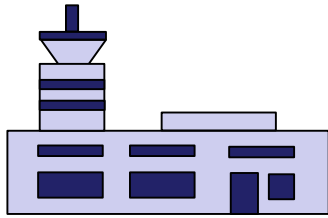


IoT Augmented Airfield Service System (AS2)

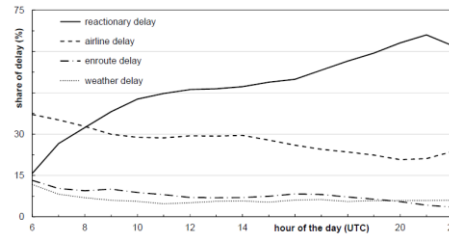
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Aircraft turnaround process at the airport



HKIA

- Top 20 by OTP - 71.51%
- 427,725 air traffic
- 5.1 mln tons air cargo
- 74.7mln air passengers



Airport Delay

Delay is often caused by airport operations (reactionary delay)



Turnaround

- ✓ Debris check
- ✓ Chock on
- ✓ Auxiliary power
- ✓ Air conditioning
- ✓ Baggage and cargo
- ✓

IoT initiative in Hong Kong International Airport

- HKIA has GPS/RFID/Bluetooth on 5000+ motorized vehicles

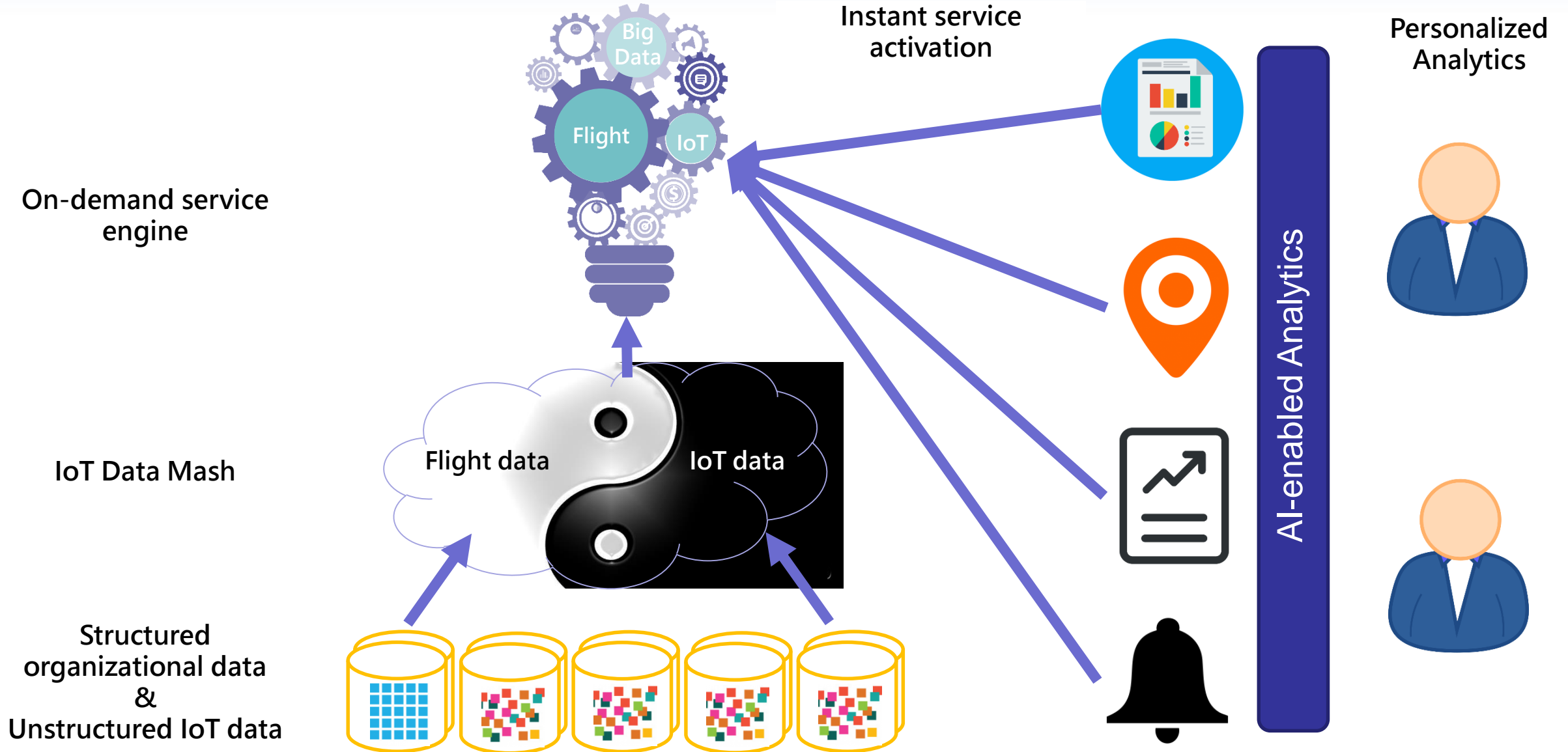


- IoT Data and beyond

Organizational data consists up to 80% of unstructured data (Gartner, 2018)



