



2018
World ATM Congress

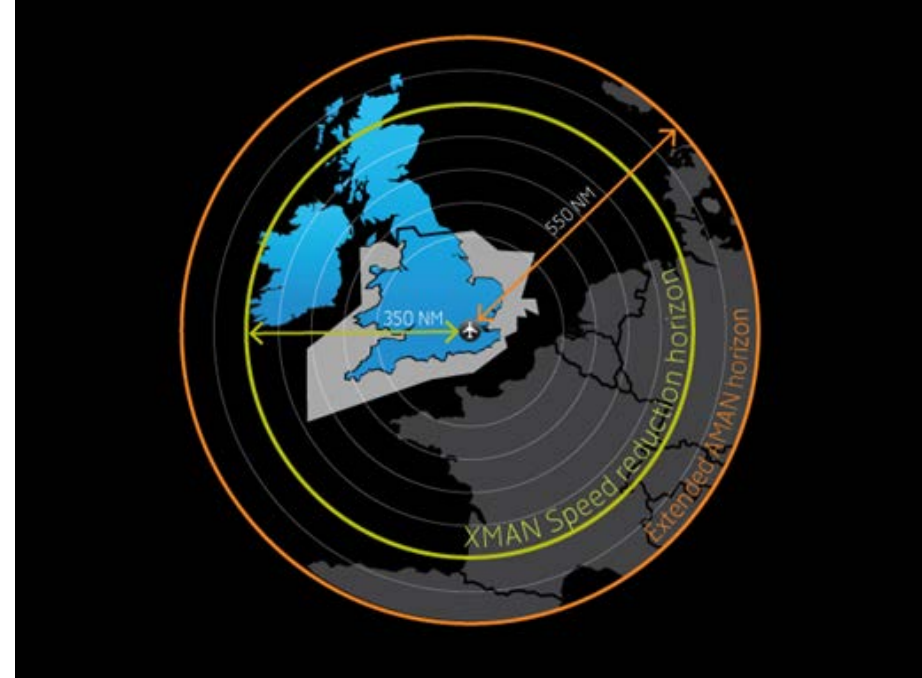


PJ25: AMAN Arrival Streaming

- NATS Operational Activity 2018-19
 - Gatwick Coupled AMAN-DMAN
 - Gatwick XMAN
 - Heathrow XMAN Extended Range Arrival Streaming

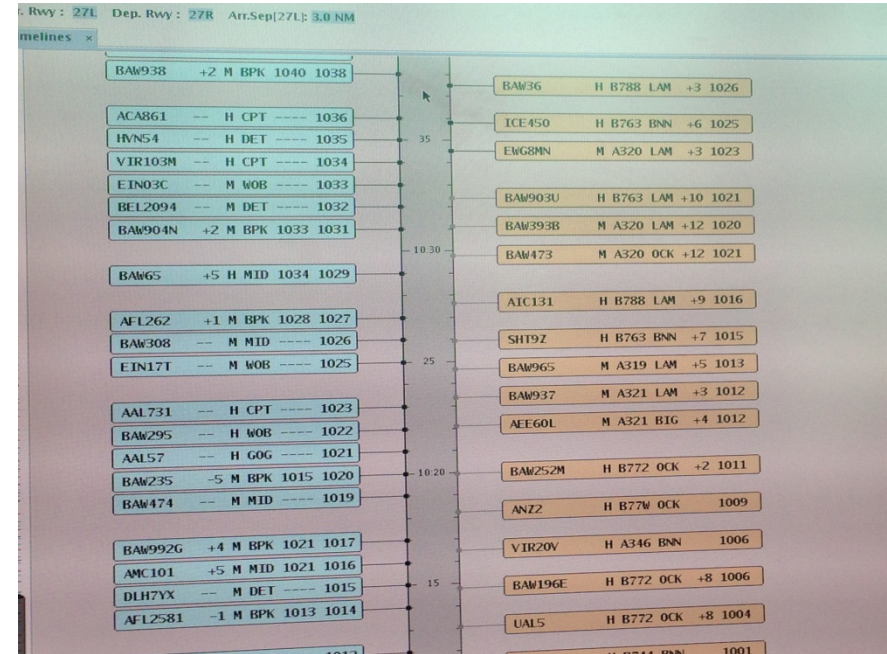
Current Heathrow XMAN

- Operational Heathrow AMAN has a 550nm data horizon
- At a 350nm speed reduction horizon, when delay predicted to be ≥ 7 mins, XMAN partners (MUAC, DSNA, Shannon, Prestwick) slow aircraft by up to Mach 0.04.
- Prior to descent, when delay predicted to be ≥ 5 mins, NATS controllers apply 250kts descent speed.
- These two measures reduce stack holding by up to 3 mins per slowed flight and save an average of 50kg fuel per slowed flight.



