Healthcare IT News

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SOLUTIONS SERIES

Real Time Location Systems

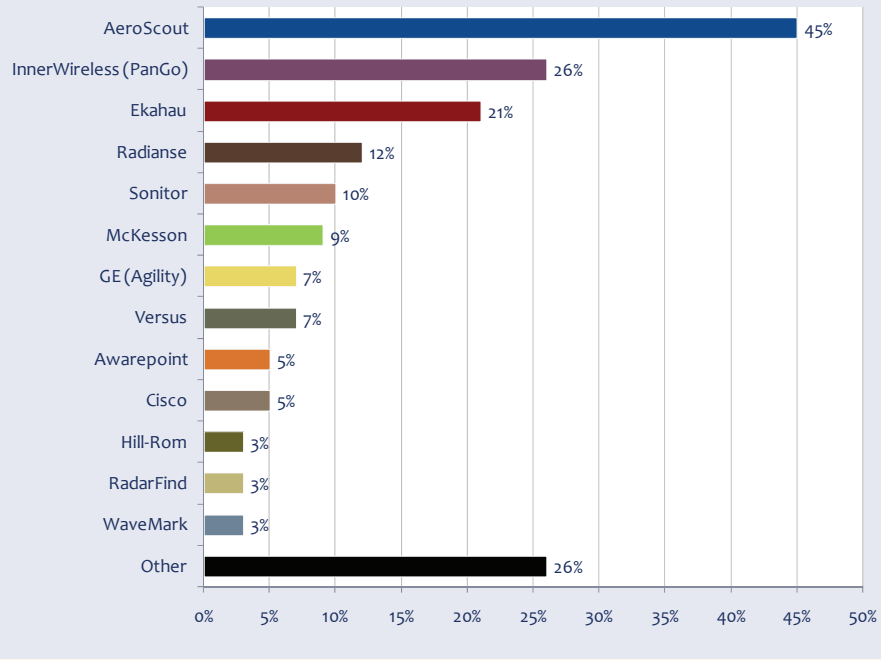
Early RTLS adopters report success with initiatives

by Steve Van Wagenen, KLAS

KLAS' venture into the monitoring and reporting of real-time location systems (RTLS) began in response to inquiries from CIOs and IT directors looking for clarity and a sense of direction in this new and confusing market segment. Some providers report that RTLS technologies save money, create efficiency, and improve the quality of care. However, many others are still confused. Who are the vendors? What are organizations using RTLS solutions for? How are others prioritizing its value? Is there an ROI?

To begin answering these questions, KLAS interviewed 122 organizations known for being progressive in their use of healthcare IT (HIT). Only 35 of those organizations are doing anything in the way of real-time location, and even fewer had deeply implemented a solution. In addition, the RTLS market features a crowded vendor landscape without many clear leaders, as providers listed 28 different RTLS vendors they might consider. (See Figure 1.)

FIGURE 1:
Vendors Considered in the Selection Process
(n=58) The "Other" category includes Aionex, CenTrak, GE, InfoLogix, Mobile Aspects, PCTS, Philips, Rauland-Borg, Red Prairie, Reliance, RF Technologies, SkyTran, Time Domain, Visible Assets, and Xmark.



Since 2005, several prominent industry surveys have suggested that a significant percentage of providers would be implementing RTLS technology within the next two years, yet we have only seen very modest growth. While almost one in three of our targeted, progressive survey group was deploying some RTLS solution, it appears that less than 5 percent of hospitals nationwide are utilizing the technologies. There appears to be a direct correlation between provider size and adoption, with large acute care facilities (200 beds or more) adopting RTLS more often. KLAS study results indicate that RTLS purchases in the next one to two years are expected by 30 percent to 40 percent of respondents.

WHAT'S THE ROI?

Today's enterprise-wide RTLS offerings are an inch deep and a mile wide, and many providers can't quite put a finger on the value of RTLS. Enterprise-wide visibility is not just for assets, but can also be used for managing patient flow, beds, rooms, staff, and other departmental activities and workflows. One hospital reported using RTLS to monitor and manage patient wait times; if a patient's status had not changed in a certain amount of time, an alert would be generated.

Nonetheless, it is not surprising to see

SUCCESS **SEE PAGE 4**

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KLAS helps healthcare providers make informed technology decisions by offering accurate, honest and impartial vendor performance information. By working with thousands of hospitals and clinics throughout the United States and Canada, KLAS has assembled performance ratings and customer comments for more than 1,000 healthcare technology products and services.

To learn more, visit the KLAS Web site at www.KLASresearch.com.

