

SIEMENS

Artis
With PURE®

Artis with
PURE®



[siemens.com/interventional-neuroradiology](https://www.siemens.com/interventional-neuroradiology)

Smart solutions for neuro interventional procedures

Siemens' broad portfolio for interventional neuroradiology
and endovascular neurosurgery

A comprehensive portfolio and complete range of applications for procedures performed by neuro interventionalists

Neuro interventions are becoming more challenging. New devices are being introduced, exposing the physician to increased possibilities and challenges at the same time.

With its cutting-edge technology such as flat-emitter X-ray tubes as well as the latest innovations like *syngo* DynaPBV Neuro and *syngo* Dyna4D, Siemens has set the bar in interventional imaging, and enables you to shape its future.

Not all features shown in this brochure are necessarily standard and available in all countries.





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Artis with PURE[®]

Adding smooth to smart.

In angiography, many physicians do not get to experience the full capabilities of their modern interventional systems as both procedures and system interaction get increasingly complex. The new PURE[®] platform for Artis zee, Artis Q, and Artis Q.zen is changing this now: Adding smooth use to Siemens' smart technologies.

Increase your process efficiency in the angio suite, enable all your staff members to get the full potential of the system, and enhance your patient treatment outcomes – with an angio system that combines better ease of use, integrated expert therapy guidance, and tools providing better diagnostic information.

For a PURE[®] experience in angiography.



Artis with
PURE[®]

Smooth interaction

Save time during procedures. Fewer steps. More efficiency.

Smart performance

Expand your capabilities. More confidence. Better outcomes.



Experience PURE[®]
Scan this code
or visit
[www.siemens.com/
artis-with-pure](http://www.siemens.com/artis-with-pure)

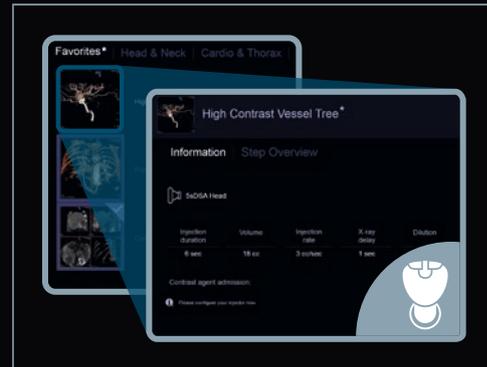
Some highlights of the PURE[®] platform:



syngo DynaCT SMART

Reduce metal artifacts to see the unseen

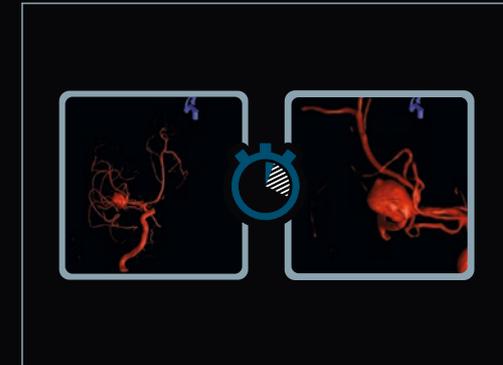
Important diagnostic information can be obscured by metal artifacts. Reduce these artifacts with *syngo DynaCT SMART*. This helps you increase diagnostic confidence and increases the chance for visualizing complications such as bleedings close to metallic objects.



3D Wizard

Simplify 3D imaging with expert guidance

Choosing an optimal 3D protocol is not always easy. The 3D Wizard provides step-by-step expert guidance to achieve the desired imaging results. Increase your confidence when using 3D and get the full benefits from your system.



QuickZoom

Focus and zoom at tableside with just one click

Interacting with 3D volumes at tableside can be cumbersome. QuickZoom helps you save time and speed up your workflow. Click into your region of interest, and QuickZoom centers and zooms automatically, and even provides high-resolution refinement of your 3D volume.



syngo Dyna4D

Welcome the 4th dimension to the angio suite

Direct 3D flow information was limited to CT, MRI, and ultrasound – yesterday. With *syngo Dyna4D*, you can now see flow patterns in 3D, providing a virtually unlimited number of DSA runs at no additional dose and contrast media.*

syngo Dyna4D helps you expand your clinical capabilities in the angio suite by optimizing patient selection and individualized treatment strategies.

* Individual user experience. Results may vary.

Siemens' portfolio for stroke management – perfectly customized to your needs!

When it comes to find the optimal solution for your stroke management needs, Siemens is the vendor that offers the broadest range of pathways, perfectly customized to your needs. Whether you treat strokes daily in a comprehensive stroke center, with a view towards optimizing treatment and outcomes, or whether interventional treatment of ischemic strokes is an upcoming challenge in your institution.

All of the possible pathways shown on the right have one thing in common: They help you optimize your workflow for stroke patients, saving time and thereby improving outcomes.

- **Standard workflow**

Fast and easy diagnosis and patient selection by CT/MRI; subsequent treatment in the angio suite.

- **Combined solutions**

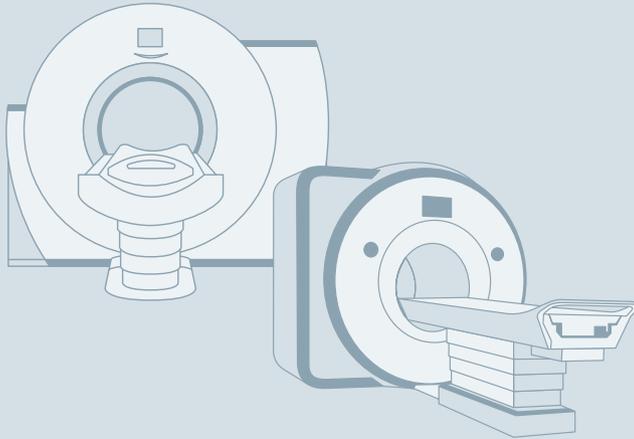
In order to reduce transfer time, representing a big share in the overall time from onset to reperfusion, diagnosis (CT/MRI) and treatment (angio) 'meet each other' in one room. Both modalities can be used jointly together, but also independently in different rooms. This means that outside the emergency stroke scenario, the CT scanner can be used as a regular diagnostic scanner, optimizing usage profile and speeding up return-on-invest.

- **Angiography only**

Avoid patient transfer and perform diagnosis and treatment of pre-selected patients (e.g. by NIHSS) directly in the angio suite. See pages 8-15 to discover that new and exciting potential new pathway.

Standard

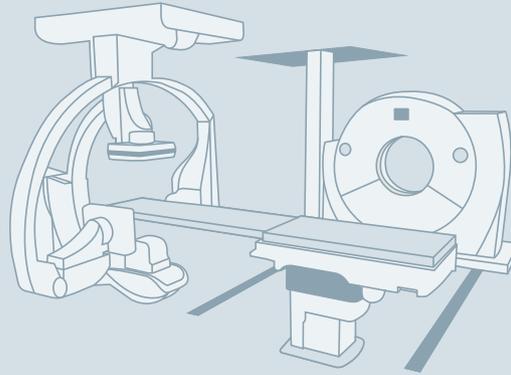
Diagnostic imaging with CT or MRI,
treatment in the angio room



CT or MRI

Combined solutions

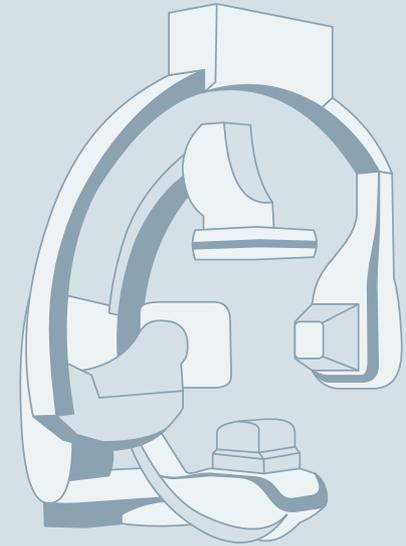
Diagnostic imaging and
treatment in the same room



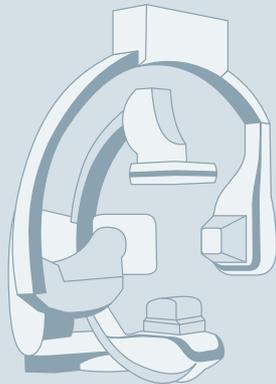
MIYABI Angio-CT*

Angiography only

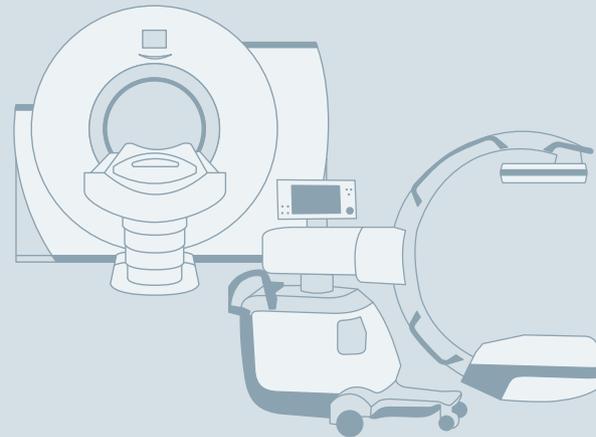
Diagnostic imaging and
treatment in the same room



Treatment



Angiography



CT and mobile C-arm

Angiography "only"

*MIYABI Angio-CT is a customized solution and not commercially available in all countries. Due to regulatory reasons, future availability cannot be guaranteed. Please contact your local Siemens organization for further details.

