

RSNA 2017 in Chicago: South Building, Hall A, Booth 1937**Siemens Healthineers strengthens its CT portfolio by improving patient experience and expanding precision medicine**

- **Somatom go.All and Somatom go.Top open up the Somatom go. platform to advanced clinical fields such as cardiology and CT-guided intervention**
- **Premium systems Somatom Edge Plus and Somatom Force introduced with the world's first FAST 3D Camera automatically safeguarding precise and consistent patient positioning**
- **Innovative technologies help improve patient experience, standardize examinations, and thus deliver more precise diagnostics at lower cost**

At the Annual Meeting of the Radiological Society of North America (RSNA) in Chicago, USA, Siemens Healthineers will present its new scanner portfolio, which covers all requirements and customer needs regarding CT imaging. With their innovative workflow technologies, the new computed tomography scanners help deliver standardized, high-quality examinations that support clinical users on their way to precision medicine, while at the same time significantly improving patient experience. The two new scanners in the Somatom go. platform – Somatom go.All and Somatom go.Top – now make the mobile workflow available for advanced clinical fields such as cardiology and CT-guided intervention. This mobile workflow enables the user to interact with the patient being closer to him/her. With its high-end systems for single- and dual-source imaging – Somatom Edge Plus, Somatom Drive, and Somatom Force – Siemens Healthineers is introducing to the CT market the innovative FAST (fully assisting scanner technologies) Integrated Workflow with the brand new FAST 3D Camera. Using artificial intelligence and deep learning technology, the camera automatically facilitates precise and consistent isocentric positioning of patients. By reducing unwarranted variations and avoiding scan repeats, diagnostics is more precise and involves lower costs.

“We believe that our new scanner portfolio is the best possible answer to the very different challenges in computed tomography – in particular to the simultaneous issues of growing patient numbers and declining reimbursement rates,” says André Hartung, Head of Computed Tomography at Siemens Healthineers. “With our innovative technologies, we can contribute to the success of healthcare providers by helping them to tap the full potential of computed tomography and to offer high-quality examinations while also reducing costs.”

Mobile workflow now in cardiology with Somatom go.All and Somatom go.Top

With its new models Somatom go.All and Somatom go.Top, Siemens Healthineers is strengthening further the Somatom go. platform and expanding the range of clinical applications for its patient-centric mobile workflow operated via tablet. With a rotation time of 0.33 seconds and the well-known Stellar detector technology, the 64-slice Somatom go.All can cover scan ranges of up to 100 millimeters in one second. What is more, the 128-slice Somatom go.Top can perform whole-body scans of up to 200 centimeters with a scan speed of up to 175 millimeters per second. This means that users can deploy the Somatom go. platform’s mobile workflow in advanced clinical fields such as emergency medicine, interventional radiology (steered by Guide&GO, the first tablet-based solution for CT-guided interventions), and even cardiology, which is a major growth area for many healthcare providers because of the sharp rise in coronary CT angiography.

The new X-ray tube allows users to adjust the tube voltage in steps of 10 kilovolts while keeping the tube current high – and thus to adapt the settings to each patient’s individual anatomy. Examinations performed at just 70 kilovolts with a current of up to 825 milliamps, for instance, can significantly reduce X-ray dose and the amount of contrast medium required. Somatom go.Top also offers TwinBeam Dual Energy imaging, which means users can examine the same body region at two different energy levels simultaneously. The technology splits the X-ray beam into two energy spectra before it reaches the patient. With a scan mode that is not different to a routine CT examination, TwinBeam Dual Energy can therefore acquire two image datasets that provide additional information about the tissue. This is particularly beneficial in soft tissue differentiation and for oncology.

In all applications, patients benefit from what they feel is a very comfortable examination situation: All scanners belonging to the Somatom go. platform (including the two new

additions) are handled via a tablet that can be used to control all routine and advanced examinations. Radiology technologists can thus stay close to their patients during the entire scan preparation process, which makes the experience much more pleasant for the patients, especially if they are children.

Further innovative hardware designs are introduced with the Somatom go. platform. After the integration of all computer hardware into the gantry, a new injector arm is now available. This smart and ergonomic solution allows the user to swivel the tablet and the injector around the gantry, flexibly placing them wherever needed.

Innovations for precision medicine with Somatom Force and Somatom Edge Plus

In the high-end segment, Siemens Healthineers will use RSNA 2017 to enhance its portfolio: Somatom Edge Plus is the new premium single-source system, and Somatom Force is the new version of the leading system in the dual-source field – i.e., systems equipped with two X-ray tubes and two detectors. The newcomers allow clinical users to cover all computed tomography applications, regardless of the patient or the clinical issue at hand. Both systems also offer high-precision diagnostics, which is a prerequisite for individualized prevention and therapy. “More than 200 scientific papers exist that show what Somatom Force is capable of,” says André Hartung. “With this new version of our top-of-the-range system, we want to help our customers take the next step on their way to precision medicine.”