To see a list of available KLAS reports, including the recent RTLS study, go to www.KLASresearch.com/reports.

RTLS market set for growth

But providers still have many questions

By Chip Means, Web Editor

REAL-TIME POSITIONING and location tracking should be as high on healthcare providers' project lists as an electronic medical record system.

Yet the versatile technology, used primarily for tagging and tracking physical assets, is found only in one-third of U.S. hospitals. Education and cost barriers have inhibited adoption for RTLS in a year of tight budgets and heavy focus on incentive-worthy IT like EMRs.

An increase in adoption is likely to be spurred by trends such as enhanced interoperability with enterprise IT systems

GROWTH **SEE PAGE 6**

RTLS Technologies

RTLS systems are often equated with RFID technology, but the truth is the different vendors utilize a wide variety of technologies. KLAS estimated the market share of each technology and asked providers to comment on the strengths and weaknesses

Technology	Market Share	Bravo	Ouch
Wi-Fi	55%	This is the most common technology used for wireless computer networks. Many hospitals already have a wireless network installed, so adding functionality to that network can add to the ROI of the original investment. With Wi-Fi infrastructure, any Wi-Fi enabled device can be tracked, such as smart IV pumps, COWs, PDAs, tablet PCs, VOIP phones, or badges. The Wi-Fi signal is not restricted by walls. Multiple vendors offer this positioning technology.	Wi-Fi has reportedly less precise locationing capability than other RTLS solutions. When Wi-Fi is used, providers indicate that it is more precise for tracking assets than it is for tracking patients or staff. Existing wireless networks may require additional access points to improve tracking precision unless the network is already VOIP enabled. Some networks may already have capacity issues, so adding traffic to the network with a tracking system may affect the responsiveness of the tracking system and other applications running on the same network. Wi-Fi locationing is based on the triangulation of distances from sensors. Precision may be impacted by sensors on adjacent floors or rooms also receiving tag transmissions.
Active RFID	13%	Active RFID can use a combination of passive, active, or semi-active tags to meet varying tracking needs. RFID systems utilize some proprietary hardware that limits interference or impact on existing wireless networks.	Active RFID requires additional infrastructure costs. Active tags require battery maintenance and consequently, they cost more than passive tags.
Passive RFID	4%	Passive RFID is a low-cost alternative to active RFID. Passive RFID tags are activated when they pass sensors or exciters. Passive tags are less expensive because they require no battery, resulting in lower variable costs per piece of equipment.	Location updates are dependent upon tags passing these sensors, so there is no real-time data. Passive systems require higher fixed costs for exciters/sensors.
RFID/IR	*	Combines radio frequency (RF) signals, which can travel through walls, with the more precise infrared (IR) technology. Provides functionality to overcome the line-of-sight concerns found in IR-only applications. RFID/IR does not interfere with wireless networks or other Wi-Fi equipment.	As with most technologies other than Wi-Fi, RFID/IR uses proprietary reader networks that must be installed in the tracking area.
Infrared	12%	Infrared offers high, room-level precision because infrared light does not extend beyond walls. Readers only detect tags within a specific room, but with improved specificity.	Infrared detection relies on line of sight. A few vendors in this study found ways to incorporate IR with RFID technology to try and get the best of both worlds.
ZigBee	6%	ZigBee is an RFID platform with a higher level of precision resulting from a mesh network of tags and readers that communicate with each other. With more points of communication, accuracy is reportedly better than with RFID and Wi-Fi. Some providers report an easy installation of the system with readers that simply plug into existing electrical wall outlets, minimizing up-front costs.	Plug-in sensors need to be secured to outlets to prevent theft, although new designs are able to detect connection with an outlet and send alerts when this connection has been lost or the sensor is moving. Providers need to have plug-in sensors that allow for continued use of existing electrical outlets in rooms and may need more outlets. Sensors would need to be plugged into auxiliary-powered outlets for continued use of the system during electrical outages.
Ultra-wideband	*	Precision is reported to significantly improve with ultra-wideband technology, taking accuracy from several feet down to a few inches.	The ultra-wideband systems are very costly, as a whole network must be installed in the facility. Few vendors offer ultra-wideband. No providers in this study mentioned that they were considering vendors offering ultra-wideband technology.
Ultrasound	10%	Ultrasound is based on transmitting high-frequency sound waves, rather than radio frequencies. There is no electromagnetic interference that could impact the locating data, and the ultrasound system has no potential of interfering with other wireless systems or electronic equipment.	Ultrasound systems are susceptible to some noise interference from high frequencies that could imitate locating tag transmissions.

* KLAS estimates market share at less than 1 percent.

