AREARAES FOR INCIDENT RESPONSE & LAW ENFORCEMENT

AREARAE RAPID DEPLOYMENT

AreaRAE systems are particularly well suited for rapid deployment in temporary systems, perhaps lasting only a few hours or days. Examples include delineating perimeters for HazMat incident response, law enforcement operations involving chemical threats, and protecting a temporary military camp from chemical warfare agents.

The entire system can be set up and running in less than five minutes. Compared to other remote detection systems, this rapid deployment is allowed by:

• Having multiple sensors and the modem all in a single unit.

• Fast, two-button start-up of sensors and radio transmission.

• Host controller automatically searches for the signal from the remote monitors; no software set-up is required.

• Highly specific communication means the system operates immediately. This is because the frequency hopping and proprietary protocols rarely require the user to spend time locating and removing radio interferences.

Ease of Use

The system is very easy to use. All the operations are controlled through icon-driven software functions. Figure 1 is the panel-view status window of the ProRAE Re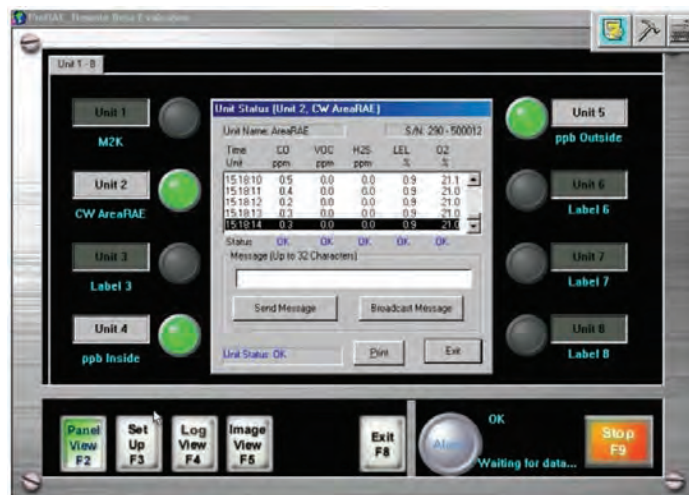mote software, showing the simple menu icons, the alarm status of all units, and the readings for a selected remote unit. For more details of this simple user interface see Application Note AP-225.

HazMat Incidents

AreaRAEs are commonly used in responses to hazardous materials spills or leaks. The systems can be used to:

• Rapidly deploy to the spill or accident and then retreat to the host computer at a safe distance to assess the need for personal protective equipment (PPE).

• Delineate a safe operating zone, inside which PPE should be worn while the release is being cleaned up.

• Delineating a vapor plume in the broader region so that evacuations can be coordinated to only the necessary zones.

Several AreaRAEs can be deployed around a two- mile radius and the readings monitored from a central location. The readings can be linked to a plume modeling program to predict the extent of the exposed area and make proper evacuation decisions, thereby protecting the public while minimizing disruption.

Figure 1. Panel View Status of ProRAE Remote showing menu icons and readings of all 5 sensors on one remote unit.

Figure 2. Many fire department HazMat teams deploy AreaRAEs.

Figure 3. Perimeter monitoring during repair of leaking gas pipe (propane is explosive, but not highly toxic).

Figure 5. National Medical Response Team exercise.

Figure 4. Simulated plane crash response training.

Terrorist Attack or Large-Area Chemical Release

AreaRAEs have been used at large-scale emergency response drills such as TOPOFF II simulated terrorist attacks in Seattle and Chicago, and at National Medical Response Team training exercises. In such large-scale incidents, the interoperability (ability to share assets) is particularly useful. At the 2003 Major League Baseball All-Star game, the 5th CST, the Chicago Fire Department, and the Illinois EPA all shared AreaRAE assets. During the TOPOFF II training in Seattle, the results were communicated in real time through the Disaster Management Information Systems (DMIS) platform to the central command in Virginia.

Figure 6. AreaRAE monitoring Boeing Airfield fuel pumping station during TOPOFF II.

Law Enforcement Forced Entry Situations

In some cases such as clandestine drug labs and other forced entry situations, there exist safety threats due to armed criminals or terrorists together with possible chemical vapor hazards. Examples include police entering clandestine drug labs, where a variety of toxic chemicals are used, including solvents, acids and phosphine. Another example is a criminal or terrorist who is armed with both conventional weapons and small chemical weapons. A criminal could, for example, threaten to use industrial tanks of propane, chlorine, or ammonia as weapons. Furthermore, the officers may be concerned about oxygen deficiency, combustible vapors, and CO and H_2S. In such cases, both a police force and a HazMat team respond to the incident, and the question arises which hazard, weapons fire or chemical vapors, presents the greater risk. The police typically enter first, followed by the HazMat team, which determines the chemical safety only after the area is secure. With the AreaRAE, law officers can enter the building, quickly drop down the monitor, and the HazMat team can immediately begin assessing the chemical hazards using the wireless signal. The Hazmat team can then warn the law officers of a chemical risk by radio.

Figure 7. Civil Support Team members preparing to deploy an AreaRAE.