Wireless networks will be the highway for a new generation of pervasive sensors and analytical software applications that will give Emerson Process Management customers the ability to make a far broader range of useful and profitable decisions. The executive leadership of Emerson Process Management described the company’s vision of “Pervasive Sensing”—and three customers showed how they’re using Pervasive Sensing solutions—during a press conference, “Comparing Complexity: Pervasive Sensing for Actionable Information,” Monday afternoon at the 2013 Emerson Global Users Exchange.

“We want to make sure we’re a listening organization, and show we can work with our customer to solve their toughest problems,” said Steve Sonnenberg, president of Emerson Process Management. “Our customers are traditionally vigilant in optimizing their plant performance and keeping them safe, but there are other areas into which they haven’t had as much visibility. There’s an increasing emphasis on other business-critical issues, such as equipment reliability, environmental concerns, energy use, security and personnel safety. The cost of monitoring these areas has been dropping due to wireless technology, and we’re now reaching an inflection point that we’re calling Pervasive Sensing.”

Peter Zornio, Emerson’s chief strategy officer, added that everyone seeks actionable information, whether it’s for improving personal health or picking good investments, and these efforts are often incomplete or unsuccessful. However, unlike these other endeavors, Pervasive Sensing’s automated technologies will give its customers far more widespread and complete health visibility.

As a result, the traditional process-critical functions of process control and process safety will now be joined under Pervasive Sensing’s umbrella by business-critical functions of site safety, reliability, energy efficiency and others. “Because keeping applications and facilities up and running was the top priority, it was usually seen as too costly to add more sensors for monitoring business-critical issues, but wireless makes doing this simpler and cheaper. Big data is now available,” reported Zornio. “Pervasive Sensing will provide users with real-time information on all aspects of their plants, and so we believe it will more than double today’s $16-billion traditional sensing market.”

In essence, Pervasive Sensing is founded on three pillars:

- Innovative sensors that are multivariable, non-invasive and cover wide areas.
- Easily commissioned components that are wireless, self-powered and configuration-free.
- No-maintenance devices that are accurate, calibrations-free and have lifetime reliability.

This foundation delivers its huge amounts of new data to a Strategic Interpretation level, which sorts through it by using sensor awareness functions, new algorithms, industry knowledge and human expertise. Finally, this interpretation level presents its findings to users at the Actionable Information level.

“In fact, the value of business-critical sensing is already being realized,” added Zornio. “We know of a next-generation process plant that’s currently deploying wireless infrastructure and growing measurements by 50% for business-critical applications, which is above and beyond the 20,000 process-critical process control instruments it already has. These include 2,000 personal safety measurements, 8,000 reliability measurements and 2,000 energy measurements.”

“Pervasive Sensing changes the game in site safety,” said Steve Sonnenberg, executive vice president and CEO, to the nearly 3,000 attendees of his keynote speech Monday at the Emerson Process Management president and CEO, to the nearly 3,000 attendees of his keynote speech Monday at the Emerson Global Users Exchange. “She said that it looks like swimming is a solitary sport, but in reality it is a team sport. “She’s the hero of the story, the one who made the swim. But she relied on a team of nearly 40 people who were her trusted advisors on everything from navigation avoiding jellyfish stings, Sonnenberg said. “My goal is for you to think of Emerson as part of your team—as your trusted advisor—when it comes to automation.”

Emerson’s focus in 2013 has been to make the needed changes to earn that trust—changes customers asked for in their responses to “thousands of surveys,” Sonnenberg said. He outlined the four elements of its strategic direction introduced last year—that provide a framework for Emerson’s efforts to earn a role as your trusted advisor: Connecting to customers; technology innovation; lifecycle services; perfect execution.

To better connect with customers, “Our aim is to literally understand your situation, your pains and your goals so we can provide solutions that are right for you,” said Sonnenberg.

Emerson is strengthening its industry expertise and solutions capabilities. It now has “more than 800 industry, application and technology specialists who work together—and with you—to solve your toughest problems,” Sonnenberg said.

Emerson is also developing pre-engineered, industry solutions—proven combinations of technologies and services tailored to specific applications.