Unique and proven, Sonitor's Ultrasound RTLS Technology drives maximum ROI

Sonitor Technologies
877.477.9767 or
727.466.4547
WEBSITE:
www.sonitor.com

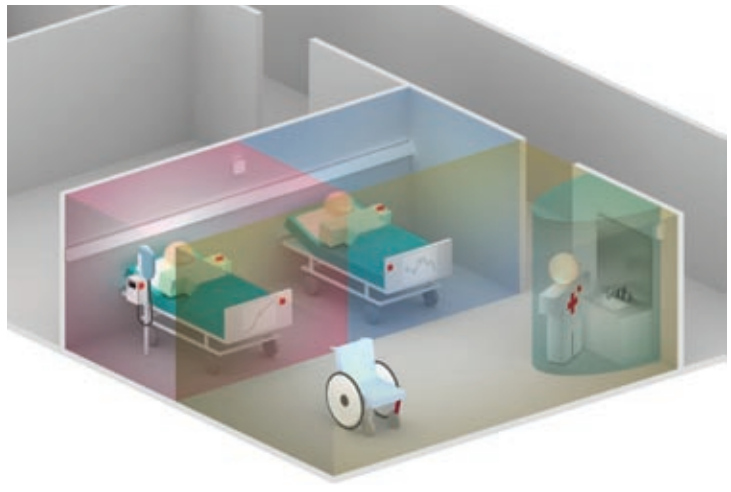
Sonitor's unique ultrasound RTLS technology (USID) is specifically developed and designed for use in hospitals. Ultrasound RTLS guarantees virtually fail-proof room level location accuracy. Defined sub-room level location zones can also be created to obtain bed level resolution or to create specific locations within rooms or corridors. Another benefit is that USID eliminates any risks of electromagnetic interference with other patient care equipment.

Personal insight into the healthcare industry's need for improving operational visibility solutions led Ole B. Hovind, MD, M.P.H. to establish Sonitor Technologies in 1997.

A growing number of leading hospitals and RTLS solutions integrators have since chosen Sonitor over other RTLS technologies. Sonitor has also replaced several other RTLS technologies at hospital sites, where these have not been able to provide accurate location information. Sonitor's proven USID technology enjoys an unsurpassed record of customer satisfaction, and has received multiple awards.

Sonitor's USID technology is in daily use for a variety of hospital applications to help drive maximum ROI. From simple applications, such as equipment tracking to enable right sizing of equipment pools, to more complex workflow improvement applications, Sonitor's room and sub-room level location accuracy performance has proven particularly valuable in increasing patient throughput and safety, as well as staff satisfaction.

The newest generation of plug-and-play High Definition Receivers can establish several location zones inside the same room. This



Sonitor Technologies' ultrasound IPS accurately locates patients, staff, and equipment at the sub-room level.

is ideal for multi-patient rooms, and also allows for fall-detection capabilities within the room.

A variety of Sonitor tags are available. These are specifically designed for the hospital environment, for tracking of equipment, patients, staff, charts etc. Tag buttons allow for additional messaging functionality.

The Sonitor RTLS receiver infrastructure leverages any existing local area network, either wired or wireless, for communication of RTLS signals to a central server. Due to the simple location detection of the Sonitor system, only very small amounts of data are transmitted over the LAN, saving bandwidth for other important hospital tasks. Once the system is up, there is no need for repeated calibrations to adjust for changes in signal interference as often required with other RTLS technologies.

Sonitor's unique positioning technology is designed for easy integration with third party visualization and reporting software solutions, and among Sonitor's integration partners one can find several of the industry's leaders in healthcare IT and workflow solutions. ■

SUCCESS

CONTINUED FROM PAGE 1

asset tracking as today's most popular use for RTLS solutions (see Figure 2) – after all, it was the market's initial focus. It is perhaps easiest to understand the potential ROI for asset management considering the common problems arising from poor equipment planning, inefficient utilization, and misplaced or hoarded equipment. By combining detection, rules, messaging and interfacing, RTLS can provide ROI through reduced equipment loss and rentals, less overtime, increased utilization and efficiency, and improved communications.

Early adopters have reported successes with RTLS, and planned use is rising in almost all categories. With an eye out for performance and scalability, departmental asset tracking is giving way to enterprise-wide asset tracking. One site reported having saved more than $300,000, equivalent to the cost of the system, just from tracking their smart IV pumps. Some hospitals reported a 12–15 month ROI. Other user-documented results include a 50 percent reduction in lost equipment, a 20 percent reduction in bed turnover time, and up to a 70 percent increase in OR utilization.

