

Further Reading

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Magnetic Navigation for Comprehensive Cath Lab

The latest issue (no. 10) of the customer magazine *AXIOM Innovations* showcases the Marienhaus Klinikum St. Elisabeth in Neuwied, Germany, where Burkhard Hügl, MD, and his staff established a new catheter lab equipped with an Artis zee® Magnetic Navigation system for interventional cardiac procedures. Thereby, the physician realized his vision of bringing

state-of-the-art technology to heart patients.

When joining the hospital to establish an invasive cardiology unit, Hügl brought years of experience working with Siemens technology with him. Aware that electrophysiology was not very common in the region, he saw the potential offered in terms of serving patients

and utilizing the latest technology. Hügl decided to integrate the AXIOM® Sensis XP recording system with the *syngo*® X workplace and Stereotaxis Magnetic Navigation. "Magnetic Navigation was the right fit for what we were planning to do here: Primarily for the general procedures associated with running something as complex as a cath lab, it was clear we needed high-quality X-rays and a good interface with all of the components working well together," he explains. Patient registration is done via AXIOM Sensis XP, which is linked to the hospital's entire information network. The demographic data are then transferred to both the Artis zee imaging and Carto XP mapping systems. A big advantage for the physicians is that the level of radiation they had previously been exposed to has been significantly reduced. Now, they only enter the exam room at the beginning of a procedure to insert catheters and place the magnets and again at the very end to park them.



The Artis zee Magnetic Navigation system is used for reconstructive heart procedures at the Marienhaus Klinikum St. Elisabeth in Germany.

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AXIOM-Innovations-navigation](http://www.siemens.com/AXIOM-Innovations-navigation)

Spanish Hospital Sees Ultra-integration Benefits



The three Dimension Vista systems in the central lab of the facility in Málaga are connected by StreamLAB® Analytical Workcell, which has allowed Carlos Haya to add allergy testing, automated drug analysis, and drugs of abuse analysis, in addition to improved genetic and assisted reproduction testing. The hospital is now able to carry out more than 200 different testing methods thanks to the broad menu of the system. Valero sees measurable results: "More test requests are being made, new tests are being performed, and all of this is being handled by fewer staff." In addition, the hospital has been able to redeploy resources to other lab areas.

Productivity and efficiency improvements are further advantages of the Dimension Vista system, with each analyzer providing a throughput of up to 2,000 tests with 200 primary tubes per hour to meet peak time demands. Technology consolidation has helped resolve previous response-related problems, providing further workflow benefits. Furthermore, Valero found Siemens to be supportive and helpful in training staff on the system and accommodating the hospital's needs: "Siemens listens to the labs and investigates what they need. That's one of the things to keep in mind when making decisions." A case study about Carlos Haya Hospital can be accessed using the link below.

[www.siemens.com/
dimension-vista-casestudy](http://www.siemens.com/dimension-vista-casestudy)

In May 2007, Carlos Haya Regional University Hospital in Málaga, Spain, became the first facility to install a Siemens Dimension Vista® system in its laboratory. As one of the largest hospitals in the country, the state-run, 1,200-bed facility was looking for a consolidated platform with more automation to satisfy its demanding workload while being able to offer a variety of testing methods. Since the installation, testing volume has increased to nearly six million per year – a growth rate of about six percent. Optimized laboratory workflow – a product of hundreds of interviews with laboratorians worldwide during the

Dimension Vista Intelligent Lab System's development – allows the facility to perform more tests, new kinds of tests, with fewer staff.

Vidal Pérez Valero, MD, Director of Clinical Analysis Service and the Diagnostic Management Unit at the hospital, appreciates Dimension Vista's ultra-integration of four state-of-the-art technologies – photometry, nephelometry, V-LYTE® multisensor electrolyte detection, and LOCI® advanced chemiluminescence – in one workstation. As Valero explains, "Right now, it is a great advantage for us. Having these four technologies in a single platform is really important."

