

RSNA Coverage: Wrapping Up

Features abound, innovations aplenty at the annual RSNA meeting.

By Andi Lucas and Lori Sichtermann



The 89th annual meeting of the Radiological Society of North America (RSNA), held November 30–December 4 in Chicago, brought together companies and attendees from around the globe to experience and discuss the newest innovations in medical imaging. Regardless of any language barriers, the topics discussed were universal.

"This is the year of the feature," commented Ed Heere, president and CEO of CoActiv, (Ridgefield, Conn). Although PACS, RIS, and filmless storage are advances in medical imaging that have been introduced only recently, companies at this year's show were eager to display the improvements made on these innovative systems. Walking among the more than 27,000 registered booths on the show floor, it was clear that this year's focus was on medical-imaging equipment that operates faster, provides more information, and is easier to use and transport.

It's only been a few years since the acronym for picture archiving communication systems, PACS, became universally known in the medical-imaging industry. Since the introduction of PACS, many substantial developments in its operation, functionality, and accessibility have been unveiled.

From its sizable booth on the RSNA showroom floor, Agfa Healthcare (Ridgefield Park, NJ) announced the results of its recent survey of more than 1,000 medical-imaging professionals and what they consider to be most important in the workplace. Agfa found that the major concerns and wants of those surveyed were speed, workflow/efficiency, and simplicity between applications. When developing its new products, Agfa took these factors into account.

As a result of Agfa's initiative to be both patient- and user-centric, the company generated a healthy response from its TalkStation 3.0, a work-in-progress (WIP) to be released in early 2004. New enhancements include Dragon v7 for improved recognition accuracy, improved security features, new workflow options, and improved client maintenance capabilities. Other WIPs included initial CR, initial RIS, and initial archive for imaging centers and community-based hospitals.

"Our goal at RSNA and in the coming months is to show that we have been listening," explained Jeff Hendrikse, director of OEM marketing healthcare at Agfa. "And we plan to move forward together with our customers."

Making the Work Flow

Improving workflow was an underlying theme with many products and services on display at the show. Visitors to Siemens Medical Solutions (Malvern, Pa) were able to see how technologists and physicians reconstruct images and access complete patient information using PACS. The SIENET Integrated Radiology Suite, which combines a PACS and Siemens NOVIUS RIS, enables data captured from medical devices to be integrated into information systems—without the need for additional electronic devices or "brokers"—to communicate between the two systems. Clinicians are able to obtain real-time access to patient information, including test results with CT scans or X-ray images.



Infimed (Liverpool, NY) showcased its workflow-enhancing product lines to much acclaim. The company's PlatinumOne R/F, DSA, Cardiac & Combo is an advanced digital image acquisition, processing, and review system that can help transform urology, R&F, angio, EP labs, and cath labs into modern digital imaging suites. Also on display from Infimed was the StingRay DR, a flat-panel digital acquisition system for general radiographic applications. The system offers a number of benefits, including full-resolution imaging in less than 8 seconds, increased productivity, cost savings on consumables, and a full DICOM PACS connectivity. CV & CWS are Infimed's cardiovascular workstation solutions that bring cost-effective, advanced networking, and DICOM capabilities to cardiac cath labs.

To help improve workflow, as well as cut costs, CoActiv showcased its EXAM-PACS, a PACS product that's typically less than one-half the cost of existing systems. EXAM-PACS retains all the necessary and required functionality of today's streamline PACS, but also offers several additional features, such as the ability to instantly forward exams to colleagues for consultation and to burn a self-contained custom EXAM-CD complete with a custom viewer. According to CoActiv, the EXAM-PACS solution achieves much of its cost savings through the use of readily available and inexpensive PCs and PC servers.

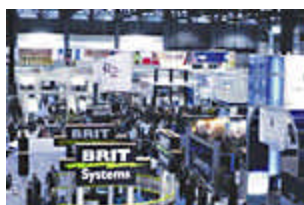


Fujifilm Medical Systems USA (FMSU of Stamford, Conn) has addressed workflow issues with the Synapse v3.0. The addition of integrated document scanning capabilities and enhancements to FMSU's Reading Protocols are included in the company's Module Release 1, which further assists facilities with the analysis, distribution, and presentation of information. Synapse Module Release 1 features the addition of an integrated "auto-filer" or document scanning device.

"The sheer amount and complexity of data that is generated in the patient care cycle is enormous," explained Bob Cooke, executive director of marketing and network systems for FMSU. "The ability of PACS to present images, documents, and other data in a user-friendly format is critical. Synapse provides the tools to help manage the overflow of information."

Synapse provides digital image management, storage, and distribution for the entire healthcare enterprise. It features on-demand information access, cascadable architecture, integrated Web technology, and a consistent desktop user interface. Synapse's Web-integrated design provides a technological infrastructure and deployment model that can be expanded based on evolving technologies.