CHOICES, CHOICES

From tags to sensors to location hardware to location engine to the positioning infrastructure to software – can one vendor do it all? Most providers wish it were that simple, but it is not. Today there are a number of positioning technology choices and each has its pros and cons (see page 3 "RTLS Technologies").

At the broadest of levels, RTLS is all about detection. Detection is a function of the positioning technology and the vendor patented, software-based algorithms loaded in a location engine. Ultrasound and infrared signals do not penetrate walls, so the granularity of detection by these systems is inherently more specific. Some solutions use additional hardware, such as sensors, exciters, repeaters, choke points, additional receivers, and other proprietary hardware infrastructure, to better enable the location detection function.

Even the most basic element of an RTLS solution, the tag, is undergoing development. Past problems with size and shape, battery life, and cost are being resolved, giving way to broader RTLS use. Two-way pager tags can now support location and messaging. Multiple vendors have developed temperature sensing tags. Others are developing a software tag for enabling location detection for PDAs, laptops, and other smart devices that may have compromised functionality when a physical tag is attached.

Vendors are developing their systems and tags to respond to expanding provider needs. Some manufacturers are offering tags with tamper-resistant mechanisms that can send alerts upon the tag's removal. Contamination concerns are being addressed by vendors who are offering semi-disposable patient tags for single patient use. Hybrid tags such as an RFID/IR are interesting in that they combine the stronger radio frequency signals with more precise locationing possible with infrared, allowing providers to take advantage of the strengths of multiple technologies.

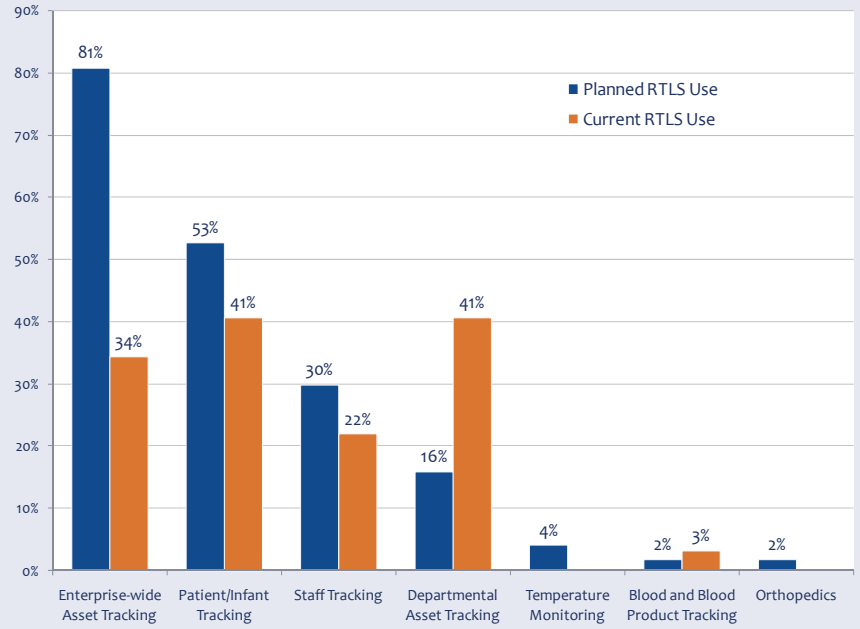
The bottom line? Your technology choice should be driven by your needs and situation. ■

Steve Van Wagenen is a research director at KLAS and author of the KLAS Real-Time Location Systems (RTLS) Perception Study 2009.

FIGURE 2:

Current vs. Planned RTLS Use

(n for Planned Usage by Future Purchasers = 57, n for Current Use = 32)



Awarepoint and Skytron lead with Zigbee-based RTLS

Continuing success of Awarepoint Zigbee-based RTLS and distributor relationship with Skytron garners top spot with more RTLS assets under management than any other vendor

"Awarepoint offers the industry's only truly practical solution for enterprise-wide RTLS.

JASON HOWE
CEO

Notes from KLAS

Real-Time Location Systems (RTLS): Perception Study 2009
January 2009
www.KLASresearch.com

"Zigbee is an RFID platform with a higher level of precision resulting from a mesh network…"

"…accuracy is reportedly better than with RFID and Wi-Fi."

"…easy installation of the system with readers that simply plug into electrical wall outlets, minimizing up-front costs."

"Awarepoint … offers solutions that are low cost, easily deployed and provide a vendor-managed service model."

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Skytron's network of independent distributors exclusively offer the patented Awarepoint RTLS technology, marketed under the name, 'Skytron Asset Manager, powered by Awarepoint,' to hospitals nationwide.