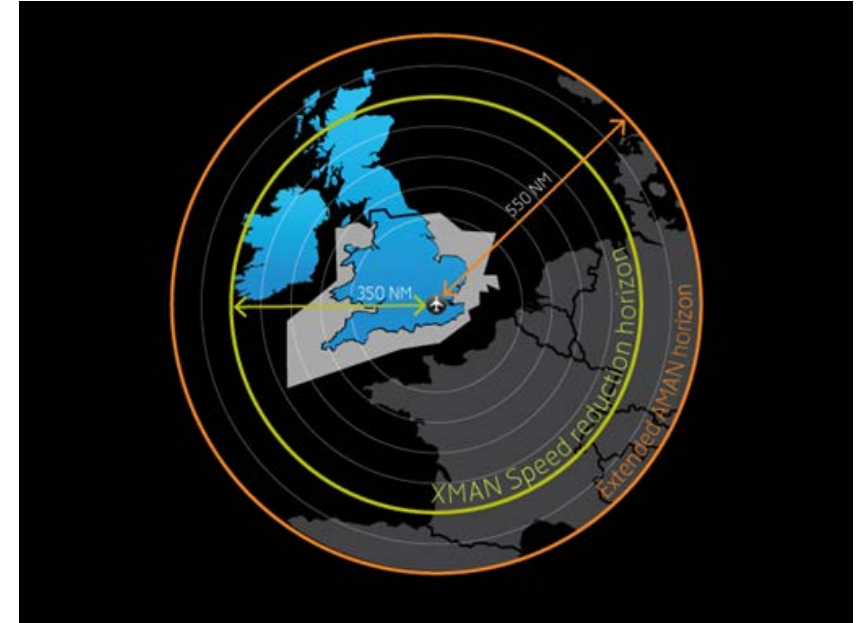
PJ25 WP6 London – Ex 1 Gatwick Coupled AMAN-DMAN

- Deployment of Gatwick XMAN requires a stable delay profile.
- A major cause of delay instability at a mixed mode runway is the changing of the arrival-departure spacing policy at short notice, i.e. inside the XMAN horizon of 350nm, 55 minutes.
- Displaying the arrival and departure sequence and delay information alongside each other at Gatwick Airport ATC and in Terminal Control enables both supervisors to agree the runway spacing policy at least 60 minutes in advance.
- Evaluation Q2/Q3 2018
- Operational Trial from Q3 2018



