



# Cranfield University

**Professor Graham Braithwaite**  
**Director of Transport Systems**

2<sup>nd</sup> March 2023

[www.cranfield.ac.uk](http://www.cranfield.ac.uk)

# Welcome to Cranfield!





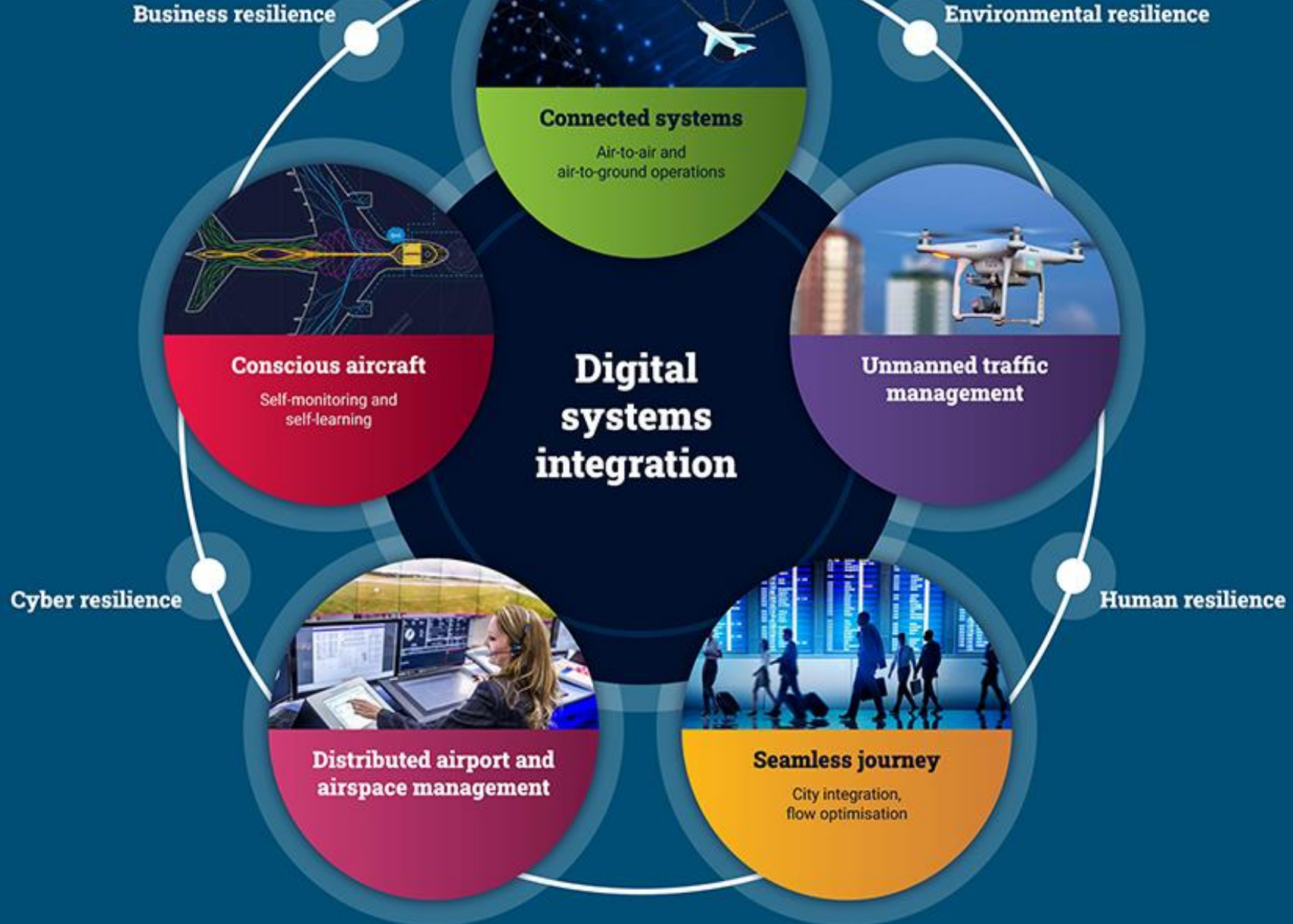
# Digital Aviation Research & Technology Centre (DARTeC)





## What is DARTeC about?

- DARTeC is focused on advancing the **application and integration of innovative digital systems technologies** within the commercial air transport sector.
- DARTeC aims to address the research challenges facing the aviation industry such as:
  - the integration of drones into civilian airspace;
  - increasing the efficiency of airports through technological advances;
  - creating safe, secure shared airspace through secure data communication infrastructures;
  - increasing the reliability and availability of aircraft utilising self-sensing/aware and self-healing/repair technologies.