Largest healthcare RTLS assets under management

With its patented technologies, the companies continue to expand their RTLS footprint throughout healthcare. At press time, Skytron and Awarepoint are contracted to manage more than 79,000 healthcare assets nationwide, boasting the largest healthcare RTLS 'assets under management' client base among their competitors.

ZigBee plug-in Sensor

Simplicity and Scalability

In addition to using a ZigBee sensor network design and IEEE standards that are both well-documented and safe, Awarepoint has developed a patented plug-in sensor that makes network deployment extremely simple and cost effective. Simply attach long-lasting battery powered tags to critical assets, plug sensors into standard wall outlets, then keep an eye on everything with an intuitive interface that requires virtually no training to use.

With a suite of RTLS tags including asset tags with a configurable status switch, temperature monitoring tags, fully autoclavable tags and wearable patient tags, the solution can make an immediate impact to improve patient care, patient flow, clinical engineering and business processes – while at the same time prevent "missing" equipment, reduce equipment rental expense and increase equipment utilization.

The ROI of RTLS in Healthcare:

More than ever, hospitals must invest in solutions that offer rapid a return on investment. RTLS offers practical hospital applications that save time and money. People are talking – hear what they have to say:

- "We implemented exit alerts three weeks ago. Already we saved two wound vacs from accidentally going with patients to extended care facilities. This saved us nearly $50,000 – we would have never gotten those back, not ever!"
- During the 90 days evaluated prior to expansion, administrators verified 11,534 equipment searches. This is valued at $314,481 in staff time repurposed to conduct more meaningful tasks.
- In the past 90 days, increased equipment utilization has saved the hospital $611,734.
- "We expected to purchase six additional transport monitors before the end of the year. Staff now has the tools to closely track and observe their usage. The planned purchase of six transport monitors will be avoided, equating to $248,000, which can now be saved or spent on new technology.
- Infusion pump rental fees show an immediate downward trend, from nearly $8,000 in March to $2,000 in June. This monthly savings has been maintained for over 18 consecutive months; totally $120,000 is reduced rental fees.
- Staff could not readily find otherwise available equipment. Elimination of these inefficiencies has resulted in projected $450,000 savings in capital expenditures.

Keep everything on-site, in-sight.

Increase throughput, utilization and quality of care

5 Critical Success Factors to Enterprise RTLS Success

By keeping track of resource in every room on every floor, every minute of every day, you can utilize them more efficiently, reduce the need for rentals and redundant equipment and improve the quality of patient care. Plus, it's the fastest, easiest and most cost-effective way to make a difference in your bottom line.

The question is not whether to implement, but which technology is best suited for the many applications that can benefit from location awareness. To obtain maximum benefit, five critical factors have been identified to ensure long term success:

Enterprise-Wide Coverage. RTLS is at its best fully integrated into the fabric of the organization, maximizing user adoption and providing full protection from lost, stolen or otherwise missing equipment.

Location Accuracy. In the healthcare environment, room level accuracy is a critical factor.

Installation & Maintenance. Installation considerations are a main factor in both the cost and ongoing success of your RTLS deployment.

Interoperability. Standards-based technology and the ability to deliver data to end-users and third-party applications are crucial to fully leveraging the system.

Low Risk. An easily scaled installation that does not require a large capital purchase or long-term contractual commitment will deliver maximum ROI with minimum risk.

Beyond Asset Management

RTLS data boosts efficiency and automation of comprehensive maintenance management software (CMMS), patient flow solutions, bed management, workflow automation and beyond. Awarepoint and Skytron recognize the value of these integrations. Standard XML Web Service APIs integrate with existing hospital information systems and independent software vendor applications and avoid the technical and economic drawbacks inherent to a proprietary infrastructure. ■

Radianse a "must-have"

Future-proofed RTLS platform delivers choices for tracking precision, aims for the "must-have" list

STEVE SCHIEFEN
President/CEO

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Suite 302
Andover, MA 01810
800.974.9302
info@radianse.com

THE PIONEER OF REAL-TIME LOCATION for healthcare is on an aggressive mission – to simplify the installation of its platform RTLS to the point of making it to the "must-have" list.

So far, Radianse has installed an RTLS in 75 U.S. hospitals. Tens of thousands of assets are easier to find. Process improvement studies have been completed and acted upon, increasing clinical effectiveness. Hundreds of clinicians wear tags to better measure and manage patient care. More than 600,000 patients have been safely tracked to improve their care experience. And millions of dollars have been saved.