Part of an efficient workflow is maximizing system uptime. In that regard, Toshiba America Medical Systems Inc (TAMS of Tustin, Calif) unveiled what the company refers to as the industry's best service program for diagnostic imaging products. Built upon Toshiba's existing 98% uptime service program, the Extraordinary Guarantee includes a reimbursement structure that's calculated based on quarterly statistics and adjusted according to the annual contract value. Available to customers now, the program applies to new equipment sales on the Aquilion and Asteion multi-slice CT systems; Ultra, EXCELART, and Vantage MR systems; Infinix i-Series, Efficiency 450D, Ultimax, and T.RAD X-ray systems; t.cam nuclear medicine cameras; and Aplio and Nemio ultrasound systems. To further support the program, Toshiba plans to increase its technical services staff by 15% by the end of FY04.



Accessing data from anywhere in the hospital is a hot topic, and an equally hot marketing point for many companies that offer PACS. In response to the freedom of accessibility is the question of patient privacy and information security. HIPAAT (Mississauga, Ontario) is a relatively new company with a solution to hospital security issues. The company's SingleSource, a HIPAA-compliance package, works independently or with other vendors' products to facilitate compliance on DICOM and/or HL7 networks. It provides key features of IHE node security; controls role-based access to PHI; controls

export of PHI to peripheral devices, such as printers, VCRs, and optical-disk recorders; and generates customizable reports of security incidents.

The Need for Speed

One of the top system features requested by radiologists is the advancement of speed. In response to these requests, nearly all the items showcased at this year's RSNA demonstrated an increase in operational speed and efficiency.

The new Speed4D technology from Siemens Medical Solutions enables further advancements in imaging speed, workflow, and resolution. The company announced its latest CT innovation at RSNA, the SOMA-TOM Sensation 64, which provides 64 slices per rotation. The system has a 0.37-second rotation time to enable unprecedented speed, sub-millimeter volume coverage, and image quality. The Sensation 64 is built on Speed4D technology and includes Staton (an X-ray tube), WorkStream4D (for workflow optimization and data handling), Syngo InSpace-4D (for evaluation of the moving heart), and CARE Dose4D (for automated real-time dose adaption).

The demand for time-saving features is a result of filmless imaging, which has created an equally important need for data storage. Such companies as StorageTek (Louisville, Colo) offer a series of Information Lifecycle

Management reference architectures and solutions that provide healthcare enterprises with image and data archival technology.



"The StorageTek Information Lifecycle Management Strategy is centered around enabling healthcare companies to store, retrieve, and manage their tiered information in a cost-effective and efficient manner," said Bob Koecheler, StorageTek global VP of global partners and alliances. "Information has a changing value over time. It must, however, be safeguarded from disaster and continually be available to the appropriate users, all while complying with HIPAA requirements for data."

StorageTek's Lifecycle Management solutions offer tailored features: Open Systems Archiving allows hospitals to automatically manage data movement across a tiered-storage hierarchy; Open Systems Data Protection provides business-critical data protection; and Mainframe Archiving helps hospitals manage information cost efficiently across a tiered-storage hierarchy in a mainframe environment.

Speed is necessary not just in terms of the computer and bandwidth, but also in physical-exam processes. Bard Biopsy (Tempe, Ariz) showcased its Vacora, a vacuum-assisted biopsy system that is the only stand-alone system on the market. Utilizing a battery-operated hand piece, the Vacora loads and cocks the needle automatically and features a 20-mm fire length. "The needle fires through the lesion," explained Peter Kelly, territory sales manager for Bard. "It takes the biopsy, the user pulls the needle out of the patient and then goes to a petri dish to expel the biopsy tissue. No dry tapping is needed, because the system purges itself completely."

Merge eFilm (Solon, Ohio) speeds the process with its FUSION RIS/PACS, a single-desktop solution that offers intelligent, distributed workflow. The solution helps users accelerate productivity by integrating and streamlining RIS, PACS, dictation, and billing as well as distributing images and information more efficiently. By utilizing the flexibility of image streaming and multiple routing processes to distribute images, the system is able to get the right study to the right radiologist in less time while optimizing bandwidth and image storage. The driving forces behind the distributed workflow functionality designed in FUSION RIS/PACS are staffing shortages, an increase in multisite/group practice environments, and the increasing size of images per study.



Orex Computed Radiography Inc (Auburndale, Mass) highlighted its CR solutions, which offer a compact and convenient design without jeopardizing quality or speed. For example, the Orex ACLxy mobile CR scanner provides increased throughput of up to 75 cassettes an hour on a single scanner and up to 150 cassettes per hour on the dual RAIS II scanner. Housed on a compact and mobile cart, the scanner requires a 50% smaller footprint.

Helping Hands to the Industry

Some companies that exhibited at RSNA catered to the growing demands placed on the medical-imaging community. One such company is Virtual Radiologic Consultants (Minneapolis, Minn). With the recognized shortage of industry professionals, the company offers night and off-hours emergency room coverage for more than 200 hospitals nationwide.

Virtual Radiologic's team of more than 60 US board-certified radiologists offers 24/7 interpretation coverage to help resident radiologists. The company's technology is HIPAA-compliant and open-source. Simply put, hospitals do not need additional equipment to use its services; the company's technology integrates seamlessly with a hospital's existing systems. For example, Virtual Radiologic's PACS deliver quality diagnostic images within 45 seconds to the company's authorized physicians working from around the globe. Virtual Radiologic physicians access work orders using their Web-based RIS systems, interpret the images, and "type" their reports with voice-recognition software. This technology enables Virtual Radiologic to deliver preliminary reports in 30 minutes or less.