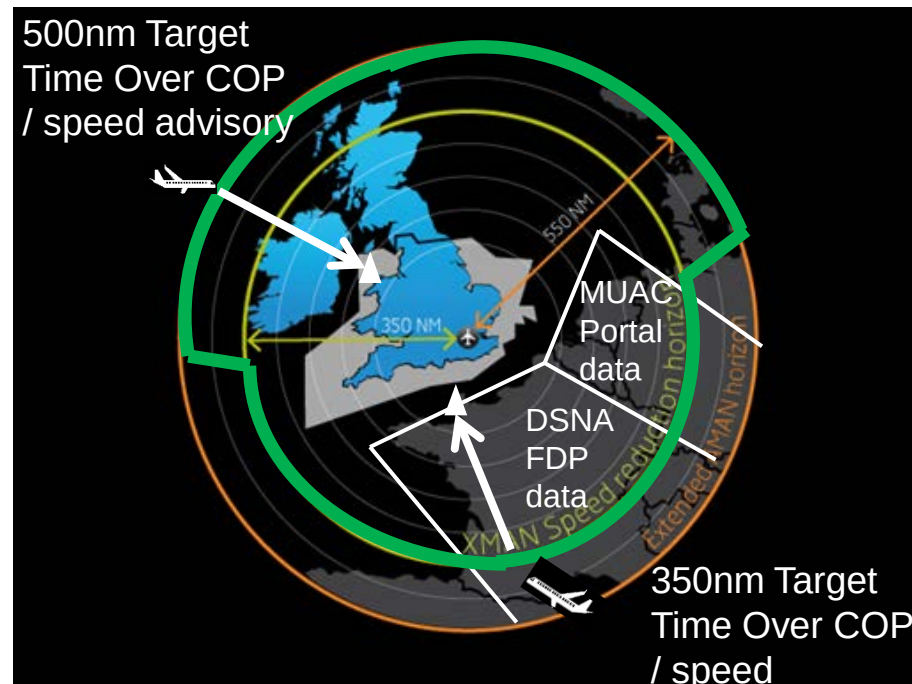
PJ25 WP6 London – Ex 2 Gatwick XMAN

- Operational Gatwick AMAN has a 550nm data horizon
- At a 350nm speed reduction horizon, when delay predicted to be ≥ 7 mins, XMAN partners (MUAC, DSN, Shannon, Prestwick) slow aircraft by up to Mach 0.04. Planned for Q4 2018/ Q1 2019
- Prior to descent, when delay predicted to be ≥ 5 mins, NATS controllers apply 250kts descent speed. Planned for Q4 2018/ Q1 2019
- These two measures are expected to reduce stack holding by up to 3 mins per slowed flight and save an average of 50kg fuel per slowed flight.
- Engagement with Easyjet Feb 18; other airlines to follow



