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# Press Presse Press Presse

## Healthcare Sector

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**Siemens at the European Congress of Radiology 2009: News and Highlights**

The changing age demographic and growth in population have lead to a greater need for more efficient health care, offering people the best possible care at an affordable price. Innovations in the technologies used and the optimization of clinical workflows play a major role in this. Themed "Ask the ultimate Power in Imaging", Siemens Healthcare will present its latest imaging innovations at the European Congress of Radiology 2009 (ECR 2009), including the new computer tomograph Somatom Definition Flash, the world's first molecular CT - the biograph mCT - and the next generation of breast magnetic resonance tomography - the Magnetom Espree-Pink. The demonstration will also feature the first automatic breast scanner Acuson S2000, the new digital radiography system Ysio and Mammomat Inspiration with 3D tomosynthesis for mammography.

News

**Siemens sets a new standard for breast ultrasound**: **New automated breast ultrasound system automatically acquires volumes and offers intelligent clinical applications**
Siemens Healthcare introduces the Acuson S2000 Automated Breast Volume Scanner (ABVS), the first multi-use ultrasound breast system that automatically acquires volume images of the breast. Thanks to the user-independent, standardized image acquisition, the system is ideally suited for early detection and diagnosis of breast cancer with ultrasound – especially for women with dense breast tissue.

**Maximum efficiency in diagnostic reporting: syngo Portal Transcriptionist from Siemens for medical transcriptionists**
The PACS (Picture Archiving and Communication System) and RIS (Radiology Information System) solutions from Siemens Healthcare are enhanced by role-based portals. Clinical staff access their tasks via portal applications that are specifically adapted to their function. The new



Siemens AG
Corporate Communications and Government Affairs
Wittelsbacherplatz 2, 80333 Munich
Germany

Information number: H200903.024 e FP

**Media Relations: Marion Bludszuweit**
Telephone: +49 9131 84-3292
E-mail: marion.bludszuweit@siemens.com
Siemens AG
Healthcare Sector
Henkestr. 127, 91052 Erlangen

Syngo Portal Transcriptionist, developed for the European market, contains all core functions needed by transcription offices for diagnostic reporting in radiology. The portal clearly indicates and prioritizes the main tasks that need to be addressed, for example, pick up incoming cassette, listen to digitally dictated text, or transfer text, including comments by the radiologist, to the reporting template. With this approach, the portal provides seamless interaction between radiologists and transcriptionists, reducing breaks in their workflows.

**Innovation for Women's Health – the new MRI breast scanner from Siemens**
**Magnetom Espree-Pink makes examinations more comfortable for physicians and patients**
Siemens Healthcare presents its first MRI breast scanner, Magnetom Espree-Pink. This 1.5-Tesla system is the latest innovation in magnetic resonance imaging (MRI) from Siemens, featuring a dedicated solution for breast examinations. Particularly for obese and claustrophobic patients, the large, 70-centimeter magnet bore makes examinations more comfortable than with previous systems, or, in some cases, it makes them possible for the first time ever. The flexible design of the "Sentinelle Vanguard for Siemens" breast coil also optimizes the clinical workflow. Comprehensive applications, such as syngo Grace or syngo Views, additionally set a new standard in Women's Health.

**Siemens presents new MR applications for Oncology**
Siemens Healthcare exhibits its latest solutions in the field of Magnetic Resonance (MR) for Oncology at the European Radiology Congress ECR 2009 in Vienna. The syngo TimCT Oncology application enables not only comprehensive patient examinations within extreme short examination time possible, it can also eliminate the need for multiple examinations with other modalities. The syngo Tissue 4D software supports tissue differentiation of prostate cancer. In addition, Siemens presents innovative technologies in the area of Women's Health: dedicated breast coils for 1.5 Tesla and 3 Tesla systems as well as the new breast scanner Magnetom Espree - Pink. The 1.5T system combines a 70cm Open-Bore design with a dedicated breast care solution. Particularly for obese and claustrophobic patients, the large bore makes examinations more comfortable than with previous systems, or, in some cases, it makes them possible for the first time ever.



