

# Operational/Entrepreneurial view and potential flagships

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## Time and Distance Based Separation – Vision with SESAR

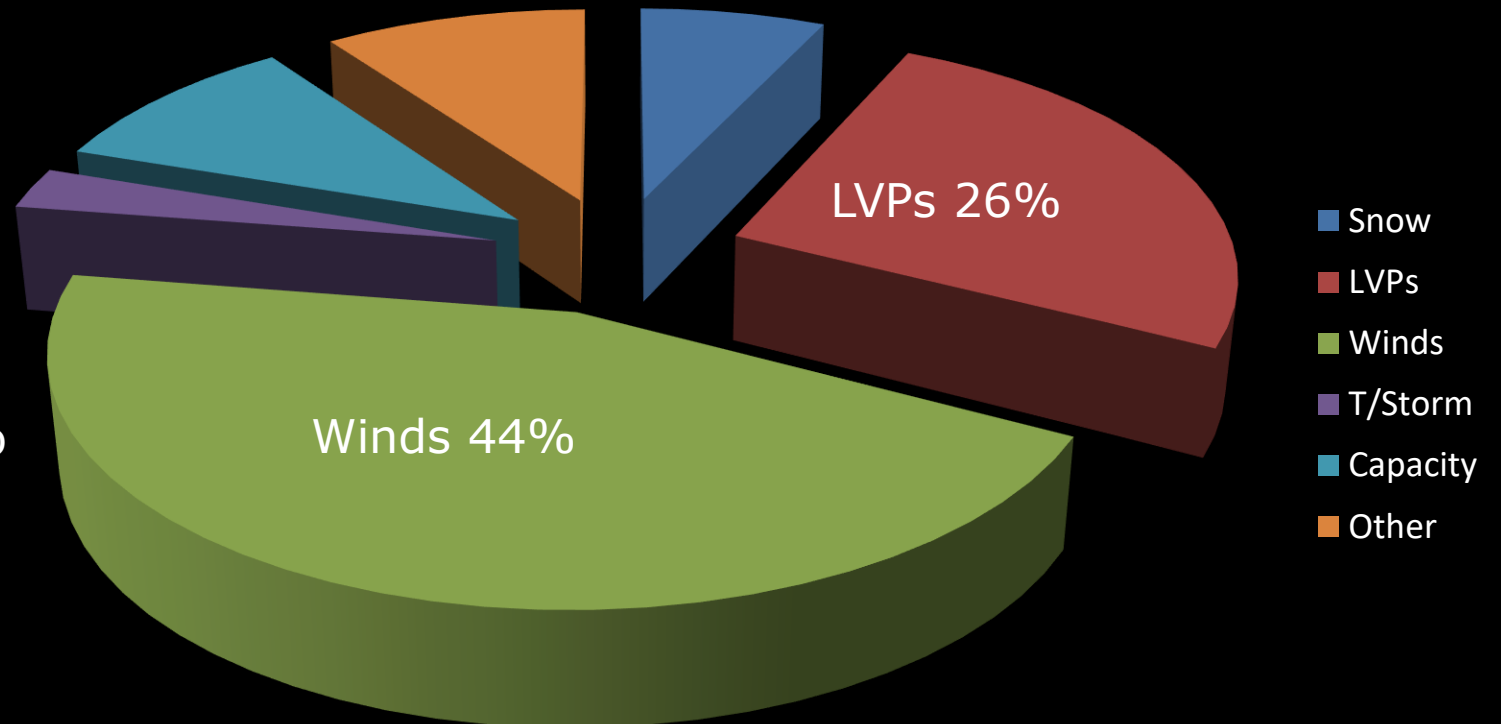
### “Optimised and Resilient Landing Rates”

Prior to 2015 Heathrow Arrival ATFM Delay

- Headwinds cause 160–180,000 minutes ATFM delay per annum and growing
- Affecting 55-65 days per annum