Tools for STROKE treatment – the angio-only one-stop-shop principle

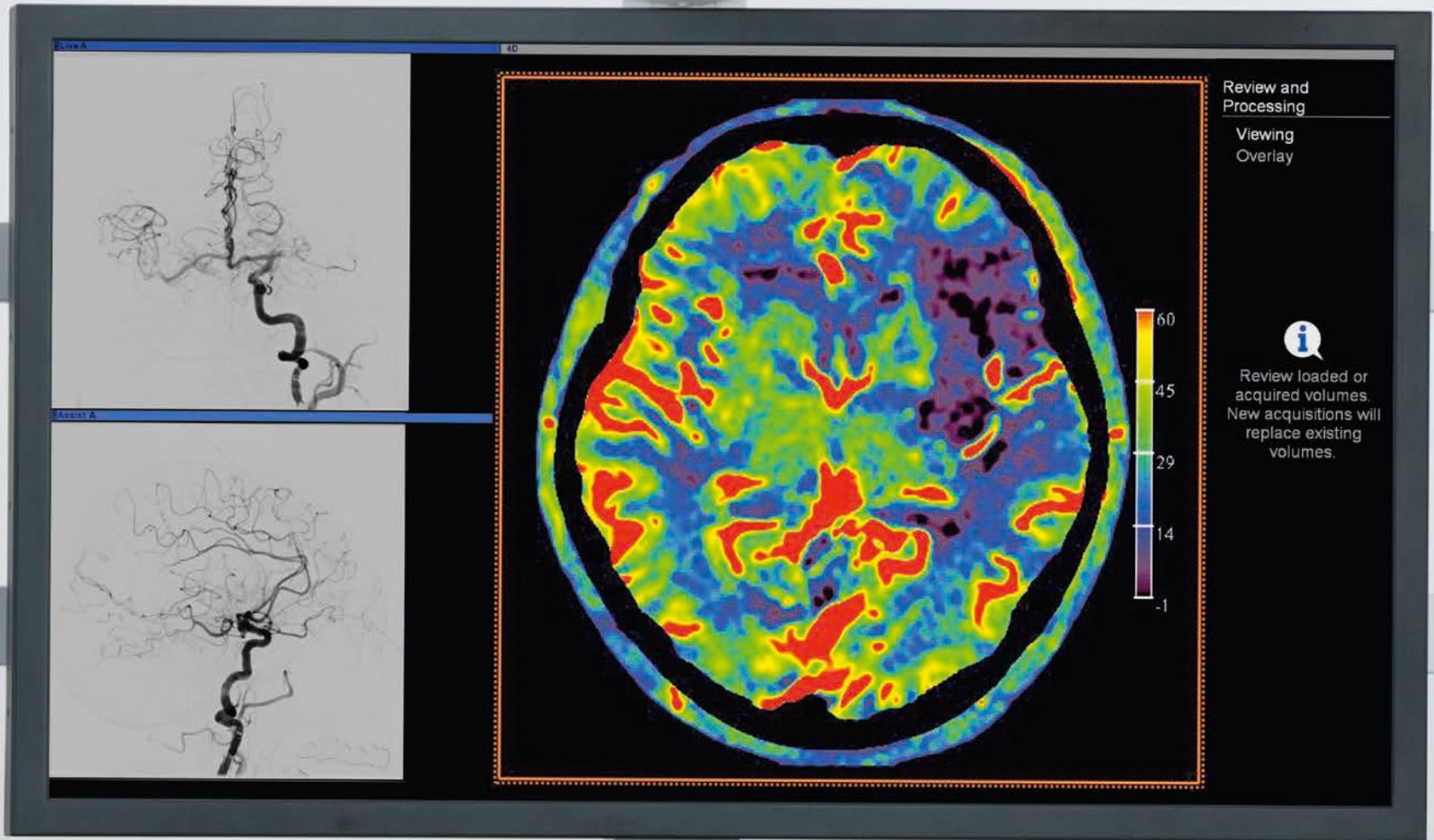
As one of the leading causes of death and disabilities worldwide, stroke is currently one of the most threatening diseases.

Thanks to the most recent studies (as MR CLEAN, ESCAPE, EXTEND IA, SWIFT PRIME, etc.), interventional treatment has proven to be the treatment of choice for many stroke patients. Learn how Siemens' solutions can help physicians to succeed.

After clinical pre-selection of patients (NIHSS), excellent imaging for further patient selection and during intervention is indispensable for safe and efficient endovascular therapy. Therefore interventional angiography systems have to provide uncompromised image quality while interfering as little as possible with interventional procedures. Siemens' Artis Q and Artis zee systems fulfill these requirements by offering comprehensive imaging capabilities such as *syngo* DynaCT to check for bleeds. The unique combination of *syngo* DynaCT in Angiography (to check for clot location and collateral status) and perfusion analysis by *syngo* DynaPBV Neuro (to evaluate size and location of the infarct core) further helps the physician decide whether interventional treatment is advisable. Following this new idea for a potential new stroke pathway (trying to achieve reperfusion times similar to myocardial infarction), all that can be done in the angio suite with only one intravenous contrast injection, saving time and thereby enhancing outcome.

These tools support patient selection and optimize treatment planning. In addition, they assist in performing the intervention and allow for an immediate and in-depth evaluation of the therapeutic success right at the site of intervention.



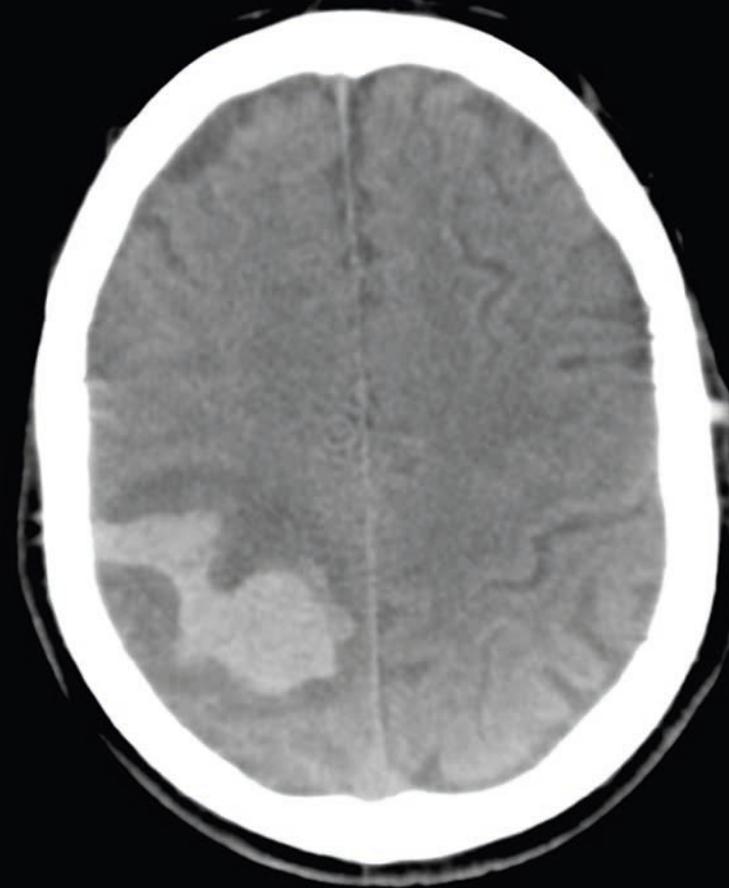


syngo DynaCT

- With the Artis Q's continuous 16-bit imaging chain and the Siemens-unique dedicated cone-beam reconstruction algorithm, *syngo* DynaCT allows for bleed detection of clinically pre-selected patients (NIHSS), and thereby deciding whether it is a hemorrhagic or ischemic stroke
- Might also be indicated at the end of treatment for a final check-up
- Simply select your desired 3D imaging result using the 3D Wizard and let the system guide you through the acquisition step by step, including recommended injection parameters and acquisition delays



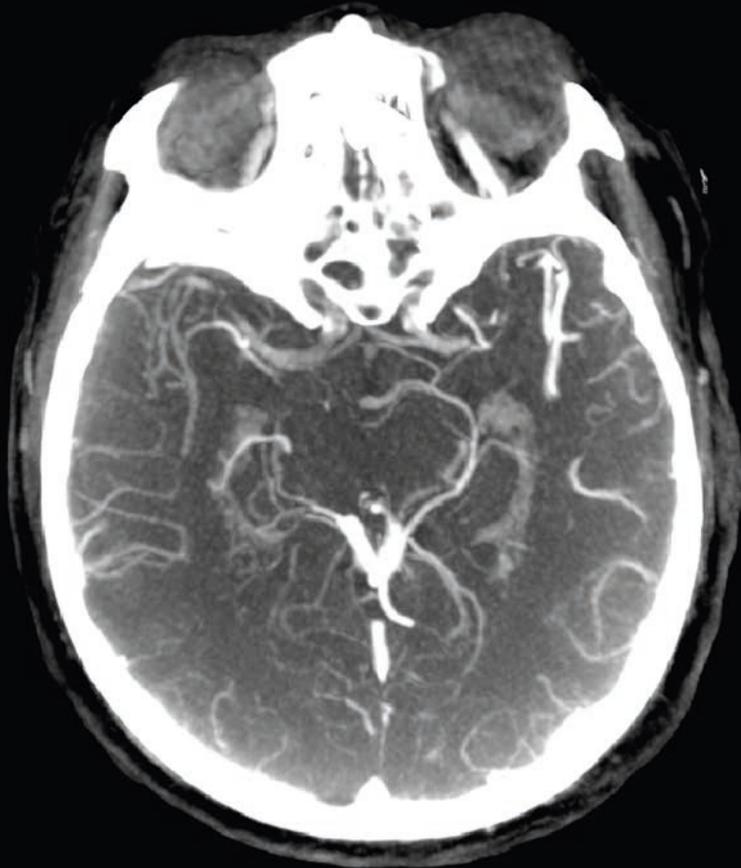
Differentiate between hemorrhagic and ischemic stroke in the angio suite



Bleeding and surrounding edema with native *syngo* DynaCT imaging on Artis Q

Courtesy of Prof. Martin Skalej, MD, University Hospital Magdeburg, Germany

Check occlusion site and collateral status



syngo DynaCT in Angiography

- Allows localizing the clot and estimating the collateral status with intravenous contrast injection (and Siemens-unique integrated bolus-watching phase)
- Allows physicians to evaluate the size and location of the “tissue at risk”

Depiction of occlusion site and collateral status using syngo DynaCT in Angiography with intravenous contrast injection

