

Introduction

The Elpas EIRIS™ Local Positioning System (LPS) uses revolutionary IRFID™ triple technology that combines IR, RF (UHF), and LF (RF low frequency transponder) signals. This unique triple technology combines the advantages of each technology – the exact room location of IR, the wide range and constant communication of RF, and the tailored range sensitivity of LF – providing scalable, powerful and cost effective tracking and identification solutions. Scalable and flexible, Elpas LPS system's serves enterprises in leading markets including healthcare, educational and correctional facilities, intelligent buildings, and museums.

Elpas™ solutions provide WWWW™ information as follows:

- **Who** is wearing the tag/badge? (Identifies the person or equipment)
- **When** is the tag/badge holder in a certain location?
- **Where** was the tag/badge last detected?
- **What**, a unique feature of Elpas, enables the LPS system to provide vital status information about tagged entities. This includes equipment information, such as plugged/unplugged, on/off, in use/at rest, and motion/motionless status, and the equipment's utilization level, remaining battery level, temperature, and more.

Architecture

ELPAS' comprehensive Local Positioning Systems are committed to open standard architecture, utilizing TCP/IP and LonTalk™ protocols to enable seamless integration with other building systems and components, as well as management of multiple remote sites via existing IT infrastructure.

The ELPAS system architecture is comprised of four main levels:

- **Triple Technology RDRs and Tags**
- **LonTalk™ Network (LNS) TCP/IP**
- **EIRIS™ Server/Operating System**
- **EIRIS™ ELPAS LPS Applications**

Solutions

BabyMatch™

A comprehensive system for infant protection in maternity wards used to monitor an infant's whereabouts in real-time and notify of abduction, mismatch and swapping events. Immediately after birth, personalized tags are issued to both mother and baby. The tag's are pre-programmed to certify an identification match between mother and baby as well as monitor the infant's whereabouts in real-time and generate alerts when an attempt is made to tamper with the tag, move the baby through an exit without an authorized escort, or when a baby is missing.

Personal Security/Staff Attack

Personal Security/Staff Attack solutions for healthcare institutions increase staff security and improve productivity, by enabling staff emergency signaling at the push of a button as well as real-time monitoring of the whereabouts of personnel and immediate event generation.

Asset Management & Loss Prevention

Information regarding equipment whereabouts at all times not only enables its location when required, but also prevents its loss. In addition, equipment monitoring enables the generation of statistical reports showing the level of usage over a period of time, thus providing an important managerial tool for decision makers.

Wandering Patients

Patients suffering from Alzheimer's disease, disorientation or recovering from head injuries require constant supervision to prevent them from wandering into an unsafe zone. The patient's location is reported in real-time to the nursing staff, and the exit point in closest proximity to the wandering patient is automatically locked.

Nurse Call

This solution enables hospital patients and staff to call for assistance and to communicate from anywhere within the facility, at any time increasing overall safety and allowing for greater mobility on the part of both staff and patients. The system relays location and identification information to a central location for monitoring and notification purposes.

Personal Badges

Alert Tag

The small, light-weight, oval shaped tags, worn around the person's neck, are designed especially for the convenience of the elderly and for people in duress states (such as alert and panic). This tag is available in a number of models, including: an IR technology based tag with a pull tag mechanism and a pushbutton; an IR and RF (433MHz) technology based tag with one pushbutton; and a tag that combines RF and LF technology with two pushbuttons.



Baby Tag

The baby tag is a small tag, attached to a baby's ankle using a latex-free tamper-proof band, used for real-time infant location monitoring (abduction and mismatch notification), in hospital maternity wards. The tag is automatically activated when attached to an infant's ankle and removal of the tag triggers a "Tamper" alert. A variety of tags are available offering a combination of IR, RF and LF technologies, transmitting infant approach to protected exits, battery state, tag tampering and tag location.



Pediatric Tag

The pediatric water resistant wrist tag is primarily designed for monitoring infants and Alzheimer patients in real time. Removal of the tag will trigger a "Tamper" alert. A variety of tags are available offering a combination of IR, RF (433MHz) and LF technologies enabling constant and exact real time location, identification and status reporting.



