

Elpas Unified Risk Mitigation Systems at The Methodist Hospital Houston, Texas (USA)



Overview

The Methodist Hospital in Houston, Texas has implemented a large-scale Active-RFID deployment for multiple applications.

The Elpas system is fully integrated with West-Com's West-Call nurse call system.

Site applications include; Automatic Nurse Presence (i.e. automatic cancellation of patient call upon arrival of nurse), Staff Location, Infant Protection and Asset Tracking.

The site contains 1500 readers, and 2,000 Active-RFID tags.

The West-Call Staff Location applications include productivity reports with Call Response Times, Stay-in-Room times, and Time-With-Patient. This information is used both for quality control and billing. The West-Call console shows current staff location on a digital map.\

The Infant Protection System protects newborns from abduction and mismatch. Active-RFID Tags are placed on both Infant and Mother at birth and an audited match test is performed when an infant is discharged with mother. Mother and nurse tags are able to escort infants through protected exits without triggering an alarm.

Asset tracking tags are now being added to the system for the purpose of locating medical devices for patient care and for administering preventative maintenance to the thousands of assets in the hospital.

Information Sharing:

Each Elpas tag transmits a unique identifier, tag input states and other tag stats including battery level and whether the tag is attached to an asset/baby or detached.

Tag transmissions are received by RF and IR receivers. IR receivers are used to achieve precise room location.

In addition, tags are equipped with 125 KHz LF receivers. By placing LF exciters at strategic locations throughout the site, the tag will transmit a unique location when it passes such an Exciter.

Location is determined using the received signal strength levels or RF and IR signals combined with the explicit excited messages.

All tags are monitored using VT's EIRIS software. The software exposes this information using a Software Development Kit.

The Infant Protection application uses Alarms defined in the EIRIS software. Alarms include "Near Exit", "Lost", "Tamper" and "Low Battery".

West-Com developed an interface between its WestCall Nurse Call system and EIRIS using a Delphi development and the EIRIS Software Development Kit.

Each time a tag relocates, the associated nurse location is updated in WestCall.

The Methodist Hospital

Christy Jones
6565 Fannin Street
Houston, Texas 77033
Tel: 713-441-3169
email: mcjones@tmh.tmc.edu

Halco Life Safety Systems

Cliff Switzer
4210 South Drive
Houston, Texas 77053
Tel: 713-667-9424
email: cswitzer@halcolss.com

About Visonic Technologies

Visonic Technologies, a fully owned subsidiary of Visonic, Ltd. (VSC.L) is a global leader in enterprise class, active & passive RFID/ RTLS real-time visibility solution for personnel identification and safety; supply-chain logistics, asset protection & facility supervision. More is available at: www.visonictech.com.

VT Office Locations

VT Americas

65 West Dudley Road
Bloomfield, CT (USA)
Tel: 1-800-223-0020
vta_marketing@visonictech.com

VT Israel

30 Habarzel Street
Tel Aviv, Israel
Tel: +972-3-7681400
marketing@visonictech.com

VT United Kingdom

PO Box 4143
Beckenham Kent BR3 9BF U.K.
Tel: +44-870-730-0840
vtuk_marketing@visonictech.com

Visonic GmbH

Kirchfeldstr 118
D-40215 Düsseldorf, Germany
Tel: +49-(0)-221-600-696-0
support@visonictech.de

Obstacles Overcome:

Even though the EIRIS SDK was developed for use with Microsoft's Visual Studio languages (such as Visual C++ or Visual Basic) The WestCall programmers were able to import the EIRIS SDK library into Borland's Delphi environment.

Today, an EIRIS .NET Framework SDK or EIRIS Web Services are available for industry standard integration.

The Elpas LON Network provided a simple scalable solution for the deployment of a large number of readers. Use of TCPIP-LON routers provides virtually unlimited scalability by combining individual LON channels into a single broad network of sensors and I/O devices.

Business Impact:

The Elpas installation serves multiple applications so that ROI may be realized sooner.

1. The Nurse Location system provides a number of business benefits:
2. Enables streamlining of staff while maintaining the needed level of quality of service.
3. Provides time-with-patient to enabling billing for actual care given.
4. Produces history reports that may be used in defense of litigation to prove that the necessary care was provided where and when needed.

Benefits of the Infant Protection System include:

1. **Competitive Advantage:** The tagging system provides mothers with a feeling of greater security knowing that her baby's location is monitored even when the mother is not present. This translates into a competitive advantage in the hospital's profitable labor and delivery service.
2. **Reduced Risk:** The Tagging system reduces hospital's risk of litigation from possible infant/mother mismatches.
3. **Staff Confidence:** Elpas gives nurses piece of mind that an automated system is in place that ensures that only an infant's mother can take it from a nursery.
4. **Accountability:** Each time an infant is discharged a recorded match test is performed proving that baby is sent home with the correct mother.

The Asset Tracking System, currently being implemented, provides significant operational savings. Hospitals, such "The Methodist", typically have millions of dollars of owned or leased mission-critical equipment in service. In any corridor, patient care devices ranging from IV pumps, ventilators and x-ray machines to other mobile assets such as wheelchairs, stretchers and gurneys, are either moving from one place to another, or are parked along a wall waiting to go somewhere. Overloaded support personnel, nurses and even doctors, waste time searching and retrieving misplaced and overlooked patient care equipment. Maintenance staff also loses productivity by searching for specific items in need of repair or calibration. Typically, searches are random, unorganized and in some cases may adversely affect patient treatment.

Hundreds of thousands of dollars worth of equipment are unaccounted for each year, it simply gets misplaced, or stolen. Assets are often underutilized or unutilized due to departmental hoarding. To compensate, many healthcare facilities have found find it simpler to just over-procure.

The Asset Tracking system at Methodist has:

1. Eliminate overstocking of hospital equipment.
2. Makes use of assets that are often misplaced and left in corners of the hospital and are otherwise unused.
3. Reduce excessive time spend searching for assets.

In addition, with detailed room location of each asset, the hospital will be able to bill for actual usage of a particular asset, such as an oxygen pump, by a specific patient. Without the tracking system, this information must be recorded manually by nurses, a task that is rarely enforced due to lack of resources.