
RSNA 2014: Siemens Introduces Somatom Definition Edge For CT Imaging



An innovative x-ray tube concept in the new CT scanner from Siemens Healthcare will premiere at the Annual Scientific Meeting of the Radiological Society of North America (RSNA) in Chicago, USA.

The x-ray tube concept in the Somatom Definition Edge enables simultaneous imaging at two different energy levels for the first time in single source computed tomography. With a user- and patient- friendly measurement method, information on tissue and other material can be obtained as well as traditional morphological data, even during examinations with high contrast media dynamics. This means that more patients will benefit from the added value of dual energy imaging.

With the TwinBeam Dual Energy technology from Siemens, the x-ray beam is split into two different energy spectra before reaching the patient thanks to an innovative tube design. This means that the Somatom Definition Edge generates the dual energy images at the same time. "With this technology, we are laying the groundwork for dual energy imaging in single source computed tomography to be used in routine procedure," says Walter Märzendorfer, CEO for Computed Tomography and Radiation Oncology at Siemens Healthcare.

The TwinBeam technology increases the diagnostic strength of clinical images and minimises the x-ray dose required in a different way to other signal source dual energy procedures. All dose-reducing Siemens technologies can be used with the Somatom Definition Edge. This includes Admire, the model-based iterative reconstruction procedure which was recently released on the Somatom Force and whose scanner-specific algorithms can reduce x-ray doses further still – achieving excellent image resolution and extremely low image noise even at low doses.

In addition, Somatom Definition Edge can help simplify the radiology workflow. As compared to other single single-source dual energy imaging, the acquired dual energy datasets are intelligently pre-processed directly after the acquisition. They can be made available directly at the CT workstation or can be sent to the picture archiving and communication system (PACS) by the Somatom Definition Edge with the aid of the new Fast DE Results technology which allows reading the cases immediately. "We can make rapid decisions, because we can see the DE images straight away," says Professor Michael Lell, senior radiologist at University Hospital Erlangen.

Iterative Metal Artefact Reduction for Clearer Material Differentiation

In order to further improve the quality of dual energy examinations and of conventional CT scans, Siemens Healthcare is also introducing a new iterative algorithm for metal artefact reduction with the new Somatom Definition Edge: iMAR. This allows respective artefacts – caused by implants, artificial joints or pacemakers – to be reduced significantly. Such artefacts may lead in the worst case to non-diagnostic images by concealing the relevant pathologies.

The new Somatom Definition Edge will be available from the first half of 2015. Somatom Definition Edge and Somatom Definition AS+ CT scanners can be retrofitted with TwinBeam technology, iMAR and Admire (in combination with the Stellar detector) as well.

Source: Siemens

Image Credit: Siemens

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