# Who are the DARTeC Partners?



## Core Partners



## Strategic Partners



## What could the future bring?



‘Passenger drones’ or variants on personalized aircraft (for example with rooftop take-off) may have some impact, but a more substantial threat may come from the extension of an Uber-type algorithm-based integrated transport system that links up small aircraft capacity at local airfields (possibly upgraded with ‘remote tower’ technology) to provide medium to long distance ground-air-ground travel options.

(IATA, 2017)



# The management of change

“The digital airline will enable further integration between humans and machines, leveraging artificial intelligence to streamline business operations while enabling airline operators to be more efficient, competitive and attractive to consumers.”

(Microsoft, 2016)

## **The implications of realising the ambition**

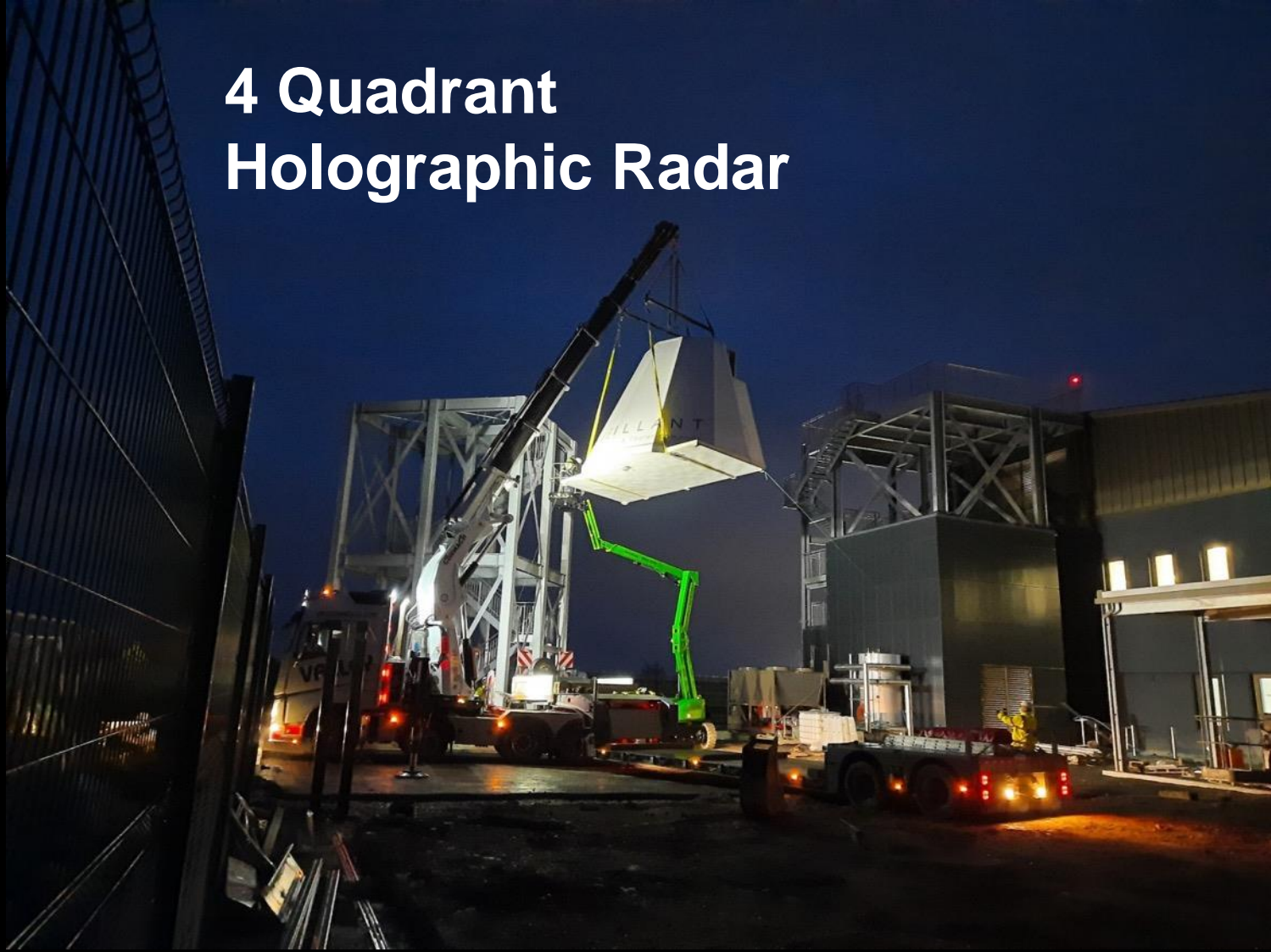
- International standards / recommended practices
- Speed of change
- New players
- Cost model
- Attracting the right talent



