



Heathrow & RFID

24th June 2018

Team
Heathrow Baggage

RFID in Heathrow baggage system

- Where is Heathrow today
- What is our strategy
- How do we get there
- Innovation
- Heathrow IATA Challenge



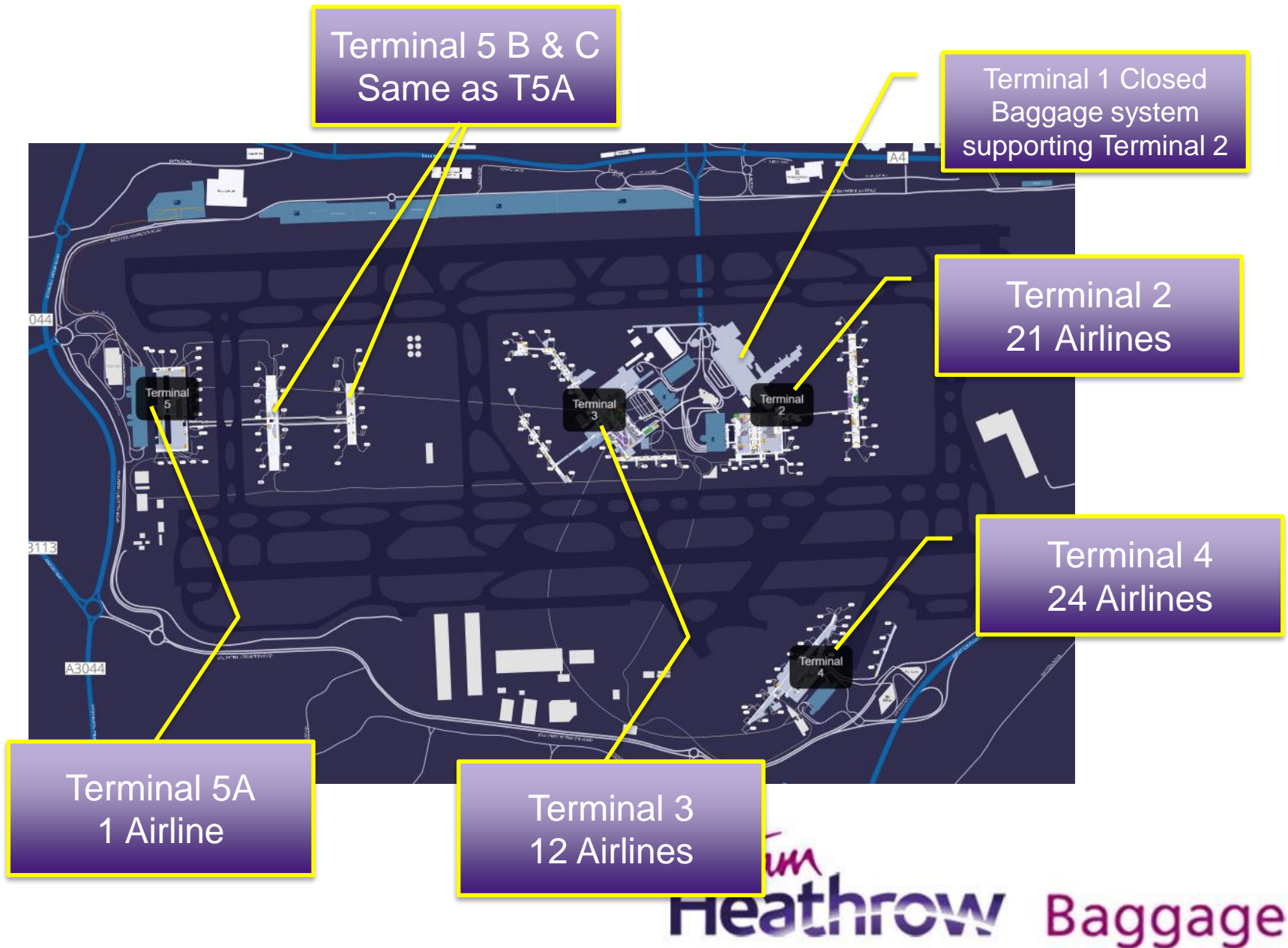
Heathrow Understanding

- Identification (Check that the information we have are still correct)
- Recognition (First time we see the bag and read the bag tag)