Personal Badge

The personal badges are small personal clip-on badges with picture and label identification. The badges are used for locating people in enclosed environments. A variety of badges are available offering a combination of IR, RF (433MHz, 315MHz, and 919MHz) and LF technologies, enabling constant and exact real time location, identification and status reporting. In addition, the button on the back of the badge enables transmitting a predefined message.



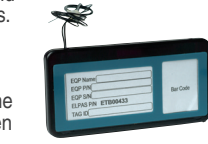
Wrist Mother Tag

The wrist mother tags are small, wrist-worn portable tags, which are used for identifying and locating patients, as well as for performing match-tests in Baby-Match enabled environments. There are two types of wrist tags: one capable of transmitting ID-coded IR beams only and one capable of transmitting ID-coded IR beams as well as RF signals (433MHz).



Rectangular-Shaped Equipment Tag

The equipment tags are used for locating, monitoring and protecting portable equipment in enclosed environments. A variety of tags are available which use a combination of IR, RF (433.92MHz) and LF technologies, enabling constant and exact real time location, identification and status reporting. In addition, the button on the back of the badge enables transmitting a predefined message. When provided with an input option, "short" and "open" input states are indicated.



Wireless Wall-Mounted Alert Button

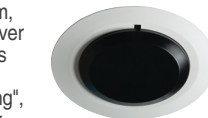
The wireless wall-mounted alert button is a wireless push-button box for fixed locations and is powered by an internal battery. It can be fastened to the wall by double-sided tape or by internal screws. When momentarily pressed, this button transmits RF signals (433MHz). When pressed continuously, the tag transmits signals once every three minutes regarding the button's status.



Readers

IR Reader

The IR reader is a ceiling or wall mounted device capable of receiving coded Infra Red (IR) transmissions from various ELPAS badges and tags. The messages are checked for errors using an advanced CRC error-checking algorithm, and are then sent to a central controller or the Eiris Server via a LonTalk FTT-10 wired network. Enhanced versions of the IR Reader also perform local actions based on received messages. Such actions, called "Local Processing", can close relays in an optional external relay control box (ExB) or be translated into industry-standard Wiegand code for use in Access Controller applications by means of an optional Wiegand Translator (WTB).



RF Reader

The RF reader is a ceiling or wall mounted device capable of receiving RF transmissions from various ELPAS badges and tags. The messages are checked for errors using an advanced CRC error-checking algorithm, and are then sent to a central controller or the Eiris Server via a LonTalk FTT-10A wired network. Enhanced versions of the RF Reader also perform local actions based on received messages. Such actions, called "Local Processing", can close relays in an optional external relay control box (ExB) or be translated into industry-standard Wiegand code for use in Access Controller applications by means of an optional Wiegand Translator (WTB). RF readers are available in 315, 433 and 919 MHz. Long range readers with external antennas enable extended communication range. Smart readers can communicate with each other to execute smart rules.



LF Reader

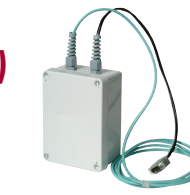
The LF reader is a ceiling-mounted device that enables tag detection in exit locations or other specific zones of a building. The device transmits low frequency signals within a range of 2 to 3 meters by low frequency receivers of IRFID tags. As soon as LF RDR signals are identified, an IRFID data message including the ID number of the RDR is triggered and transmitted. This information enables the precise location of the tag. In order to enlarge the range of detection, an enhanced system employing two LF RDRs in the same area is used working in conjunction as Master and Slave.



System & Control

ELPAS Controller (LON-based)

The LON-based EIRIS Controller is used for controlling network level solutions using an RDR network. Controller applications are downloaded as firmware onto the module via the LON Network



PLR

The PLR adapter is a free topology network Physical Layer Repeater, for use with LonWorks FTT-10/10A transceiver devices, and specially designed for ELPAS readers. It enables extension of the RDR network beyond the 64-node limit. Length limit is also extended, and depends on the topology used. In free topology, the 500m limit is extended by another 500m. In Bus topology the 1200m limit is extended by another 1200m.



External Box

The small External Box is easy to install and configure. It is connected to the RDR, enabling the control of external devices. The external box has two dry-contact, latch high-power output relays and is powered by the RDR to activate devices such as doors, lights and air conditioning.