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Further highlights at the ECR 2009

**Computed Tomography**

With the Somatom Definition Flash, Siemens Healthcare is introducing a CT scanner that will set new standards regarding speed and dose reduction. The system requires only a fraction of the radiation dose that systems previously required to scan even the tiniest anatomical details faster than ever before. The Somatom Definition Flash is a new dual-source CT from Siemens, featuring two X-ray tubes that simultaneously revolve around the patient's body. The fastest scanning speed in CT (43 cm/s) and a temporal resolution of 75 ms enable, for example, complete scans of the entire chest region in just 0.6 seconds. Thus, patients are no longer required to hold their breath during the exam the way they had to in the past. At the same time, the Somatom Definition Flash operates at an extremely reduced radiation dose. For example, a spiral heart scan can be performed with less than 1 millisievert (mSv), whereas the average effective dose required for this purpose usually ranges from 8 mSv to 30 mSv.

**Molecular Imaging and Nuclear Medicine**

The Biograph Molecular CT (mCT) is the first unit ever to combine the capabilities of a high-performance CT scanner with those of a high-resolution PET (positron emission tomography) system. With conventional PET CT scanners, the CT component can be used only to a limited degree for CT examinations. With the Biograph mCT, Siemens is introducing "molecular computed tomography". This system includes both a CT for molecular imaging and, at the same time, a PET system offering the comprehensive possibilities of computed tomography. In times characterized by sinking healthcare budgets, this new system is optimally suited for cost-effective performance of high-quality CT as well as PET CT examinations. It also promotes close cooperation between the diagnostic disciplines of radiology and nuclear medicine.

SPECT (Single Photon Emission Computed Tomography) imaging with "intelligence" is the next major trend in nuclear medicine. The Symbia gamma camera from Siemens now comes with a new feature, IQ•SPECT, which in the case of cardiac examinations will supply information concerning perfusion in only five minutes. In addition, the CT attenuation correction can be calculated during the examination and calcium scoring can be performed. At present, perfusion studies of the heart using SPECT systems take approximately 15 to 20 minutes on average.

**Services**

With Uptime Services, the Siemens Customer Care program offers a multitude of innovative proactive services that enable the detection of potential faults in medical systems before



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Siemens AG
Healthcare Sector
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malfunctions occur. This minimizes downtimes and decisively improves planning security and workflows in hospitals and medical practices. The Siemens Guardian Program, for example, allows the real-time, proactive online monitoring of medical systems. System errors and potential deviations from the current standard values can be quickly detected and remedied so that reliability and availability of the system are considerably increased. The basis for this is the Siemens Remote Service (SRS) platform, to which Siemens can connect the systems of its customers worldwide. Today, up to 50 percent of all system malfunctions can be remedied by SRS via remote access.

Siemens Healthcare now offers TubeGuard for all computer tomographs (CT) in its Somatom Definition product family. TubeGuard is an additional option featuring proactive, real-time monitoring of systems via the Guardian program. It continuously checks the operability of the X-ray tube assembly in the customer's CT system. TubeGuard informs the Siemens Service Center online via Siemens Remote Service (SRS) in due time before a tube assembly actually fails, e.g. at the end of its service life. A replacement can thus be supplied immediately, thus reducing the risk of unforeseen system failures considerably.

**Radiography**

The wireless detector wi-D, is a highlight of the Ysio digital X-ray system which can be compiled from a program of modules. Regardless of whether medical practices and hospitals require one or two detectors, whether they want a patient table or not, or whether they need fully automated or synchronized operation – Ysio can provide an X-ray system that is adaptable to virtually any clinical requirement. The wireless detector combines the flexibility of conventional cassettes with the immense advantages offered by digital radiography and thus ensures a cost-effective workflow. "MaxTouch", the large color display, also contributes to this. With this touch pad, the customer can control system functions such as examination and exposure parameters or the dose. If customers opt for the fully automated ceiling-mounted support, they can even choose from over 500 organ programs. These programs make it possible to move the tube into the correct position for the desired exposure with a single push of a button.

**Interventional radiology**

By combining an angiographic C-arm system with the electromagnetic navigation system, iGuide Cappa a new medical procedure was developed which allows a needle to be navigated in the patient with a very low X-ray dose and thus offers a greater level of patient comfort. Prior to the intervention, Siemens Syngo DynaCT software provides physicians with the 3D exposures they require. Similar to a GPS system, this method involves electro-magnetic localization. In this way needles can be placed with greater precision and faster than before. Such minimally invasive



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interventions are used, for example, in liver biopsies, in vertebral plastias for the stabilization of destroyed vertebral bodies or in pain therapy in case of tumors.