# Next Generation Air Traffic Management

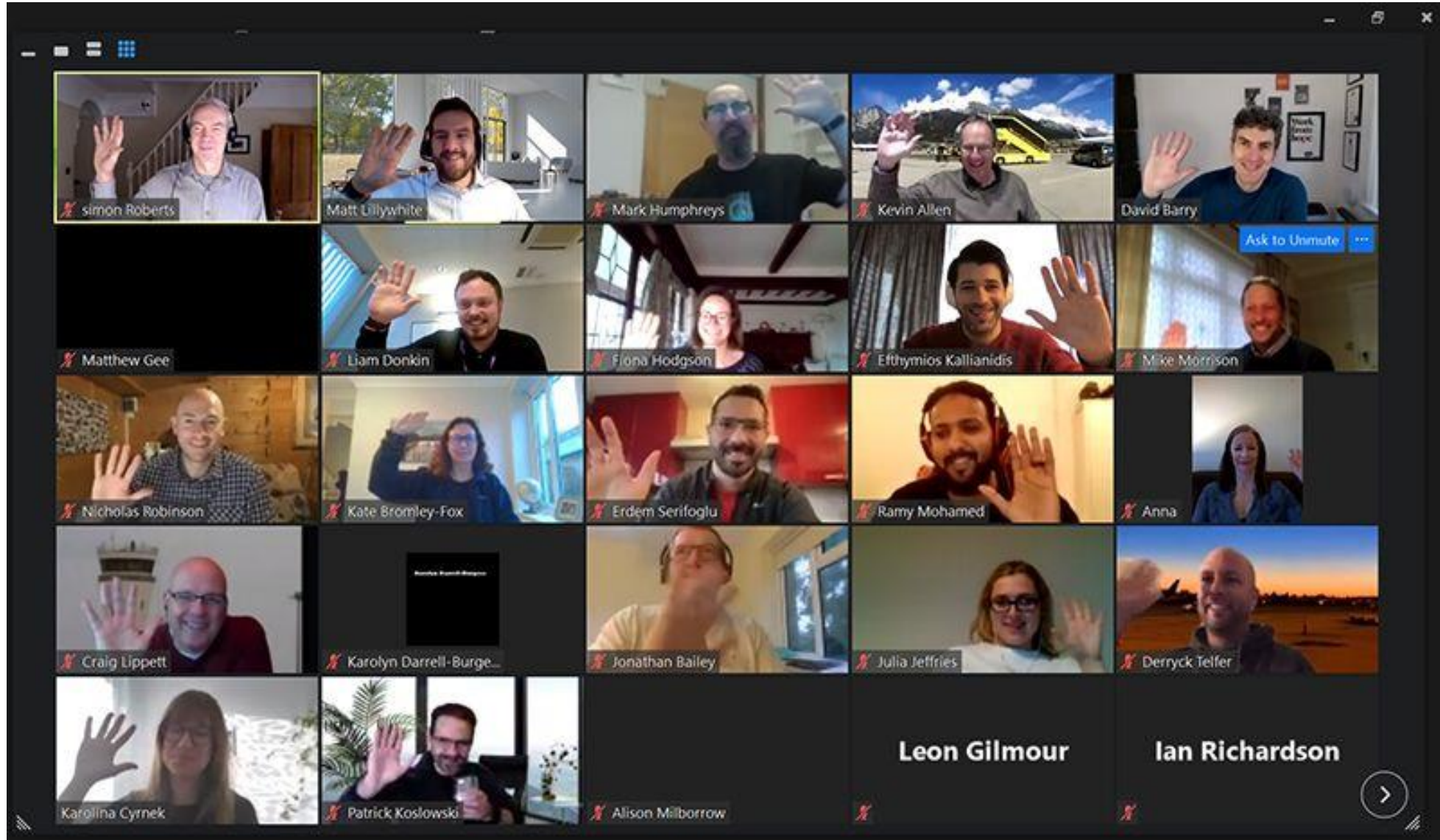


# 4 Quadrant Holographic Radar





# New MSc in partnership with CAAi – January 2021





# Questions?





## **Prof Graham Braithwaite**

**Director of Transport Systems**

**Professor of Safety & Accident Investigation**

**Tel +44 1234 754252**

**Email [g.r.braithwaite@cranfield.ac.uk](mailto:g.r.braithwaite@cranfield.ac.uk)**

**Twitter [@GRBraithwaite](https://twitter.com/GRBraithwaite)**

**LinkedIn [grahambraithwaite](https://www.linkedin.com/in/grahambraithwaite)**

[www.cranfield.ac.uk](http://www.cranfield.ac.uk)