Blockchain in Airports and Aviation in the post-COVID-19 era

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Heathrow

COVID-19 impact

Re-charging our business

Long-term sustainability

80 million
passengers a year

34%
of UK exports by value for non-EU exports

2
full length runways
and
4
operational terminals

82
airlines serving
204
destinations in
85
countries

76,000 jobs
supported at the airport

9
routes to other UK airports

Classification: Public

COVID-19

200,000
Passengers in April

1,788
cargo-only flights in April

Consolidation

1
full length runway
and

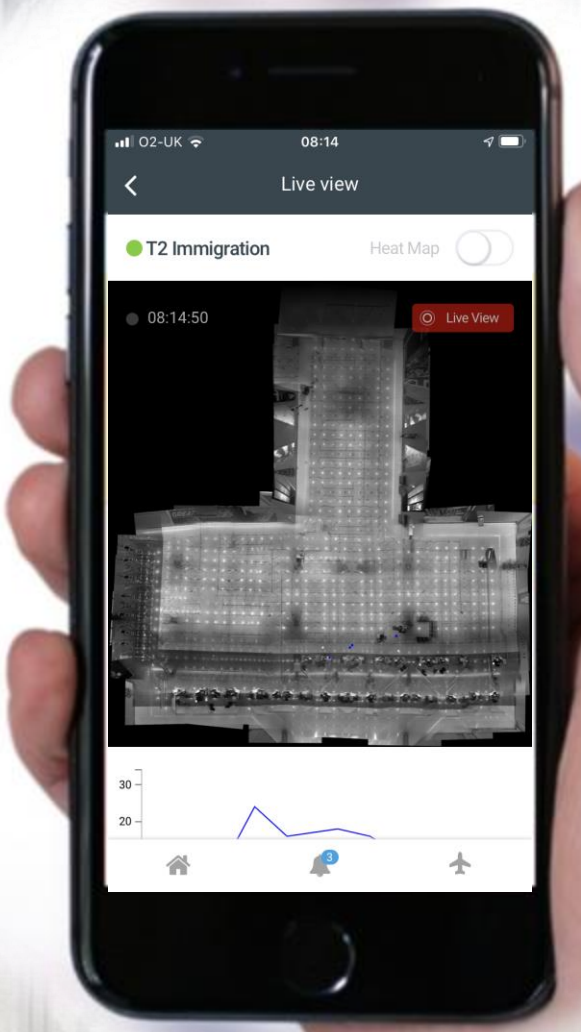
2
operational
terminals

Supporting the NHS

33kV NORTH INTAKE
SECTION 2
SECTION 3
Sub 294 Feeds South
East Intakes and Sub 260
North Intake
T3 T4