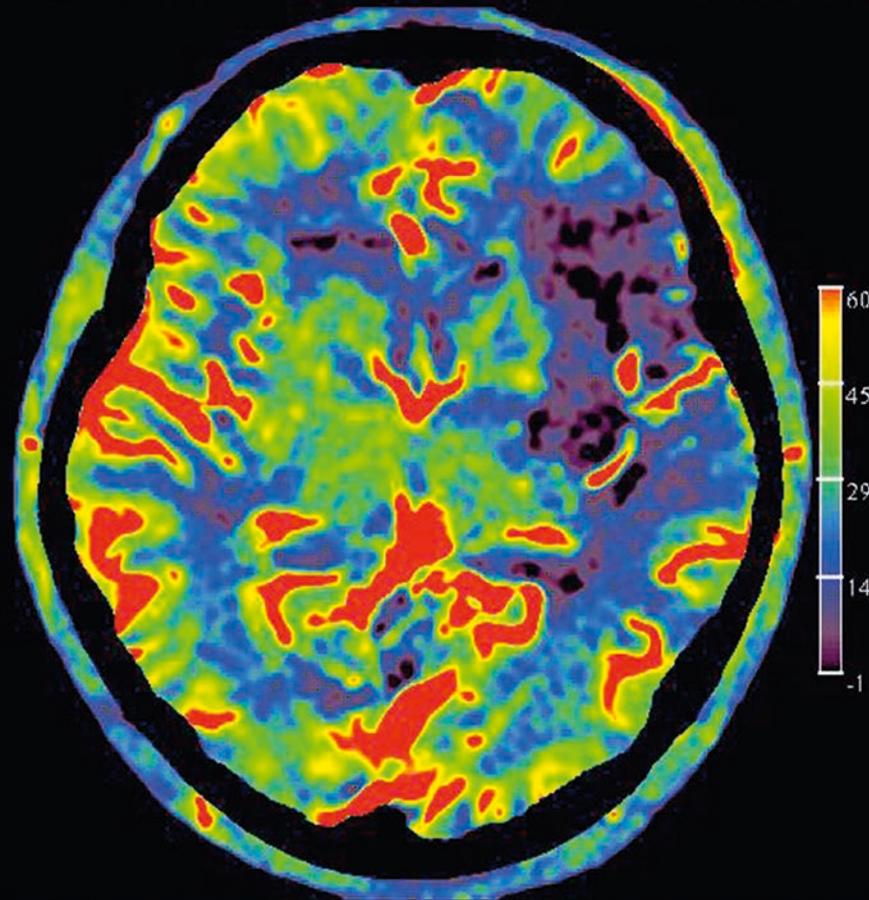
Courtesy of Dr. Johannes Weber, MD, Kantonsspital St. Gallen, Switzerland

syngo DynaPBV Neuro

- Visualizes the blood volume distribution (comparable to the CBV maps, known from CT and MRI functional imaging) of the whole brain in 3D
- Helps to monitor the functional state of the patient and thereby allows physicians to evaluate the size and location of the core infarct
- No additional contrast injection needed, as *syngo* DynaCT in Angiography and *syngo* DynaPBV Neuro are automatically reconstructed using the same intravenous contrast injection (~60 cc) with Siemens-unique integrated bolus-watching phase
- Simply select your desired 3D imaging result using the 3D Wizard and let the system guide you through the acquisition step by step, including recommended injection parameters and acquisition delays



Evaluate the infarct core



Hypoperfusion in the *syngo* DynaPBV Neuro map represents the infarct core

Courtesy of Prof. Arnd Dörfler, MD and Tobias Struffert, MD, University Hospital Erlangen, Germany

Excellent image quality, even for patients under conscious sedation only



Low-dose DSA imaging visualizes occlusion site

Courtesy of Dr. Johannes Weber, MD, Kantonsspital St. Gallen, Switzerland

DSA

- Siemens-unique 0.3 micro-focus, combined with simultaneous 2k acquisition (at a biplane system, on both planes), the smallest pixel size in the AP and lateral plane, and the advanced CLEARmatch pixel-shifting algorithm (on Artis with PURE) allow for superior resolution and image quality at the lowest possible dose
- Real-time pixel-shifting (CLEARmatch on Artis with PURE) is crucial as the trend from general anesthesia towards conscious sedation advances
- Allows for confident diagnosis and decision making to the smallest detail

Artis with
PURE®

Roadmap

- Benefit from consistent image quality during patient movements by CLEARmatch online pixel shift compensating for 6 degrees of motion (with Artis with PURE), which is crucial as a subgroup analysis in the MR CLEAN* and other studies has proven that conscious sedation provides better outcomes compared to general anesthesia
- Individual windowing of vessel map and devices or tools enables optimized visibility without compromise
- Helps to save contrast and X-ray dose and optimize image quality by using DSA scenes as a vessel map
- Zoom&Pan (on Artis with PURE) eases and accelerates your workflow, and saves contrast and X-ray dose

Artis with
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*Olvert A. Berkhemer, M.D. et al., A Randomized Trial of Intraarterial Treatment for Acute Ischemic Stroke, N Engl J Med 2015; 372:11-20

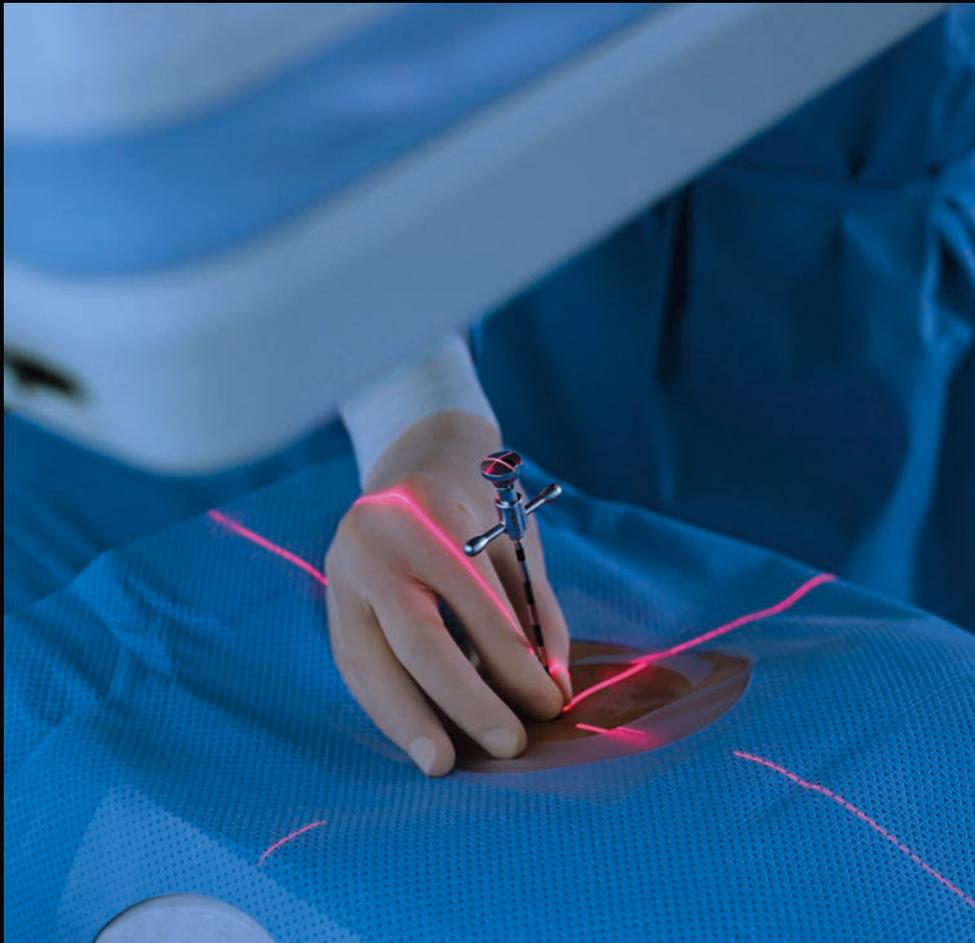
Optimized Roadmap functionality for every challenge



CLEARmatch during Roadmap allows for low dose and optimal visibility

Courtesy of Prof. Michael Knauth, MD / Marios Nikos Psychogios, MD, University Medical Center Göttingen, Germany

Smooth and precise puncturing



syngo Needle Guidance

- Enables precise planning and performing of e.g., drainages and craniectomies
- Especially in cooperation with the Siemens-unique integrated laser crosshair, syngo Needle Guidance marks the skin/skull entry point and provides puncture direction and length automatically – with no additional radiation

The Siemens-unique integrated laser crosshair provides skin entry point and puncture direction

Tools for treatment of ANEURYSMS

By introducing new imaging technologies and devices, the number of endovascular treatment of aneurysms is constantly rising. At the same time, these new devices demand the best image quality as maneuvering and placement have to be very precise.

With its cutting-edge technology such as high-resolution imaging using micro-focus with simultaneous 2k imaging at flat-emitter X-ray tubes, as well as the latest innovations such as CLEARmatch and *syngo* DynaCT SMART, Siemens equipment not only best supports treatment, but also increases safety and confidence before discharging the patient.





syngo Dyna3D

- High-contrast 3D imaging with *syngo* Dyna3D allows the evaluation of the entire vessel tree as well as selecting the ideal working projection for subsequent treatment. The C-arm can be moved to that projection automatically.
- Siemens-unique DualVolume functionality enables ideal differentiation between the contrast-enhanced vessel and implants/devices
- Automatic 512x512 reconstruction with user defined presets
- QuickZoom (on Artis with PURE) allows for fast and easy selection of and zoom&pan to the ROI (region of interest)
- Simply select your desired 3D imaging result using the 3D Wizard and let the system guide you through the acquisition step by step, including recommended injection parameters and acquisition delays



Precision and differentiation with high-contrast 3D



DualVolume visualization of a WEB device at a bifurcation aneurysm

Courtesy of Charles Strother, MD, University of Madison, Wisconsin, USA

Boosting the level of detail



Clear depiction of intersection zone of two bypass flow diverters

Courtesy of Prof. Martin Skalej, MD, University Hospital Magdeburg, Germany

syngo DynaCT Micro

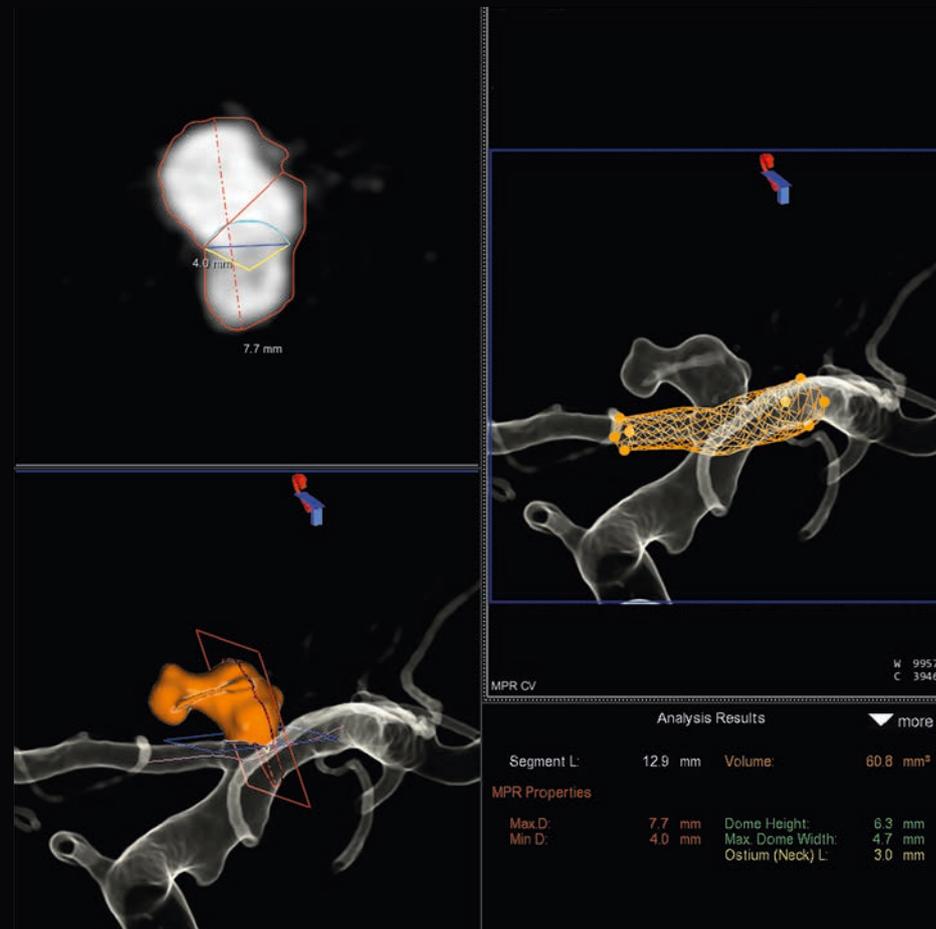
- 50% higher spatial resolution of *syngo* DynaCT Micro is boosting the level of detail; most relevant in detecting and evaluating potential tiny perforators in the proximity of aneurysms to enable the best possible and safe treatment
- Allows for validating correct positioning and wall apposition before detaching the device.

