Hackathon Scenario

Set-up: People-Counting Camera, Two Magnetic Parking Sensors and a Sound Level Meter

Objective: Ingest and expose sensor data, detect and identify busses, conclude relevant analytics and set warnings

Assumptions

- The route is served by 2 Bus Lines, one loads consistently more passengers than the other at each stop (given that there are enough waiting).
- A third line passes by, but does not stop.
- While parking sensors are positioned in a way that reflect the bus size, fast car-passes can activate both at the same time and during bus stops a sensor can have delayed activation/deactivation by chance.
- Cars can stop and pick up passengers but the amount is significantly less than both bus lines.
- All individual buses & cars share the same noise level as their counterparts and also depends on their position relevant to the stop, people also contribute to noise level as does steady background noise. Noise level increases logarithmically.
- Bus stops/passes have steady intervals for each line.
- The bus stop is 2nd in both routes so no passengers gets off .
- All buses and cars stop at the same position.
- Passes and stops have at least 30 seconds empty time between them

Hackathon RoadMap

Produce

1. MQTT subscription — 10 pts
2. SDM adaptor *Op* — 15 pts
3. Context Broker Registration Op — 5 pts
4. Context Broker Updating Op — 15 pts

EXTRA: Future set-up suggestions — 15 pts

Consume

5. Consumer Hello World (Context Broker API call) Op — 5 pts
6. Persistent Storage (MQTT subscription or Context Broker Subscription) — 20 pts / 30 pts
7. Visualization (graphing data live or offline) — 15 pts / 20 pts

Process

8. Bus Stop Detection — 20 pts / 35 pts
9. Bus Identification *Op* — 15 pts
10. Timetable Prediction *Op* — 15 pts
11. Delay Detection *Op* — 15 pts
12. People Flow Analytics — 15 pts
13. Congestion Warnings — 15 pts

EXTRA: webpage for output — 35 pts