

# Redefining the Angio Suite for Interventional Radiology

Canon introduced its next-generation Angio-CT - The Alphenix 4D CT integrated with the Aquilion ONE / INSIGHT Edition - at CIRSE 2025, the annual congress of the Cardiovascular and Interventional Radiological Society of Europe, which was held in Barcelona between September 13 and 17, 2025.

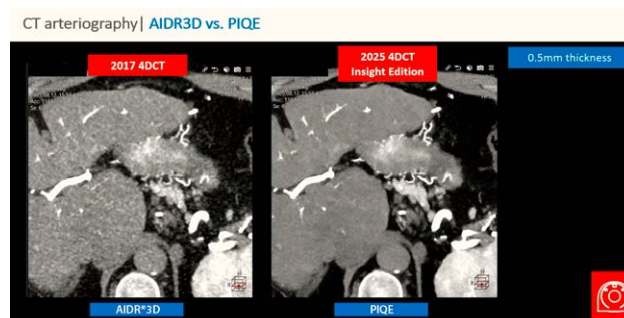
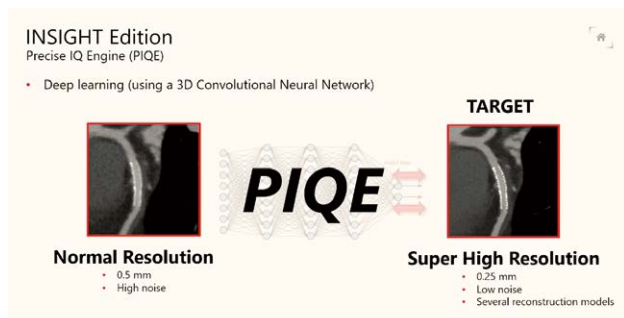
The new advanced solution redefines the angio suite by combining state-of-the-art angiography with cutting-edge CT technology, delivering unparalleled imaging precision and workflow efficiency.

## A plethora of new features

Hardware enhancements that can be found in the new system include an 80 cm flared bore, gantry lighting, and tilting for improved access during complex procedures. The 16 cm wide-area detector enables full-organ coverage in a single rotation, while volume CT-fluoroscopy provides real-time guidance for challenging interventions. Clinicians can now perform full-organ perfusion studies and immediate post-treatment evaluations - all within the angio suite.

Also featuring an expanded range of software solutions powered by Altivity AI technologies, the system incorporates AiCE (Advanced intelligent Clear-IQ Engine) and PIQE (Precise IQ Engine) for super resolution (1024 matrix) and low-noise imaging, along with deep-learning spectral CT capabilities. The redesigned INSTINX\* interface simplifies complex workflows through automated scan planning, intuitive layouts, and low-dose 3D landmark scans.

\* Please refer to page 12 for more information about INSTINX.



\* Adaptive Iterative Dose Reduction

“With the Alphenix 4D CT and Aquilion ONE / INSIGHT Edition, we are setting a new standard for interventional imaging,” said Erwan Ladsous, European Director Interventional X-ray at Canon. “This innovation reflects our commitment to empowering clinicians with tools that enhance precision, safety, and patient outcomes.”

## Welcomed with enthusiasm

Recognized as one of the most influential events in interventional radiology, CIRSE 2025 brought together thousands of specialists from around the world to explore the future of minimally invasive therapies. Canon's new Angio-CT system

was welcomed at the event, being showcased at Canon's booth and supported by a European-wide press release of the launch of Alphenix 4D CT with Aquilion ONE / INSIGHT Edition: On September 14, initial experiences with Canon's Alphenix 4D CT integrated with the Aquilion ONE / INSIGHT Edition, as

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well as further benefits of the Alphenix 4D CT were discussed by two European IR experts in a satellite seminar, moderated by Prof. Afshin Gangi, Chairman of the Radiology and Nuclear Medicine Department at the University Hospital of Strasbourg in France.

The St. Eloi University Hospital in Montpellier, France, was one of the very first to explore the potential of Canon's next generation Angio-CT platform - The Alphenix 4D CT integrated with the Aquilion ONE / INSIGHT Edition. The hospital, which has a long-standing collaboration with Canon, evaluated in the system in the summer. At the CIRSE seminar, Prof. Boris Guiu, Head and Chairman of the



Prof. Afshin Gangi

## 4DCT | 2025 August 4th... first patient



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Department of Diagnostic and Interventional Radiology at the same hospital, outlined the impact the new system has already made in daily clinical practice in a presentation entitled: "Introducing a New Alphenix 4D CT Platform: From Installation to Intervention."