PJ25 WP6 London – Ex 3 Heathrow XMAN Extended Range Arrival Streaming

- Prototype demonstration AMAN that uses enhanced trajectory data from the MUAC XMAN Portal and DSNA Co-flight FDP on respective axis.
- AMAN functionality to calculate Target Time Over boundary Coordination Point (COP) and associated speed advisory. Demonstrates streaming into systemised airspace.
- Heathrow XMAN demonstration in Q1/Q2 2019 using above functionality at 500nm on selected northern routes and 350nm on selected southern routes.
- If successful, functionality would be added to operational AMAN during RP3



Questions on PJ25 work?

NATS

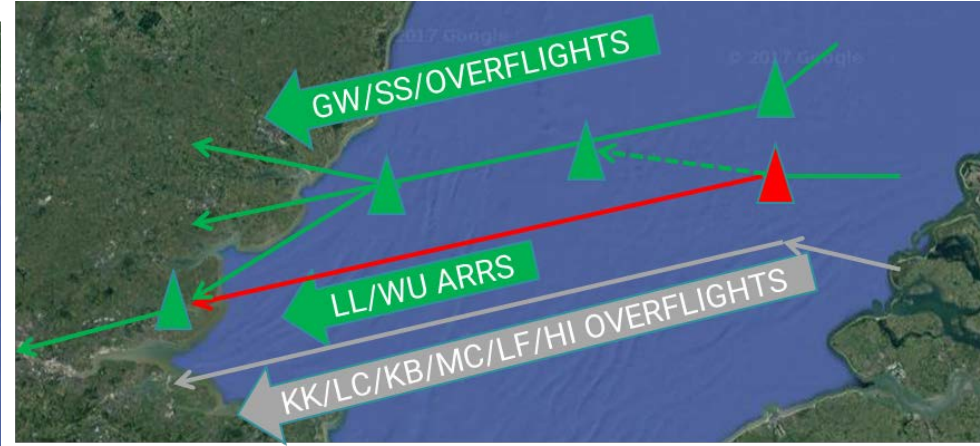
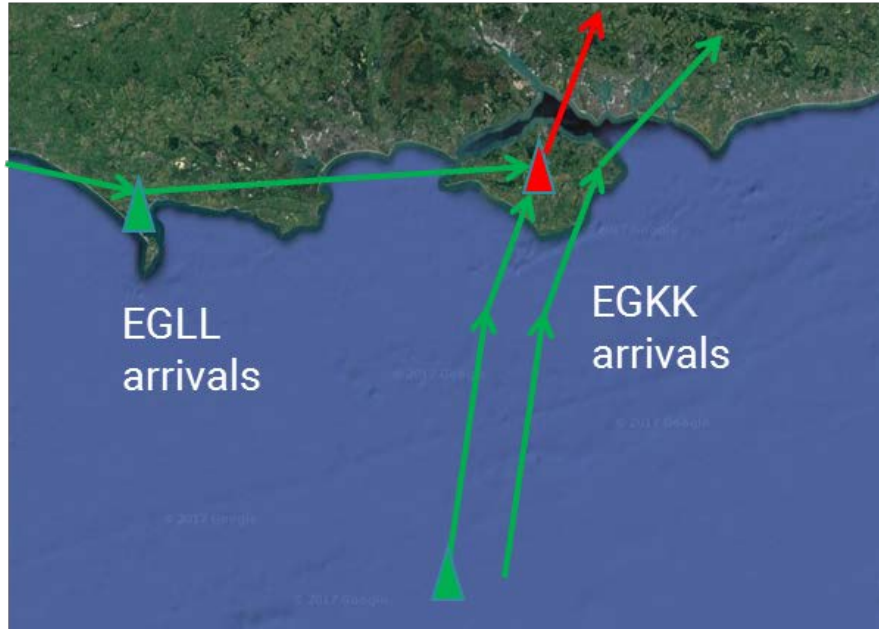