Note:

Information and status shown in this presentation are based on Heathrow Terminal 5

Heathrow terminal overview



Where are we today

Heathrow is a complex integrated environment with a diverse range of legacy and emerging equipment and operating procedures



Baggage projects at Heathrow, in the past was delivered based on “Value for money” and often with a weighting on price, which resulted in same project being delivered by different suppliers with very little or no considerations to technology or unity across the airport

Tracking - Where are we today

Departure	Transfers	Arrival
98%	95%	70 – 75%

Automated bag tracking (Above numbers) is achieved by a combination of automated identification (scanners) and tracking at PLC level.

- Arrivals barcode readers: 270 degrees (10 head arrays)
- Transfers barcode readers: 360 degree (13 head arrays)
- Departures barcode readers: 360 degree (13 head arrays)
- All backed up by manual coding, to ensure 100% read rate
- Downstream at sortation, we have 90+270 degree arrays installed with MES back up so 100% read rate is achieved.
- All OOG bags are manually read ensuring 100% read rates.

Heathrow is also using RFID in the Bag store in Terminal 3 and 5 where bag identification are done via the RFID tags installed in the tubs used in the bag store.

Generally, majority of Heathrow's scanning is by scanners but with substantial amount of other ATR systems.

Heathrow Baggage Strategy

- 999/1000 bags travelling with the passenger by 2023,
- The Installed infrastructure shall achieve automated read rates of 99.9% so that manual intervention scan will be reduced.
- To provide end-to-end traceability and reduce Mis-Connect Rate(MCR), all in-gauge and out-of-gauge bags shall be positively identified from system entry to system exit.
- To reduce In-System-Time(IST), bags shall be able to be reidentified along the normal bag journey.
- Understand the impact of the operating airlines' need to comply with IATA753 Resolution.
- Baggage tracking is a key way that the industry can continue to drive down costs and improve service at a fundamental level.

How do we get there

To support the delivery of Heathrow baggage strategy, we have started a number of workstreams which shall inform the Baggage team what are the “right decision” and what will deliver “Value for money”.

- Develop bag recognition strategy
 - Baggage recognition systems required for end-to-end bag traceability,
 - To develop a campus wide strategy for bag recognition
 - A terminal-specific recommendation for improvements.
 - Baggage strategy partner
 - Inform needs (If any) for IATA753
- RFID trail
 - Why RFID trail
 - Understand current RFID use and status
 - Challenges moving towards RFID

How do we get there

We are currently using RFID in our bag store where loading bags into trays

The trays used in the bag store in T3 and T5 are all RFID enabled, bag and tray are tight together at loading point and from there until unloading from the tray the bag are Identified via the tub RFID tag

Data collection and sharing

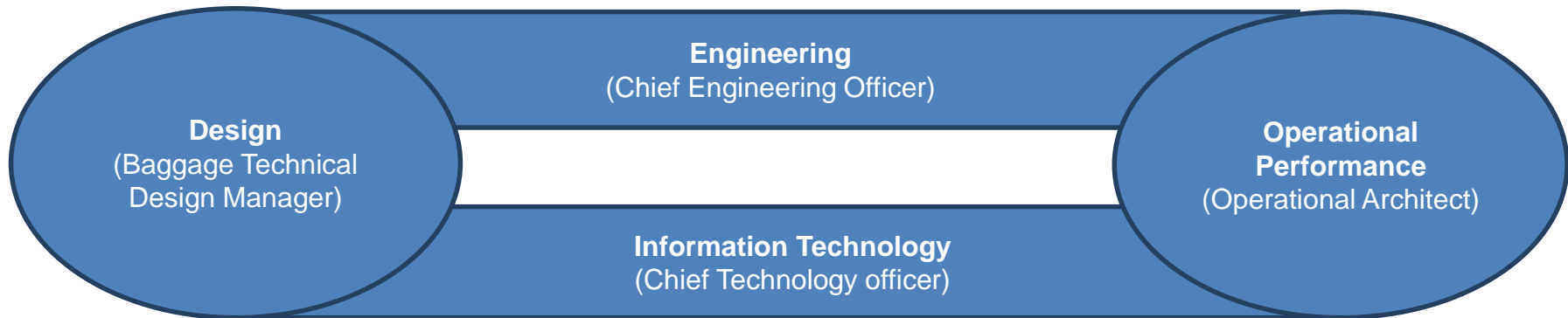
Creating Data interface to ensure supplier following Heathrow standard

