High-Precision RTLS
Accurate. Affordable. Easy.
Driving Business Intelligence

Data-driven business intelligence hinges on the availability, reliability, and accuracy of time-sensitive metrics. For many businesses functioning across diverse industries, spatial context is rapidly becoming a vital element in that data set. Who, what, and when no longer suffice to assess operational efficiency; it’s real-time knowledge of where that now enables intuitive understanding of an organization’s operation.

Revolutionizing Indoor Positioning Technology

First generation RTLS offerings hinted at the importance of indoor location awareness, but technological shortcoming limited their true potential. Aware of these deficiencies, Redpoint started with new technology and a different value proposition. Ultra-wideband (UWB) eliminates the reliance on congested Wi-Fi and Bluetooth bands, while also enabling a 10x increase in precision. Redpoint is disrupting the status quo to deliver ultra high-precision accuracy, scalable and fast deployment, and a performance/cost ratio unseen in the industry to date.

Breakthrough Performance for RTLS

Redpoint’s integrated Real-Time Location System (RTLS) delivers spatial sensing and position data with maximum flexibility and unrivaled accuracy. Whether tracking materials on industrial job-sites, monitoring health and safety of patients or employees, or guiding guests through interactive exhibits, there’s no better solution than Redpoint RTLS.
Redpoint RTLS Delivers Unparalleled Value

**Accurate**
20cm accuracy in 2D, 30cm accuracy in 3D.

**Fast**
Tags can report positions at up to 30 times per second with better than 100ms latency.

**Easy**
Easily install mesh-network infrastructure with no data cabling required.

**Scalable**
Redpoint RTLS systems can be configured to handle up to 65,000 tags.

**Intelligent**
Self-calibrating, self-healing network is virtually maintenance-free.

**Dynamic**
Redpoint tags simultaneously transmit location and data.

**Ready for Integration**
An open API allows easy integration with existing applications.

Redpoint RTLS System Components

Redpoint's RTLS system is comprised of all the necessary components for an integrated solution. Redpoint started with the IEEE 802.15.4a industry standard and built a sophisticated mesh network on top that serves as a true IPv6-enabled IoT sensor network. Time synchronization is handled wirelessly and transparently as the radios automatically configure themselves on the network.

Navigation and Tracking Tags
When a Redpoint RTLS tag moves about the RTLS coverage area, its precise location is reported and recorded at a server. Redpoint has also extended the typical functionality of RTLS tags in a number of ways. Unlike traditional RTLS solutions, Redpoint RTLS tags have the location algorithm embedded inside, so it knows its precise real-time location, and is capable of reporting that independent of server communication. This enables a server-less indoor positioning, much like a GPS receiver functions outdoors.

Redpoint tags can also communicate directly with a smartphone or tablet, through Bluetooth, to provide real-time location coordinates for navigation. If a server-side tracking function is needed, Redpoint server software can calculate and record the location of mobile tags in a centralized database.
Redpoint dramatically lowers the barriers to entry for equipping your business with RTLS intelligence. RTLS solutions bring a new level of efficiency, ROI and experience to enterprises with diverse applications.

- Employee Safety
- Workforce Optimization
- Asset Management & Logistics
- Indoor Navigation
- Factory Automation
- Augmented Reality
- Sensor Networks (IoT)
- Retail
- Industrial Construction
- Robotics
- Healthcare
- Factory Automation
- Oil & Gas
- Mine Safety
- Education
- Entertainment

Two-way Communication

Redpoint tags also include a bidirectional interface that enables direct connection to actuators such as relays, alarms, and door locks, as well as analog and digital sensors for measuring temperature, pressure, humidity, or anything else that can be wired.

Anchors and Bridges

Anchors are UWB radios placed at known physical locations. These devices are mounted within a structure and wired for power. Within the RTLS network, they are commissioned with a known location and able to communicate with each other, as well as with any RTLS tags that happen to be nearby. They exchange messages with tags to communicate location and timing information. In so doing, Redpoint tags are able to autonomously compute their precise location within the RTLS environment.

Bridge nodes are very similar to anchors but play an additional role. Beyond simply acting as position reference points within the mesh, bridges are connected to a local area network (LAN) and function as a point of egress for location and position data. These reports leave the tag and hop along the mesh to the nearest bridge, where they then make their way to the server database.

Both indoor and outdoor versions of anchors/bridges are available.

Server

For tracking applications, a server based positioning engine software is used to aggregate tag position and sensor data across the RTLS network. The data is time-stamped and ready for retrieval, post-processing, and analysis.