PLUS LOCATION SYSTEMS

RTLS Solutions Transform Soldier Training Operations in Live Fire Shoot House

SUMMARY

INDUSTRY:
Government + Defense

THE ENVIRONMENT:
1500 square meter Live Fire Urban Operations Training Facility

THE CHALLENGE
Improve soldier training operations with real-time centimeter-level accuracy tracking and data analytics

THE SOLUTION
PLUS ACTIVATE RTLS using UWB for OD, 1D, and 2D tracking algorithms

A live fire shoot house used for special forces Urban Operations (UO) training, located near the equator, includes multiple floors of close quarters rooms, narrow hallways, stairwells with turns, exterior walkways against the building walls, an exterior spiral staircase, and an accessible open roof area to support engagement scenarios representative of the real world.

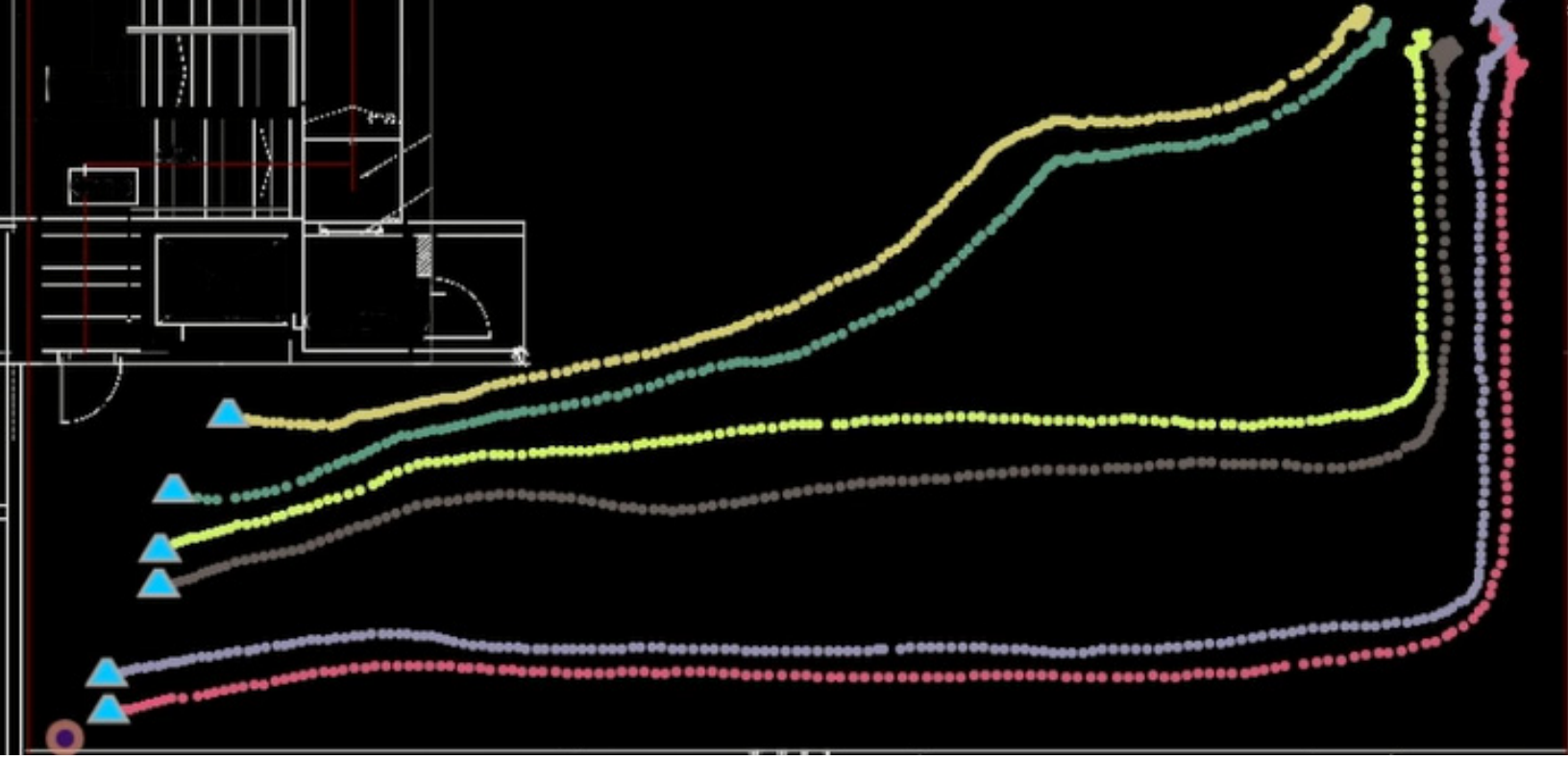
THE CHALLENGE

The Tier 1 U.S. Defense Contractor wanted to integrate high-accuracy, real-time soldier and asset tracking into the operation of the facility to track and improve training scenarios inside the facility. The facility, constructed of concrete blocks lined with steel plates and ballistic rubber panels, includes mock structures representing enemies, friendlies, and a variety of assets or obstructions that vary depending on the specific training scenarios being conducted.

THE SOLUTION

The training facility turned to a Real-Time Location System (RTLS) to track individual soldiers and teams in real time with centimeter-level accuracy. Because of the training scenarios being completed, tracking had to be performed seamlessly in all areas including the exterior of the building that encounters harsh tropical weather conditions.

PLUS integrated its PLUS Activate RTLS using Ultra Wideband (UWB) technology into the facility with tags and readers. Due to the environment, PLUS added IP65 ingress protected hardware to the exterior of the facility and installed all hardware on the interior strategically to minimize the likelihood of damage from live fire scenarios. PLUS also located the majority of the UWB readers behind ballistic protection with only a small portion of the reader antennas exposed and designer the antenna modules for easy replacement should a stray bullet select an antenna as its target.



PLUS integrated a variety of tracking algorithms using UWB technology to cover the diversity of environments in the training facility:

- 0D tracking (proximity, presence/absence) in load-up zones
- 1D tracking (linear) in narrow hallways
- 2D tracking (actual path) in rooms, open areas and stair wells

To integrate x/y location data and geofenced zone rule-based event data into the client's proprietary user interface database and data analytics tools, PLUS provided standard API's to the client.

THE RESULT

Once installed, PLUS carried out a detailed acceptance test and provided the client with synchronized video and real-time, map-based tracking results demonstrating performance.

Potential future enhancements include tagging and tracking weapons and targets for enhanced measurement of soldier/team performance and multi-variable zone rule-based event triggering of audio files, explosive devices, lighting, target action, and other physical events.

ABOUT PLUS LOCATION SYSTEMS

PLUS Location Systems enables innovative location solutions with the PLUS Activate Real-Time Location Systems (RTLS) platform that delivers integrated, real-time location and activity data. PLUS empowers organizations to receive reliable location data that is flexible, scalable and is easily integrated.

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