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syngo Aneurysm Guidance Neuro

- Provides you with all the relevant data of an aneurysm (parent vessel dimensions, volume, ostium, etc.) and assists in planning virtual stents in 3D space, which can subsequently be overlaid for guidance during treatment

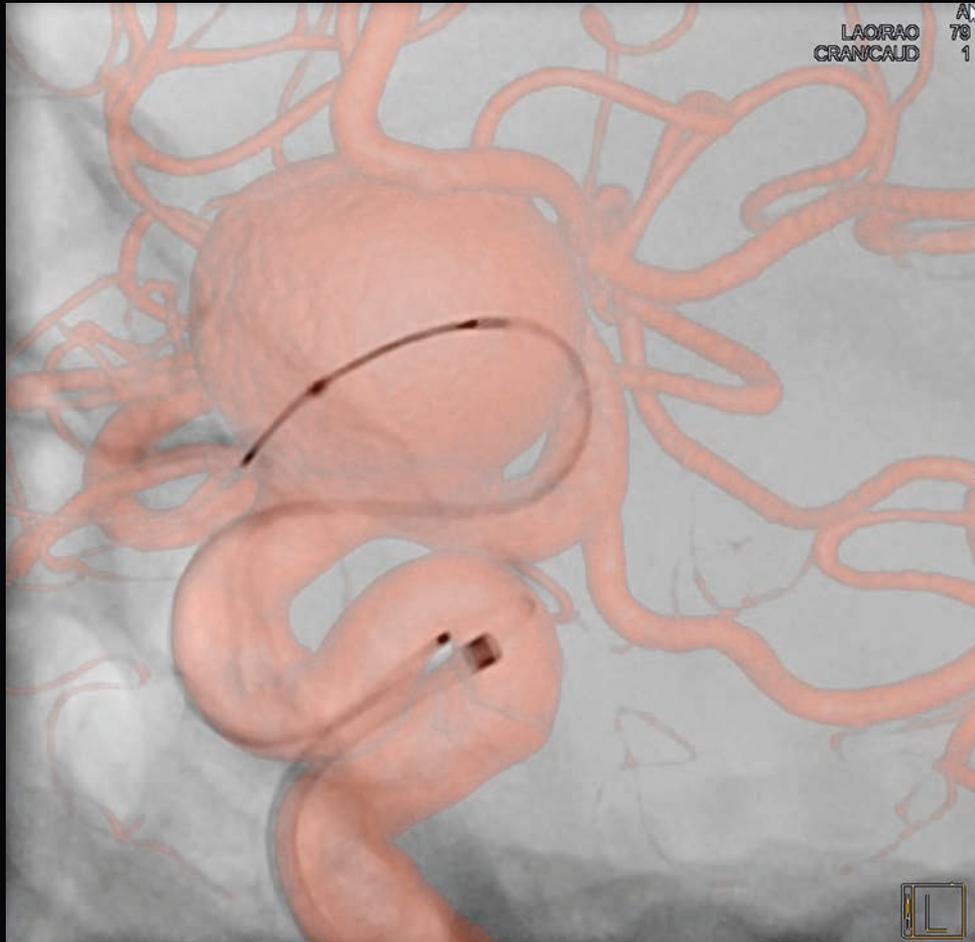
Ease and speed up your workflow



Evaluation, measurement and virtual device implantation

Courtesy of Prof. René Chapot, MD, Alfried Krupp Krankenhaus Essen, Germany

Insights from 3D shown on 2D



syngo 3D Roadmap for dose and contrast-optimized maneuvering – automatic adaption to changes of angulation, zoom, table, etc.

Courtesy of Prof. Saruhan Cekirge, MD, Hacettepe University Ankara, Turkey

syngo 3D Roadmap

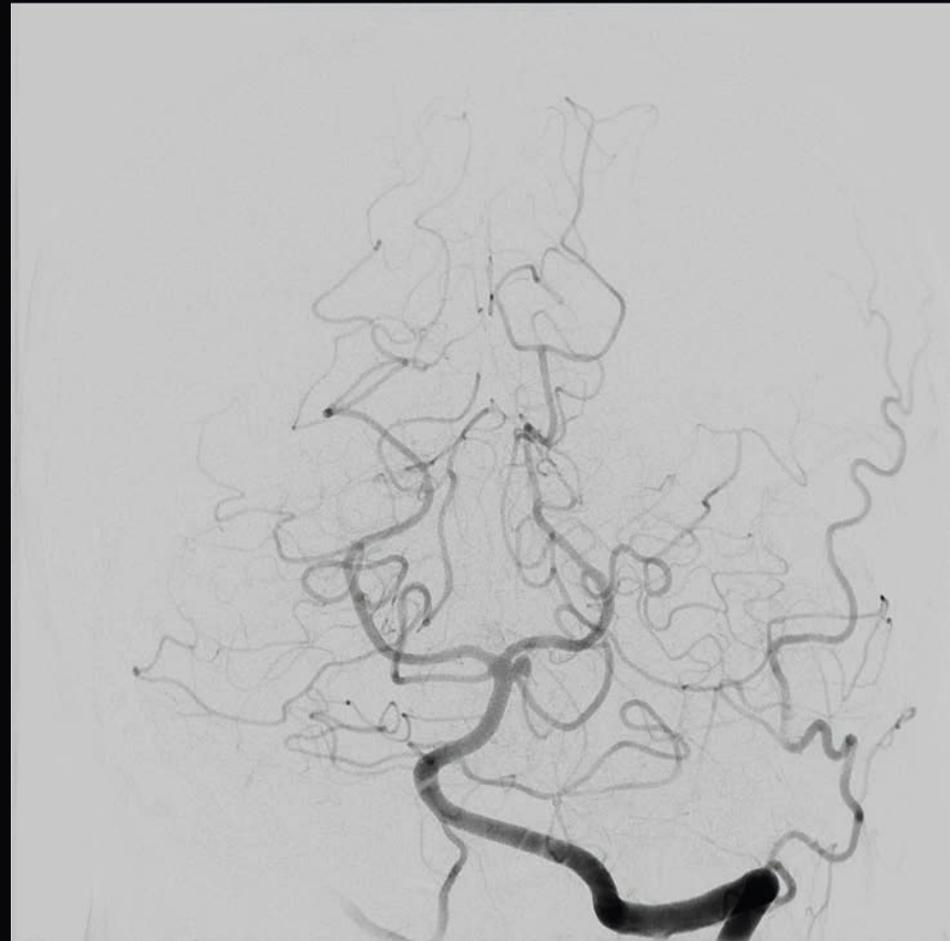
- Complements guidance by overlaying 3D information from *syngo* Dyna3D/ *syngo* DynaCT, CT or MRI onto the live image during the intervention
- Automatically updates to changes in the C-arm angulation/position, table, zoom, and source-to-image distance, providing the most convenient and efficient workflow for interventional procedures

DSA

- Siemens-unique 0.3 micro-focus, combined with simultaneous 2k acquisition (at a biplane system, on both planes), the smallest pixel size in the AP and lateral plane, and the advanced CLEARmatch pixel-shifting algorithm (on Artis with PURE) allow for superior resolution and image quality at the lowest possible dose
- Real-time pixel-shifting (CLEARmatch on Artis with PURE) is crucial as the trend from general anesthesia towards conscious sedation advances
- Allows for confident diagnosis and decision making to the smallest detail

Artis with
PURE®

Excellent image quality, even for patients under conscious sedation only



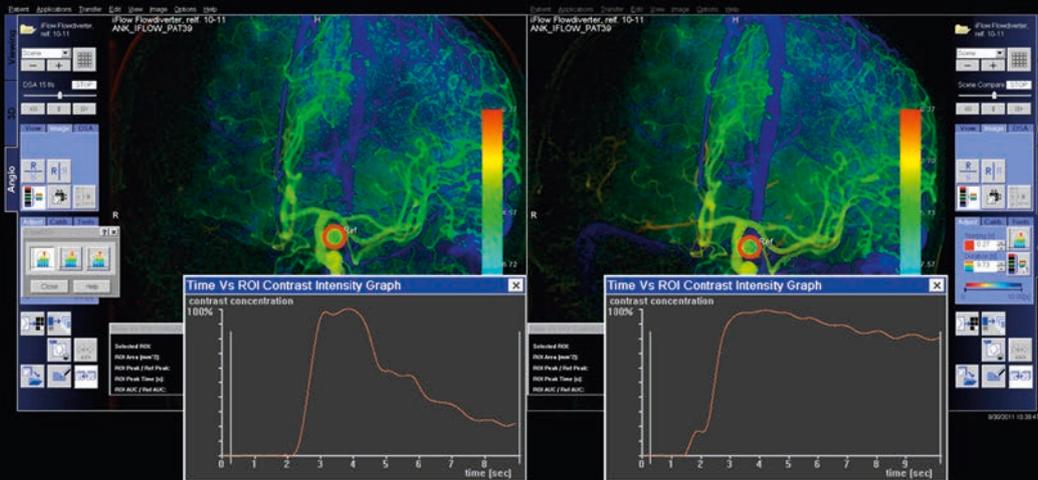
The new CLEARmatch online pixelshift during DSA and Roadmap allows for crystal clear images, even at the lowest doses

Courtesy of Prof. René Chapot, MD, Alfried Krupp Krankenhaus Essen, Germany

Understand the flow – quantify results

syngo iFlow

- Siemens-unique region-of-interest feature with *syngo* iFlow enables physicians to evaluate the flow dynamics of aneurysms, even of arbitrary shape
- Allows for qualitative endpoint determination at the click of a button without any additional X-ray or contrast dose, as every DSA scene (independent of angulation or frame rate) can be analyzed by *syngo* iFlow



