Arrivals Efficiencies Work

HCNF

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HAL has inherent arrival inefficiencies and resilience issues

It has not yet been decided which project(s) to pursue – decision expected in q4 2016

All projects currently in Feasibility and Options stage

eTBS

RECAT EU

IPA

Benefits at this stage could include:

- ability to recover more quickly from disruption leading to fewer late running flights
- greater adherence to runway alternation
- improve passenger experience
- help meet our punctuality goals

Time Based Separation (TBS)

- A significant cause of delay to arrivals is strong headwinds on final approach
  - *Currently approx. 60 days per year that have significant headwinds*

- Strong headwinds reduce an aircraft's speed and it takes longer for them to fly the required separation distance – this negatively impacts the landing rate

- Evidence suggests that wake vortices dissipate more quickly in strong headwind
  - This means that the *distance* between certain aircraft can be reduced and the *time* between landings kept similar to normal conditions (hence Time Based Separation)

- TBS has been in place at Heathrow since May 2015 and helps us minimise impact of strong headwinds on landing rates at Heathrow, reducing delays and cancellations

- We are currently looking at ways to further utilise this functionality

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RECAT EU: arrivals

Re-categorisation of the ICAO Wake Turbulence Separation Minima

- Wake vortex generated by aircraft on departure or final approach is a significant factor defining safe separation of two aircraft

- During recent years, knowledge about wake vortex behaviour has improved

- Based on this knowledge, EUROCONTROL has updated ICAO wake turbulence separation minima for aircraft categories (referred to as “RECAT-EU”)

- ***Heathrow is currently exploring the feasibility of using a component of RECAT EU in relation to A380 aircraft***

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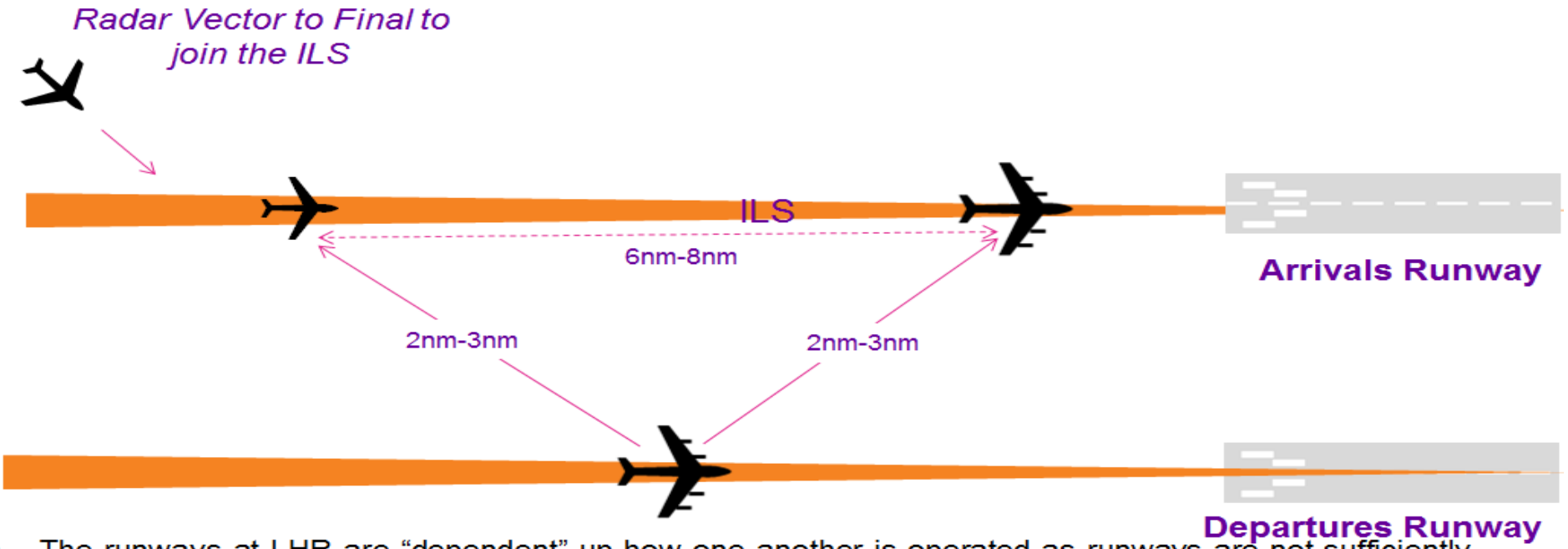
Current TEAM arrival procedures have inherent inefficiencies – IPA looking to improve this