Sonnenberg said, “We have over 20 such solutions so far, with many more on the way.”

The second area is technology innovation, traditionally an Emerson strength. Here Sonnenberg emphasized continuing investments in human-centered design—designing products for the way people work instead of making people change the way they work to fit the products. “We’re applying human-centered design to more products all the time—even re-designing some of our existing products for better usability and maintainability,” Sonnenberg said.

Another trend is pervasive sensing, where the falling costs of sensors and wireless technology are accelerating their use to address business-critical issues such as reliability, energy, safety, health and environment. Emerson introduced five (See Sonnenberg, p2)
Emerson Bringing New Technology to Many Plant Functions

Sonnenberg (continued from p1)

new wireless products this year and have several more planned for next year. “The adoption rate for Smart Wireless is astounding and is now approaching 2 billion operating hours in the field,” Sonnenberg said. “It’s an innovation that you clearly found useful.”

The final way Emerson is accelerating technology advancements is through acquisition, most recently of Vingo Valves and Controls, which will enhance Emerson’s ability to supply engineered on-off valves, especially for oil and gas operations.

The third element in Emerson’s strategic direction is strengthening lifecycle services. Emerson has added seven new service centers and expanded others. Over the next two years it plans to add 12 more, for a total of more than 400. It also added 215 additional service people this year, for a total of almost 2,700, and deploying centers close to custom- ers so they’ll get faster response.

Yet another innovation that you clearly found useful.”

Emerson Global Users Exchange, welcomed conference delegates to Monday morning’s keynote session, where some 1,500 attendees from 90 countries around the world are expected to attend this year’s event at the Gaylord Texan Resort & Convention Center in Grapevine, Texas, near Dallas.

Emerson’s ability to draw on both local and global resources can bring significant force to bear on a problem or project anywhere in the world, and it has added more than 500 project personnel since 2005. Headcount for the project services business will top 5,155 in 2013, up from 4,600 last year. In total, more than 3,000 engineers have been added to Emerson’s project execution staff since 2005.

Emerson’s Project Management Office (PMO) has invested in its second-generation Remote Virtual Office, which allows customers to access expertise and resources independent of location, so they can leverage virtualization technologies so that configurations can begin before hardware has been de- fused, and to eliminate travel time and expense associated with remote offline prototyping and testing. Please visit our Project Services experts in the Solve & Support area on the exhibit floor to learn more about how virtual project teams improve the efficiency and delivery of a successful project.

Emerson Turbomachinery Services are another element of Emerson’s expanded support service capabilities. Experts are available at the Turbomachinery Services booth by the Instrumet & Valve Services trailer to discuss how turbomachinery can be ex- ecuted cost-effectively, safely and with certainty.

Sonnenberg’s opening keynote to the Em- erson Global Users Exchange, welcomed conference delegates to Monday morning’s keynote session, where some 1,500 attendees from 90 countries around the world are expected to attend this year’s event at the Gaylord Texan Resort & Convention Center in Grapevine, Texas, near Dallas.

Around the Exchange

Help Make Emerson Solutions Easier to Use

Have you ever wished an Emerson product was easier to use? Emerson’s Human-Centered Design Institute invites you to its User Experience (UX) test lab so you can provide direct feedback on specific Emerson products. This is a great opportu- nity for you if you influence the design of future Emerson products and programs.

“We want to improve the design of our technical products to better serve custom- ers and the real-world problems they face,” says Jay Elberts, director of human-centered design at Emerson Process Management. “Directly connecting our tech- nology teams with customers via product usability testing is the best way to do this.”

This year at the Exchange, Emerson is recruiting users to test several product enhancements and online digital tools. Please test your name and company to +1-214-789-5220 to register to participate. Testing runs Monday through Thursday.

Expanded Services Capabilities on Display

Emerson Process Management continues to invest in the services personnel many users require to deploy and manage their automation investments effec- tively. Headcount for the project services business will top 5,155 in 2013, up from 4,600 last year. In total, more than 3,000 engineers have been added to Emerson’s project execution staff since 2005.

Emerson Process Management is another example of Emerson’s expanded sup- port service capabilities. Experts are available at the Turbomachinery Services booth by the Instrument & Valve Services trailer to discuss how turbomachinery can be ex- ecuted cost-effectively, safely and with certainty.

