

Volume Navigation – 3D Roadmap at Centre Hospitalier Régional de la Citadelle



“The Infinix-i provides me with more choice, not another choice.”

Dr. Laurent Collignon

Advances in digital imaging technologies and information technology have greatly expanded the application of interventional angiography systems from diagnosis to interventional catheterization procedures.



CHR de la Citadelle, Liège, Belgium

Toshiba's innovative interventional angiography systems Infinix™-i have been designed with the latest technologies reflecting the voice of the customer. They play an important role in medical imaging and intervention whilst providing the lowest dose for each procedure.

Visions spoke with Dr. Laurent Collignon, neuro-interventional radiologist at Centre Hospitalier Régional (CHR) de la Citadelle, about his experience with the hospital's new Toshiba interventional angiography system Infinix-i.

Liège, a major city of Belgium, is the capital of the province bearing the same name. It is situated in the valley of the river Meuse, near Belgium's eastern borders with the Netherlands and Germany, where the Meuse meets the river Ourthe. The city is the principal economic and cultural centre of Wallonia, the French-speaking region of Belgium. The metropolitan area of Liège, including the outer commuter zone, covers an area of 1,879 km² and has a total population of 750,000 and ranks as the third most populous in Belgium, after Brussels and Antwerp.

With 1,036 public hospital beds CHR de la Citadelle is one of the largest French-speaking hospitals in Belgium. All medical specialties are available within the facility. CHR de la Citadelle is also a major employer in the Liège region with some 3,450 employees

and more than 400 physicians. The hospital has a regional focus due to its high specialization.

Radiologist Dr. Laurent Collignon, who heads the interventional angiography service, specializes in diagnostic and interventional neuro-radiology. He and his colleagues Dr. Denis Henroteaux, Dr. Paul Jamblin, Dr. Jean-Luc Lismonde and Dr. Pierre-Julien Bruyère use the Infinix-i 5-axis interventional C-arm system for vascular neuro-interventional procedures.

Interventional angiography procedures are carried out five days a week. Three days a week the system is used for peripheral examinations, whilst the unit is used for two half days a week for neurointerventional examinations.

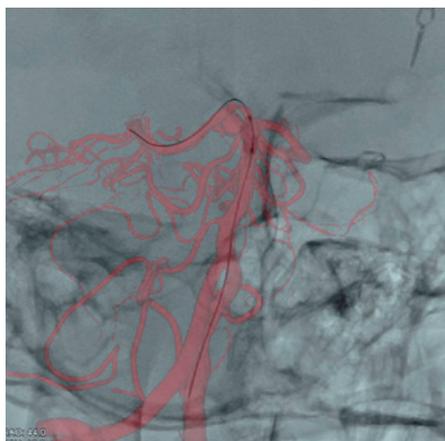
During a long mutually beneficial relationship with the hospital, Toshiba Medical Systems in Belgium has installed several diagnostic imaging products in the radiology department. The hospital's current interventional floor-mounted 5-axis angiography system Infinix-i is the successor of the previously installed Infinix system. The angiography suite of CHR de la Citadelle is also equipped with a Toshiba Nemio™ XG ultrasound system.

Dr. Laurent Collignon: “Toshiba's service department has a very good reputation here in CHR de la Citadelle. Regular scheduled maintenance is performed by the local service team, which leads to a guaranteed system uptime exceeding 98%. The support of Toshiba is outstanding.”

There is a strong clinical requirement to identify lesions as early as possible



The Infinix-i in the angiography suite of CHR de la Citadelle



3D Roadmap delivers a higher level of fluoroscopic and radiographic image quality

and to rapidly initiate treatment. A system is needed which offers excellent fluoroscopic and radiographic image quality, thus ensuring highest patient safety. Infinix-i meets these needs: it reduces stress on the interventional radiologist and provides a safe, comfortable environment for catheterization examinations and treatment.

Dr. Laurent Collignon: "The recent upgrade with Volume Navigation – the 3D Roadmap – delivers a higher level of fluoroscopic and radiographic image quality. Changing the field of view of the images does not lead to a deterioration of image quality.

I can even observe small details at the largest field of view. The visibility of stents remains unchanged. The exact positioning of the Volume Navigation image is extremely useful for neuro-interventional procedures."

Toshiba has created an advanced easy-to-use 3D roadmap tracking system for the interventional angiography system Infinix-i that moves with the radiologist during the interventional procedure. With table-panning capability as standard the 3D overlay is automatically aligned with the fluoroscopic image even when the table is moved longitudinally or laterally. All system movements are linked with the fusion 3D and fluoroscopic display, including FOV switching, SID movement and table height adjustments as well as C-arm angulations. Easy manual realignment of the map image is possible for finetuning image position. This reduces the risks associated with repeat 3D acquisitions during the procedure, ensuring safer interventions and more confident decision-making in difficult situations.

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MOIXR0036EAA 2018-05 CMSC/CPL/Printed in Japan

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This document was created prior to the name change and therefore the former company name may still be referred to within the document.

Dr. Laurent Collignon: "The possibilities of the Infinix-i interventional angiography system are virtually endless, but 90% of time I only use 10% of the functionality. Only in exceptional cases the additional functionality of the interventional angiography system is called up. But it is good to know that the advanced functionality can be applied when necessary. The ease of using acquired images as mask for the 3D roadmap is highly appreciated. Acquisitions of the carotid bifurcation before the intra-cranial phase are used as mask for the volume navigation. This eliminates the need for additional contrast agent and radiation dose to the patient."

Toshiba's Volume Navigation takes 3D roadmapping and image fusion to the next level by providing a range of display options that can be applied at any stage of the procedure. This allows optimal solid vessel or transparent vessel display of the 3D anatomy and separate 2D live image display for manipulation of the wire. "The simultaneous display of 2D and 3D images next to each other is the perfect tool to place stents and coils with great ease. After placement of three to four coils in an inter-cranial aneurysm, repositioning of the C-arm is required to obtain the optimum view for my desired image angulations.

The fact that the 3D roadmap image is linked to the C-arm angulations speeds up the interventional procedure substantially. There is no need to create an additional roadmap mask image and the procedure can be carried out without additional radiation or time delay." Dr. Laurent Collignon: "The system and its imaging features are very important to us and an improvement in our daily work. The team at CHR de la Citadelle is very happy with it. It's a pleasure to work with the Infinix-i as it is to work with Toshiba."



Laurent Collignon and team

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