Current Operation



- The runways at LHR are "dependent" up how one another is operated as runways are not sufficiently displaced or separated.
- The result is during TEAM operations the aircraft must be staggered on approach such that a minimum of 2nm separation is maintained.
- The result is a increased separation of aircraft on approach to the designated arrivals runway, reducing the number of arrivals that can land on it, the effect is
- TEAM can increase arrival capability by only +2 ATMs in total but requires 6 TEAM landers to do so (1 TEAM lander = ~ 1/3rd movement).

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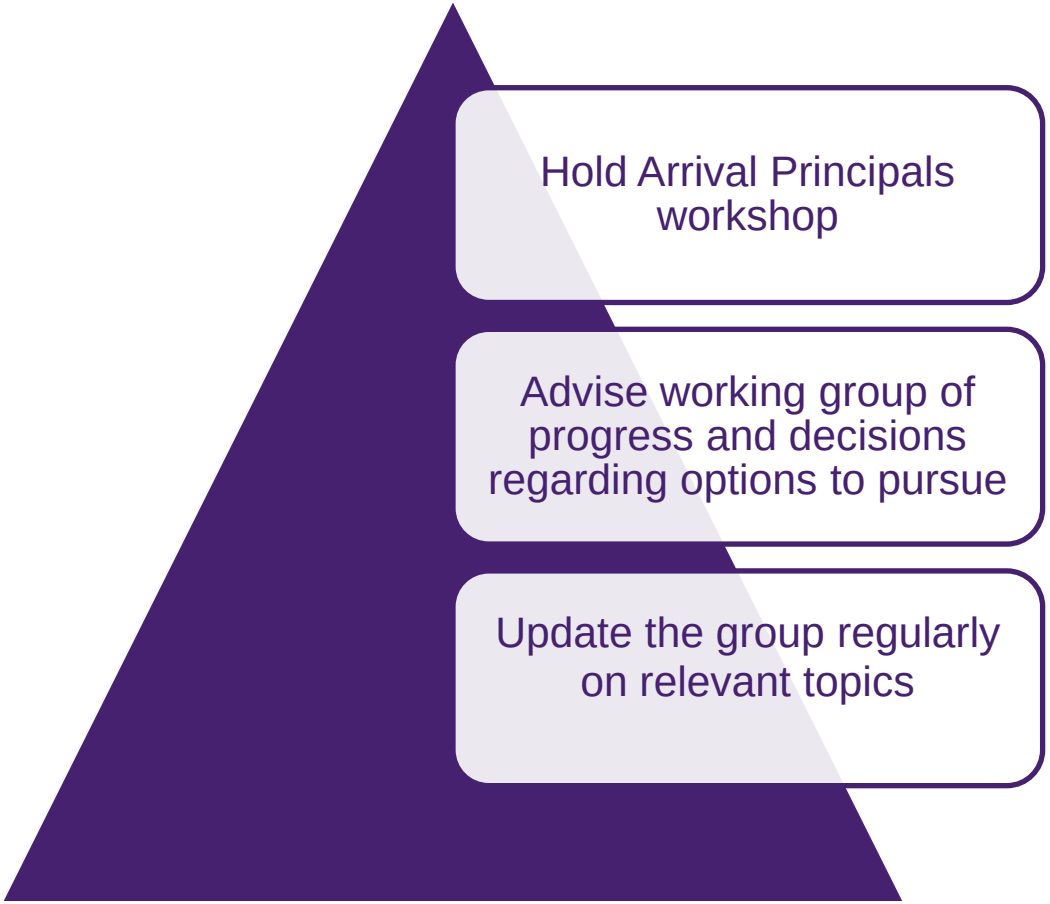
Heathrow arrival efficiencies – next steps



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