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Siemens Healthineers introduces angiography system Artis icono ceiling for precise tumor embolization

- **New system mechanics and image chain for precise 2D and 3D imaging**
- **Seamless integration of different systems with third-party interface**
- **Better capacity utilization thanks to multidisciplinary usage**

The number of cancer cases is increasing worldwide, resulting in a greater need for minimally invasive tumor treatment options such as transarterial chemoembolization (TACE). An early diagnosis and treatment decision requires a high level of interventional precision to make the embolization of the tumor-feeding vessels as selective as possible. For such super-selective procedures and other complex interventions, Siemens Healthineers developed its new, ceiling-mounted Artis icono ceiling angiography system.

To allow for comprehensive therapy while maintaining organ function, tumor embolization needs to be performed with an extremely high level of precision. Interventional results are affected by several factors, such as image quality and patient coverage provided by the angiography system used. Particularly tall or large patients present a challenge in imaging since some of their organs, for example the liver and prostate, are difficult to visualize with flat-detector CT. The new Artis icono ceiling helps hospital personnel to meet this challenge by combining mechanical flexibility with high positioning accuracy and intelligent workflows.

To enable consistently high image quality in line with the ALARA (as low as reasonably achievable) dose principle, Siemens Healthineers developed a new image chain called OPTIQ for the Artis icono angiography family. Combining hardware and software, this image chain provides optimized image contrast and reduced noise – regardless of the angulation or patient size. For precise image reconstruction, Artis icono ceiling provides three-dimensional (3D) data acquisitions both at the patient's head and from the patient's side over a complete angular range of 200 degrees.

This is particularly important in interventional radiology since 3D imaging from the side plays an important role in tumor and prostate embolization.

New controls and drives available with the Omni Spin C-arm of Artis icono ceiling enable fast rotation and exact system movements. 3D images can be acquired in as little as two and a half seconds, thereby reducing motion artifacts. Thanks to the system's high positioning accuracy, the vascular tree needs to be visualized only once for image-guided catheter navigation during Roadmap, which may lead to reduced contrast agent and dose. Intelligent image guidance tools also support users in anatomical navigation and software-supported identification of tumor-feeding vessels.

Since April 2022, Artis icono ceiling has been in use at Hannover Medical School, Hannover, Germany. "The new system is very precise and the image guidance is excellent," says Prof. Dr. Bernhard Meyer, Head of Interventional Radiology at Hannover Medical School. "Artis icono ceiling has made embolizations a lot easier, even complex ones with challenging patients. We are selective, but also comprehensive. We save healthy liver tissue but also treat the whole tumor. We should never forget about the quality of life of our patients. That's why precision with fewer side effects is so important."

Artis icono ceiling is capable of even more in the operational suite: The system is designed to serve as an interface for third-party systems and software. Consequently, parameters of third-party software can be imported and modified – for example for image postprocessing or for training. "Artis icono ceiling represents a major advancement for digital integration in the interventional suite", says Dr. Michael Scheuering, Head of Interventional Radiology at Siemens Healthineers. "Not only does the system offer our customers excellent economic efficiency and image quality, but it will also become the digital hub of the angiography suite and provides an investment in the future."

In order to address increasing cost pressure in clinical routine and to allow for maximum capacity utilization of the interventional suite, Artis icono ceiling is designed for multidisciplinary use. In addition to interventional radiology, the system can be deployed in interventional cardiology to improve treatment results in cardiovascular interventions.

Thanks to a novel hygiene concept that includes the use of sealed surfaces, the system is easy to clean and can be quickly cleaned for the next procedure.

To standardize and improve clinical workflows, Artis icono ceiling is equipped with the “Case Flows” functionality, which allows the standardization of procedure workflows with the press of a button. The number of unwarranted variations during interventions as well as the radiation dose can thus be decreased, for example by using lower frame rates across certain steps of the intervention.

The products/features mentioned herein are not commercially available in all countries. Their future availability cannot be guaranteed.

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

The products and features mentioned herein are pending 510(k) clearance, and are not yet commercially available in the United States.

This press release and a press picture is available at <https://www.siemens-healthineers.com/en/press/releases/artisiconoceiling>.

Contact for journalists

Kathrin Palder

Phone: +49 173 3645319; Email: Kathrin.Palder@siemens-healthineers.com

Follow the Press Team on Twitter: <https://twitter.com/siemenshealthpr>

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