Digital & Data

Supporting our colleagues

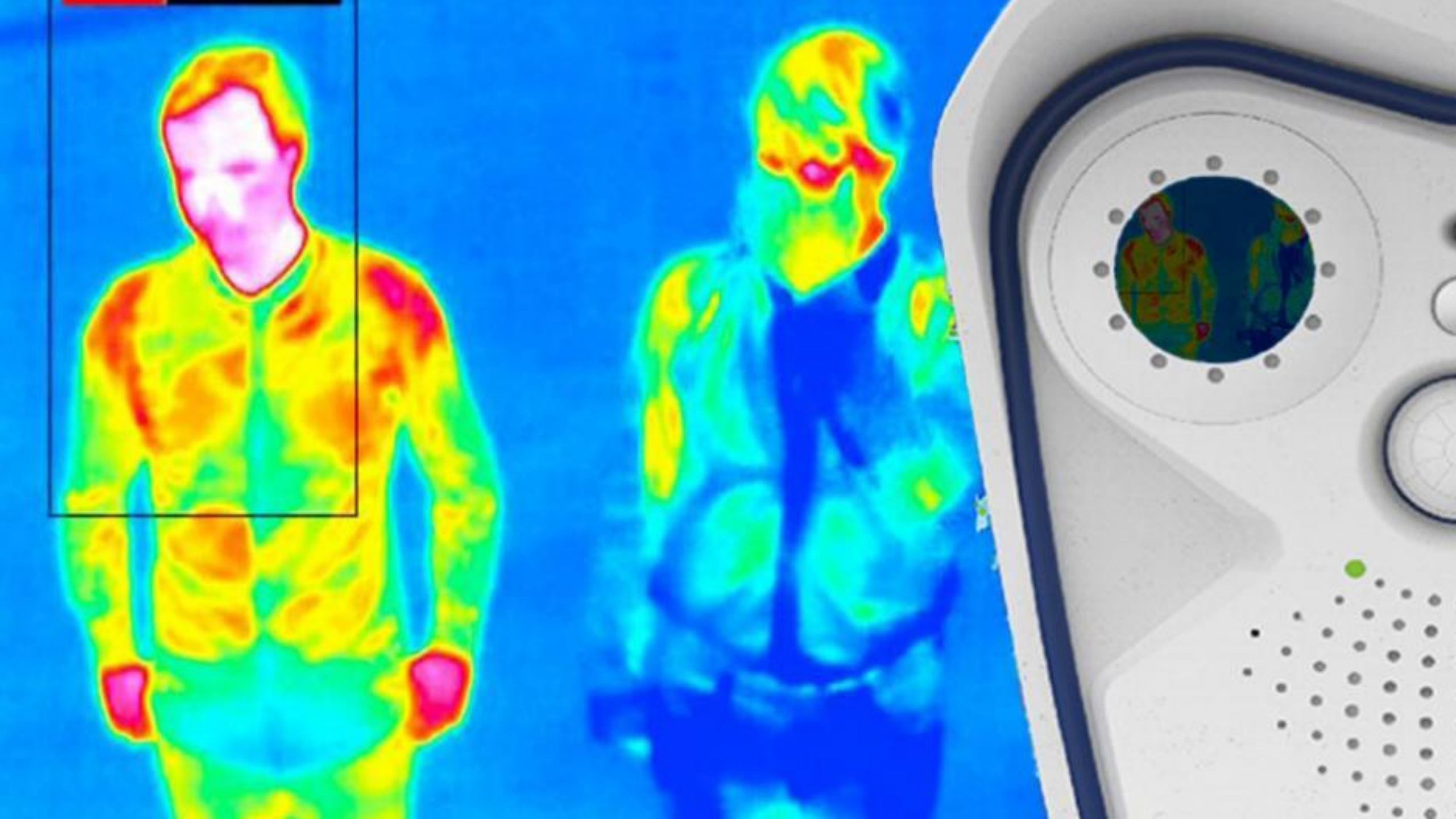


Digital & Data

Supporting our passengers

Classification: Public

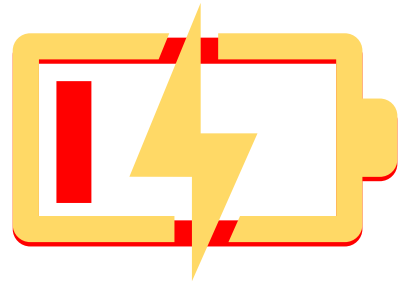
Re-charging confidence



Classification: Public

"Aviation is the cornerstone of the UK economy, and to restart the economy, the Government needs to help restart aviation. [Agreeing a] standard is key to minimising transmission of Covid-19 across borders, and the technology we are trialling at Heathrow could be part of the solution."

