

Extended solution:

- Suitable for people working alone in industrial and other high-risk facilities
- Automatic personal security "man-down" transmitter
- Tilt mechanism for automatic alarm activation
- Can be integrated into any alarm system
- Accurate location of users
- Intelligent wireless sensor networks provide the backbone

Application & Uses:

Hazardous environment personnel

Alone worker protection

Tunnels, galleries

Prisons/correctional facilities

Secure psychiatric units

Military bases

Employee reassurance

Staff member identification

Guards and security personnel

Chemical and nuclear plants

Safety Solutions in life-critical situation

Outdoor and indoor location tracking



SAFETY SOLUTIONS THE Wi4B APPROACH

No other situation is more critical than a life-endangered "man-down" situation. In fact, the single biggest challenge for safety and operations managers is: How do I keep my people safe?

When fatalities occur in an environment the current approaches have some flaws.

- Often they only alarm the area. Safety procedures require the individual to leave the area immediately and report the incident.

In some cases, individuals do not leave the area, which can have significant consequences.

- If an alarm does sound, others in the plant are unable to locate the individual.

- The few indoor localization platforms existing require an high costs of investments for the deploy of the infrastructure.

The Wi4B solution combines wireless sensor networks as infrastructure and location-based technologies. Until now, wireless networks have been unable to provide reliable coverage to support safety solutions combined with a low cost in the deploy. The indoor infrastructure is based of a IEEE 802.15.4 network in order to assure easiness of installation.

The possibility to extend the radio coverage without replanning the area, add infrastructure nodes without cabling, improve the location precision using distributed collaborative information are some of the advantages in the solution. The device permits to acquire informations from the environments and transmits them to the control center. The solution is a neural infrastructure that covers the building, easily installed also in complex scenarios.

Functionalities:

- Automatic personal security "man-down" transmitter
- Tilt mechanism for automatic alarm activation
- Can be integrated into any alarm system
- Indoor and outdoor localization



- Accurate indoor location of users
- Real time localization for fast and optimized deployment of operators
- Operator health status with alert system
- Improve operator rounds and transmit local field information continuously
- Scalability—The technology can be applied in small or very large environments
- Intelligent wireless sensor networks provide the backbone
- Expand your radio system without having to upgrade your existing system
- optional GPS outdoor localization
- optional GSM/GPRS module
- optional bluetooth module

- Alarms: 3 modes of activation:

- *free fall*: when the tag does not detect any movement for an extended period of time (configurable) the warning status is activated and after 10 seconds the alarm procedure starts;

- *man-down*: when the tag detects an inclination greater than 60 degrees for an extended period of time (configurable) the warning status is activated and after 10 seconds the alarm procedure starts;

- *Emergency button*: when you press the emergency button it activates the tag and immediately send the alarm to the control center, enabling the localization procedure.



HOW the Wi4B Safety Solution works

The employee:

Wears the device.

Inside the plant:

The device is within range of the wireless sensor network. It receives, collects and transmits information to the control room .

The control room:

- Receives an alert that employee is in trouble (if he/she uses the panic button).

Outside the plant:

The device acquires his GPS position and communicates via GPRS cellular network or via SMS.

- Receives transmitted information about the location of employees in case of emergency.

- Can take action to initiate a rescue operation for employees.

- Can determine who is in their area of responsibility

- Can activate the tracking option for the employee.

Personalized firmware permits to communicate between devices in a collaborative tracking scenario, especially in large scale emergency situation.