RS-232 Adapter

RS-232 Adapter converts LonTalk data from the reader to RS-232 in order to convey it to third-party devices, such as displays or pagers.



About Visonic Technologies

Visonic Technologies (VT) is dedicated to developing and integrating identification solutions that enhance security, safety and communication throughout the enterprise. Catering to the needs of industries and institutions such as healthcare and correctional facilities, where identification and location of people and assets drives mission-critical performance, VT offers a variety of solutions: a full range of integrated, customized, state-of-the-art tracking and signaling systems as well as effective and economical access solutions. VT is the holding company of Elpas Local Positioning Systems, SpiderAlert Signaling Network Solutions, and VisAccess Access Control Solutions. VT has merged the three product lines to operate with Eiris™, a single, scalable, open platform software solution which draws upon the company's ground-breaking triple technology (IR, RF & LF identifications). With a widespread network of qualified system integrators and strategic alliances with internationally renowned companies such as Honeywell, Siemens, ASCOM and Hill-Rom, Visonic Technologies is expert at tailoring solutions to the unique requirements of its strategic market segments. VT is a member of the Visonic Group, a leading international provider of innovative, wireless automation and control security solutions, and benefits from the corporation's financial backing, expertise and global partnerships.

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Elpas™

Weigand Translator Box

The Weigand Translator Box (WTB) receives signals from readers and converts these signals to unique Weigand26 format signals. This enables the readers to transfer the received ID code from the tags to external controllers. The WTB has two Weigand outputs, one for transferring the tag ID when the tag button is pressed and one for tag status messages. The WTB is used to connect to third-party access applications such as the AXS-100.



Junction Box

The backbone cable ports junction-box interconnects the network line, power supply and network RDRs



Displays

Remote Display Unit

The Remote Display Unit is a LON based interface display. The two line unit is used to display information about existing alerts or tags, depending on the application. Using the 3 keypad buttons, it is possible to perform a number of basic pre-configured operations such as changing a tag status, or closing an alert.



Message Display Board

The Message Board Display, connected to the RS-232 adapter, is hung in public places (e.g. corridors) and displays messages regarding alerts or events. The message board is available in a number of models, offering single-sided or double-sided data display, in red or multi-colored.



EIRIS Software

EIRIS™ Software Platform

The EIRIS™ software platform is a client-server monitoring and control system used to manage ELPAS systems, as well as third-party network elements and solutions. An open system, EIRIS supports a wide range of drivers and protocols, such as TCP/IP, LonTalk™, RS 232, RS485, and Spider Bus. EIRIS is delivered with an intuitive user interface for configuration of complex alarms and operations, as well as continuous display of tag and alert information in both alphanumeric and graphic formats. EIRIS clients are available as desktop applications (EIRIS viewer) and Web browser pages.

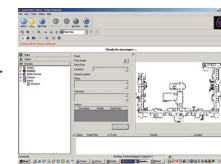


The EIRIS platform supports:

- EIRIS events and configuration information are stored in a relational database management system (SQL server and MS Access)
- Integration with third-party communication devices (pager, SMS and DECT systems).
- Digital CCTV integration: EIRIS video extensions enable the display of relevant Video streams on the EIRIS Client.
- Eiris Web Viewer and Map Viewer enable Web and graphic access to Eiris information.
- The Time and Attendance Module generates time and attendance information and manages conversion tables capable of appending this information to a network file on a daily basis.

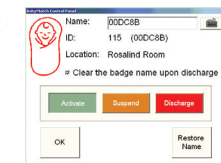
EIRIS Viewer I Package

EIRIS Viewer I is the graphic user interface that is installed on a PC connected to the network. It provides a graphical display of the current location of each badge/tag and enables the user to view people or equipment as they move around the workplace. Additionally, subject to the user's level of authorization, users can view the history (i.e. previous activities) of registered badges/tags and/or make changes in the system configuration. The Viewer includes a variety of views, including: Map Display, Badge List, Active Alert List, Alert History Recorder, EIRIS Report Generator and more.