Some hospitals use Radianse to do it all – tracking anyone or anything that moves across the healthcare enterprise. Others need superior performance in one particular application area. Every Radianse customer can choose where to start and how far they want to go using real-time location intelligence. Need to know that an infusion pump or other clinical device is on a particular floor? Radianse has a basic tracking application to deliver. Looking for enterprise-wide visibility into how your patients and providers move and interact? Radianse can take you there. It's a future-proof strategy that generally gets Radianse onto the "short list."

People, payback and potential

Closing in to be a priority investment requires an assurance of payback. Interestingly, the more you ask of a Radianse RTLS, the faster that payback comes. For example, in eight to 12 months, every bit invested into a whole hospital RTLS infrastructure and asset tracking application can be recovered. The company has the data to prove it. Also, efficiency gains and cost-savings from Radianse real-time tracking are proving to be sustainable for the long-term. Created in 2003 at a major university hospital, the Radianse payback and sustainability model lets hospitals see how they can actively reduce loss, increase utilization and improve care.

Faster, simpler and more affordable

Going beyond the usual high expectations for room-level location precision, interference-free performance and ease-of use are hospitals that rightly set the bar even higher: speed up and simplify the infrastructure installation and lower the cost.

One solution is to connect Radianse receivers to a hospital's existing 2.4GHz network, using Wi-Fi only to transmit data. Location is always calculated using the company's patented algorithms, active-RFID and the 433MHz UHF band.

But the giant step forward is coming soon – a significant integration capability that should position Radianse squarely on the healthcare IT "must-have" list. Go to **www.radianse.com/must-have**. Right now. ■

KLAS lists the main RTLS vendors

RTLS Vendor	The Bottom Line
AeroScout	AeroScout is the largest, fastest-growing vendor in the RTLS space. Providers' comments suggest that AeroScout has a significant amount of momentum in the market in terms of performance and perception.
Awarepoint	Awarepoint has staked its claim on ZigBee technology, bringing a unique approach to addressing RTLS needs. They are making inroads with 18 sites reported live. The future of Awarepoint and ZigBee technology will depend upon whether Awarepoint uses an aggressive education program to help providers understand the benefits of going with ZigBee. The ASP model is based on a monthly per asset service fee.
Ekahau	In the minds of providers, Ekahau offers essentially the same solution as AeroScout provides, the difference being that AeroScout reportedly has twice as many healthcare customers and is considered by providers twice as often. Even though both vendors provide a Wi-Fi system, Ekahau has some unique features, such as the software tag and open Wi-Fi standards. Providers are currently unaware of, or are not concerned with, those features.
GE (Agility)	GE's acquisition of Agility in September 2008 leaves many questions unanswered, specifically what GE's plans will be for the future of this product offering. In all fairness, it may be too soon to tell. Recent GE HIT acquisitions have seen vendor performance ratings decline, which is something Agility needs to avoid.
InnerWireless (PanGo)	InnerWireless has spent time over the past year developing its go-forward strategy, which includes sunsetting its PanGo product and pursuing its announced partnership with AeroScout. However, if providers see two vendors using the same end-user application for accessing the location data, it remains to be seen whether they will be more likely to purchase their hardware solution from a partner vendor or go to a single-source vendor. Providers are not reporting significant differences between InnerWireless and other Wi-Fi RTLS vendors.
Radianse	Radianse is one of the more recognized names in RTLS solutions; they enjoyed a flurry of activity in the earlier years. However, since then, they have grown somewhat slower than other RTLS vendors and most of that growth appears to be from existing clients who are expanding the deployment of Radianse throughout their organizations.
Sonitor	Sonitor plays a dominant role in ultrasound-based RTLS technology. All reported vendor solutions using an ultrasound location method are based on the Sonitor system. Sonitor's solution only provides location data input for third-party real-time location systems.
Versus	Versus has an extensive indirect customer base via its network of partnerships. As most of these indirect customers are not aware of Versus running in the background, developing brand and market awareness of what Versus has to offer has been a challenge. On a few occasions, providers mentioned Versus by name, but significantly less often than other key players in the space.

GROWTH

CONTINUED FROM PAGE 3

and increased awareness of the value of innovative applications for RTLS. Some providers are using RTLS to track human location and activity, adding tags to nurse badges to monitor the time and place where patients receive care. Such uses could help those institutions target incentives that reward quality of care.

KLAS Research Director Steve Van Wagenen said the crowded vendor market for RTLS is due for a flurry of consolidation. "Very few enterprise vendors have a product in this space. There are a lot of smaller RTLS vendors without the same recognition," he said. It's not common for a product market to sustain a large amount of vendors for very long, he noted. Providers surveyed for KLAS' Real-Time Location Systems Perception Study 2009 identified 28 RTLS vendors whose tools they would consider implementing.

