Use Cases | Safety & Security

Real-Time Location Keeps People & Businesses Safe.

Security and safety are key factors at any large facility where people come and go every day. Real-Time Locating Systems (RTLS) are enabling new ways of keeping people safe and secure in both normal conditions and emergencies. Accurate and economical Bluetooth® tags allow companies in diverse industries to gain a real-time view of their environment with minimal intervention in routine processes.

Access Control & Visitor Management

- **Easy Integration with Badges**
- **Customisable Access Levels**
- **Smoother People Flow**

A basic way of using location services to enhance both security and safety is through controlling access. Unauthorised people need to be barred from areas to which they should not be allowed entry. This can be implemented by introducing trackable staff and visitor ID badges or keycards. The system can then automatically allow entry to authorised people while keeping other people out of specific areas.

An added bonus of RTLS compared to traditional access control is that there is no delay at the door when entering an authorised area. The system will identify the person approaching the door and unlock it automatically if they have authorisation to enter. While this is primarily a safety feature, it also has a positive effect on the user experience of moving through the building.

From simple access control, location services can be extended to more comprehensive visitor management. For example, in addition to blocking visitors from entering areas that they are not authorised to enter, the system can be configured to check that visitors are not left alone. In these cases, an alert can be sent to relevant parties if the designated host is not in the vicinity of the visitor. Similarly, when approaching areas to which the visitor does not normally have access, the system can check whether they are accompanied by someone who does have access and let them in.

“Industrial safety is becoming increasingly important globally, with governments and regulatory bodies making stricter safety norms, which the companies need to comply with.

RTLS solution strengthens industrial safety in complex and challenging conditions

Frost & Sullivan

www2.frost.com

Automated Emergency Procedures

- **Scalable & Cost Effective Solution**
- **Individual Location or Presence Monitoring**
- **Automated Headcounts for Emergencies**

Location-based solutions can significantly improve safety in emergencies. For example, if a building needs to be evacuated, Locators at entry and exit points as well as at the evacuation assembly point can provide a headcount of evacuated people in real time. Additionally, because of the unique IDs on the tags, the system can provide information about who is still inside the building and where they are located so that rescue workers can find them efficiently.
Mining companies are facing new national and EU-wide regulations that require mine operators to have real-time location information and headcounts of all miners that are underground in the mine. The new regulations put pressure on mine operators to find a sufficiently robust location-based solution that can withstand the harsh conditions in the mines.

Compared with traditional Wi-Fi and RF technologies, Bluetooth-based tracking solutions provide higher location accuracy (less than 10m) at a more attractive price point. The tracking works well even in confined tunnels, and can feature an offline mode for emergencies when connectivity is limited. With a long battery life of 1-2 years, tags can be attached directly to the headlamps on miners’ helmets. The tags also allow two-way communication, enabling alerts to be sent to workers underground.

Bluetooth tags can serve as IoT gateways for any type of sensor data. In addition to relaying information from various types of equipment and systems, they can be used to keep track of the vital signs of workers in extreme environments (heat, cold, altitude, humidity, etc). This can greatly improve work safety for professionals that need to work alone or in small teams in high-risk conditions.

Real-time location is the key to smart safety management of industrial solutions that involve people working with automated guided vehicles (AGVs), robots or other automated heavy equipment. Highly accurate automated tracking of people and machines enables real-time collision avoidance that can significantly improve occupational safety at automated and semi-automated facilities.

In a very different setting, real-time locating systems are being deployed at swimming pools to alert lifeguards if a swimmer stays underwater for an excessive amount of time, pinpointing the precise location of the person in distress on a tablet computer. At the same time, the system can be used to enable gamified tracking of swimming performance.

Location-based services can help hospitals, senior housing providers and other care facilities improve the safety of both residents and staff. Care providers face increasingly demanding regulations for the continuous care of elderly or cognitively impaired patients. Oversights can lead to costly lawsuits or fines, so knowing the exact location of each resident makes it easier to demonstrate that the facility has provided the required level of care.

Location solutions also enhance patient and caregiver safety by making it easier to enforce standard aseptic practices. Touch-based microbe contamination is a significant pathway for the transmission of pathogens in hospital settings, yet standard practices for hand sanitation are not always followed by staff.

Indoor positioning and location services offer a precise yet unobtrusive way of ensuring that nurses and doctors apply hand sanitizer between patient contacts. Patient bed areas can be geofenced precisely, and the system can alert the staff member if he or she passes from one patient to another without conforming to hand-hygiene compliance in between. For a more basic implementation, the system can collect precise data on hand sanitation and patient contacts that can be used to develop the aseptic procedures at the hospital.
In no field are security and safety more critical than in law enforcement. Real-time location helps keep both staff and detainees safe while ensuring that legal compliance requirements are met at all times. Lightweight Bluetooth tags are being used at police stations to provide a real-time view of the location of suspects and officers in the building.

In addition to making it easier to keep track of every person in the facility, such solutions improve the legal protection of detained persons. Many jurisdictions require that suspects are interviewed or accompanied by at least two officers at all times. If this requirement is not met, the system can automatically raise an alarm and pinpoint the room where additional staff is required.

Additionally, location tracking can improve the safety of staff and detainees by providing real-time alerts of anomalous activity such as gang gathering in prisons. Data from detainees' movement patterns can be used to gain insight on which individuals move together in groups, alerting staff to potential or developing incidents before they escalate.

The future of RTLS will continue to expand within the safety and security sector as we see an increase in more strict regulations across a variety of industries. The examples show an immediate requirement for implementation of location-based services and this need will undoubtedly continue to grow.