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RFID in Harsh Environments

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Enhanced Worker Safety in Process Industry Environments:

Hybrid Location Technology is the
complete solution!

CUSTOMER REQUESTS

- Track all my people and assets to sub 1 metre accuracy in 3D
- Battery life should last at least 5 years, better 10!
- The solution should be low cost with little or no infrastructure to deploy it
- It should work in heavy metallic and very harsh environments
- 99.999% up time for the complete RTLS system

PROCESS INDUSTRY WORKER RISKS



OPERATIONAL CHALLENGES















ENVIRONMENTAL CHALLENGES

- Sites cover large areas
- Indoor and outdoor spaces
- Highly metallic structures
- Hazardous/ non-hazardous areas
- Number of workers on site can vary day to day



GEOLOCATION TECHNOLOGIES

Technology	Typical Accuracy	Typical Range	What's it Suitable For?	Battery Lifetime	Things to Consider	
GPS	<5m				Minimal infrastructure, good accuracy.	Battery consumption is high. Indoor location not reliable.
Wi-Fi	5 to 25m	<150m			Use existing Wi-Fi infrastructure.	Dense infrastructure may be required for 5m accuracy.
802.15.4 RSSI	5 to 25m	75m			Battery life.	Dense infrastructure required.
UWB	<1m	<150m			Great accuracy and battery life.	Dense infrastructure required.
BLE - RSSI BLE - AOA	10m <1m	<75m			Battery life, beacons battery powered.	Maintaining beacons.
Passive RFID	<3m	<3m			Low cost, no battery.	Choke point location only, read reliability not suitable for personnel safety.

THE NEED FOR HYBRID LOCATION TECHNOLOGY

- To deliver wider coverage with reduced infrastructure
- To add greater accuracy in certain areas
- To provide additional functionality
- To reduce total cost of ownership



UTILISING HYBRID TECHNOLOGIES

GPS: large scale outdoor location

- Tracking vehicles and machinery around site
- Locating remote workers over wide area, such as a pipeline



WiFi: automatic mustering, and site-wide evacuation

- Emergency call/man down
- Know when workers are mustered and safe
- Identify missing personnel and find them quickly



BLE or LF Exciters: choke points, zone delineation and floor level separation

- Limited entry to untrained personnel in hazardous areas
- Ensure visitors don't stray into danger
- Reduce search time
- Muster point



UWB or BLE AOA: high accuracy use cases

- Specific placement of parts in manufacture to avoid critical failure
- Detect workers moving around heavy machinery



iTAG X30 WORKER SAFETY TAG



Leverage hybrid location technology across your entire industrial site with the all new iTAG X30

Improving worker safety and reducing the need for dense Wi-Fi infrastructure

Wi-Fi, GPS, LF and Bluetooth low energy technology

ATEX and IECEx zone 0 and 20 certified

Accurately locate workers in hazardous areas, anytime, anywhere

Optional Integrated access control or photo ID card

GETTING BACK TO WORK SAFELY

Proximity Alerting

Generate alerts when proximity distances are infringed

Contact Tracing

If an individual is confirmed with COVID-19, identify others who were in contact with the diagnosed individual



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