As these products are folded into enterprise IT systems and providers are better educated about the value of asset tracking in the healthcare setting, RTLS systems will move up the project lists.

"Integration with biomedical systems and clinical engineering is trending, too," Van Wagenen said. "Ultimately, providers need to be more educated about RTLS before it can really take off. I think it will get to a point where it's more broadly accepted." ■

Versus Technology

The bottom line is delivering better, safer, more efficient patient care—but, for Versus Technology, it's a top priority.

Versus automates manual data entry to greatly improve communication through the location of people and equipment for in-the-moment process flow.

"With 26 direct and 487 indirect healthcare customers, many enjoying 15 years or more continuous operation of the Versus system, Versus is the only AHA-endorsed IR-RFID provider."

GARY GAISSER
Chief Executive Officer

VERSUS understands the value of time and the need to do more with less. For nearly 20 years, the Versus RTLS solution has allowed hundreds of healthcare organizations to make the most of their time and resources with effortless communication and automation.

According to a study by the University of Maryland, the location-based information and enhanced communication afforded to hospitals by an accurate real-time locating system (RTLS) will result in $4 million in savings for the typical 500-bed hospital. Versus automates manual time taker-uppers like "moving" a patient in a bed management system, documenting nurse rounding, updating whiteboards, monitoring interactions with contagious patients, and tracking mobile equipment, patients and other staff. When patients or staff need assistance, Versus sends an alert to the appropriate caregivers or security staff, quickly and efficiently directing communication.

Small, lightweight badges help identify patients and speed the patient visit.

The ability to instantly locate patients or resources with a high degree of granularity, along with the automatic updates and communication alerts, are of tremendous value. With the Versus solution, our clients have:

- Eliminated clinic waiting rooms, positively impacting patient flow.
- Reduced phone calls by 75 percent to create quieter healing environments.
- "Fixed" the Pyxis Medication Dispensing units (and eliminated manual workarounds) so that the machines release meds when patients arrive to the unit.
- Effectively increased bed capacity by 25 percent without laying a single brick.
- Identified staff requiring prophylaxis after short, forgotten interactions with infectious patients.
- Made it possible for nurses to walk ½ mile less during their shifts.
- Reduced annual property loss from $1.5M to $40K.
- Increased the number of patient care rooms by 150 percent *without* adding staff.

It's because of results like these that the Versus IR-RFID locating system is exclusively endorsed by the American Hospital Association and has received praise from clients and integrators alike, including Microsoft's Senior Director of Worldwide Health, Bill Crounse, MD, who noted Versus' ability to improve processes and increase efficiencies, and announced on his blog: *"if you are not planning for the use of this technology in your hospital or clinic, you are missing a huge opportunity to lower costs, increase revenues and deliver better, more satisfying care."*

Keeping the Bigger Picture in Sight

Initially, Versus' clients may be interested in tracking assets or monitoring temperatures and equipment utilization, but when they realize that Versus can also help them reduce patient wait times, alert them as to when the patient is ready to be seen or when lab results are back, or report on in-room patient alone time – that's when their eyes light up and they delve deeper to uncover the possibilities.

Just what are these possibilities?

- How about seeing more patients? Enhanced patient throughput leads to:
  - Shorter wait times for patients (happy patients).
  - Fewer late nights filling out paperwork and more time with family (happy staff).
  - Enhanced revenue (positive bottom line).
- How about knowing which patient is in which room, whether the nurse is with him and how long the bladder scanner has been in there?
  - Allows staff to be more professional when they can automatically locate their counterparts on a screen and wait nearby, rather than interrupting patients and other staff as they search.
  - Automate equipment billing.
- How about automatic Infection Control and Hand Hygiene Compliance alerts and reporting?
  - Identify H1N1 and MRSA patients and their interactions with others.
  - Alert staff to "non-compliant" state if they attempt patient care, allowing them to take corrective action.
  - Record hand hygiene compliance events vs. interaction with patients for process improvement.
  - Help protect patients from Hospital Acquired Infections (HAIs).

Educating the Market, Educating Consumers

Asset tracking is an important component of real-time locating; however, the real value of any RTLS is in its ability make patients and staff safer and processes more efficient. This means that the Real-time Locating System must be accurate, reliable and fast enough to keep up with what you do with patients.

Versus is the only RTLS provider offering a complete RTLS package:

- IR-RFID locating technology with guaranteed granularity, timeliness and reliability as is required for advanced locating and clinical automation.
- A myriad of software for viewing locating information in real-time (floor plans, list views, dashboards, etc.), custom milestone reporting, and rules-based event notification and automation.
- Expert services (training, implementation, support) to ensure long-term success.

