DevCon Challenge (GSMA)
Application/solution ideas

September 2023
Network programmability applications

1. Device supervision and location tracking application
2. Industrial plant with Smart safety application
3. Drone application with mission critical data mode
1. Device Supervision and Location Tracking

Enabling applications to monitor NB-IoT location and connection status

Scenario:

IoT devices are monitored by an IoT Supervision Application

1. Application determines when the device is disconnected from the network.
   - Based on expected device behavior, App determines that device has been disconnected ‘too long’ and flags potentially ‘dead’ or defective device.

2. Application queries for device location
   - For mobile devices, App uses location info as required (tracking, geo-fence, etc.)
   - For stationary devices, App identifies device that has unexpectedly moved and flags potentially lost, stolen, or defective device.

Use Cases:
- Device location tracking
- Identify potentially ‘dead’ devices
2. Industrial plant with Smart safety application

Application to monitor industrial safety devices and respond to a detected hazard

Scenario:
IoT sensors detect a safety hazard
1. Application requests the device location(s) in the hazard area
2. Application requests the bandwidth boost for nearby cameras via QoS on Demand
   - High bandwidth connections enable high-resolution interactive video inspections
3. Application queries for the location of all known persons ‘on duty’ (and vehicles, etc.) to identify if anyone is within an unsafe distance of the hazard
   - Warning notification sent to affected persons.

Use Cases:
- Get device/user location
- Distance to device/user location
- Event-Driven Dynamic Bandwidth Allocation
3. Drone application with mission critical data mode

Scenario:
Drone application Drone’s normal mode of operate is low-bandwidth. However, the application is expected to require mission-critical data transfer during hazard response or emergency response. Therefore, the drone application will be deployed to the nearest edge cloud during drone operation, and the drone application will use network programmability to use high bandwidth on demand.

Drone detects an anomaly where it needs to transmit a large amount of data
1. Application requests bandwidth boost via Quality on Demand
   • High bandwidth connection is enabled
2. After mission-critical data transfer, drone is returned to standard data connection

Use Cases:
- Event-Driven Dynamic Bandwidth Allocation
- Deploy application to nearest edge cloud
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