Realisation that Runways are the main constraint to UK Capacity

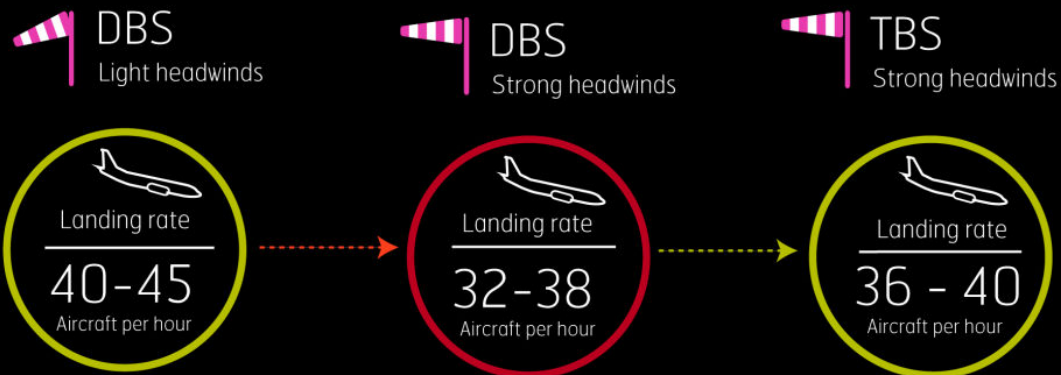
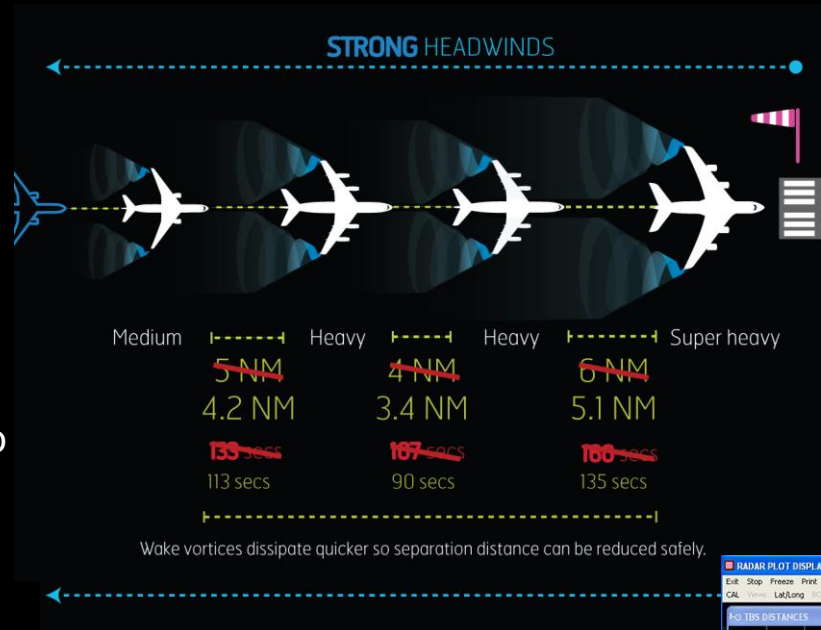
- With Headwinds the greatest disrupter
- Born through **SESAR** the vision is to transform runway capacity in headwinds by moving from distance to time based separation



# Time and Distance Based Separation - Operations

## “Optimised and Resilient Landing Rates”

- Assured Operations – improved resilience and safety
- High Performance ATC – consistent delivery of approach spacing
- Capacity Gains – maximising runway throughput
- Evolved from basic TBS to Enhanced TBS and soon to Pairwise and 2nm arrival spacing.



## Time and Distance Based Separation - Entrepreneurship

### “Optimised and Resilient Landing Rates”

- Live operation started in March 2015, tools now operational at Heathrow, Toronto and Amsterdam
- It has been successful because
  - Absolute focus on improving airline and airport performance
  - Identification of a specific problem to solve
  - Application of expert R&D to create possible mitigation
  - Identification of the right Industry partner to build
  - Contained within ANSP – no politics, no losers
  - Consistent with SESAR masterplan
  - Relatively small training burden
  - Avoidance of costly airport surface works
- NATS & Leidos now deploying the 3<sup>rd</sup> and 4<sup>th</sup> versions – Benefits include:
  - Improved delivered spacing consistency
  - >62% reduction in Arrival (ATFM) delays due headwinds & more stability in landing & flow rates
  - Over 230,000 minutes per annum reduction in Heathrow average airborne holding Saving 47kT CO2 per annum
  - No increase in Wake Turbulence Encounter Reports & Go Around rate due to TBS
  - Average landing rate increased by 2 - 4.2 landings per hour
  - Arrival spacing savings equivalent to over 30 minutes extra landings per day
  - Overall savings inc. holding & delay > €40m p.a.

Heathrow will deploy Pairwise TBS in 2024 & Gatwick will deploy a world first Mixed Mode TBS in 2024 and fully optimised in 2025