If you're struggling to find ways to save in this wavering economy, Versus has a clear path to success. In fact, with over 500 customers benefiting from the Versus RTLS (many for over 15 years!), the Versus solution is proven to deliver immediate – and repeatable – benefits. ■

VERSUS® Accuracy Matters™

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Antti has over 20 years of experience in high tech and IT industries in international sales and marketing leadership and product management. Prior to Ekahau, Antti worked at Vaisala Inc., Boston, as a General Manager of Vaisala's Industrial Business Division for North America. Prior to Vaisala Antti has worked in several management and leadership positions in companies such as Government Research Institute VTT, Computer 2000, and Western Digital Corporation.

Meaningful use, interoperability, adoption gaps and other EMR mysteries

A conversation with KLAS General Manager of Clinical Research Jason Hess

Q: So much attention is focused right now on ARRA-HITECH and EMR adoption, but if you look at the most recent Top 20 Best in KLAS Awards report, acute care EMR software is the lowest-ranked market segment. Why?

A: One reason is just complexity. EMR systems touch so many different departments in the hospital that they require a level of functionality and integration that is really tough to do. Another reason is provider expectations. I've used this analogy before, but if you think back to your first VCR – I'm kind of dating myself here – the capability was very simple. You put the tape in, push play and the wheels start to turn. You watch your movie. That's it – and we were delighted with it. Over time, though, you found out you could do more with the technology. You could program the VCR to come on at a certain time and record a favorite show while you were out of the house. Suddenly the expectation of what your VCR could and should do went up significantly.

Jason Hess

I think it's very similar with these core clinical systems. For a long time providers focused on just going live with an EMR and sharing results from different parts of the hospital. But now meaningful use is driving people to realize that they have to have interoperability. They have to have physician adoption. It's no longer just this notion of having your ancillaries feed into a central data store so you can see results and share them. Can your nurses use it? What about physicians? Will we be able to go live with CPOE and ePrescribing? The stimulus package has brought those issues to a head.

Q: As important as EMR adoption is going to be over the next couple of years are there other technology areas that providers should be considering in the short term?

A: It's hard to answer that because the focus is so explicit around the stimulus package right now. But certainly there are other topics that providers are asking about. KLAS recently did a report on infection surveillance software, which is becoming increasingly relevant thanks to changes in Medicare reimbursements. Treatment for hospital acquired infections will no longer be reimbursed by Medicare, so hospitals have to have a way to isolate the source of those infections and eliminate the cause. Infection surveillance systems help by pulling together and analyzing data from a number of different departments. That's one area that's gotten some attention lately, and there are certainly others.

Q: What about health information exchanges? There is a lot of hype around that technology right now, again, partly because of the stimulus package. What's real?

A: We're working on a study right now to address that question. It's a tricky market segment to evaluate because so many vendors approach the concept of an HIE in so many different ways. What we have seen already, though, is that even the most leading-edge HIEs and RHIOs are doing fairly straightforward things. For instance, we conducted some interviews recently with one notable RHIO that has garnered a fair amount of attention. When we talked to the physicians using that network, they said that all they are really doing at this point is a pilot for sharing emergency department data. That is the extent of it. That's not to say the project isn't an impressive undertaking that's creating significant value, but it doesn't necessarily match the level of hype you hear from some vendors.

Another crucial piece of the HIE discussion is the idea of a governance model. It's one thing for hospitals in the same health system to share patient data, it's quite another to share it with an institution that's essentially a competitor. In fact, that's why our upcoming research in this area focuses specifically on HIEs among non-related acute care hospitals. Those are the deployments that have had to deal not just with the technical issues, but also with the political and competitive issues that are bound to arise.

Q: With all the focus on integrating clinical systems, are there any hospital departments that are still dominated by best-of-breed software solutions?

A: There are a few. In the emergency department, for instance, there are only a couple of enterprise vendors that score as high as the best-of-breed vendors and who have the advanced functionally and concise clinician workflow to evenly compete. The ED is also unique in that a lot of the best-of-breed products were developed by ED physicians who just understand how a doctor in the ED works; and their workflow is fairly slick in certain areas. Both Meditech and Cerner have integrated products for the ED, but historically, providers have said that the clinician workflow of those products has been lacking. Now, I think that is changing with recent releases, but many of the best-of-breed products have also improved and still have an edge in understanding the physician workflow – again, because of their roots. Picis was started by an ED doctor, WellSoft was started by an ED doctor, and MEDHOST, and EmpowER, and T-System and so on. ■