### **Intricate installation**

Aiming to achieve the IR ideal in patient care of 'treat-plan-and-verify' in a single room, the installation of the new system was carefully planned to create a full, multimodal IR suite with integrated Angio-CT and ultrasound in the same space that measured less than 50 m<sup>2</sup>. It was a challenging task due to having to place the system within a functioning Operating Room (OR). It required a great deal of skilled teamwork.



Prof. Boris Guiu



The first global installation of the Alphenix 4D CT which combines the Alphenix Sky + C-arm with the Aquilion ONE / INSIGHT Edition CT scanner

“This was a truly massive work completed by Canon’s teams and carried out over a three-month period,” remarked Prof. Guiu.

“Everything was simulated in advance. Not only the parking positions, but also the full range of movements: of the table, of the CT, and of the C-arm, as well as considering the ceiling mounted equipment, such as the large display or protective shields,” he continued. “The ground rails, for the CT- gantry had to be built with extreme accuracy, because the system must know at any given time, the exact relative position of the CT, the C-arm, and the table, to enable seamless image core registration across modalities.”

“We also modelled the workflow of the medical staff, including radiographers and anesthesiologists,” he added.

“You can see how difficult it is to install such a system in a working OR - which in this case was carrying out liver transplantation next door - without interrupting surgery,” said Prof. Guiu. “And, as you can see on this video, heavy access was done through the OR façade to keep activity running during this work.”

### **Accommodating a true one-room IR**

The result is a full, multimodal room that integrates Angio-CT and ultrasound in the same IR suite.

Canon’s new Alphenix 4D CT solution combines the new Alphenix Sky + C-arm with High-Definition flat panel detector with the Aquilion ONE / INSIGHT Edition CT scanner, bringing together 16cm coverage, 0.24 second rotation and integrated deep learning reconstruction - all from within an 80cm bore.

*“The evolution from the previous platform was really immediate to capture. It is very fast and seamless, and the workflow clearly improved from the very beginning.”*

Prof. Boris Guiu,  
Head and Chairman of the Department of Diagnostic and Interventional Radiology, St. Eloi University Hospital,  
Montpellier, France

“It is precisely this combination that makes one true IR room possible,” said Prof. Guiu. “We started using the system with the first patient only one month ago, but the evolution from the previous platform was really immediate to capture. It is very fast and seamless, and the workflow clearly improved from the very beginning.”

Despite not having the system for very long, Prof. Guiu outlined in the seminar how impressed he was with the new features, including INSTINX, which is now available with the Alphenix 4D CT for the first time, PIQE – Canon’s Precise IQ Engine which delivers super resolution, sharper images, less noise and no additional dose, dose reduction tools, and improvements such as super-fast transition between modalities. He was also able to share a number of interesting cases to illustrate various benefits.