PJ01: Systemised Airspace Manager (SYSMAN) & AMAN

- NATS R&D activity 2018-2019
 - New iACM and AMAN functionality
 - Support to Systemised Airspace
 - Support to Collaborative Decision making

Systemised Airspace

NATS

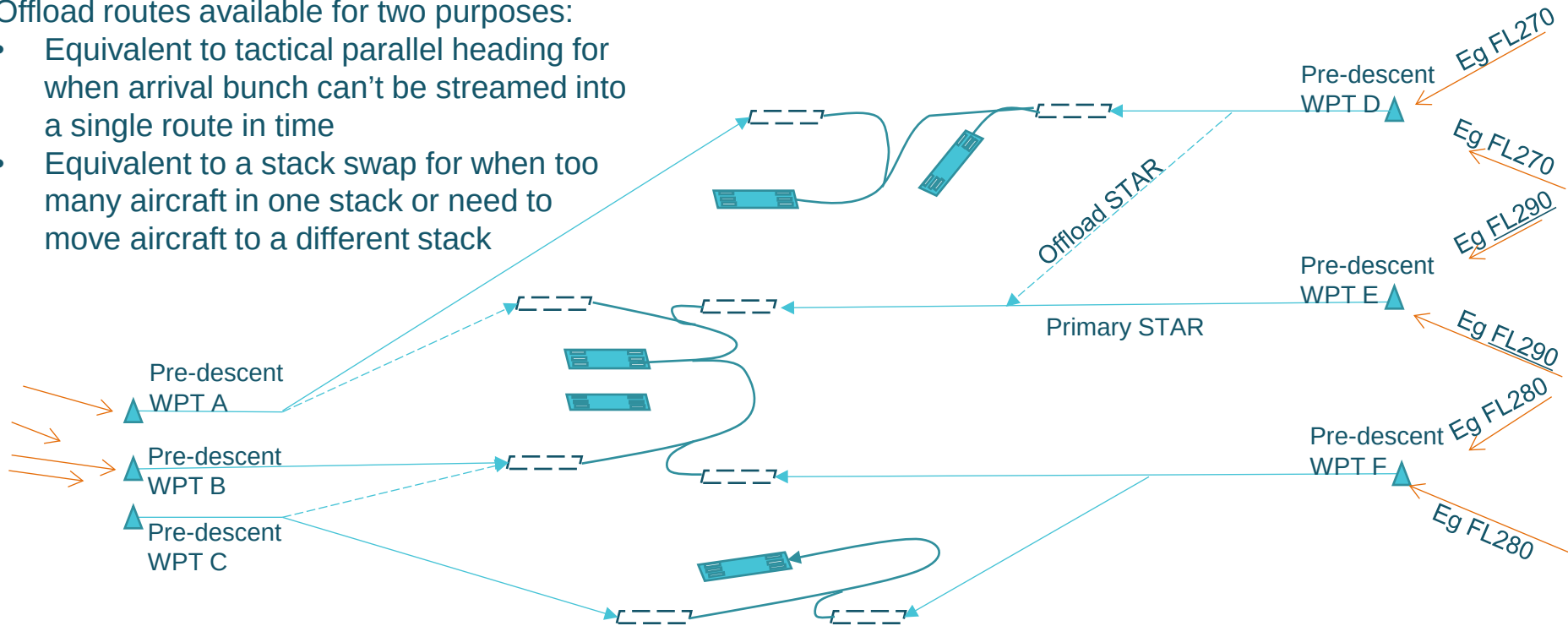


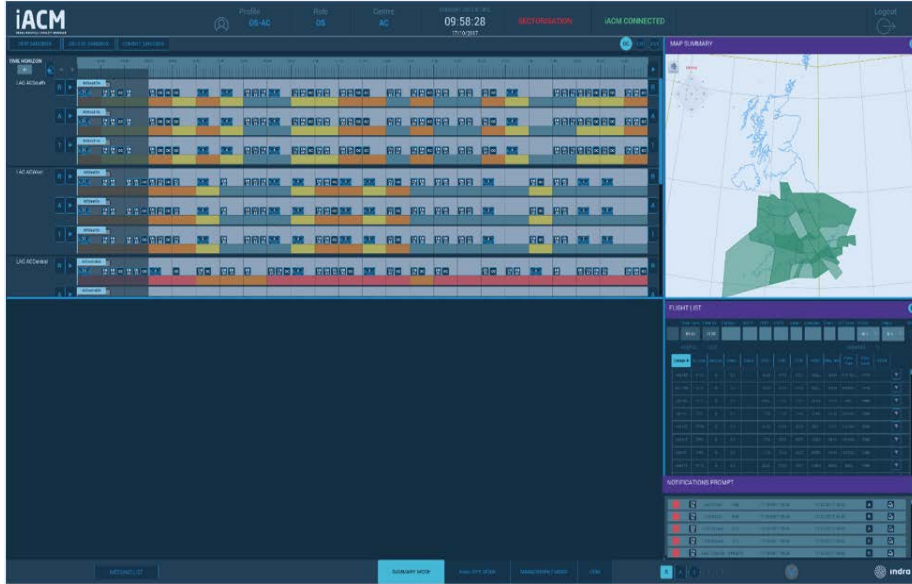
Route separation to reduce level of tactical workload

Systemised Arrivals Airspace

Offload routes available for two purposes:

- Equivalent to tactical parallel heading for when arrival bunch can't be streamed into a single route in time
- Equivalent to a stack swap for when too many aircraft in one stack or need to move aircraft to a different stack

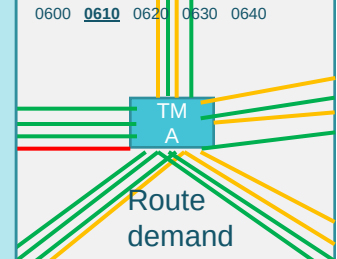
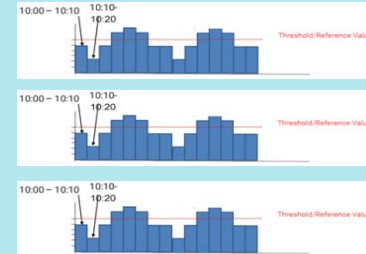




