience and greater simplicity compared to previous systems where the footswitch and injector started independently
- **Decreased radiation dose**, with programmed X-ray delay
- **Synchronize the injector with the X-ray system**, using the Angiodroid touchscreen to select the parameters
- **Dedicated wireless remote control** without coupling



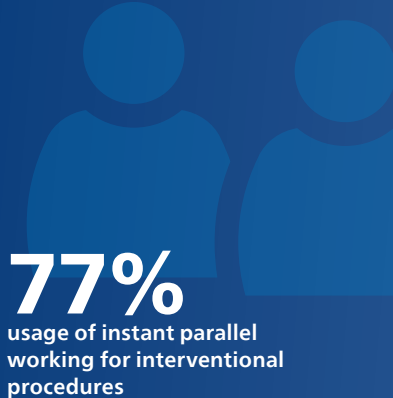
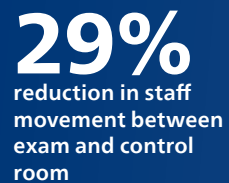
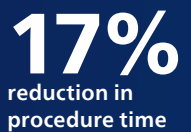
With Azurion,  
**performance and superior  
care become one**

Reduction of procedure time by 17% with Philips Azurion in independently verified study with more than 770 procedures<sup>10</sup>

The Interventional Vascular Department of St. Antonius Hospital, a leading interventional institution, has faced the challenge of increasingly complex procedures, unpredictable demand, and growing patient waiting time. When the time came to replace one of their existing labs, their goal was to invest in a solution that would help them improve quality of care, maximize workflow efficiency and drive staff and patient satisfaction.

**Less movements with full tableside control**  
Azurion's advanced capabilities like FlexVision Pro and TSM Pro allow full table-side control. This reduces the necessity for team members to leave the sterile exam room area during procedures. In the first Azurion lab performance study the medical team reduced their movements by 29%.<sup>9</sup>

After installing Azurion, the interventional vascular department of St. Antonius Hospital achieved<sup>9</sup> a:





# Full flexibility and patient access

Our solutions are based on continuous input and collaborations with stakeholders across the clinical spectrum. Our most recent survey<sup>10</sup> of surgeons around the globe identified their key requirements for a Hybrid OR. The Azurion Hybrid OR with its unique FlexArm gantry option has been developed to meet these critical issues.

### Optimal use of space

Major equipment is mounted on the ceiling, the preferred location for OR equipment. The FlexArm gantry have a compact design, developed to maximize use of OR space and help maintain a clean floor.

### Easy full body patient coverage

Team members can work at both sides of the table, and the patient can be accessed at any location from head to toe. The imaging system can be easily moved away from the table as needed. Azurion's gantry flexibility also helps to reduce and even eliminate table pivoting or panning which can enhance patient experience and improve catheter control and intubation.

### Positioning flexibility and clean floor

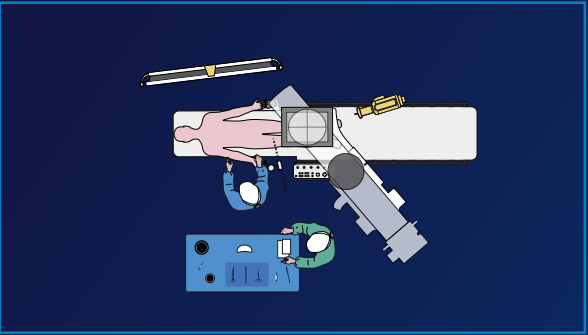
Imaging and surgery equipment can be easily positioned for different teams and procedures without touching the floor. The FlexArm C-arm has a 270-degree range of movement to further increase staff and equipment positioning freedom without compromising projection freedom.

### Workflow without compromise

The anesthesiologist can stand at the head of the table, and other team members can stand in their preferred working positions for a variety of open and minimally invasive procedures. During radial access and multiple access cases, the transversal movement of the gantries allows you to work in the most ergonomic position.

