Interactive Map of Air Quality Monitors with Persistent Identifier

Presenter: Hsiu-Mei Chou

Airbox Sensor

Pub-Sub System

Data Dashboard
(Html & JS based data visualization)

JSON data

Data API
（Restful Web Service）

Apache Cassandra

Database Archive
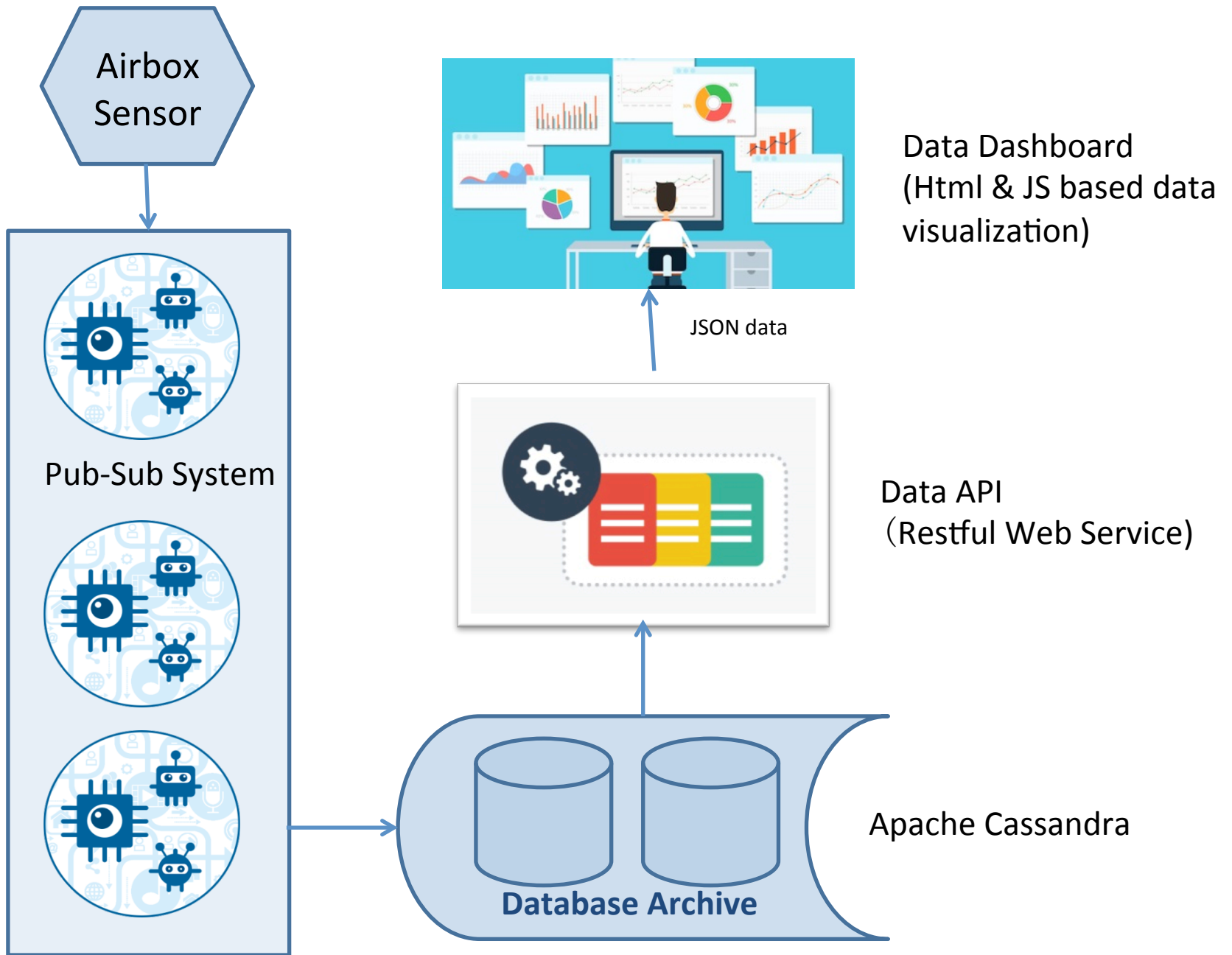
- Each Airbox device bears several sensors of varied types; Indicated in the message with sensor type initial and sequence String:
  - ❖ Sensor type: d-dust; h-humidity; t-temperature; b-barometer;
  - ❖ Sequence: s_t4 – temperature BME280 Sensor; s_d0 – G3/G5 dust sonsor PM2.5
- Airbox publishes message to MQTT server on device base; Each device send out one message including readings from all sensors on the device;
- Each message also bears timestamp and device geolocation (GPS readings)

Message topic

Message Timestamp

LASS/MAPS_COPY/9E65F90B25B8
|ver_format=3|FAKE_GPS=1|app=MAPS|ver_app=5.1.5|

Device Unique ID

device_id=9E65F90B25B8|date=2017-03-28|time=20:10:17|
device=LinkIt_Smart_7688_Duo|tick=1145023922
|s_t4=20.29|s_h4=70.30|s_b2=1006.65|s_d2=42|
s_d0=64|s_d1=80|d_t5=28.38|d_h5=41.55|
gps_lat=24.1763|gps_lon=120.6442|gps_fix=1|gps_num=15

Sensor/Value

Device Geo (GPS) Location

Airbox Devices

Ingest

Ingest

Ingest

Message Broker

Historical Batch Archive

PID

PID Service

Data Processing Service

Data Chunks (Device base & Temporal by Weekly, Monthly, etc.)