Difference of flow within the entire aneurysm, before and after flow diverter implantation

Courtesy of Prof. Cekirge, MD, Hacettepe University, Ankara, Turkey

Optimized Roadmap functionality for every challenge

Roadmap

- Benefit from consistent image quality during patient movements by CLEARmatch online pixel shift compensating for 6 degrees of motion (with Artis with PURE), which is crucial as a subgroup analysis in the MR CLEAN* and other studies has proven that conscious sedation provides better outcomes compared to general anesthesia
- Individual windowing of vessel map and devices or tools enables optimized visibility without compromise
- Helps to save contrast and X-ray dose and optimize image quality by using DSA scenes as a vessel map
- Zoom&Pan (on Artis with PURE) eases and accelerates your workflow, and saves contrast and X-ray dose

Artis with
PURE®

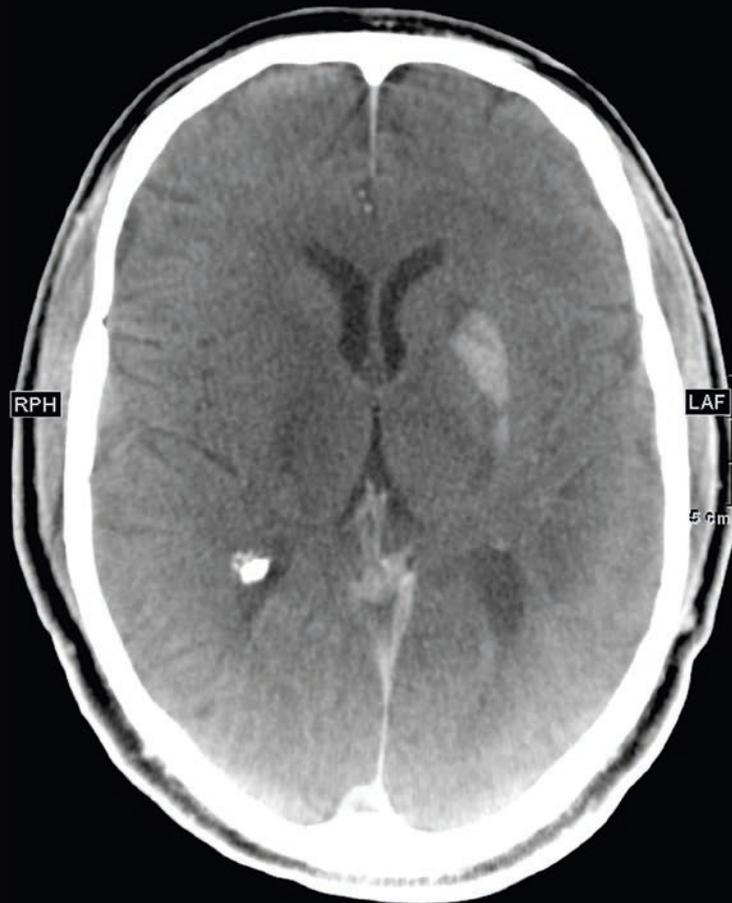


CLEARmatch during Roadmap allows for low dose and optimal device visibility

Courtesy of Prof. René Chapot, MD, Alfried Krupp Krankenhaus Essen, Germany

*Olvert A. Berkhemer, M.D. et al., A Randomized Trial of Intraarterial Treatment for Acute Ischemic Stroke, N Engl J Med 2015; 372:11-20

Confidence at the site of intervention finalizing the procedure



Contrast extravasation visible in final *syngo* DynaCT

Courtesy of Prof. Michael Knauth, MD / Marios Nikos Psychogios, MD, University Medical Center Göttingen, Germany

syngo DynaCT

- Just before finalizing treatment, the Artis Q's unique true16-bit imaging chain and the dedicated cone-beam reconstruction algorithm allow for detecting potential issues right at the site of intervention; either allowing for immediate reaction, a change in medication (i.e., antiplatelet regimen), or for confident discharge of the patient
- Simply select your desired 3D imaging result using the 3D Wizard and let the system guide you through the acquisition step by step, including recommended injection parameters and acquisition delays

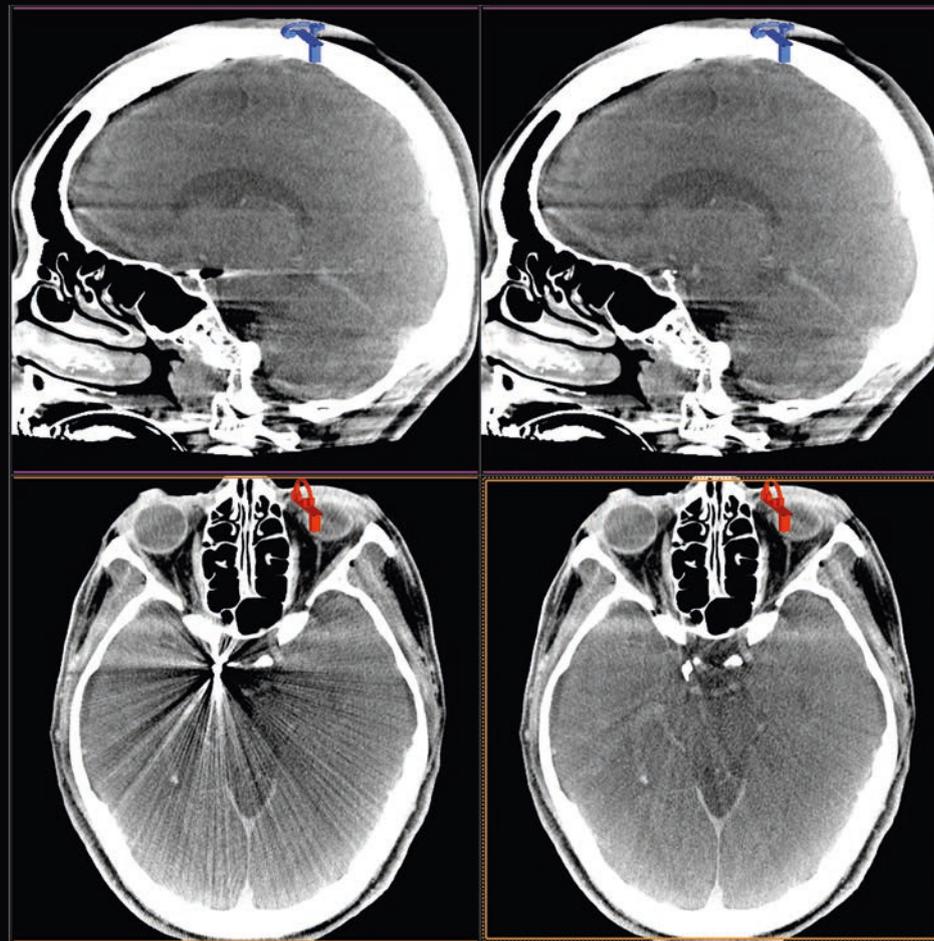


Reduce metal artifacts to see the unseen

syngo DynaCT SMART

- Reduces streak metal artifacts from metallic implants like coils and clips, allowing physicians to see the unseen
- Using a secondary reconstruction of the same input data, this post-processing algorithm reduces metal artifacts, increasing safety and confidence
- Industry-leading image quality is achieved by the Siemens-unique iterative reconstruction method

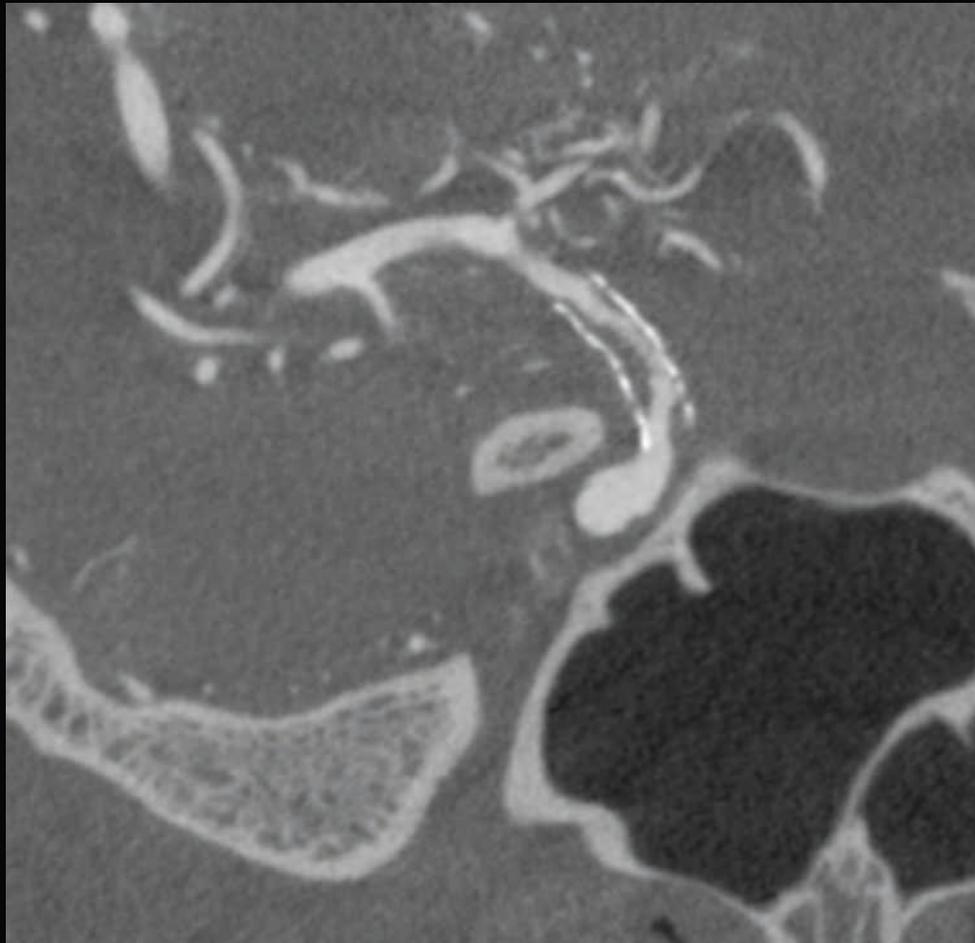
Artis with
PURE®



Applying *syngo* DynaCT SMART (right hand side) increases image quality and confidence at discharge

Courtesy of Prof. Hidenori Oishi, MD, Juntendo University School of Medicine, Tokyo, Japan