The new Artis zeego angiography system of Siemens Healthcare introduces unprecedented flexibility in catheter labs and operating theatres. The industrial robot technology integrated in Artis zeego allows the physician to move the C-arm to almost any position around the patient. This makes it easier than ever before to visualize internal organs from various sides, if - for example - tumors or vascular diseases have to be assessed. The University of Munich Hospital will be the first hospital in the world to use the new Siemens angiography system for patient care. Artis zeego supports innovative 3D procedures such as tomograms with syngo DynaCT from Siemens. As Artis zeego is capable of displaying large volume cross-sectional views, large areas such as the entire abdomen can be viewed. This offers great advantages to the physician, for example in the treatment of obese persons or of patients with liver cancer.

**Fluoroscopy**

For many examinations using fluoroscopy systems, patients have to fast the night before. As a result, fluoroscopic examinations are often planned for the morning. The systems then remain unused for the rest of the day in private practices and hospitals. This is not the case with Axiom Luminos dRF: the system is also a fully digital radiography system which can be used around the clock. Axiom Luminos dRF can both visualize dynamic processes in the body – for example swallowing in the esophagus – and produce static radiographs. Instead of operating with a conventional image intensifier and cassette, the system works with a dynamic flat detector, which digitally acquires the image data for both fluoroscopic and radiographic acquisitions. This eliminates the steps involved in inserting and aligning the cassette, as well as the subsequent read out at a corresponding device. Axiom Luminos dRF eliminates these interruptions because the image is available immediately and electronically. This saves time both for personnel and patients, resulting in increased patient throughput.

**Breast Care**

With tomosynthesis mammography is extended to include a radiographic technique which is similar to the principle of computed tomography. The X-ray tube takes several exposures of the breast from various angles. From these projection images, a software program computes a set of sectional images with the help of algorithms. The resultant three-dimensional data provides the radiologist with much better information than was possible with previous methods. Superimposed tissue structures can be displayed separately. This technology is in the process of being developed and will be available for Mammomat Inspiration, the latest mammography system from Siemens. It



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allows screening, diagnosis and tomosynthesis to be provided on a uniform digital platform for the first time ever. The customer can, where required, purchase a screening device and add on the biopsy unit or 3D tomosynthesis, as required, at a later stage.

**Computer Aided Detection**

Intelligent post-processing, which includes computer-aided detection (CAD) and advanced imaging solutions, help physicians detect regions on clinical images that may require further attention. Siemens has developed CAD and advanced imaging solutions particularly for the lung, intestinal and chest regions. These CAD applications are available on the MultiModality Workplace, on the syngo CT Workplace and in implemented into syngo Imaging or syngo Imaging XS. At ECR 2009, Siemens will demonstrate the extension of intelligent post-processing in the PACS workflow.

The syngo Lung CAD software helps search through thoracic CT data records for potential nodules. syngo Lung CAD is available on syngo Imaging, syngo Imaging XS or in conjunction with syngo CT Oncology.

Syngo CXR CAD can be used to detect pulmonary nodules in digital X-ray studies of the thorax. Syngo CXR CAD processes images of the posterior-anterior (PA) view and is optimized for detecting pulmonary nodules ranging in size from 8 to 30 mm.

Another CAD solution from Siemens is syngo PE Detection, a second reading product for detecting pulmonary nodules in CT angiography images. Syngo MammoCAD helps to detect regions of interest, including masses and microcalcifications clusters in full-field digital mammography (FFDM).

Syngo Colonography PEV (Polyp Enhanced Viewing) is an automated second-reading tool used to display polyps in the colon. If a specific PEV finding is selected, the tool automatically travels to the polyp marked for PEV in the "3D endoscopy" and "multiplanar reconstruction" views. The tool supports the detection of polyp-shaped objects ranging in size from 6 to 25 mm and assists in measuring them.