Where does bag handling start and stop? Currently handlers are contracted by airlines, in the future Heathrow will look towards check-in to end of plain

How do we get there (Strategic Partner)

Heathrow is looking to engage with a Strategic Partner to deliver baggage products, a strategic Partner for specific areas at Heathrow will move the baggage system to be aligned whilst using the same technology

Showing below Heathrow has created BSLT (Baggage System Leadership Team) that ensures all aspects of implementation of new technology and processes has been reviewed and evaluated



RFID Trail

To inform our coming Bag recognition strategy

RFID Trail together with Delta and Virgin Airlines in Terminal 3 with the aim to demonstrate the value of using RFID for baggage in a shared “common-use” environment.

The trial shall evaluate the performance of baggage tracking using RFID.

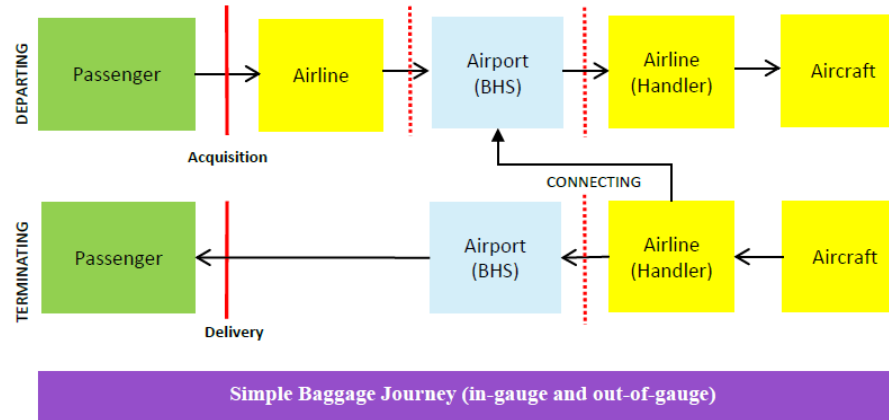
Identify where Heathrow can move to RFID and immediately improve bag recognition and by that support the Baggage strategy

Challenging moving forward using RFID

- Self-service bag drops will become more widely available
- Sortation on arrival
- Cost to airlines bag recovery on mishandled bags.
- Bag tag cost
- Number of Airlines
- Passenger printing bag tags at home
- Airlines printing with RFID tags
- Passenger informed about their bag location
(Not an Airport issue, no but one team)
- Currently using Barcode scanners and MES/PBA

Heathrow interpretation of IATA 753

The diagram below shows a simple overview of the relationship of “passenger-airline-airport” acquisition and delivery points in addition to extent of tracking that must take place at each stage of the baggage journey.



What does that mean in Heathrow

- First time recognition: Scan bags at HBS
- Arriving bag information: We need all Airlines to share BSM

More clarity

- The resolution is unclear towards read rate (Airport)
- Transfer bags without BSM

Future bag recognition

- Using RFID we should move towards being able to scan ULD and get all bag tags
- Supplement scanner arrays with cameras, RFID, OCR, to increase automated read rate.
- Bag Vision systems
- Using screening image from HBS

Conclusion

- We will not have a fully automated bag recognition and identification system installed purely based on RFID technology for years to come
- We shall explore the use of HBS scanning image to do Bag recognition and identification
- We must participate and encourage that airlines share BSM across all airports
- IATA (Should not only focus on RFIA but also look to the marked and give recommendation or standards

Questions?

Heathrow

Making every journey better

Baggage Design team

Don't chase perfection - start delivering something