Follow-up imaging in the angio suite – as easy and fast as MSCT, with higher spatial resolution



syngo DynaCT in Angiography clearly depicting in-stent stenosis

Courtesy of Swedish Medical Center, Englewood, Colorado, USA

syngo DynaCT in Angiography

- Benefit from the high spatial resolution of *syngo* DynaCT imaging by performing your follow-up imaging in the angio suite by intra-arterial or contrast injection (if needed, followed by metal artifact reduction with *syngo* DynaCT SMART correction)
- The bolus-watching phase that is integrated in Siemens systems enables you to save contrast and get best results at the same time

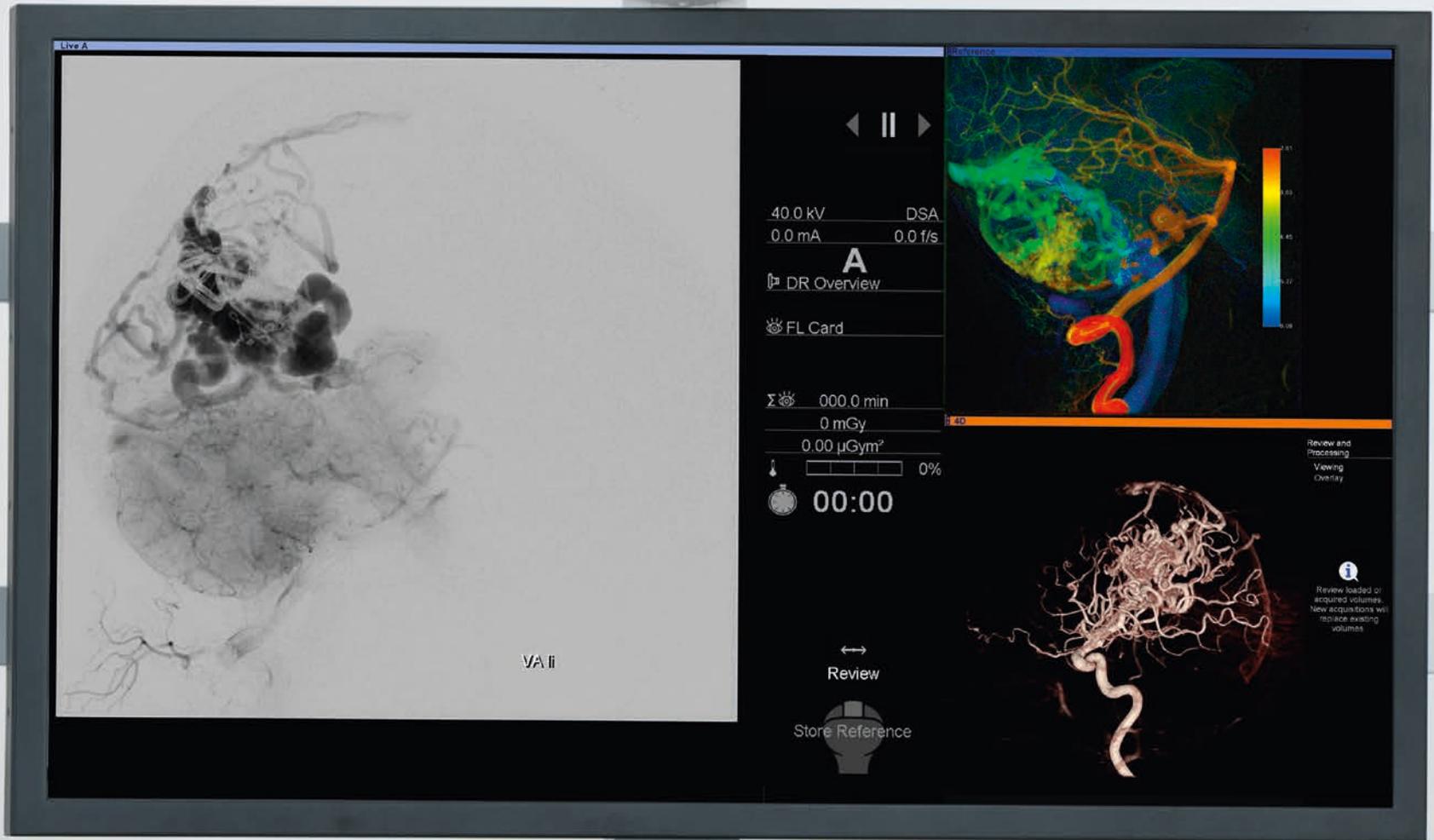
Artis with
PURE[®]

Tools for treatment of VASCULAR MALFORMATIONS (AVMs/fistula)

Treating malformations such as AVMs or fistula is very likely one of the biggest challenges in the field of neuro interventions. Understanding the disease and understanding the angio architecture is crucial for creating the best possible treatment plan and a successful embolization.

With its cutting-edge technology such as high-resolution imaging using micro-focus with simultaneous 2k imaging at flat-emitter X-ray tubes as well as the latest innovations such as CLEARmatch and syngo Dyna4D, Siemens equipment enhances treatment planning and supports the intervention further with the best image quality at low radiation.



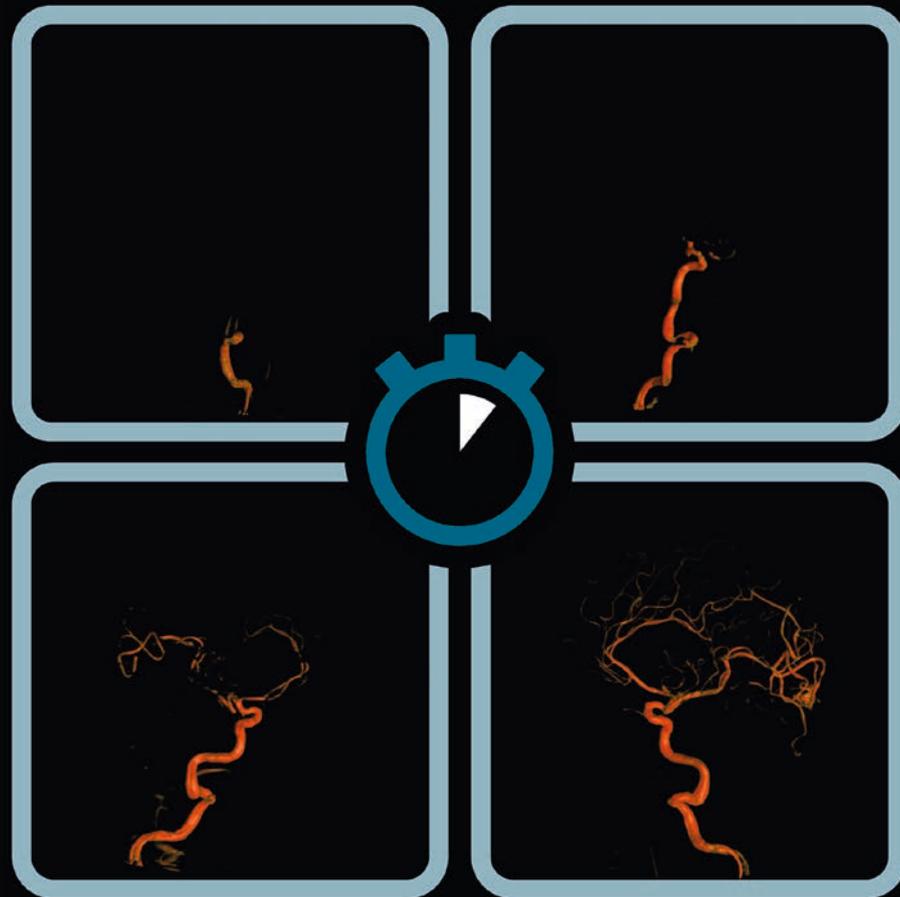


syngo Dyna4D

- Allows viewing the flow pattern (temporal resolution) in 3D, providing a virtually unlimited number of DSA runs with no additional dose*
- Enhances treatment planning and patient selection, best suited for endovascular treatment, by combining the advantages of 2D (time) and 3D (space)
- By further zooming into the nidus of an AVM, syngo Dyna4D allows for any view at any time, even without disturbing overlaps from distracting arteries or veins

Artis with
PURE[®]

Welcome the 4th dimension to the angio suite

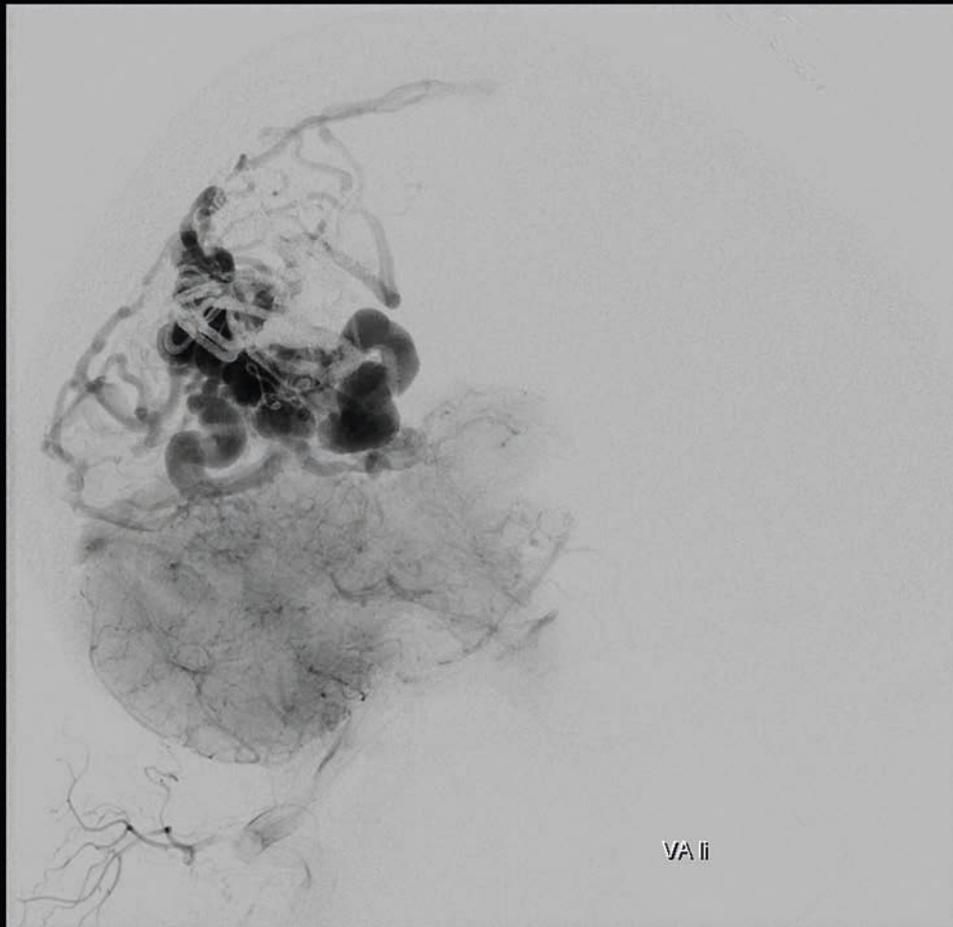


Better understanding of angio architecture and flow dynamics of an AVM

Courtesy of Prof. Charles Strother, MD, University of Madison, Wisconsin, USA

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

Excellent image quality, even for patients under conscious sedation only



The new CLEARmatch online pixelshift during DSA and Roadmap allows for crystal clear images, even at lowest doses