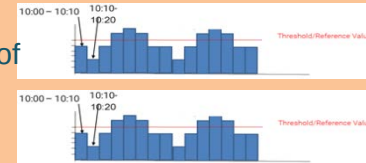
Actual iACM screenshot

Illustrative SYSMAN HMI

Actual Route Demand vs. thresholds

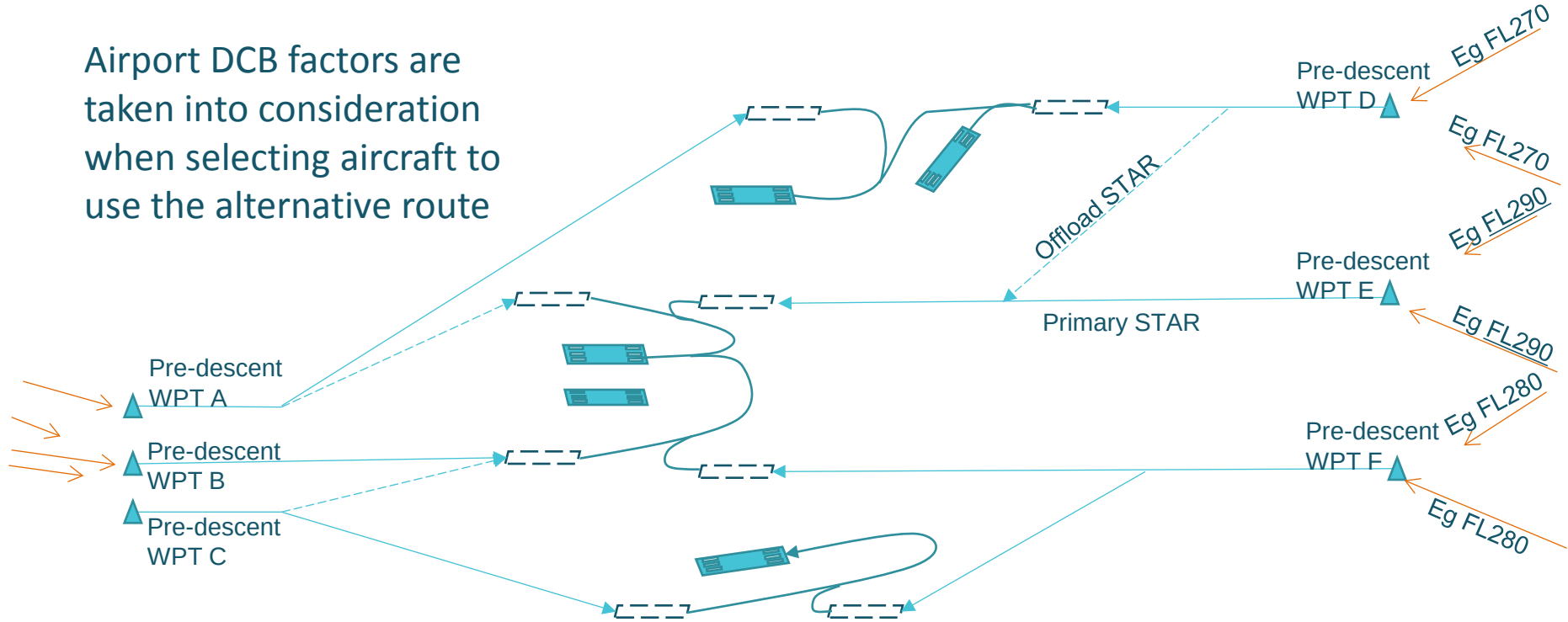


What If Assessment of SYSMAN proposals



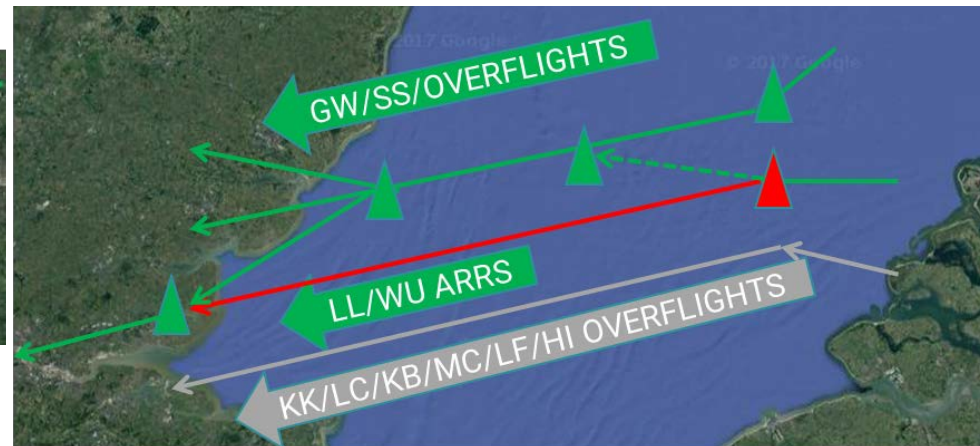
Flight List
BAW27
DLH331
AAL33
etc

Airport DCB factors are taken into consideration when selecting aircraft to use the alternative route

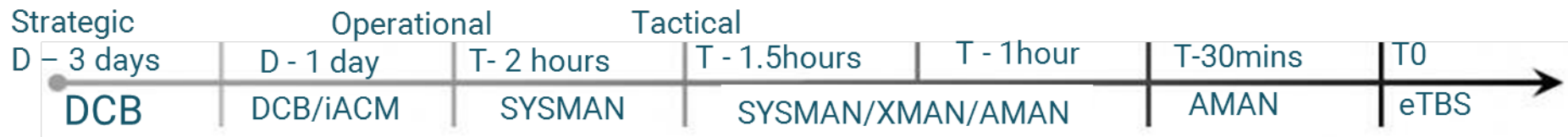


Departures and Arrivals

NATS



Timeframe



Questions on PJ01 work?