Severe-Service Vortex Meter Claims Innovation Award

The Rosemount 8800 Vortex severe-service sensor was designed with the toughest process conditions in mind. A unique nickel-alloy sensor lead wire and housing material supports resistance to corrosion. A proprietary piezo-electric crystal is de- signed to handle continuous exposure to process temperatures that are considered unbearable. These two key features combine to make the Rosemount 8800 Vortex severe-service sensor the most rugged and reliable vortex sensor on the market today.

The meter is proving its mettle in demanding applications such as offshore oil production and solar thermal power generation and recently was awarded Flow Control magazine’s Innovation Award. Stop by the Rosemount Flow area of the Measure & Analyze section of the Technology Exhibits to learn more.
“Pervasive” (continued from p1)

instrumentation technology to enhance safety, save energy and increase equipment reliability. For example, Richard Clarke, maintenance team lead for Spectra Energy’s PT/C pipeline division, reported that its Empress plant and pipelines in Saskatchewan produce up to 2.4 billion cubic feet per day of natural gas and re- liquifying liquid products, and then stores much of it in deep salt caverns. Spectra’s problem was that threats were pro- tecting surface valves and other devices also collected any gas leaks into dangerous concentrations.

Removing the valves solved one problem, but introduced others. “Our legacy, single-point, catalytic bead detection technology was effective when the cavern wellhead was con- tained, but it wasn’t effective without the enclosure to contain leaks. But the detector may not sense leaks in fluctuating open-air conditions,” explained Clarke.

As a result, Spectra adopted Emerson’s Innus ultrasonic, wide-area gas-mapping and detection solution, which iden- tifies the background noise produced by any leaks within a 40-meter radius and is field proven to overcome any environ- mental performance challenges. “We installed Innus last fall, and we’ve had great re- sults,” said Clarke. “It performed flawlessly in all-out, high-frequency leak tests.”

On the reliability side, Nick jade, rotating equipment re- liability engineer at Flint Hills Resources (FHR) refinery in Pine Bend, Minn., reported that a recent process hazard analysis (PHA) found 100 high-risk pumps that were at risk for vapor-cloud releases and potential fires. So Pine Bend fitted 110 pumps with Emerson’s CSI 9420 wireless vibration trans- mitters for continuous fault detection.

“One on pump, we saw an increase in vibration and confirmed it with a CSI 2130 analyzer,” said Jade. “So a work order was written, the pump was shut down, and our preventive project objectives were met. We only had enough funds to upgrade 15 pumps with traditional tech- nology, but with wireless we had enough money to do all 110 pumps. And, over eight months, we found three or four pumps like this, and we shut them down, fixed them and prevented possible catastrophic failures.”

Finally, on the energy efficiency front, Richard Lau- neark, project coordinator for Flint’s global services divi- sion, reported that a food manufacturer’s plant that makes refrigerated and frozen dough and yogurt in Murfres- boro, Tenn., reduced the energy used by hundreds of its steam traps and saved $36,000 by implementing Emerson’s Rosemount 708 wireless acoustic transmitters, which provide instant alerts about failed traps.

"How can you take industries that suck and find the great performers in them?" — Mark Thompson
Whether your choice is standalone, interfaced or integrated—DeltaV SIS. That’s modern. You shouldn’t be limited by your existing control environment to employ today’s state-of-the-art technologies. DeltaV SIS with Electronic Marshalling and CHARMs technology simplifies design, installation, wiring and commissioning of SIS projects. Modern technology increases capacity and reduces the footprint of your SIS system by eliminating traditional marshalling cabinets. Now you can implement a standalone safety system or integrate with your current control system for even more benefits—either way, the choice is yours. Scan the code below or visit: ModernSafetySystem.com to learn more.

Visit us in the Operate & Manage Process Control – Safety and Compliance area

My system architecture shouldn’t stop me from having a modern safety system. I need the best technology available today.

YOU CAN DO THAT

The Emerson logo is a trademark and a service mark of Emerson Electric Co. © 2013 Emerson Electric Co.