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VISIONS spoke with interventional radiologist Dr. Jasper Florie and CEO Frank de Reij about the Aquilion ONE / PRISM Edition scanner that Meander Medical Center Amersfoort started using in February. The scanner was festively inaugurated during a Japanese Sake Ceremony.

The first Aquilion ONE / PRISM Edition in Europe*

“Meander has the European exclusive in advanced CT scanners”, read the media headlines. The hospital in the Dutch city of Amersfoort has the first commercial release in Europe of the Aquilion ONE / PRISM Edition. Interventional radiologist Dr. Jasper Florie and CEO Frank de Reij are keeping a cool head though. “It’s really good for our hospital, of course, all that attention from the media. But first and foremost, this simply was the best deal.”

During Dr. Florie’s work at Amsterdam University Medical Center, Leiden University Medical Center, Erasmus Medical Center and now Meander Medical Center, he has seen a multitude of CT scanners come and go – all of undoubtedly high quality. “If, like me, you have had the privilege to work in leading medical centres, you’ve obviously always had the best equipment at your disposal.

The same applies to Meander, where we had some scanners I was very happy with. But when the time comes to replace them and expand your arsenal, you explore whether you can get a better return, financially as well as in terms of features. And that turned out to be possible, as became clear from the conversations with Canon Medical Systems.”

Unanimous verdict

And this is how Canon Medical Systems won the tender for the new CT systems – of course after extensive consultations between all the important stakeholders and users at Meander, such as lab technicians, radiologists, tech personnel and financial specialists. “For all these parties at Meander, Canon’s package deal was so good that we just couldn’t say no to it. So now we have two new high-end scanners that massively expand our planning options: one Aquilion ONE / PRISM Edition and one Aquilion ONE / Genesis Edition,” tells Dr. Florie.

The two older scanners, which Meander used before purchasing the two Aquilions, were constantly occupied. One of them was even in use evenings and nights. Because of this, there was simply no room for urgent interventions, which needless to say tend to be more time-consuming.

*First commercial release



During the Kagami Biraki (sake ceremony), Lo Wuite, Director of Canon Medical Systems The Netherlands, gives the Daruma doll to Frank de Reij, CEO of Meander Medical Center. The Daruma doll is a lucky charm that symbolises resilience and perseverance.

For example, a biopsy of an intervertebral disc to assess which bacteria was the causative agent of an infection, could be accomplished only with great difficulty.

That is not such a desirable situation for a hospital that has set the goal for itself to operate as efficiently as possible and therefore wishes to be able to screen any patient on any CT system.

CEO Frank de Reij, supporting Dr. Florie: “Hospitals like ours, which are considered to be the very best, are at the forefront of healthcare by combining patient-oriented care with solid train-

ing and extensive scientific research. This also necessitates equipment that not only can operate at that level, but that can also help raise that level. As far as I’m concerned, in addition to the technical and financial aspects, the current and future innovation strengths of Canon played a major role in our choice for the Aquilion ONE / PRISM Edition system.”

Speed and efficiency

Before the acquisition of the new Canon equipment, the situation at Meander was such that per definition, no interventions were performed on one of the two scanners.

With the new setup, interventions can be performed in both new CT scanners. Acute care and oncology overlap, with a speed and efficiency that was previously unattainable.

That has a lot to do with the distinguishing wider detector of the Aquilion ONE / PRISM Edition, which offers the advantageous ability to scan a large area in one go, as is the case for a dynamic scan of the heart or the head. This makes for the best possible image quality.

Another major advantage mentioned by Dr. Florie is the possibility to perform very precise dynamic tests.



Dr. Jasper Florie is an interventional radiologist at Meander Medical Center and is specialised in vascular and non-vascular interventions and abdominal radiology.

Before coming to Meander Medical Center, he worked at Amsterdam University Medical Center, Leiden University Medical Center, Haga Hospital and Erasmus Medical Center.



CEO Frank de Reij started his career as managing director for Transport Management International bv. After 10 years he went to work for KLM, where he held a variety of positions, including that of Executive Vice President and head of the division of Ground Services KLM and Chief Procurement Officer. In 2011 he was chosen CPO of the year. By 2010 he was already a member of the supervisory board of Tergooi Hospitals, and was introduced to the hospital world. Presently Frank de Reij is CEO of Meander Medical Center Amersfoort, chairman of the supervisory board of the Foundation for Dental Care in 's-Hertogenbosch and member of the supervisory board of homecare services HappyNurse Thuiszorg in The Hague.

For example, when screening the wrist it is in fact crucial to be able to image the movements of the wrist joint. Together with features such as Advanced intelligent Clear-IQ Engine (AiCE), Single Energy Metal Artifact Reduction (SEMAR) and image reconstruction, the possibility of dynamic testing makes the Aquilion ONE / PRISM Edition what it is: a high-end solution for the hospital of the future.

Artefact reduction and deep learning

AiCE is the first Deep Learning Reconstruction method that uses Artificial Intelligence (AI) to produce very detailed images with the extremely low noise you can expect from these deep-learning algorithms of the future. With its eight advance video cards, the AI application of the Aquilion ONE / PRISM Edition approaches the calculating power of IBM's Watson. For example, thanks to AiCE, the Aquilion really displays the various soft parts distinctively, even with low radiation as well as with less or even no contrast fluid.