BabyMatch Package

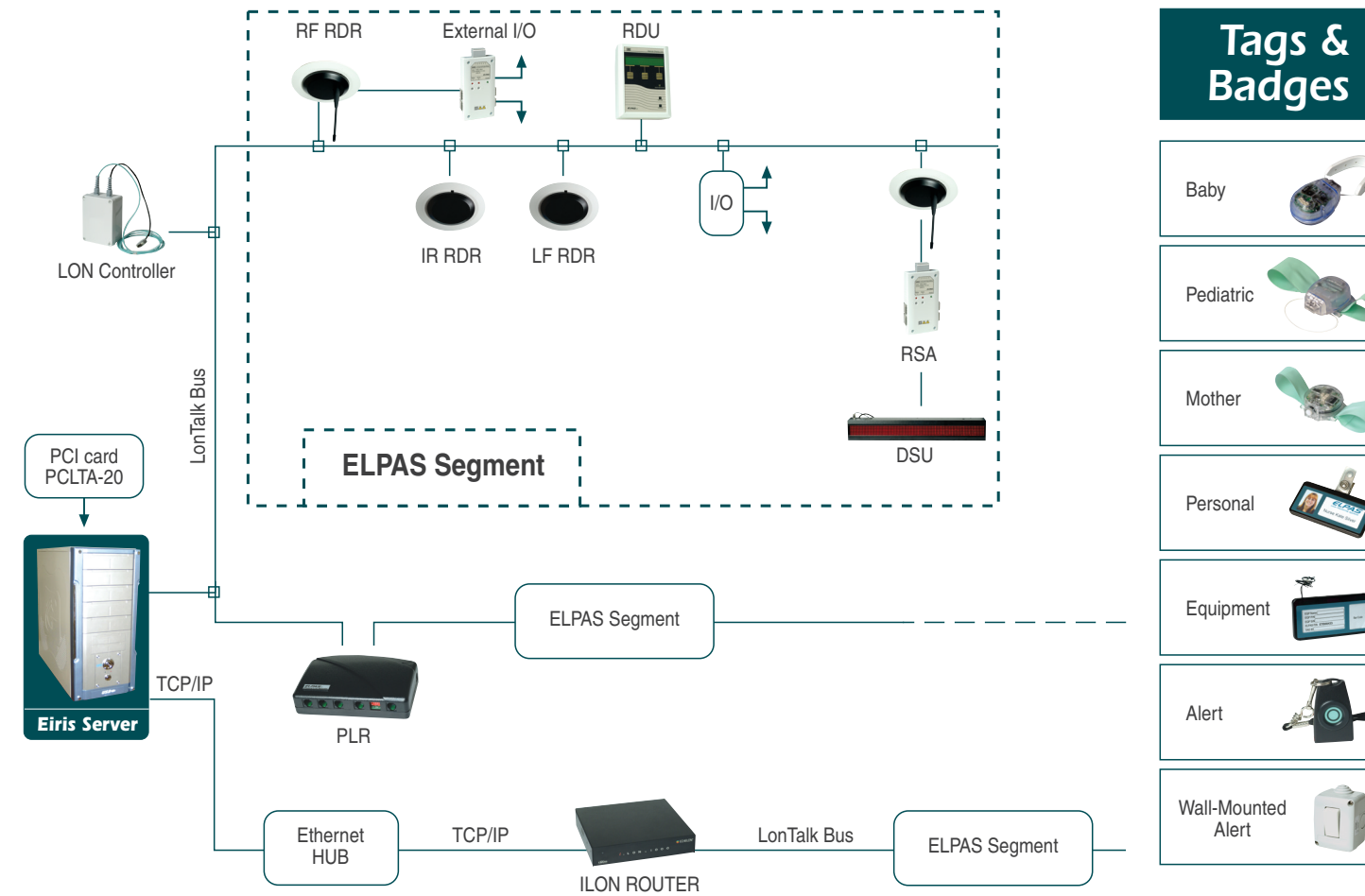
BabyMatch is a comprehensive infant location monitoring system. The BabyMatch Software enables alert generation when nearing exits; mother-baby match tests; automatic activation of badge upon attachment of cap; and additional features to support the baby tagging system. Designed for Touch Screen use, it includes display screens for admitting and discharging babies, and pinpointing the exact location of babies on the premises; alert management and history reporting; map window viewing; and photo capture of badge holders with a WebCam (optional).



