Thinking Outside the (Software) Box

Tracking System Helps Keep Lone Workers Safe

Background

It was 10 o'clock at night when a call came in from the field that an employee was missing. He had been working in the field alone, as is usual for his particular occupation.

KSB Industrial Services sent out a half dozen personnel and three client field operators in search of its employee throughout 1,500 well sites within a 45-mile radius.

The missing individual was later found over at a friend's house.

This story ended well, but precious time and money was spent by the company. And if the worker *was* in danger, the time it took to search through 1,500 sites may have spelled disaster. KSB's experience inspired the creation of the Personnel On Site Tracking System (POSTs).

Challenges

*Workers Are Alone Without Communication*
When lone workers operate in remote areas, they often are not near enough to cell towers to communicate via cell phone. Without a means of communication, supervisors cannot easily find where employees are, nor where they have been throughout the course of the day.

Legislation Places Liability on Companies
Under Bill C-45, Canadian legislation requires companies to take "reasonable steps to prevent bodily harm" to their workers. Companies could be held legally responsible for any harm that lone workers may experience.

Cost Prohibits What Companies Can Do
Solutions on the market carry a high price tag. The available options involve either purchasing hardware—which costs $4,000 per truck—and paying monthly monitoring fees of $150-$200 per month, or bypassing the upfront hardware cost by signing a 48–60 month lease at $200 per month or more.
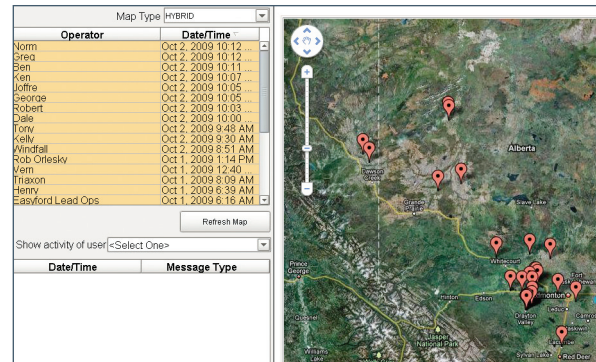
The Map screen is tied into Google Maps. It shows how many workers are in the field, where they are, when they arrived to that location, and how long they've been there.

Solution

In order to create a system that provides a backup form of communication for workers, which would also be affordable, KSB turned to existing technology. They found the SPOT tracker, a GPS device designed to track longitude and latitude coordinates for backpacker enthusiasts. KSB was able to configure the devices to transmit the GPS data in XML format via satellite.

Inductive Automation's FactorySQL was used to gather the XML data into a SQL database, making it ready for use in Inductive Automation's FactoryPMI – which could create dynamic applications for analyzing lone worker whereabouts. The result is KSB's Personnel On Site Tracking System (POSTs). This system is set up on KSB's servers, and companies only have to pay $100 per GPS unit and $80 per month for unlimited monitoring, alerts, and reports.

Ken Bannard, owner of KSB, attributes a large part of his company's success in developing the system to using FactorySQL and FactoryPMI.

"The Inductive Automation software has been the critical component to the POSTs system," Bannard said. "Because the software is flexible, it's opened up new possibilities for innovation."

Results

Automated Alerting System

The beauty of the monitoring system is its capability to automatically alert supervisors, day or night, if a lone worker might be in danger. There is no need to constantly check in with every employee; a phone call will automatically notify the supervisor when an individual may be in trouble.

Workers Can Ask for Help 24/7

The tracker is equipped with a 911 button that an employee may press if they need assistance. KSB configured the button to send an alert to the POSTs database. FactoryPMI reads the signal sent from the 911 button and automatically sends an alert to a list of first responders customized for each location zone.

Frequent Location Updates

GPS coordinates of workers are sent to the database every 10 minutes, creating a trail of where a worker goes throughout his or her day. The trail of data can easily be viewed via a table or on a map in the FactoryPMI application.

Reports Demonstrate Company Safeguards

The POSTs system provides a way for companies to help prevent harm to their employees who work alone. Bill C-45 requires that a company protect its employees, but it does not say *how* to do it. The law leaves it up to the company to take *reasonable steps* against injury.

The reports are a tangible way to show that a company is doing what it can to protect its employees. "A company must put its best foot forward," Bannard explained. "The POSTs system has gone above and beyond that protocol. Once a person is in dire need, it's the company that is held in front of the court as liable. That's why it's so important to be able to produce evidence that the company is doing what it can to prevent danger to its employees. The reports generated by FactoryPMI can really help show that the company is doing its best to protect workers."
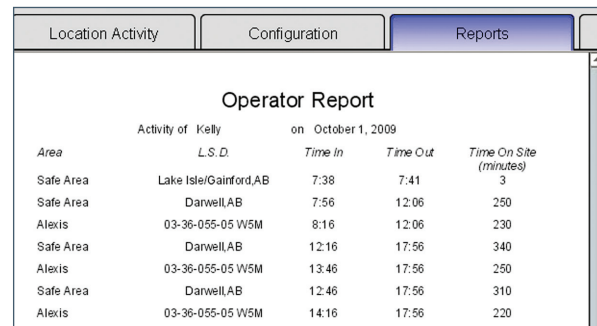
Keeping Costs Down and Quality Up

KSB's choice to use FactorySQL and FactoryPMI allowed the company to create the POSTs system without cost restraints. Bannard explained, "I would have had to buy $50,000 worth of software with other companies such as WonderWare in order to complete a project like this. Instead, the price of Inductive Automation's software made it possible to create the system."

And since the software is server based, KSB is able to host the system on their server and charge an affordable monthly fee to other companies that wish to protect their employees in the same manner.

Galleon Energy Inc. is one of the companies that has implemented KSB's POSTs system.

Location Activity		Configuration		Reports	

Operator Report

Activity of Kelly on October 1, 2009

Area	L.S.D.	Time In	Time Out	Time On Site (minutes)
Safe Area	Lake Isle/Gainford,AB	7:38	7:41	3
Safe Area	Darwell,AB	7:56	12:06	250
Alexis	03-36-055-05 W5M	8:16	12:06	230
Safe Area	Darwell,AB	12:16	17:56	340
Alexis	03-36-055-05 W5M	13:46	17:56	250
Safe Area	Darwell,AB	12:46	17:56	310
Alexis	03-36-055-05 W5M	14:16	17:56	220

The Reports screen assists administration departments to generate reports if an incident occurs. A supervisor can select a date and operator, and get a report on when and where an employee was.

"We looked at several solutions and found that the POSTs Units satisfied a wide variety of needs," said Gerald Aleman, manager of health safety and environment for Galleon. "Most importantly we found it effective for worker safety and ensuring our people were tracked to a safe zone and made it home at the end of the day."

KSB Industrial Services Inc. is a control systems integration company in Canada. They have been using Inductive Automation for more than four years with great success for their customers. KSB provides services for the automation, instrumentation, and electrical needs of their clients for oil and gas, petrochemical, pulp and paper, wood product, and research and development industries. www.ksbindustrial.com

Inductive Automation produces software that reduces frustration and increases efficiency in the industrial automation market. Their software facilitates the instant accessibility of meaningful information throughout the enterprise.