John Holland-Kaye - Heathrow CEO



Business Traveller

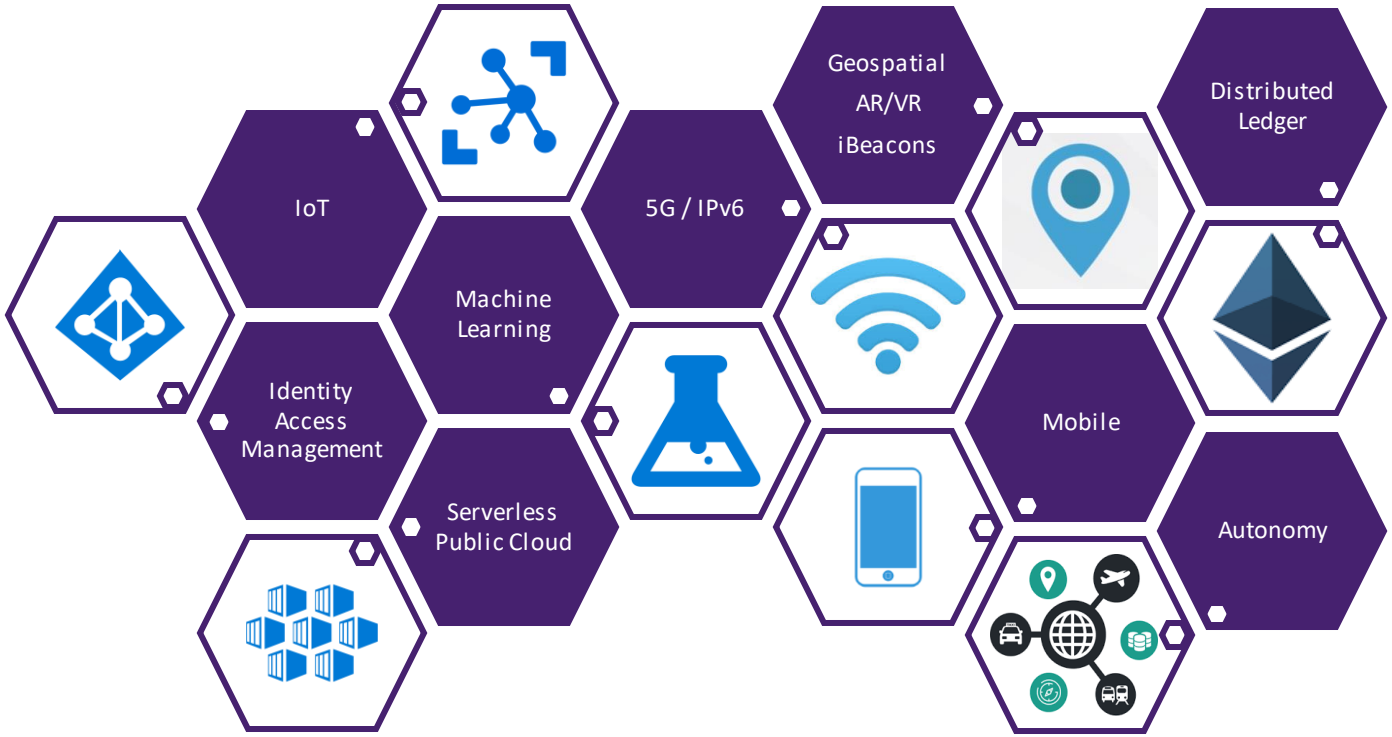
News

IATA: over two thirds of travellers will not fly if it means quarantine period

14 May 2020 by Mark Caswell

Classification: Public

Innovations pipeline



https://nats.aero/blog/2020/07/the-greatest-innovations-in-the-history-of-air-traffic-control-flight-data-processing/

Digital Disruption?

Data Centre ▸ Cloud

Amadeus booking software outages smack airports across world

Firm won't explain network failure

By Andrew Silver 28 Sep 2017 at 14:46 34 SHARE ▼

The Register® Biting the hand that feeds IT

EUROCONTROL @eurocontrol

There has been a failure of the Enhanced Tactical Flow Management System. Contingency procedures are being put in place which will have the effect of reducing the capacity of the European network by approximately 10%. Further information will be provided as soon as possible.

