

# OHS & S

## OCCUPATIONAL HEALTH & SAFETY

### Wireless Gas Detection: Trust & Verify

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# Wireless Detectors Aiding Emergency Responders

“Today, I can hand you a gas monitor, and it’s really a trust-based scenario. Whereas with a real-time feed, it’s trust and verify. I can see where you are. I know what kind of readings you’re getting while you’re out there.”

BY JERRY LAWS



RAE SYSTEMS INC.

**G**as detector wireless technology has become essential to the emergency response community during the past decade. Wirelessly connected gas detectors are beneficial to industrial users, as well, even though responders’ needs have driven the innovations during this period.

Detectors made by RAE Systems Inc. have been deployed at Olympics venues for years and were used at stadiums in both St. Louis and Arlington, Texas, during the seven-game 2011 World Series. Bobby

Sheikhan, director of product management for RAE, said one of the big benefits used by many customers and during this World Series is cascade mode: “As long as you have Internet access, not only can we communicate with these wireless devices locally, within a few miles, but we can also take that information and feed it real time. In this case, for example, the local fire chief wanted to be able to see everything at the station on his computer. That’s a big benefit. You might have an expert off site who wants to look at it, or if it’s more of an industrial application, you might want to look at multiple facilities at the same time, for example. It’s global, basically,” he said.

Sheikhan said the capability is prized because hazmat responders frequently are doing several tasks at once while inside a hot zone. “Having the ability of somebody sitting in a command center to monitor the same readings that they’re getting really has a huge benefit. They can respond faster.”

Although RAE offered a similar solution in 2002, the market wasn’t ready for it, and the company’s base of installed equipment was too small at that time to make it a strong selling point, Sheikhan said during a Nov. 3 interview. Since then, however, there has been a sincere effort by the responder community to standardize on common equipment and also to enable interoperability among departments, he said.

Selling points are the detectors’ ease of deployment, ease of use, and how rapidly customers can put the equipment to work in the field. “One of the messages we try to communicate is, these are field-tested solutions that work in those types of environments,” he said.

A top concern among customers in the first responder market is limiting the number of items that responders have to carry downrange. RAE developed a new family of multi-threat monitors with five sensor slots last year. More than 30 different types of smart sensors can be popped into the slots, and the monitors will detect and measure gamma radiation in a multi-threat configuration.

“Being able to combine radiation with a photoionization detector to detect a lot of the common hydrocarbons they would come across was a big benefit to our customers,” said Sheikhan.

## Enabling Faster Rescues

RAE and some other gas detection manufacturers are

offering detectors with a locating function, which will be highly useful to industrial users and to emergency response commanders.

“Without a wireless backbone, what is it worth?” Sheikhan asked. “With a real-time wireless backbone, when you get an alarm, you can send somebody immediately and actually rescue that person.” He said he expects this will be a key feature for end users.

During a refinery turnaround, for example, a manager can view real-time readings of hundreds of contractors and do real-time tracking to find out where those personnel are located. “Depending on the size of the refinery, you can have a couple of thousand contract employees on site. That can be a logistical nightmare for everybody,” said Sheikhan.

He said this feature touches on “a key point that applies across multiple verticals — today, I can hand you a gas monitor, and it’s really a trust-based scenario.” That is, a manager assigns a detector to someone and trusts he or she will wear it, bump test it, ensure the sensor isn’t clogged, and use it correctly, “whereas with a real-time feed, it’s trust and verify. I can see where you are. I know what kind of readings you’re getting while you’re out there,” he explained.

Sheikhan said RAE recently updated its software for these detectors for the first time since 2001. During the 2010 Deepwater Horizon oil spill response and cleanup off the Louisiana coastline, hundreds of the company’s gas detectors were deployed by numerous agencies, which resulted in millions of data points, he said. The

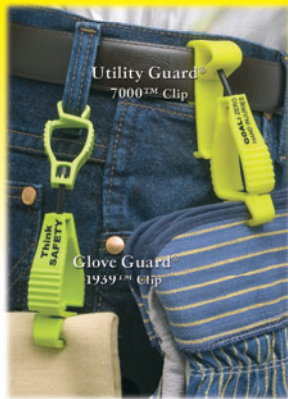
new software will be a powerful tool to analyze such data and understand what’s happening in real time, he added.

RAE will do a phased release of new access points/accessories during 2012, initially for first responders and then for industrial users. Oil and gas exploration is another key market, one for which RAE has developed specific wireless gas detection products. (A product geared for oil exploration currently ranks among its fastest-selling products, Sheikhan said.)

Demand for these wireless multi-gas and single-gas products is growing faster domestically than in some other parts of the world. “Europe, I’m still surprised that they tend to be behind the U.S. in terms of hazmat response, for whatever reason. Although we’ve had limited success in terms of selling to that region, it hasn’t really taken off to the point that we think it can,” he said. “We’re getting a lot of military interest, actually, in Asia-Pacific, and also we’ve had success selling equipment into the Middle East. . . . So we’re seeing increased demand for some of these solutions in other regions.”

During the second half of 2011, a significant order came in from the National Guard as it ordered next-generation gas detectors to add to its existing fleet. He said other users include the U.S. Coast Guard, the U.S. Drug Enforcement Administration, and the California Air Resources Board (CARB). **OHS**

*Jerry Laws is editor of Occupational Health & Safety.*



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