SEMAR is a reconstruction technique with which the Aquilion reduces metal artefacts in the scan, thus removing artefacts from implants, clips, pacemakers or prostheses from the scan and optimising the imaging of adjoining or underlying soft tissues.

The Aquilion user can include SEMAR in the scanning protocol so that a fully automated reconstruction takes place, without further intervention of the user.

The human touch

All the wonderful technologies notwithstanding, Dr. Florie is still attached to the human side of his profession. "The artefact reduction and the AI possibilities are of course marvellous, but the nice pictures shown by the various suppliers' salespeople who came to see us during the tendering process only tell one side of the story. I am as interested in the functional side of things. The best possible collaboration between man and machine doesn't happen by itself, it needs good coordination and a solid dose of expertise."

"AiCE, for instance, works fantastically for analysing and visualising organs and soft tissue. Thanks to this feature, we can reduce the radiation dosage as well as the amount of contrast fluid. Still, as far as I'm concerned, human expertise is crucial for an optimal result; sometimes one cannot avoid having to modify a dosage because the standard settings don't allow you to get it just the way you want it," explains Dr. Florie.

He promptly adds that this is mainly a question of getting used to it. "With all its technical ingenuity, the Aquilion has served our patients outstandingly,

and I absolutely don't see why that should change. Even taking into account options and imaging results that we still have to get used to, or which need a tweak here and there, patient flow has become more efficient. By now we have installed the abdominal, pelvic and leg protocol on all scanners, allowing us to run all protocols everywhere. Now we can really scan every possible patient on every CT scanner."

The future

In addition, Meander benefits enormously from the large detector of the two new scanners, allowing scanning of large volumes in short periods of time, which yields the best possible image quality. Dr. Florie also has high expectations from the spectral feature, with which a physician gets more information than with conventional CT; this technology not only visualises the morphology of tissues and substances, but also their chemical composition, such as uric acid and calcium. The Aquilion does that through material-specific differences in weakening of X-rays in the patient, enabling more accurate diagnoses. "But in this area, Canon Medical Systems is clearly a step ahead of us," Dr. Florie acknowledges. "I suspect that spectral CT will work excellently with perfusion, but we have yet to test this extensively."



Pascal Lo-A-Njoe, radiology staff, with the Aquilion ONE / PRISM Edition.

Frank de Reij, who has examined the entire Aquilion trajectory at Meander from angles other than a predominantly medical one, which points to the major role of Canon as a collaborative partner for the hospital. "Indeed, Canon is a leader with some technologies. But conversely, I also know that our doctors encounter issues in their practice or identify desired applications for which those behind the drawing board have not yet devised a feature. So I would dare claim that Canon is keeping our medics sharp, and that in turn we offer Canon an incubator for off-label ideas – to keep things in healthcare lingo."

When asked which developments they would like to see coming for scanners, both Frank de Reij and Dr. Florie resolutely name "data exchange". Dr. Florie immediately inserts that this is not the core business of Canon Medical Systems, but is something about which Meander would like to receive input, opinions or concrete action from Canon. "Honestly, at the moment, trying to share data is a cumbersome endeavour despite the advanced technologies. Exchanging tests between different scanning modalities is not yet evident: for instance, it is not yet possible to read a PET-CT in our ultrasound equipment to merge it with live ultrasound images when you want to do a biopsy of a suspected abnormality.

Meander Medical Center is a top-tier hospital in Amersfoort, employing more than 3,000 professional staff, 200 medical specialists and dozens of volunteers. Jointly they provide care to over 320,000 residents of the Amersfoort, Baarn, Barneveld, Bunschoten, Leusden, Nijkerk and Soest region.

And if you take it a step further: data exchange between radiologists of different Dutch hospitals would also be quite a welcome development. Many hospitals are already working with platforms, offline or in the cloud, but we haven't yet found the optimal environment," says Dr. Florie.

"Ideally, software suppliers step away from the innovation-constraining, 'not-invented-here' syndrome," adds de Reij. "The longer the current predicament lasts, the clearer it is becoming that a lot can fail or succeed depending on collaboration, certainly in healthcare. Although with my commercial background I am very understanding of proprietary solutions, my gut feeling now that I am part of the healthcare system says that shared innovations give businesses a much longer life than protected new technologies. Plus it gives their clients a much more solid basis for modernisation and optimal care."

For now, the interventional radiologist and the general director consider these to remain "important secondary issues". All users are extremely satisfied with the new systems that Canon Medical Systems has installed at Meander Medical Center. Frank de Reij, Dr. Florie and their team all consider that Canon was on top of things and that those responsible were involved, accessible and very service-oriented, which resulted in a top-of-the-line system with a small footprint.

One of the lab technicians gave a broad smile when asked to describe his favourite feature. For him, the extremely advanced software features AiCE, SEMAR and spectral CT were a deal breaker against good-old lateral table-shifting. This enables lab technicians to easily place their patients in the middle of the gantry and scan them. //