

Intelligent Approach: Time Based Separation

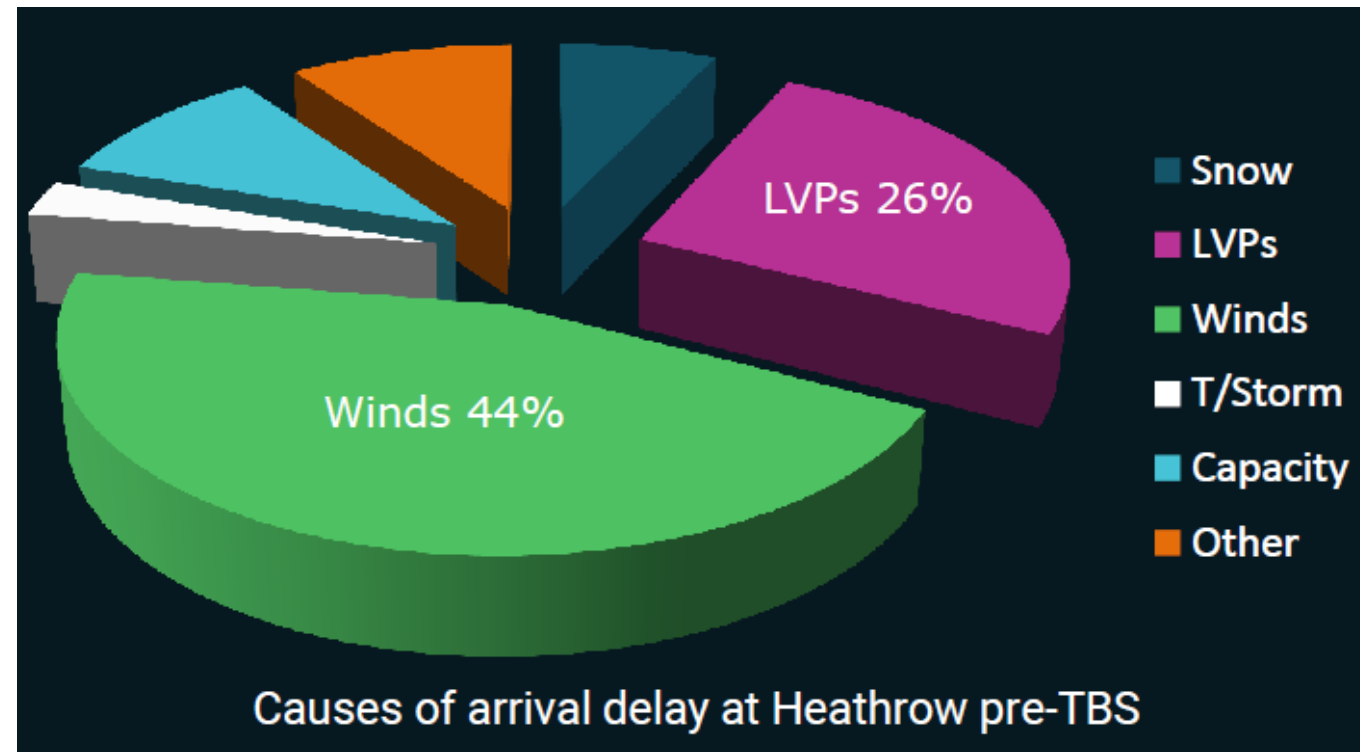
Heathrow Pairwise
(PWS) – separations on
approach

NATS

Evolution

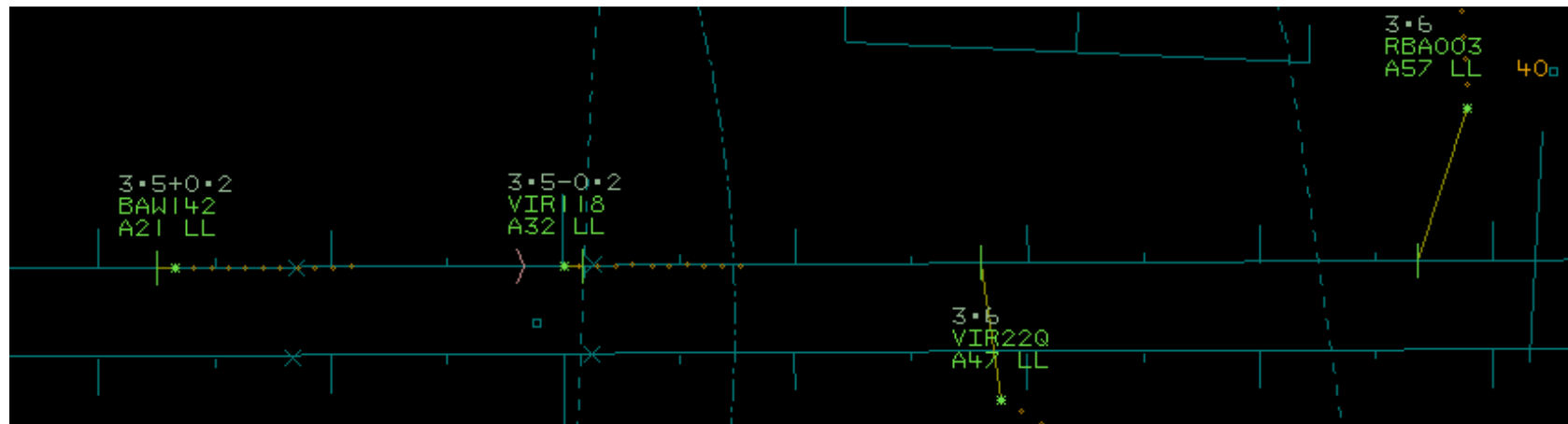
Time Based Separation introduced 2015. Original

- Wind related ATFM delay of 160,000 - 180,000 minutes per annum
- Wind causes significant delays on 55-65 days per annum (2015 had 95 days with headwinds >20knots)
- This was the original business case driver for TBS at Heathrow – since then the benefits case is more broadly linked to overall runway resilience, runway throughput (within the ATM cap) & environment



TBS to Pairwise Evolution

- **TBS** was introduced on 24 March 2015 with UK 6 CAT Wake Vortex separation and associated UK procedures
- It was in continuous operation until **e-TBS** (enhanced TBS) was deployed in March 2018
- **e-TBS** was introduced at Heathrow initially on in March 2018
- **e-TBS** is the current Heathrow final approach separation and spacing tool.



RECAT-EU-PWS with TBS

Estimated up to c.1.5 landings per hour translated into operational resilience, less holding, lower fuel burn, greater resilience and lower CO2 emissions.

Project timeline:

- Product Development, April '21 to Jan '22.
- 2022: build, install,
- Controller training, Winter '22

Implementation Spring 2023