♡ 165 12:17 PM - Apr 3, 2018

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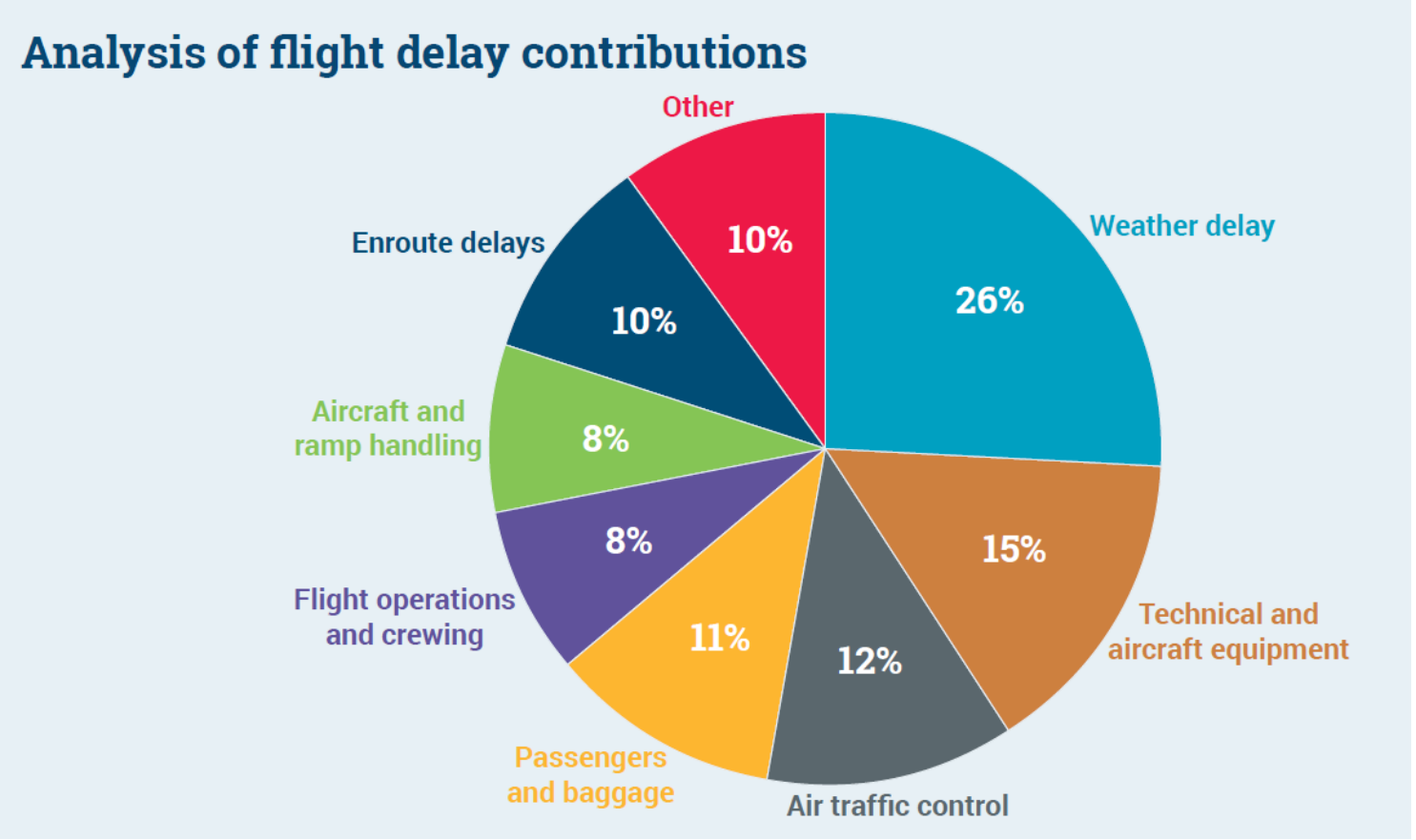
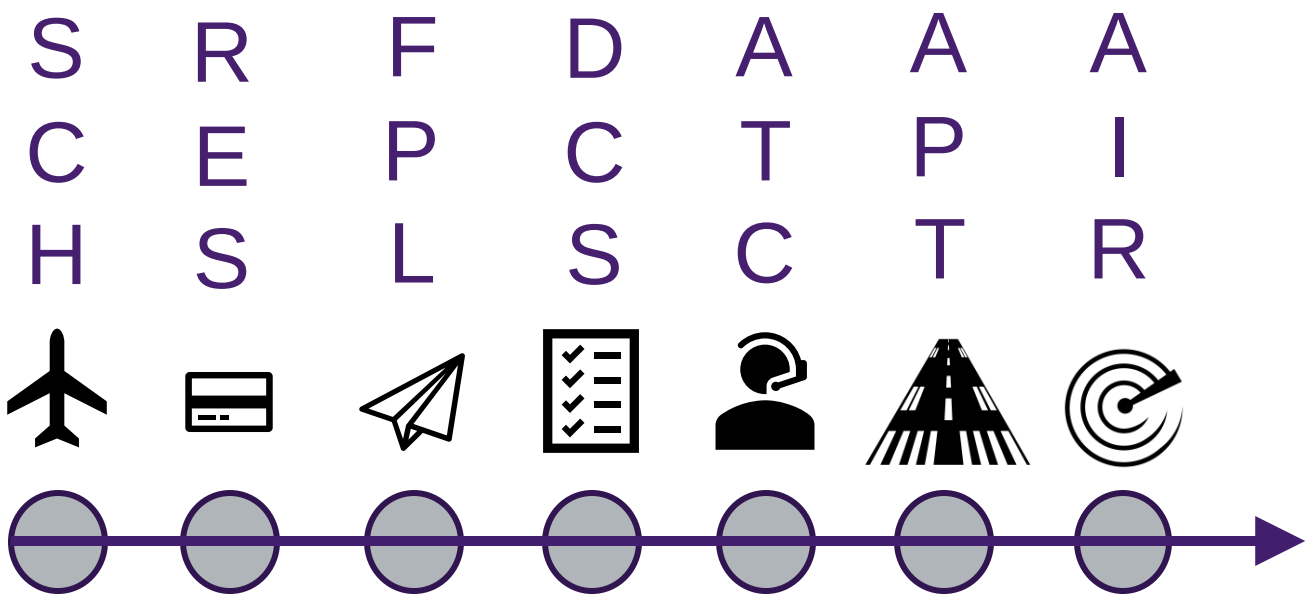
16 February 2020 Share