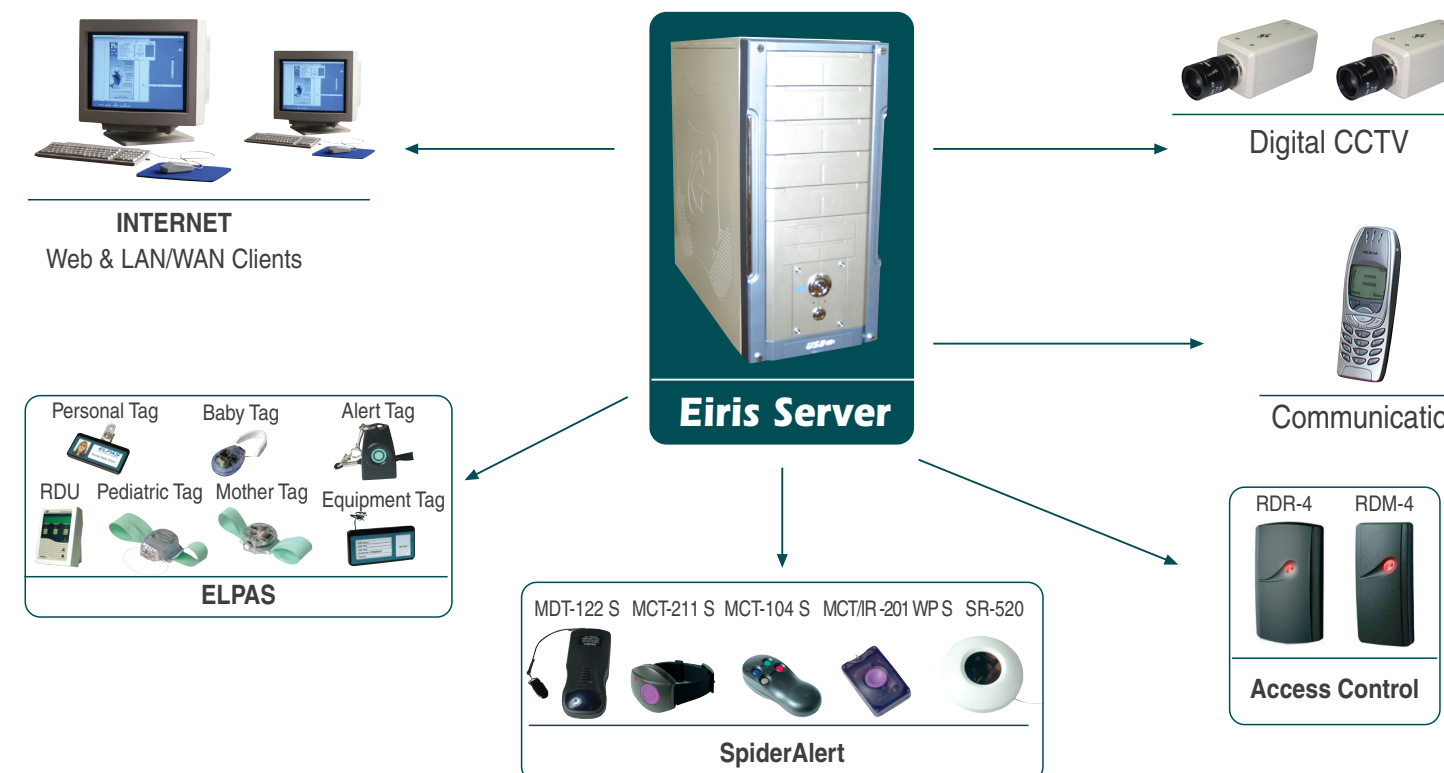
EIRIS SDK

Used for developing EIRIS-based applications, exposing EIRIS object properties, events and methods to the application, to implement features that are not provided by existing EIRIS applications.

Elpas Architecture



EIRIS Software Platform



Elpas™ Local Positioning Systems



Product Catalog