

Medical Solutions

For the trade press

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The Trauma Center at the University Hospital Erlangen Installs the First Siemens Somatom Definition AS, the World's First Adaptive Computed Tomograph

One for all: With the new Somatom Definition AS (Adaptive Scanner), Siemens has for the first time developed a scanner that adapts to virtually any patient and clinical need. The system is suitable for routine diagnostic work as well as for more complex examinations in, for example, oncology, neurology and cardiology. It is also ideally suited for emergency situations where speedy diagnosis for accident, stroke or heart attack patients are concerned. Even difficult patients – obese, claustrophobic and children – are quickly scanned with high diagnostic confidence. The first system has recently been installed at the University Hospital Trauma Center at Erlangen, Germany. Not only will all clinical situations be accelerated but also examinations of seriously wounded patients will permit faster application of life-saving treatments.

The Somatom Definition AS is the first scanner to combine such dynamic components as the Adaptive Dose Shield with a scan field of up to 200 cm and the 78-cm gantry opening. This allows fast and problem-free head-to-foot scanning, even for poly trauma patients. The unequalled high temporal resolution of up to 150 ms – combined with extremely fast coverage with up to 128 slices per rotation – makes crystal-clear images possible, free of movement artifacts, of even the finest anatomical details. This permits for example highly accurate measurement of stenosis and/or precise planning for stent implantation.

Another outstanding feature is the new Adaptive 4D-Spiral. The continuous movement of the patient table permits a larger area to be imaged so that entire organs and their functions can be examined with a single scan. In a stroke situation, for example, the entire

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brain perfusion can be displayed. With previous systems, only a portion of the affected organ could be imaged. „We hope we can diagnose stroke earlier than before. Time is brain. The earlier we get the patient to therapy, the better“, said Werner Bautz, M.D., Director of the Institute for Radiology and Medical Director of the University Hospital Erlangen,.

Minimal invasive procedures will also become faster and more certain. Biopsies of suspicious tumor tissues can, for the first time, be performed with the help of 3D image guidance. Accurate needle positioning will thereby become clinical routine.

The enormous flexibility of the Somatom Definition AS in virtually all clinical situations and with virtually all patients decisively improves workflow and facilitates the integration of CT-imaging into the clinical care process. „A Somatom Definition CT-scanner can be used as well for stroke diagnosis, can function as a non-invasive catheter laboratory or as a tool for therapy management with cancer patients or even as an intervention suite – all according to the need of the individual patient,“ says Dr. Bernd Montag, head of the CT division, Siemens Medical Solutions. „All of these advances work to improve the quality and efficiency of health care while keeping the cost down.“

Complete dose protection in all exams with Adaptive Dose Shield

With its Adaptive Dose Shield, the Somatom Definition AS avoids all unnecessary x-ray radiation in all examinations. Up to now, increases in detector size meant increased radiation – before and after the clinically relevant scan area as well. But now, Siemens unique Adaptive Dose Shield blocks unnecessary radiation assuring that the patient will be exposed only to clinically relevant dose.

In spite of its high performance, the Somatom Definition AS, whether 40-slice, 64-slice or 128-slice, adapts to the space of its customers. With its 18-qm footprint, it fits nicely into rooms that often were too small for high-end scanners.

The Somatom Definition Family

With the Somatom Definition AS, Siemens places a highly developed, high-performance and flexible Single Source Scanner as companion to the Dual Source Somatom Definition – thereby significantly expanding the flagship line of the company.

With over 250 installations world-wide since its introduction in 2005, the Dual Source Somatom Definition is clearly the most successful system that Siemens has developed to-date. Thanks to the two X-ray tubes and the double speed scanning, heart imaging has become a routine procedure. Patients with high heart rates and arrhythmia (irregular heartbeat) can now be scanned without the necessity of beta-blockers or time-consuming post-processing (such as multi-segment reconstruction). The Somatom Definition's two x-ray tubes can be simultaneously operated at different voltage levels (Dual Energy) extensively expanding its capabilities. For abdominal examinations, that would first require a scan without contrast media followed by a scan with contrast media, with *syngo* Dual Energy a virtual non contrast image can be generated out of a single dual energy scan, thereby reducing the dose for the patient..

Further information can be found at: <http://www.uk-erlangen.de/DefinitionAS> and <http://www.siemens.com/somatom-definition-as>

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