Syngo TrueD software is available on PACS systems and the MultiModality Workplace for the interpretation of CT, MR, SPECT, and PET images in oncological diagnostics. The application can load and concurrently display anatomical as well as individual or fused functional images. This simplifies monitoring the course of a disease or therapy. The latest version of *syngo* TrueD



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includes numerous additional workflow functions such as user-configurable layouts and new analytical tools for VOI assessment.

**Imaging and workflow systems**

At the European Congress of Radiology 2009, Siemens will present its innovations in the areas of Picture Archiving and Communication Systems (PACS) and Radiology Information Systems (RIS). This includes, among others, new features in the PACS Syngo Imaging XS and Syngo Imaging as well as Syngo Dynamics. New portals have been added to extend the Syngo Workflow and support radiologists and hospital personnel with intelligent access to patient images, data or reports and their administration.

One highlight of the new version V70 of syngo Imaging XS, a modular PACS solution to enter the world of digital image processing, is the implementation of IHE (Integrating the Healthcare Enterprise) profiles such as Scheduled Workflow (SWF), Patient Information Reconciliation (PIR), Portable Data for Imaging (PDI), Access to Radiology Information (ARI) and Consistent Time (CT). Some new functionalities in this version include DICOM Structured Reports and Findings Navigator. The integration of RIS, PACS and image postprocessing is aligned to suit radiology work processes, simple operation, speedier workflow or simple integration into the technological environment of the hospital.

The new version V70 of syngo Imaging XS (PACS) combines cutting-edge features for reading, planning exams, and reporting with easy installation, easy usage, and easy expansion – even for large hospitals – at an attractive cost-benefit ratio. The newest version also includes 3D visualization applications.

Version V35 of syngo Imaging, which is currently in development, will feature important improvements with regard to scalability and configurability. In addition it will support Syngo MammoReport and Syngo Expert-I.

The new versions of syngo Imaging XS and syngo Imaging both offer additional functions for computer-aided detection (CAD) and enhanced imaging with the PACS viewing station. This not only increases diagnostic reliability but also improves the workflow.

The dynamic image reporting, diagnosing, and archiving system syngo Dynamics for multi-modality application has also been extended. The application helps to improve the efficiency of clinical



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procedures, especially in cardiology and gynecology. Some of the newest features of this enhanced version 7.0 include:

- Direct data transfer between Siemens Axiom Sensis XP hemodynamics monitoring systems and syngo Dynamics
- Integration of hemodynamic system data from another vendor
- Graphical reporting element to produce coronary tree diagrams, allowing physicians to build a representation of the diagnostic results
- New 17-segment cardiac wall-scoring model to match the most current clinical standards

**Environmental concepts for medical engineering systems**

To reuse pre-owned systems as much as possible is an important component of Siemens' corporate philosophy: Resources are conserved by extending the life cycle of a product. For example, computed and magnetic resonance tomographs, ultrasound, radiation therapy and radiography systems are repurchased by Siemens Healthcare and then reconditioned by the Refurbished Systems Business Unit. This is accomplished in an extensive five-level quality process (system selection, qualified disassembly, refurbishing process, installation, warranty) that matches the same high quality standards as are applied to new systems. This integrated approach helps to prevent a yearly discharge of 18,000 tons of $CO_2$. These energy savings correspond to the yearly electrical energy demands of 4,450 3-person households.

The **Siemens Healthcare Sector** is one of the largest suppliers of healthcare technology worldwide. The company is a medical solution provider with core competences and innovative strengths in diagnostic and therapeutic technologies as well as knowledge processing, including information technology and system integration. With its acquisitions in laboratory diagnostics, Siemens Healthcare is the first integrated healthcare company that combines imaging and lab diagnostics, therapy solutions and medical information technology and also supplements these with consultation and services. Siemens Healthcare offers solutions for the entire supply chain under one roof - from prevention and early detection to diagnosis and on to treatment and aftercare. In addition, Siemens Healthcare is the world market leader for innovative hearing instruments. The company employs some 49,000 employees worldwide and is present in more than 130 countries. During fiscal 2008 (ending on September 30), Siemens Healthcare achieved a total sales volume of 11.17 billion euro and incoming orders totaling 11.78 billion euro. The Group earnings amounted to 1.23 billion euro.
For more information, go to: http://www.siemens.com/healthcare



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