



SOFTWARE SPECIFICATIONS

Blyott Location Prediction Engine

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Improve asset location with our Prediction Engine

Effective asset management is critical in any industry to avoid losing valuable time searching for assets.

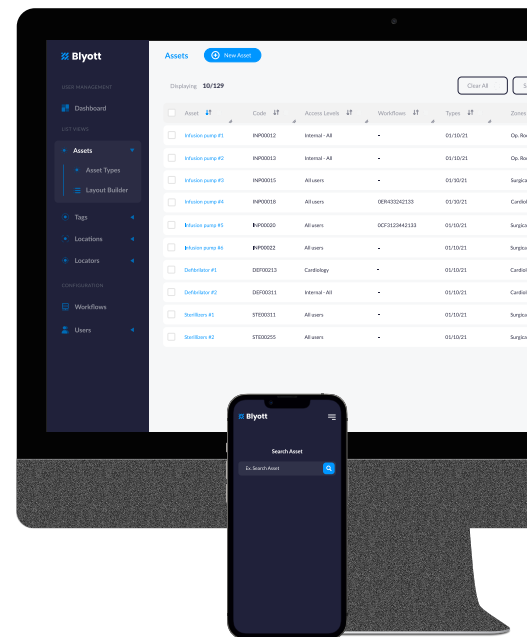
In most healthcare facilities, medical staff manually locate beds, pumps, and wheelchairs. Instead, they should be allowed more time on what drives them and what they do best: provide care.

Our Prediction Engine can drastically improve location accuracy. Depending on the configuration, it will indicate in which area or room assets are located.

Some organizations have taken the first steps to efficiently manage their assets with Bluetooth Low Energy (BLE) technology. That's a step in the right direction to achieve big savings and happy staff.

By default, the Blyott solution performs asset localization based on the number of available Blyott locators. The higher the number of locators, the higher the location accuracy.

In combination with machine learning (ML), it now becomes possible to further increase the location accuracy, and this without the need to invest in additional locators.



Location accuracy is based on RSSI values

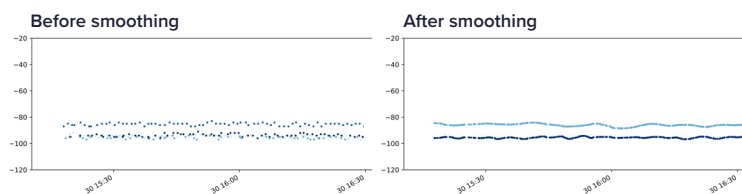
The standard approach to calculating the position of an asset involves a Blyott sensor and locators.

Now, imagine a Blyott sensor is fixed onto a hospital bed. Every 5-10 seconds, the sensor broadcasts a signal that is picked up by several locators in its vicinity. The closer the sensor is to a locator, the stronger the signal will be. The signal strength value is measured in RSSI.



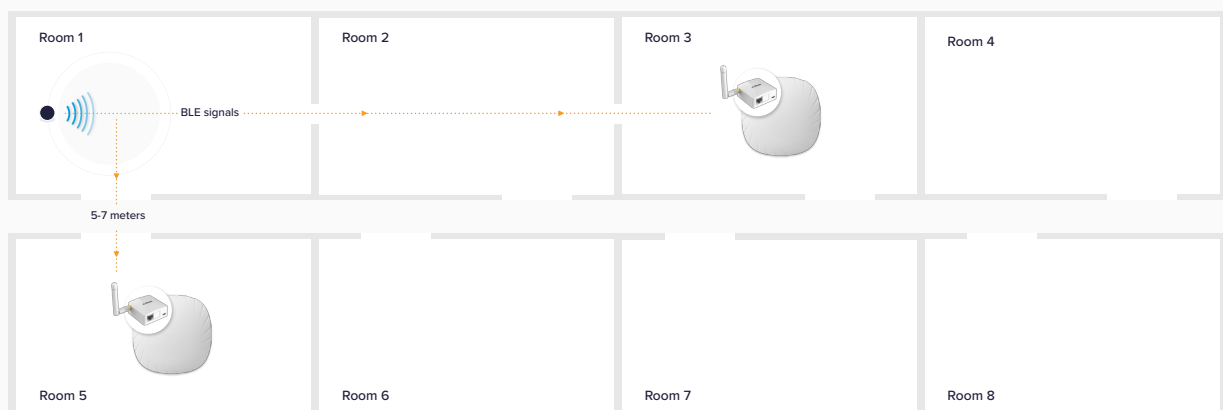
What are Blyott locators?

Blyott locators can be standalone fixed or mobile (4G) locators, but it can also be Wi-Fi access points with built-in Bluetooth capabilities. Blyott connects directly to such Wi-Fi AP's.



RSSI values can vary a lot. Therefore, we preprocess the RSSI-based datasets combined with smoothing algorithms to eliminate noise and prevent location and floor hopping.