Courtesy of Dr. Johannes Weber, MD, Kantonsspital St. Gallen, Switzerland

DSA

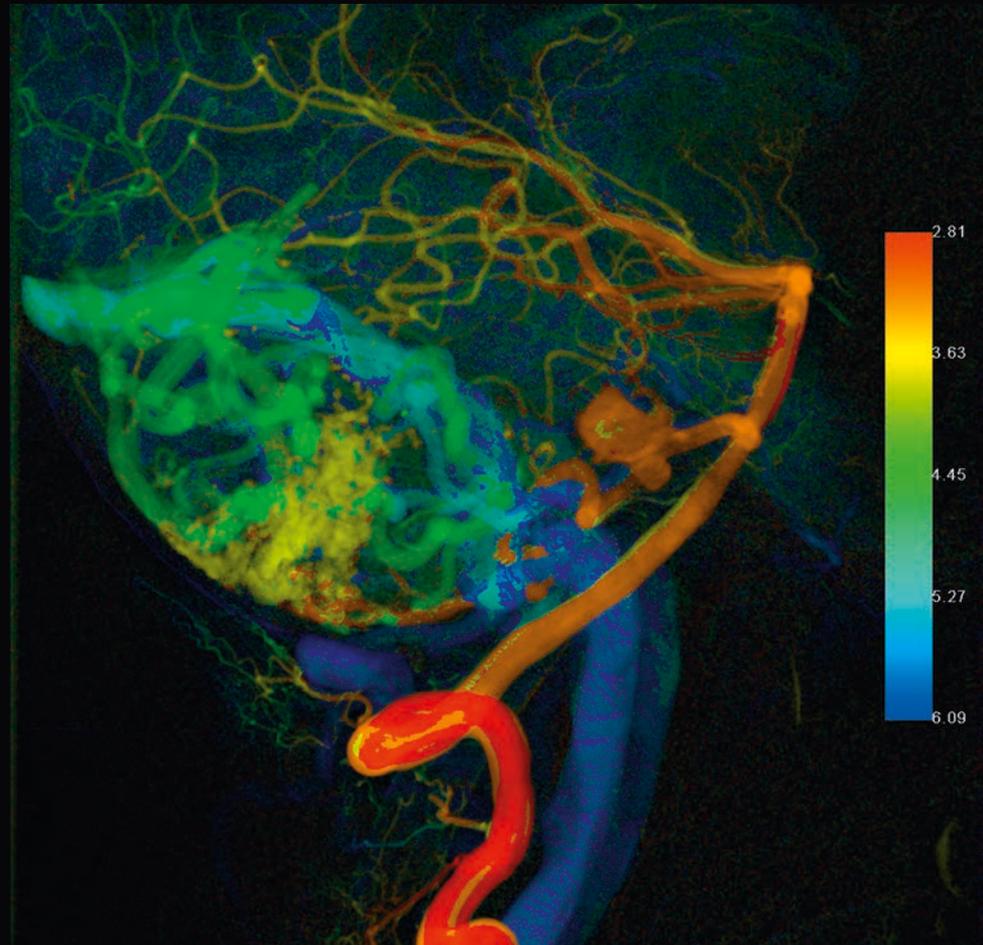
- Siemens-unique 0.3 micro-focus, combined with simultaneous 2k acquisition (at a biplane system, on both planes), the smallest pixel size in the AP and lateral plane, and the advanced CLEARmatch pixel-shifting algorithm (on Artis with PURE) allow for superior resolution and image quality at the lowest possible dose
- Real-time pixel-shifting (CLEARmatch on Artis with PURE) is crucial as the trend from general anesthesia towards conscious sedation advances
- Allows for confident diagnosis and decision making to the smallest detail

Artis with
PURE®

Understand the flow – quantify results

syngo iFlow

- syngo iFlow enables physicians to evaluate the flow dynamics of malformations, even of arbitrary shape
- Allows for qualitative endpoint determination at the click of a button without any additional X-ray or contrast dose, as every DSA scene (independent of angulation or frame rate) can be analyzed by syngo iFlow



Evaluation and quantification of flow dynamics with every DSA run

Courtesy of Dr. Johannes Weber, MD, Kantonsspital St. Gallen, Switzerland

Optimized Roadmap functionality for every challenge



Device visibility, even in the finest vessels and challenging situations

Courtesy of Prof. René Chapot, MD, Alfried Krupp Krankenhaus Essen, Germany

Roadmap

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Artis with
PURE®

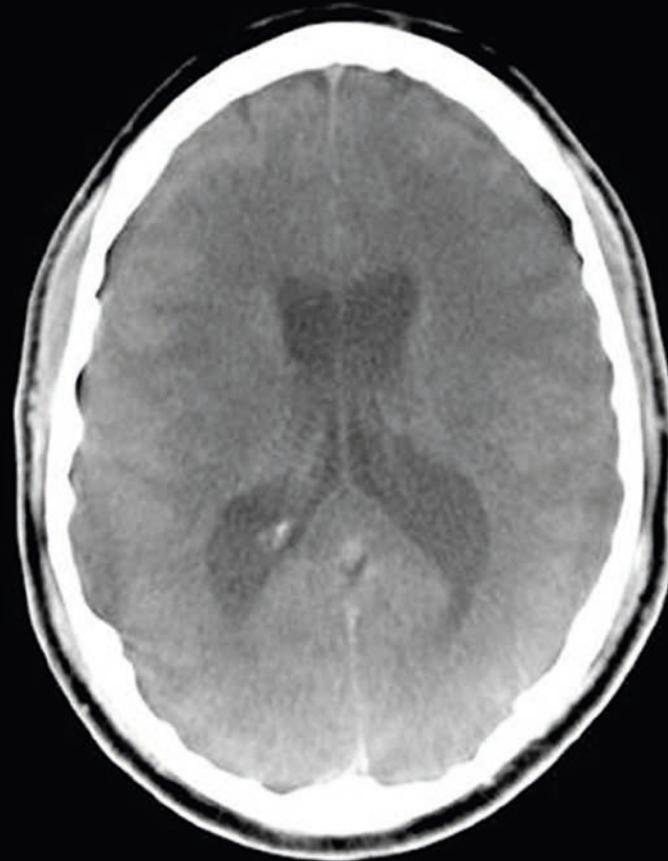
*Olvert A. Berkhemer, M.D. et al., A Randomized Trial of Intraarterial Treatment for Acute Ischemic Stroke, N Engl J Med 2015; 372:11-20

syngo DynaCT

- Just before finalizing treatment, the Artis Q's unique true16-bit imaging chain and the dedicated cone-beam reconstruction algorithm allow for detecting potential issues right at the site of intervention, either allowing for immediate reaction, or for confident discharge of the patient
- Simply select your desired 3D imaging result using the 3D Wizard and let the system guide you through the acquisition step by step, including recommended injection parameters and acquisition delays



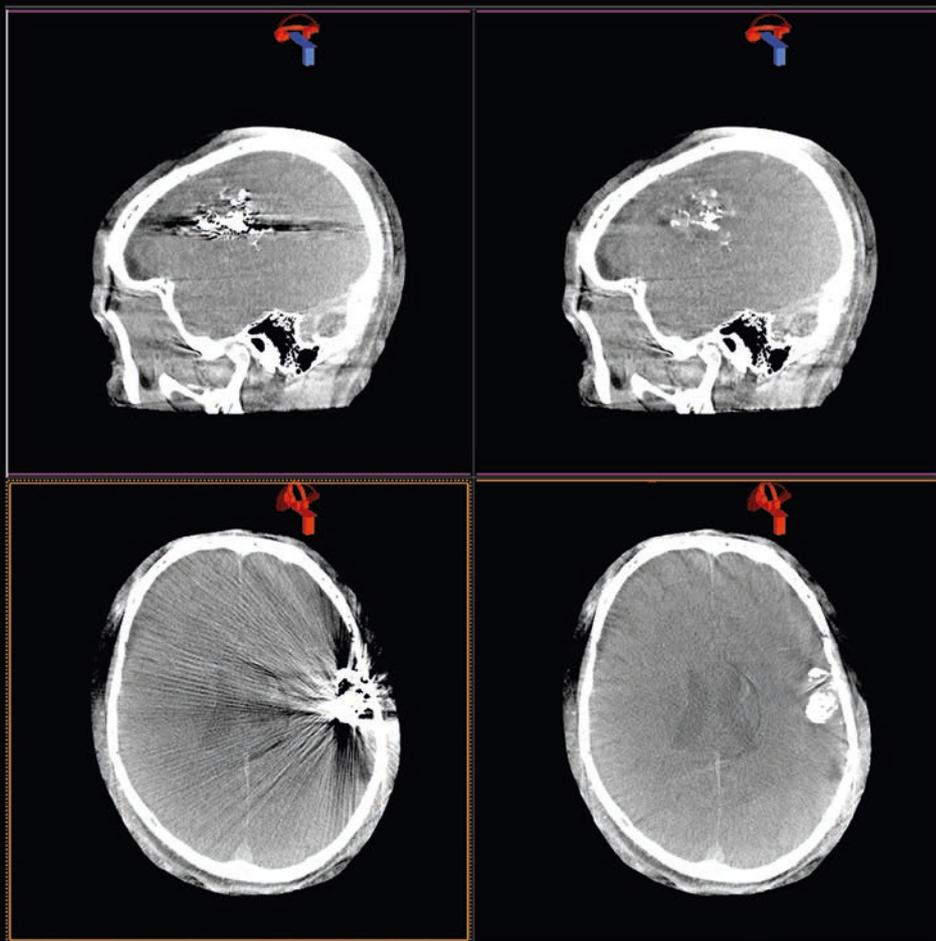
Confidence at the site of intervention finalizing the procedure



syngo DynaCT confirms exclusion of hemorrhage

Courtesy of Prof. Martin Skalej, MD, University Hospital Magdeburg, Germany

Reduce metal artifacts to see the unseen



syngo DynaCT SMART

- Reduces streak metal artifacts from metallic implants like coils and clips, allowing physicians to see the unseen
- Using a secondary reconstruction of the same input data, this post-processing algorithm reduces metal artifacts, increasing safety and confidence
- Industry-leading image quality is achieved by the Siemens-unique iterative reconstruction method