Such precise diagnostics come from the FAST (fully assisting scanner technologies) applications that are integrated into the premium systems. One of these applications is the innovative FAST Integrated Workflow with the all new FAST 3D Camera for automatic patient positioning. In many CT examinations, incorrect patient positioning is an obstacle to achieving optimal results. Studies¹ show that this is the case in 95 percent of scans with an average positioning misalignment of 2.6 centimeters. This results in more image noise or – to counteract the noise – in increased dose levels.

The automatic patient positioning workflow in Somatom Edge Plus and the dual-source scanners Somatom Drive and Somatom Force allows users to avoid such misalignments significantly. A 3D camera fitted above the patient table uses artificial intelligence and deep learning technologies to recognize the patient’s anatomical landmarks. The table then

automatically moves into the correct position and adopts the correct height to position the desired body region at isocenter and achieve an optimal examination result. This means institutions can avoid repeat scans, decrease the time required for both patients and staff, and therefore benefit from precise diagnostics at lower cost. The two touch-operated control panels fitted directly on the scanner allow radiology staff to stay close to the patient during the majority of the time needed for scan preparation.

The brand new single-source Somatom Edge Plus system combines the Straton MX Sigma X-ray tube, high power reserves at every kV value in 10-kV steps, and the Stellar Infinity detector. This provides the powerful imaging chain for scanning obese patients with diagnostic confidence – enabling sharp and rich-in-contrast images at high speed and low dose. In addition, the scanner is equipped with TwinBeam Dual Energy scan modes and the Tin Filter technology that facilitates CT scans at very low doses by shielding patients from clinically irrelevant radiation. Tin Filter technology can be used in all routine examinations and allows users to perform CT imaging at very low dose values which, in the case of lung cancer screening for instance, do not exceed those of a normal X-ray examination. With the introduction of the new scanners, Tin Filter technology is now available across the complete Siemens Healthineers CT portfolio.

The new version of the top-of-the-range Somatom Force system is – as already proven in its first version – as impressive results especially when it comes to highly challenging situations. One example here is functional imaging. Although functional imaging provides additional image information, the high levels of radiation involved mean that it has yet to become routine in many applications. Somatom Force allows functional imaging to become part of clinical practice because it offers a perfusion range of up to 22 centimeters that can cover entire organs. Its Vectron X-ray tubes with a power-independent focal spot size of just 0.4×0.5 (IEC) and the highly sensitive Stellar Infinity detector make the Somatom Force the ideal scanner when high-speed (up to 737 mm/s), large-volume coverage combined with outstanding image quality is a must. Furthermore, the scanner offers precise and dose-neutral quantification with the best spectral separation in Dual Energy acquisition to generate high-quality diagnostic results.

Somatom Force also sets new standards when it comes to image postprocessing. Rapid Results Technology allows the dual-source scanner to communicate directly with Syngo.via

for zero-click postprocessing. As a result, large Dual Energy CT datasets are sent automatically to the picture archiving system (PACS). This task is now part of standard reconstruction enabling standardized and consistent image quality, independent of operator skills.

The new CT systems Somatom Force, Somatom Edge Plus, Somatom go.Top and Somatom go.All will be commercially available beginning from the second quarter of 2018. Existing Somatom Force and Somatom Drive systems can be retrofitted with the FAST 3D Camera.

¹ Li J, Udayasankar UK, Toth TL et al. Automatic patient centering for MDCT: effect on radiation dose. AJR 2007; 188: 547 – 552 and Kaasalainen T, Palmu K, Lampinen A et al. Effect of vertical positioning on organ dose, image noise and contrast in pediatric chest CT-phantom study. Pediatric radiology 2013; 43: 673 – 684.

The products/features (here mentioned) are not commercially available in all countries. Due to regulatory reasons their future availability cannot be guaranteed. Further details are available from the local Siemens organizations.

This press release and press pictures are available at

www.siemens.com/press/PR2017110086HCEN.

For further information on RSNA 2017, please see www.siemens.com/press/rsna2017.

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Siemens Healthineers is the separately managed healthcare business of Siemens AG enabling healthcare providers worldwide to achieve better outcomes at lower costs by empowering them on their journey towards expanding precision medicine, transforming care delivery, improving patient experience and digitalizing healthcare. A leader in medical technology, Siemens Healthineers is constantly innovating its portfolio of products and services in its core areas of diagnostic and therapeutic imaging and in laboratory diagnostics and molecular medicine. Siemens Healthineers is also actively developing its digital health services and enterprise services.

In fiscal 2017, which ended on September 30, 2017, Siemens Healthineers generated revenue of €13.8 billion and profit of €2.5 billion and has about 48,000 employees worldwide. Further information is available at www.siemens.com/healthineers.