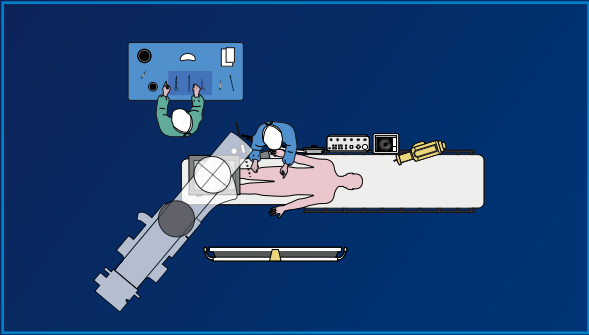


The Azurion 7 M20 monoplane ceiling-mounted with FlexArm option benefits diverse procedures



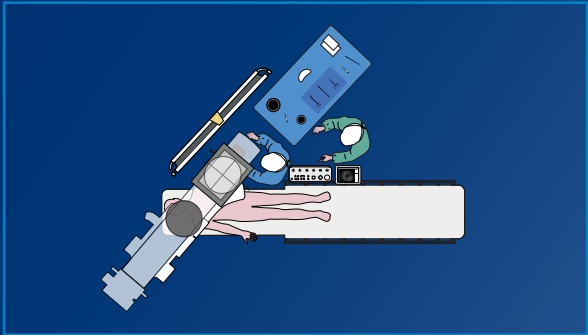
**Figure 1: Peripheral procedures**

- Unrestricted access over full legs with C-arm positioned at 135°
- Flexibility to position the system on right or left side
- Ergonomic view of display monitor



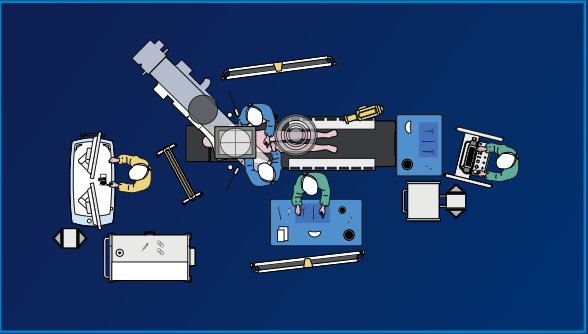
**Figure 2: Peripheral procedures with legs at head end**

- Full accessibility around foot end to position additional equipment (ultrasound, atherectomy device, etc.) and/or whenever pedal access is needed
- Ergonomic view of display monitor for ultrasound images, FlexSpot images, etc.
- 3D tools can be used from both sides of the table



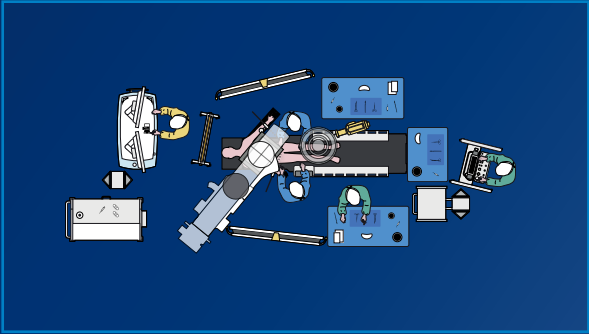
**Figure 3: Shunt procedures**

- Excellent shunt access with patient-centered imaging
- Ergonomic view of display monitor
- Ample space to position additional equipment when needed



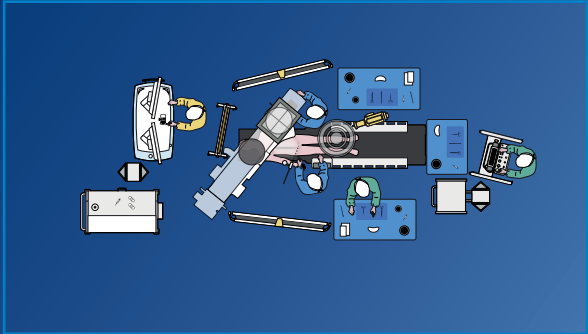
**Figure 4: EVAR procedures**

- Optimal working position for both anesthesia and physicians
- No need to move the table for sedated patients
- Lead screens can be easily positioned at table side