Artis with
PURE[®]

Applying syngo DynaCT SMART (right hand side) increases confidence at discharge

Courtesy of Prof. René Chapot, MD, Alfried Krupp Krankenhaus Essen, Germany

Tools for SPECIAL PROCEDURES



Boosting the level of detail



Clear depiction of the tiny component of the temporal bone

Courtesy of Prof. Martin Skalej, MD, University Hospital Magdeburg, Germany

Temporal Bone Imaging

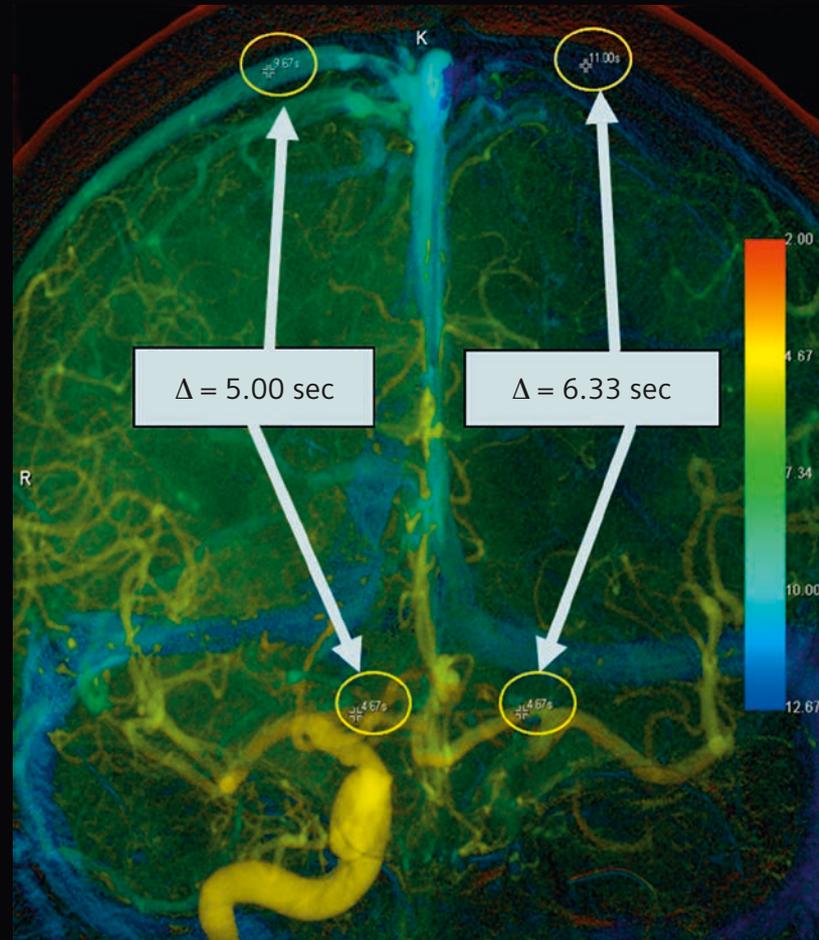
- *syngo* DynaCT Micro expands the spectrum of your angio suite, e.g., by acting as a consultant for ENT surgeons. The 50% higher spatial resolution of *syngo* DynaCT Micro boosts the level of detail; most relevant in evaluating bony structures and for confident validation of correct placement of, e.g., cochlear implants and/or stapes prosthesis

Artis with
PURE[®]

Balloon Test Occlusion

- With *syngo* iFlow you are able to quantitatively evaluate the arteriovenous delay in both hemispheres, helping you to judge the tolerance for permanent occlusion

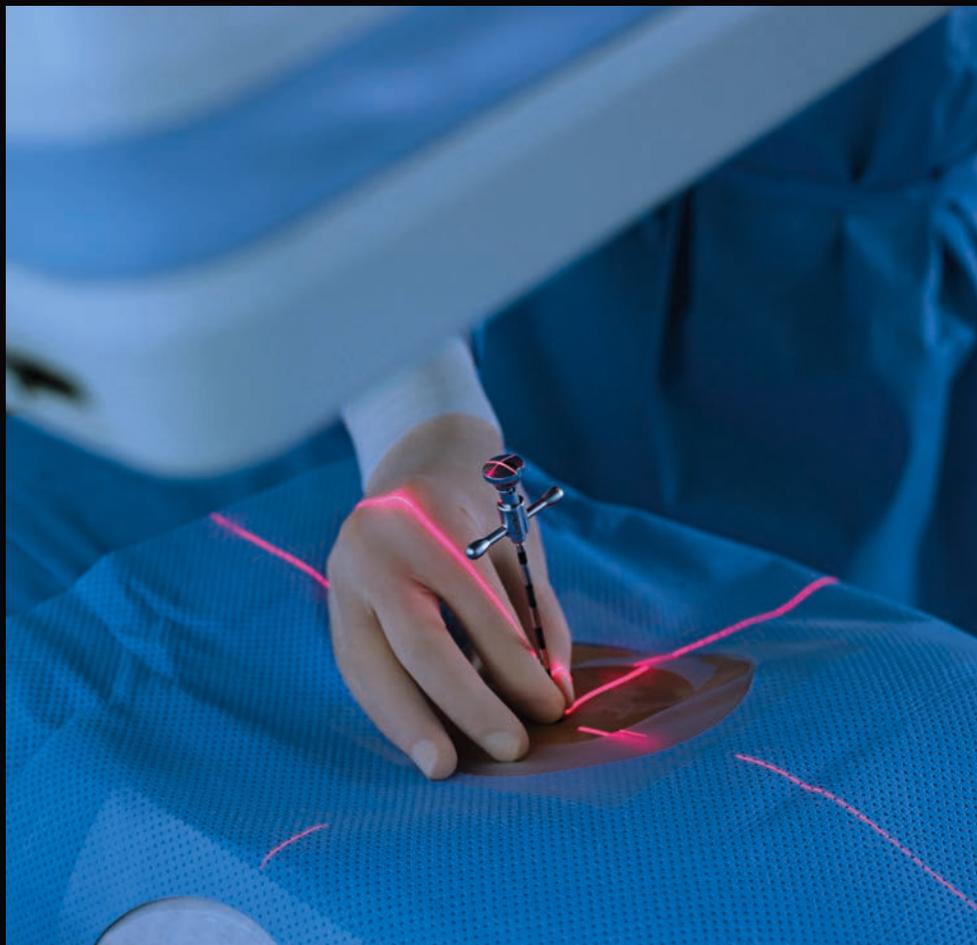
Understand the flow – quantify results



syngo iFlow shows rather high arteriovenous delay on the contralateral side

Courtesy of Prof. Alexander Bock, MD, Vivantes Berlin, Germany

Smooth and precise puncturing



The Siemens-unique integrated laser crosshair provides skin entry point and puncture direction

Spinal Interventions

- Precise planning and execution of vertebroplasty and kyphoplasty are supported by *syngo* Needle Guidance. Especially in cooperation with the Siemens-unique integrated laser crosshair, *syngo* Needle Guidance marks the skin entry point and provides puncture direction and length automatically; with no additional radiation.
- 3D planning of the puncture path can be performed on *syngo* DynaCT, CT or MRI volumes

Artis family of imaging solutions

Versatile systems for all types of interventional neuroradiology

The Artis family includes four product lines of interventional imaging systems: Artis one, Artis zee, Artis Q, and Artis Q.zen. They feature the complete portfolio for interventional neuroradiology, including a floor-, ceiling-mounted, or biplane system and even a highly flexible multi-axis system with robotic technology: Artis zeego.

The versatile portfolio from Siemens offers the right solution for virtually all needs in interventional neuroradiology keeping in mind the essentials, such as a flexible working position and high level of control from the sterile area.



Artis one

Artis zee

Artis Q

Artis Q.zen

Artis with
PURE®

Floor-mounted	Ceiling-mounted	Biplane	zeego*	Multi-Purpose*	Detectors	X-ray Tube
					 midsize detector	MEGALIX Cat Plus
					  small detector large detector	
					  small detector large detector (HDR)	GIGALIX
					 midsize detector (crystalline silicon)	

Interventional cardiology

Interventional radiology

Surgery

*Only available with large detector.

CLEAR features

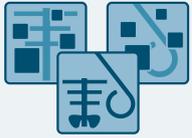
Whether your patients are tall or short, obese or slender – you need to see. And in order to see, you need optimal image quality.

Our CLEAR applications automatically enhance image quality and thus help increase certainty during interventions.

CARE+CLEAR

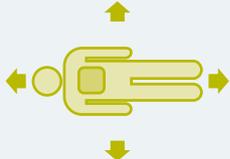
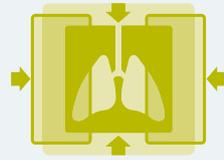
CARE+CLEAR is our comprehensive portfolio of image-quality and dose-saving tools. It provides our customers with their preferred image quality at the lowest possible dose, supporting confident decisions in diagnosis and treatment as well as increasing the safety of both patients and clinical staff.

CARE+CLEAR is standard with all Artis systems.

CLEARpulse		CLEARcontrol	
	Improved image quality by shortening the pulse length		Optimized image brightness in areas with high density differences
CLEARmap		CLEARview	
Artis with PURE [®] Fast and easy access to enhanced image quality in Roadmap		Dose-adaptive noise reduction to enhance image quality of low-dose images	
CLEARvessel		CLEARmotion	
Enhanced visibility of vessel edges and smooth background			Excellent image quality without motion artifacts
CLEARmatch		CLEARchoice	
	Artis with PURE [®] Compensating for patient movement with next-generation real-time pixel shift		Customized image quality

CARE features

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

CAREposition		CAREvision			
	Patient positioning without additional fluoroscopy while moving the table or C-arm		Dose reduction by adapting the pulses per second		
CAREfilter		CAREprofile		CAREreport	
Minimized patient entrance dose* with nearly no impact on image quality		Radiation-free adjustment of collimation and semitransparent filter		Comprehensive reporting for easier dose management	
Low-dose acquisition		CAREwatch		CAREguard	
	Get the image quality you need, at a much lower dose		Making dose visible		Effective patient entrance dose* control during procedures
CAREmonitor		Low-dose syngo DynaCT		CARE Analytics	
Real-time patient entrance dose* monitoring		3D imaging at the lowest possible dose		Improved dose monitoring and increased transparency	

*Patient entrance dose = Air kerma; Patient entrance dose rate = Air kerma rate

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Order No. A91AX-11522-01C1-7600 | Printed in Germany | CG AX 3404 WS 10152. | © Siemens Healthcare GmbH, 2015

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