InSight Health Services Corp (Lake Forest, Calif) is one of the largest integrated providers of diagnostic services. Working in 31 states, InSight has 91 fixed-site and 114 mobile operations. "We find the best practices in these operations, and then spread them out to our other sites," explained Steven Plochocki, president and CEO of InSight, a privately held company that has doubled in size over the past 4 years.

InSight recently implemented a new service solution from InSiteOne Inc (Wallingford, Conn). Called InDex Web, the solution provides real-time, secure, Web-based access to images stored on InSiteOne's DICOM archive. Using an Internet or network connection, InDex Web provides any authorized user with immediate access to lossless - quality images in increasing levels of resolution.

"InSight Health treats more than 80,000 patients a month, and we are in constant communication with our referring physicians," explained Patricia Blank, InSight's executive VP and CIO. "We needed a solution that could provide image access to all constituents wherever they are located, over a consistent platform."

Companies like TechTrans (Southlake, Texas) have evolved through the years by supplying solutions to transportation issues regarding medical-imaging equipment. The company transports and deploys high-end electronic hardware, telecommunications, and medical equipment. It also handles third-party logistics, such as short-term warehousing, rapid delivery, and full installation services in order to reduce overhead.

At RSNA, TechTrans demonstrated its Demo Move coordinator, a distribution resource tool that was created to manage the devices that medical equipment manufacturers use for sales demonstrations to prospective clients. The device has the ability to track each serialized demonstration unit based on a variety of criteria. The software allows both the customer and TechTrans to track and trace the history of any piece of equipment instantly. Demo Move also allows sales representatives to order specific instrument types and required transportation, pick-up, and/or delivery services.

Barco (Kortrijk, Belgium) has helped change the way we view medical imaging by providing it in color. The company introduced its Color Coronis 2MP, the newest member of its Coronis medical-display system product line. Color Coronis 2MP has been engineered to offer greater visual performance, allowing for more accurate diagnosis in such medical applications as PACS, ultrasound, and orthopedic imaging. The new display system is optimized to display both color and grayscale medical image sets and is fully compatible with advanced modality workstations, including 3-D applications.

Also changing the way radiologists view their work is GE Medical Solutions' (GEMS of Waukesha, Wis) Speckle Reduction Imaging (SRI) technology on its LOGIQ 9 ultrasound scanner. SRI technology improves the appearance and contrast of ultrasound images by reducing the speckle and inherent artifact created by imaging with ultrasound, and, therefore, enhances image features. The technology was designed to improve the information content of images and enhance conspicuity of lesions. SRI technology can be activated by pushing a button, or by using the company's exclusive VoiceScan technology, a real-time software algorithm that suppresses speckle and enhances image features, such as vessel borders and tissue boundaries.

Although patient care is the driving force behind new product development, companies also are focusing on the user/operator. Ergo-nomically enhanced features emerged as an added bonus at this year's RSNA.

GEMS demonstrated the new concept in diagnostic image reading rooms that addresses the growing demands on radiologists. The Reading Room of the Future lets clinicians review patients' digital diagnostic images on PACS in comfortable environments that are designed to help them experience less fatigue and stress so that they can work efficiently to deliver fast, accurate diagnoses.

"If we expect radiologists to review more images in the same or less time and still deliver accurate diagnoses, we need to improve the quality of their work environment" said Vishal Wanchoo, VP of imaging and information systems at GEMS. "We must minimize eyestrain, physical discomfort, and other distractions that can impede their productivity and compromise their effectiveness."

Similarly, Philips Medical Systems (Bothell, Wash) unveiled its Ambient Experience Pavilion at RSNA. "The Pavilion showcases Philips' drive to move system design to experience design," said Stefano Marzano, CEO and chief creative director of Philips Design. "Experience design is a human-focused approach ... that is used here to improve the experience of patients and clinicians who work with our medical equipment."

During the development of the Ambient Pavilion, scientists and designers focused on the various phases through which a patient goes during a radiological examination—from waiting and preparation to the scan itself. In an MR

setting, the Pavilion is a circular space, built around the scan room and flanked by a small patient prep room and control room. Philips eliminated unnecessary walls and used windows and lighting to decrease further barriers. A video link allows visual communication during the exam.

RSNA 2003, spanning five days and 444,250 square feet of Technical Exhibit space, brought together worldwide industry professionals. Because the show offered so much in terms of information and product unveilings, Medical Imaging will continue to highlight aspects of the show in our "Product Showcase" and "News Watch" sections. Throughout our upcoming feature articles, you'll also read about the technologies on display at RSNA 2003. In response to this year's show, it is clear that 2004 is going to be a tremendous year for radiology. Look to Medical Imaging to deliver the best of what the year has to offer.

Andi Lucas is the editor and Lori Sichtermann is the associate editor of Medical Imaging.

[Normal Version](#)