AS2 – Airfield Service System

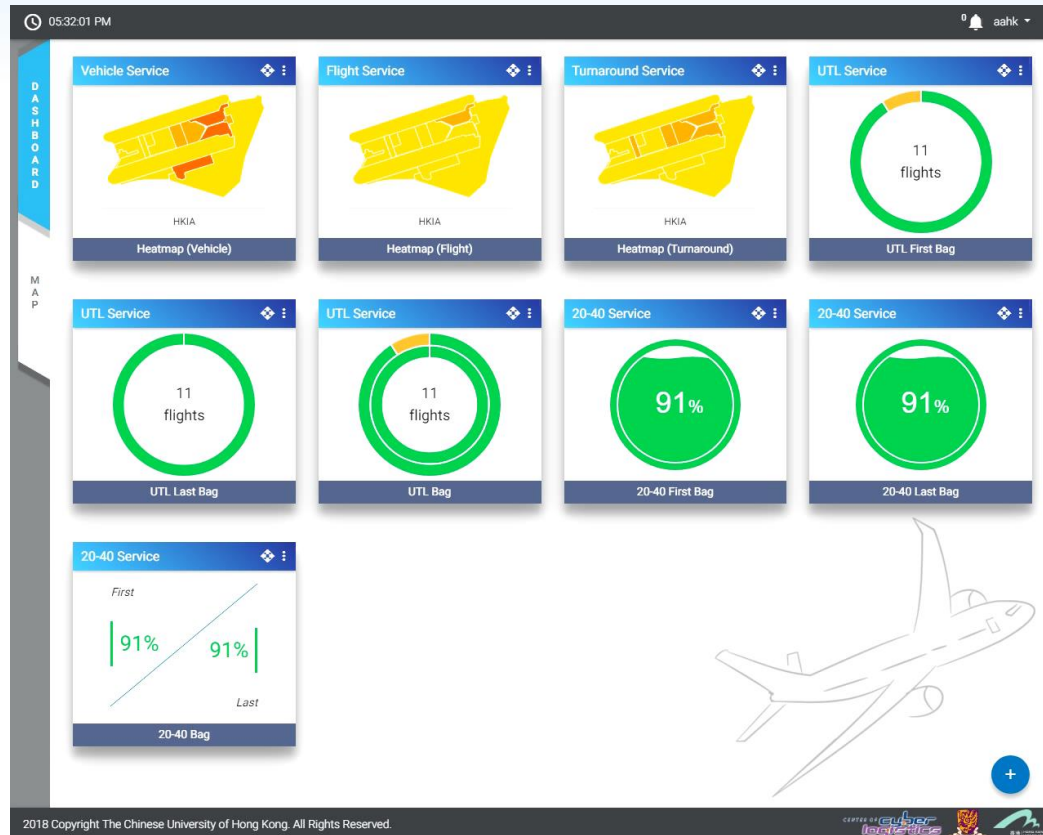


AS2 Solution

- One of the **first integrated IoT network solutions** for airfield operations
- Cloud based application – minimal setup cost
- **Interoperability** with existing systems and IoT technologies
- **Real-time visibility** & performance **dashboard**
- Interoperable with the international **A-CDM standard**
- **IoT network design Framework**, 2 patents pending
2 HK RFID Awards, 1 APICATA, and 2 HK ICT Awards



AS2 in action with telematic network



Real-time management dashboard to view turnaround visibility in an eye glance

Augment IoT data with flight data to measure and predict turnaround processes

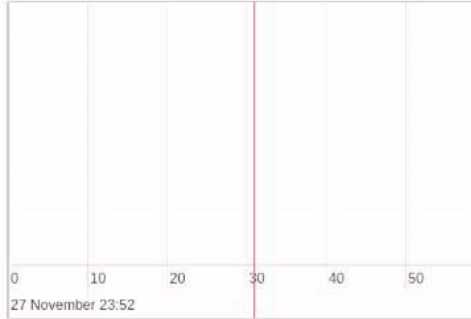


AS2 in action with CCTV network

Event detection \neq object detection

ubiZense

Sources



Real-time turnaround event detection

Flight Data

Bay: S41
Flight:
Airline:
Ground:
Body Type: wide
STA: 11:31:53 PM
ETA: 11:26:53 PM

AI-enabled BAP Prediction



Detecting..

AI-enabled BAP Prediction



Detecting..

AI-enabled prediction based on detected events

Timeline

Reset

| Total | | | | | | | | | |
|-----------------|--|--|--|--|--|--|--|--|--|
| Marshaller | | | | | | | | | |
| Aircraft at Bay | | | | | | | | | |
| Chock on | | | | | | | | | |
| Arrival Baggage | | | | | | | | | |
| ALP | | | | | | | | | |

Transforming unstructured data to structured data

- **Benefits**
 - Improved baggage operation efficiency from 75% to +90%
 - Real-time aircraft **turnaround visibility**
 - Automatic performance monitoring through IoT vs self-reporting
 - **Pro-active** manage aircraft turnaround
 - Operate with **less staff** to visually monitor CCTV
 - **Remote manage** airport operations
 - **Single Source of Truth** - IoT data accuracy
 - **Data source** for airport community stakeholders



Thank you

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