Following this approach, the location accuracy is dependent on the number of locators or Wi-Fi access points. As such, more locators will increase the accuracy. The graphic below illustrates this standard approach to asset tracking.



The system displays Room 5 as the sensor location because it has a higher signal strength (RSSI) due to the locator in Room 5.

Location accuracy with machine learning sensors

Room-level accuracy becomes possible by simply using machine learning (ML) sensors.

Like standard Blyott sensors, reference sensors broadcast signals to locators in their vicinity. These signals are continuously fed into the Location Prediction Engine. After pre-processing, this data is used to train an ML model to recognize patterns in these signals.

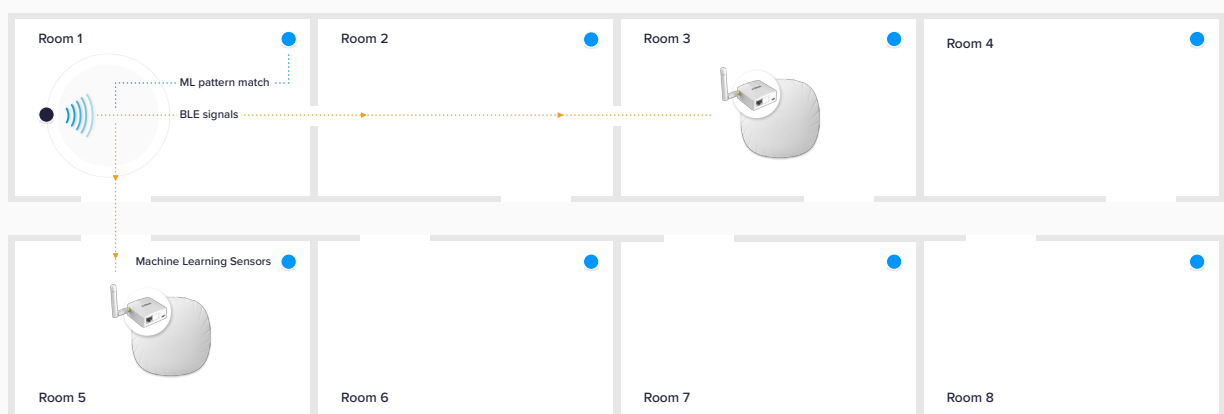
When a mobile asset, e.g. a wheelchair, enters a room, a pattern is once again calculated, but now for the mobile sensor. The pattern of the mobile sensor is compared with the ML pattern of the ML sensor.

The Location Prediction Engine compares the two patterns to predict—with a certain level of confidence—where the mobile asset, e.g. the wheelchair, is located.

Instead of returning the room where the closest locator is installed, the Location Prediction Engine will now indicate in which room the mobile asset is. Note, you only need to place ML sensors in rooms where higher accuracy is needed, like patient rooms.

What are Machine Learning (ML) sensors?

Machine learning sensors are fixed sensors that remain fixed in a room contrary to sensors that are attached to mobile assets, like pumps and wheelchairs.



Next to the two locators in Room 3 and Room 5, each room also holds a reference sensor. The system will display Room 1 as the sensor location because the ML pattern of the mobile sensor corresponds with the reference sensor in Room 1.

4 main takeaways of the Location Prediction Engine

Some organizations are already leveraging BLE technology for asset tracking to avoid teams losing substantial time searching for the right equipment.

But increasing the location accuracy can be a real game changer, providing even greater value to these organizations. With more accurate asset tracking you're on fast-track to big savings and happy staff.

1 Blyott uses location IDs instead of maps

Blyott's solution doesn't return a dot on a map, but a location ID (asset X is in room Y), allowing for easy scalability without updating maps.

2 Two ways to improve location accuracy

Golden rule: more locators translate to higher location accuracy. Adding ML sensors, we can further increase the level of accuracy.

3 Sensors are inexpensive and durable

The main advantages of BLE technology are the inexpensive sensors that come with a long battery life.

4 BLE technology is fast to implement

Blyott connects directly to existing Wi-Fi access points with built-in Bluetooth^(*) infrastructure, and within minutes you can be live.

^(*)The Blyott solution is compatible with Wi-Fi APs enabled with Bluetooth[®] technology from various vendors. Bluetooth[®] is a registered trademark of Bluetooth SIG, Inc.

About Blyott

Blyott is at the forefront of transforming industries with innovative localization and monitoring solutions. Our platform integrates advanced data analytics and AI, supporting various sectors to navigate operational challenges, enhance efficiency, foster staff well-being, and achieve sustainability goals.



EASY TO SET UP

Works in a matter of minutes.



SCALABLE

Scale to millions of assets.



PAY-AS-YOU-GROW

Custom plans are available.



OPEN STANDARD

Integrate using REST APIs and webhooks.



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