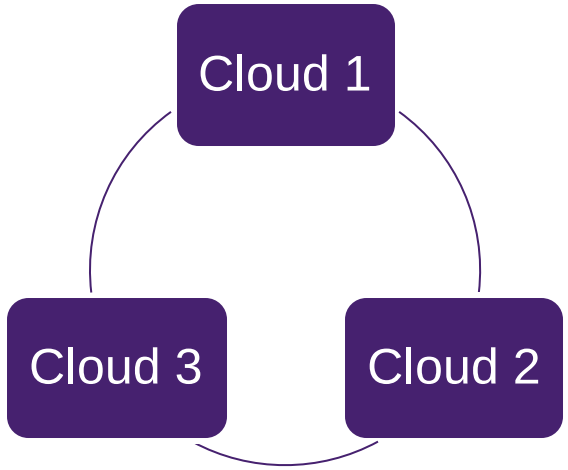
Cranfield Study - Data flow fails are 60% of root cause of flight delay



https://www.cranfield.ac.uk/-/media/files/events/farnborough-dartec-whitepaper.ashx

Series systems are not as reliable as distributed parallel systems





$$A_{all\ data} = A_{System^1} \times A_{System^2} \ldots \times A_{System^n}$$

Assuming 10 systems in chain are 99.99% available then

$A_{all\ data}$ = **0.999**

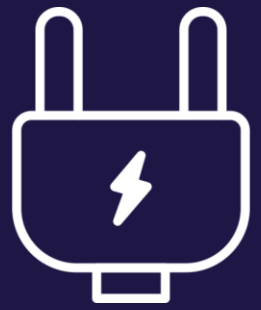
$$A_{all\ data} = 1 - (1 - A_{Cloud\ 1}) \times (1 - A_{Cloud\ 2}) \times (1 - A_{Cloud\ 3})$$

If all Clouds are 99.99% available in multi-region, then

$A_{all\ data}$ = **0.999999999999**

Will the zip-code work?
Please enter your Type B and AFTN Station code for your destination….

The UK's Future Flight research programme is to develop & demonstrate integrated aviation systems enabling the introduction of new classes of electric & / or autonomous air vehicles



These could include drones, urban air mobility (UAM) vehicles or electric regional aircraft

INDUSTRIAL STRATEGY | UK Research and Innovation

Classification: Public

By researching the use of modern and emerging internet technologies of public cloud infrastructure and distributed ledgers, the decentralised operating models built over generations of pioneering aviation discovery can be preserved, whilst transforming operating resilience and costs for the community.

Classification: Public

As we look to a future of increased trust, accountable governance, interdependence and resilience, our commitment to pioneering research remains despite COVID-19

Digital Readiness

Process-driven international collaboration

Data ecosystem transformation

Thank you

linkedin.com/in/uksimonbrown

Heathrow