**Figure 5: FEVAR procedures**

- Flexibility to put the system at patient right side to support optimal working position for anesthesiologist and physicians
- No need to move the table for sedated patients
- Both physicians have a good view of the display monitor



**Figure 6: FEVAR procedures with brachial access**

- Excellent brachial access with patient-centered imaging
- C-arm can be easily maneuvered from brachial access position to aortic position without hampering workflow

# SmartCT

## the next leap in simplifying and advancing 3D imaging to enhance interventional confidence

The Philips Image Guided Therapy clinical application software SmartCT, part of the Azurion image guided therapy platform, enriches our exceptional 3D interventional tools with clear guidance that is designed to remove the barriers to acquiring 3D images in the interventional lab.

### Increases clinical confidence

Via the touch screen at the table, you can access clinically tailored 3D acquisition protocols and advanced visualization and measurement tools. These allow you to evaluate the type and extent of disease during peripheral, aortic, visceral, arterial, and venous procedures with great detail. Studies have shown that 3D CT-like imaging in the Angio lab can enhance diagnostic accuracy, improve patient outcomes, and increase procedural efficiency.

### Empowers you to easily adopt 3D imaging

SmartCT allows any clinical user to perform 3D imaging with SmartCT, regardless of their level of experience\*:

- Easy room preparation to help position equipment and the Azurion system for a 3D acquisition
- Easy protocol selection via pictorials
- Injection protocol suggestion based on literature
- Easy isocentering with visual feedback to confirm your field of view position without using X-ray dose
- Easy 3D acquisition – you know when acquisition is completed and you can release the push button or pedal

**82%** think that the ease of using SmartCT will increase their utilization of 3D imaging in interventional procedures<sup>11</sup>

**88%** believe they can have more focus on their patient - thanks to full table side control with the touch screen module<sup>11</sup>



### Provide superb care

Increases clinical confidence for diverse vascular procedures with advanced 3D imaging, visualization and measurement tools.



### Optimize lab performance

Easily control advanced 3D acquisition, visualization and measurements at table side to improve lab flexibility and efficiency.



### Outstanding user experience

Acquire 3D images and interact with all SmartCT 3D features in a more natural and effortless way.



# Improve visibility of anatomy

with clinically tailored acquisition and roadmap protocols



## SmartCT Angio

SmartCT Angio generates a complete high-resolution 3D visualization of cerebral, abdominal, cardiac and peripheral vasculature– all controlled via the touch screen at the table. This can improve visibility of tortuous or complex anatomy.



## SmartCT Roadmap

SmartCT Roadmap provides a live 3D image overlay that can be segmented to emphasize the targeted vessel and lesions, supporting catheter navigation. The SmartCT Roadmap overlays a 3D reconstruction of the vessel tree, vessel segments, or annotations with live fluoro images.



## SmartCT Soft Tissue

SmartCT Soft Tissue generates a CT-like visualization of soft tissue (cone beam CT) in relation to other structures during procedures – all controlled via the touch screen at the table. You can use the CT-like images to assess soft tissue, bone structure and stent deployment before, during and after interventional procedures.