### Combining the best of CT and angio today

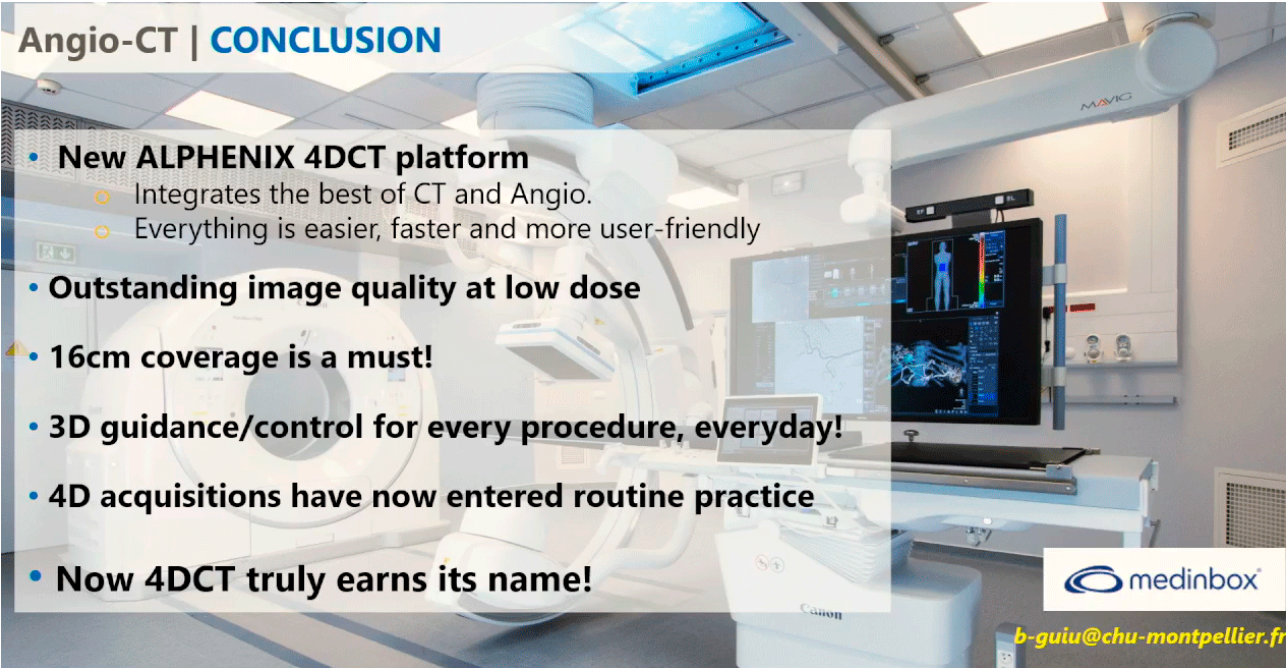
Prof. Guiu believes that the new system combines the best of CT and angio today.

### Pediatric IR

University Children’s Hospital Zurich, Switzerland, is the largest pediatric and pediatric surgery center in Switzerland and one of the leading children’s hospitals in the world. Dr. Ralph Gnannt, Interventional Radiology Consultant and Pediatric Interventional Radiologist at the same hospital, also gave a presentation at the CIRSE 2025 seminar entitled: “Broadening the Scope - Alphenix 4D CT in Pediatrics”. The presentation illustrated how advanced technology in Canon’s Alphenix 4D CT can meet the diverse needs of pediatric IR.


*“Everything has now become easier, faster, and more user-friendly. We can achieve outstanding image quality at low dose, every day.”*

*Prof. Boris Guiu,  
Head and Chairman of the Department of Diagnostic and Interventional Radiology, St. Eloi University Hospital,  
Montpellier, France*



**Angio-CT | CONCLUSION**

- **New ALPHENIX 4DCT platform**
  - Integrates the best of CT and Angio.
  - Everything is easier, faster and more user-friendly
- **Outstanding image quality at low dose**
- **16cm coverage is a must!**
- **3D guidance/control for every procedure, everyday!**
- **4D acquisitions have now entered routine practice**
- **Now 4DCT truly earns its name!**

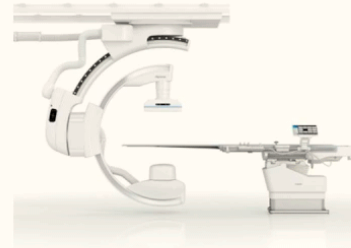
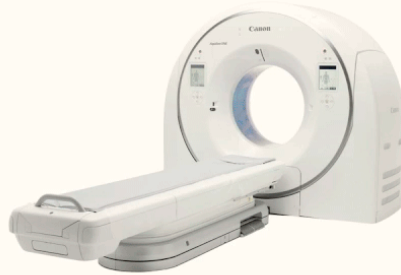
 [b-guiu@chu-montpellier.fr](mailto:b-guiu@chu-montpellier.fr)

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## What is (Pediatric) Interventional Radiology?

### What is a 4D CT?

- Dynamic CT imaging inside an IR suite (Fluoroscopy and Ultrasound)
- CT analysis and therapeutic Fluoroscopy/Angiography in one session
- Fast switching between modalities



### Brand new horizons

The hospital has been totally renewed to create a whole new facility that opened its doors to patients in November 2024. A fully-equipped, state-of-the-art pediatric IR room (47m<sup>2</sup>) forms an integral part of the new children's hospital. Canon became involved in the design process to equip the new IR room, which highlighted some of the specific requirements of the specialty.