Case Study Reveals Advantages of Automated Breast Volume Scanning

With growing awareness of genetics and other factors that increase a women's risk for developing breast cancer, there is even greater demand for advanced breast imaging methods to supplement mammography.

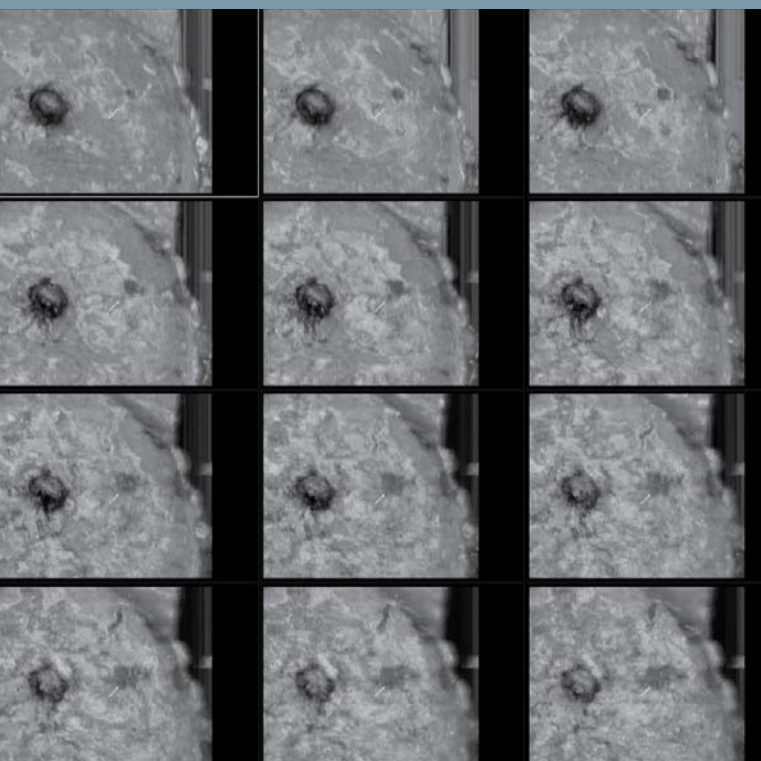
The Swedish Medical Center Institutional Review Board in Seattle, Washington, USA, recently performed preclinical trials using the ACUSON S2000™ Automated Breast Volume Scanner (ABVS). Its results have been published in a white paper.

Automated breast volume scanning may be a revealing adjunct to mammography, which is the cornerstone of breast cancer early diagnosis for both detection and evaluation of the extent of breast cancer in high-risk patients. The technique automatically acquires intuitive coronal views for a comprehensive depiction of the breast.

The trials were done on patients who had known breast malignancies and had been examined with magnetic resonance imaging (MRI). Malignant masses, especially in women with dense breast tissue, may go undetected with mammography. MRI can visualize mammographically occult cancers. Handheld ultrasound exams can also detect tumors; however, conventional breast ultrasound is generally only used to evaluate a small area surrounding a palpable mass or a specific mammographic finding. But with the ACUSON S2000 ABVS, full-field volume imaging can be achieved, enabling views of the anatomical coronal plane, which was not possible before with conventional ultrasound.

ACUSON S2000 ABVS is a complete breast ultrasound imaging system, providing high-resolution handheld imaging with innovative applications such as fatty tissue imaging, and eSie Touch™ elasticity imaging. Furthermore, it allows biopsy procedures with ultrasound guidance. The system itself features an adjustable scanner with automated one-button pressure and locking mechanism to improve workflow by simplifying and expediting volume acquisition for consistent results. Workflow is then streamlined by providing image presets that are optimized to the patient's cup size; the system automatically adjusts depth, frequency, focal zone placement, and overall gain.