Case: EVAR treatment check: Endoleak type 2 detection

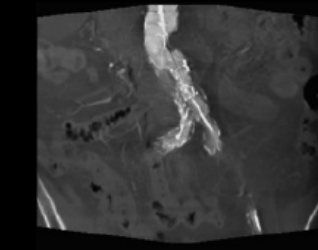
### Patient:

- Male 80 years old
- Contrast volume SmartCT: 80 ml (dilution 50:50)
- Flow: 12 ml/sec
- X-ray delay first run: 2 sec; Interval time between the 2 runs: 15 sec
- DAP per SmartCT acquisition: 13 Gy.cm<sup>2</sup>

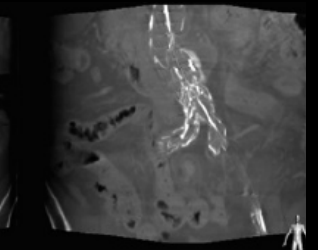


VesselNavigator as guidance for stentgraft placement

First SmartCT: Early phase



Second SmartCT: Late phase



Final check with SmartCT Soft Tissue: Deposition of contrast outside of the stentgraft, only visible on the late phase scan, showing a type 2 endoleak



Merging the two scans clearly shows the late phase contrast filling outside the stentgraft

## Benefits of CBCT during EVAR procedures

According to the 2019 guidelines for abdominal aortic and iliac artery aneurysms<sup>12</sup>, the use of cone beam CT (CBCT), combined with a completion angiogram has been shown to be highly accurate in detecting complications intra-operatively post EVAR<sup>13</sup>. Intra-operative angiography combined with cone beam CT for completion assessment could possibly replace the post-operative CT<sup>13</sup>



Scan to view feature videos

System platform

Azurion 3 M15 monoplane floor-mounted  
Azurion 5 M20 monoplane ceiling-mounted  
Azurion 7 M20 monoplane ceiling-mounted with FlexArm  
ClarityIQ technology

Vascular products

VesselNavigator  
SmartCT Angio  
SmartCT Roadmap  
SmartCT SoftTissue  
XperGuide

Vascular devices

IVUS  
Visions PV  
Pioneer Plus  
Phoenix Atherectomy  
Turbo-Power laser  
Turbo-Elite laser  
Turbo-Tandem catheter  
Stellarex DCB  
AngioSculpt

Integrated tools

Xper IM  
Advanced Visualization Applications  
DoseAware

Integrated tables

Getinge Magnus OR Table  
Baxter TS7500 OR Table

Dedicated solutions to efficiently support your case mix



Azurion 7 M20 monoplane ceiling-mounted with FlexArm option

- Staff and equipment positioning freedom
- Improved workflow for multiple patient access points
- Enhanced patient care due to reduced table and patient movement
- Make efficient use of lab/OR space



Azurion 7 M20 monoplane ceiling-mounted

- Efficient workflow with Procedure Cards, Parallel Working and Checklists and Protocols
- Broad portfolio of advanced workflow options like FlexVision Pro and TSM Pro
- Full-body coverage
- Superior imaging with ClarityIQ and MRC200+ X-ray tube



Azurion 5 M20 monoplane ceiling-mounted

- High performance ceiling mounted image guided therapy solution with a 20" flat detector
- Covers a wide range of cardiac and vascular procedures to offer flexibility for multi-purpose use
- Control all relevant applications via the central touch screen module at table side



Azurion 3 M15 monoplane floor-mounted

- Perfect fit for mixed application use in one room (cardiac/vascular)
- Same user interface as the Azurion 7 series provides ease-of-use across the whole platform
- Full-body coverage with table swivel
- Advanced dose management with DoseWise and MRC200+ X-ray tube

# Increase value throughout your Vascular suite lifecycle






























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Technology Maximizer Plus	Technology Maximizer Pro	Technology Maximizer Premium Cardiac/Vascular	
	Azurion system SW version upgrade		  
	State-of-the-art security		  
	Latest available operating system		  
	Computer HW refresh to support software upgrade		  
	Application training for new or enhanced functionality (days)		  
	New version of existing iApps		  
	Future iApps in one clinical suite (Coronary, EP, SHD, Vascular, Neuro, Onco, Spine or Lung)		 
	Future iApps in one clinical domain (Cardiac or Vascular)		



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#### How to reach us

Please visit [www.philips.com](http://www.philips.com)  
[healthcare@philips.com](mailto:healthcare@philips.com)