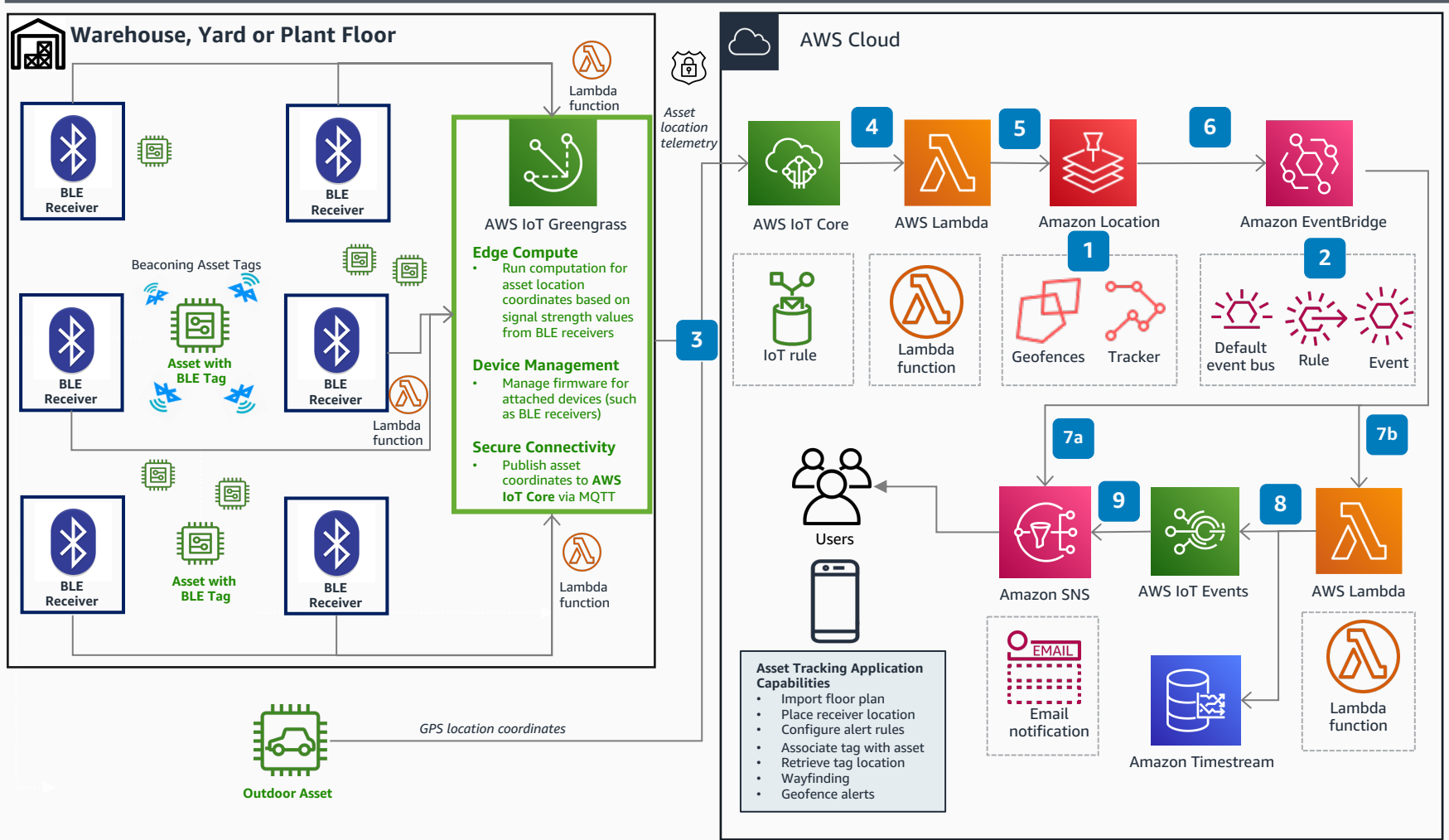


Geofencing with Amazon Location Service and AWS IoT

Tracking high-value equipment leaving or entering premises

Asset coordinates to IoT Core via telemetry forwarded to AWS Location Service Trackers for generating and acting on Geofence enter/exit events



This diagram provides guidance for integrating **Amazon Location** with **AWS IoT Core** to create alert notifications for Internet of Things (IoT) devices moving in and out of geofences. This scenario uses Bluetooth Low Energy (BLE) tagged asset locations in a warehouse using an arbitrary x, y coordinate system. GPS coordinates can be used outdoors.

- 1 Create a Geofence Collection resource in **Amazon Location** adding one or more Geofences to it. Create the Location Tracker resource and associate it with the Geofence collection. This sets up the service to send geofence events to **Amazon EventBridge**.
- 2 Configure **EventBridge** to invoke **AWS Lambda** for the event received from the service. Write a **Lambda** function for processing the event
- 3 Publish asset position to **AWS IoT Core** directly or via **AWS IoT Greengrass**. Using **AWS IoT Core** in the path allows for asset metadata management using IoT Thing models.
- 4 The IoT Rule in **AWS IoT Core** invokes the **Lambda** function. (No out-of-the-box IoT rule currently exists for **Amazon Location Service**.)
- 5 Write a **Lambda** function to send location (DeviceID, x, y) to the Location Tracker.
- 6 Location Tracker maintains device position history, and the associated geofence collection publishes enter/exit events to the default event bus in **EventBridge**.
- 7a Publish the event to an **Amazon Simple Notification Service (Amazon SNS)** topic directly from **EventBridge** to notify end user.
OR:
7b To further process the raw geofence events, configure an **EventBridge** rule to invoke a **Lambda** function (optional)
- 8 Add a **Lambda** function to forward to **AWS IoT Events** for complex event detection (optional) and to store event history as a time series in **Amazon Timestream**.
- 9 Publish the complex event detected to an **Amazon SNS** topic to notify the end user.