After acquisition, images are sent to the ABVS Workplace for review, where they are presented through multiplanar reconstruction (MPR), which reconstructs secondary images from the acquisition volume in any plane, such as sagittal, coronal, radial, and anti-radial views. Highlighted advantages of the automated breast system include standardized, reproducible whole-breast imaging with 3D capability and retrospective multiplanar image review. The study also shows potential for better pre-operative assessment of patients with known breast malignancy. To download the full white paper, entitled *Visualization of Mammographically Occult Breast Cancer – Two Cases*, and the results of the preclinical trials, please use the link below.



ABVS revealing a tumor in a 49-year-old patient with dense breast tissue: Multislice display of coronal reconstruction at 0.5-mm slice intervals shows the tumor progressing throughout the depth.

www.siemens.com/ABVS



Hybrid Brings Hope to the Heart

Hospital operating rooms (OR) equipped with high-end imaging capabilities allow diagnosis and surgery to take place concomitantly. St. Bartolo Hospital in Vicenza, Italy, wanted to take this life-saving advantage and chose AXIOM® Artis U, a room-mobile unit from Siemens, for both its flexibility and its efficiency. Hybrid rooms grant the ability to track the course of an operation in real-time. This opens new doors for surgeons dealing with high-risk patients or emergency cases. “We save time with a hybrid OR. The patient goes into surgery immediately to fix the life-threatening problem, and then we do imaging while they are still on the operating table so we can address other potentially serious problems while they are still under anaesthesia,” explains

Alessandro Fabbri, MD, at the Division of Cardiac Surgery. AXIOM Artis U has created a new niche category between small mobile units and large, powerful stationery systems, enabling operations to be done more quickly, smoothly, and with more confidence. With its compact size, AXIOM Artis U is designed to fit into average-sized ORs and meet surgeons’ need to maneuver. Its image quality enables surgeons to see more quickly where to operate, and requires less contrast fluid and fewer X-rays per second than previous systems at St. Bartolo Hospital. According to Fabbri, interest in AXIOM Artis U is high, from both Italy’s aging population and from other surgeons, who “see what equipment you have and want it, too.”

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AXIOM-Innovations-hybrid](http://www.siemens.com/AXIOM-Innovations-hybrid)

A Decade of Dose Reduction



Image data
recon

Image
correction



Iterative Reconstruction in Image Space (IRIS) represents the latest generation of Siemens’ dose saving features.

With the increasing performance of ever-refined scanning technologies, diagnostic opportunities and utilization of computed tomography (CT) are growing constantly. Thus, the excellent clinical results obtained with CT have to be weighed against radiation exposure. Siemens has been a pioneer in working to reduce radiation dose for many years, resulting in an impressive portfolio of innovations in scanner hardware, software, and imaging protocols that have cut patient radiation exposure to a fraction of what it once was. The cover story in the latest issue of *SOMATOM Sessions*, Siemens’ CT magazine, outlines a decade of key milestones, most recent developments, as well as feedback on some of the most important innovations from physicians in Germany and the USA who are working with them. “There’s more and more awareness about the amount of radiation used for CT scanning,” says Christoph Becker, MD, Professor of Radiology and Section Chief of CT and PET/CT (positron emission tomogra-

phy/computed tomography) at University Hospital of Munich in Germany. “Siemens has thoroughly looked into this and is one of the first vendors to implement the tools we need to improve our scanning.” Uwe J. Schoepf, MD, Professor of Radiology and Cardiology and Director of CT Research and Development at the Medical University of South Carolina, Charleston, USA, has implemented the latest dose reduction technology into his clinical routine: Iterative Reconstruction in Image Space (IRIS) introduces a correction loop in the image generation process that cleans up artifacts and noise in low-dose images. “With Siemens’ Iterative Reconstruction, I can save up to 60 percent of dose for a wide range of routine applications while maintaining excellent image quality,” explains the physician.

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SOMATOM-Sessions-IRIS](http://www.siemens.com/SOMATOM-Sessions-IRIS)