The old hospital had a small fluoroscopy room, which was not designed for interventions. A CT system was situated across the aisle from this room, but it was sometimes not possible for the IR team to transfer the patient there. It was important to create more space in the new room for anesthesia equipment.

"The Alphenix 4D CT brings one-stop medicine, reduced

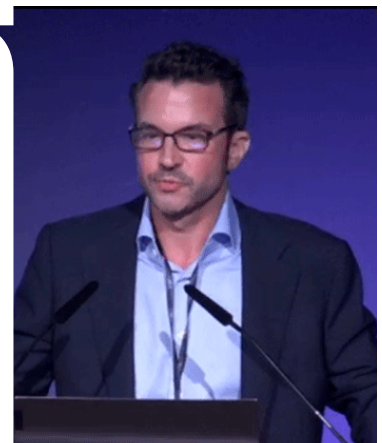
time-to-start treatment, and the ability to implement one-room workflows in pediatric IR," said Dr. Gnannt. "In addition, it is easy to train people despite the complexity of the system. With it, we can increase patient safety, and maybe it helps to really make what we actually do more transparent for the hospital."

"The oncology department have the impression that because of this new room, they can start treatment earlier. There are fewer intrahospital transfers, and we can actually implement one-room workflows, which is very important for the technicians and the nurses who work in this room," he continued.

"Once you have the system, you can't 'go back,'" he added. "You build a team around this machine, and the nurses, the technicians also don't want to go back to working without it."

*"The Alphenix 4D CT brings one-stop medicine, reduced time-to-start treatment, and the ability to implement one-room workflows in pediatric IR."*

Dr. Ralph Gnannt,  
Interventional Radiology Consultant and Pediatric Interventional Radiologist,  
University Children's Hospital Zurich, Switzerland



## Conclusion – 4D CT in Peds IR

- One Stop Medicine – reduce time to start treatment
- One-room workflows, easier to train people despite the complexity of the machine
- Raises patient safety
- More transparent, what we do

### Pioneering Progress

CIRSE 2025 marked the 40th anniversary of the Cardiovascular and Interventional Radiological Society of Europe (CIRSE). With the event themed 'Pioneering Progress', Canon aimed to showcase how it can contribute to advancing the work of interventional radiologists through

innovative technology in medical imaging. The reception of industry specialists to the Angio-CT - The Alphenix 4D CT integrated with the Aquilion ONE / INSIGHT Edition reflected how this key technology is pioneering progress in interventional radiology. //



### One Room. Endless Possibilities.

Canon's new Angio-CT solution includes in a single room:

- An Alphenix Sky + (high-precision angiography).
- An Aquilion ONE / INSIGHT Edition scanner (ultra-fast volumetric imaging).

*This setup enables optimized patient care, with fewer transfers, enhanced precision, and significant dose reductions for both patients and medical teams.*

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## Key features include:

### PIQE

*Precise IQ Engine (PIQE) is a Super-Resolution Deep Learning Reconstruction (SR-DLR) algorithm, originally developed by Canon for use in cardio radiology. It delivers extraordinarily sharp images with significantly reduced noise and dose. Combined with the Aquilion ONE single-rotation coverage, it offers specialists an entirely new level of clarity and diagnostic confidence on small vessels and fine structures.*

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### Dose reduction technologies for Aquilion ONE / INSIGHT Edition

*Canon's ground-breaking, ultra-low-dose helical scan performed using its SilverBeam filter enables preview images to be acquired at the same dose as traditional 2D scanograms – it's called a 3D Landmark scan.*

*Using data from this, Canon's Anatomical Landmark Detection (ALD) can accurately identify the anatomical structures required to perform automatic scan planning for all routine examinations. ALD enables the scan range and field of view to be automatically set to the same position predefined in the scan protocol, which saves time and ensures consistent results for CT technologists.*

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### INSTINX

*Complete workflow on the Aquilion ONE / INSIGHT Edition CT is streamlined with Canon's INSTINX – our holistic workflow solution that creates new standards in efficiency and consistency.*

*INSTINX was specially designed to enhance every aspect of imaging - from patient positioning right through to equipment maintenance. It features a host of Canon's most advanced technologies and innovations. Wherever possible, automation is employed to make operations easier, faster, and more consistent. Overall, INSTINX helps accelerate and improve workflow, save time, enhance work satisfaction, and enable flexible allocation of resources, which, together, all contribute towards creating more time to focus on the patient.*

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