LD1: West Airspace Deployment

West Airspace Deployment

West is a combination of two complementary NERL ACP's:

- LAMP Deployment 1 (LD1)
- Free Route Airspace Deployment 2 (FRA D2)

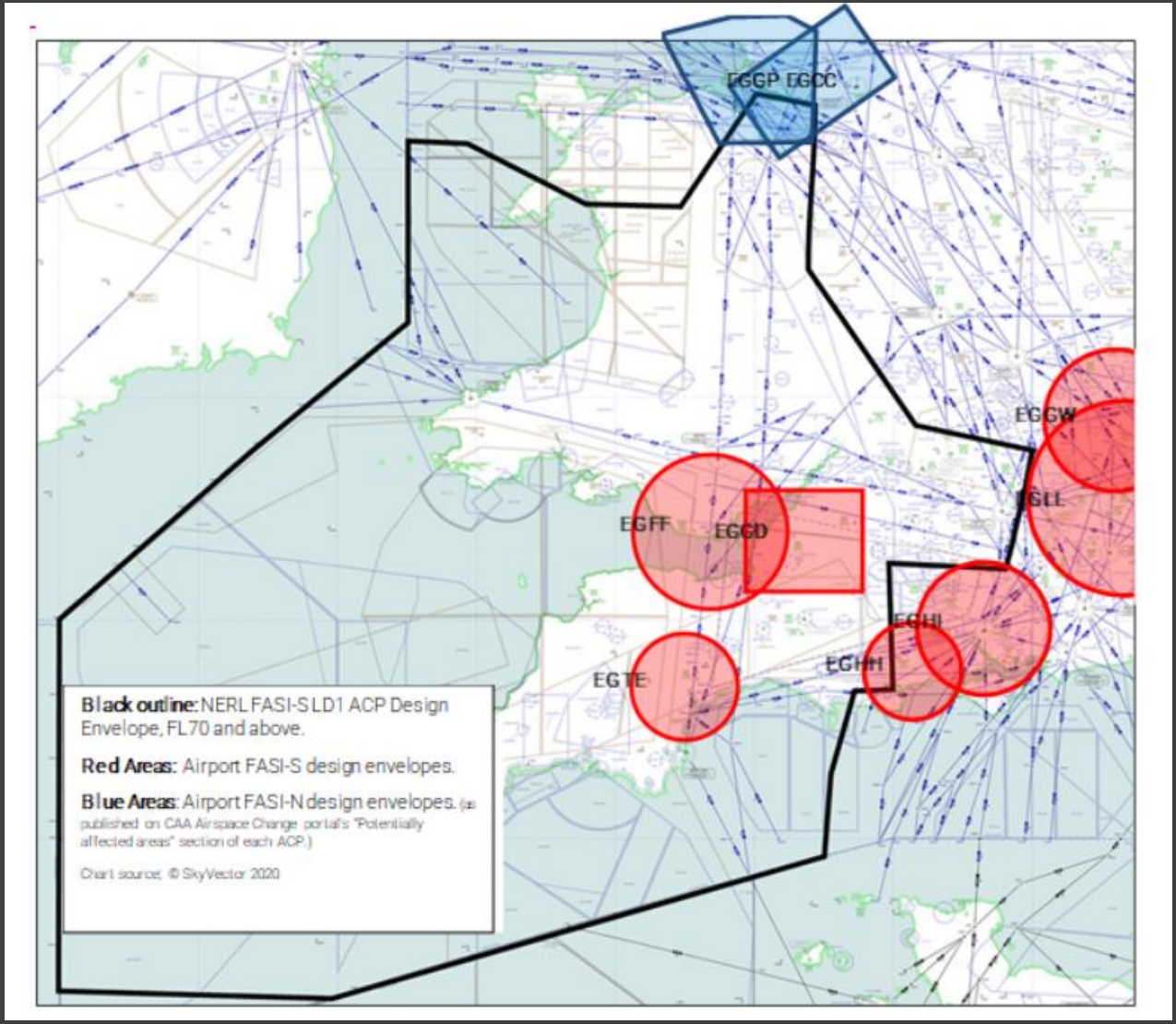
Both ACP's can be found in the CAA Airspace Change Portal:

- LD1 = ACP-2017-70
- FRA D2 = ACP-2019-12

Why?

- The core of our current airspace route system in the West was designed many years ago and although it's been upgraded over the years, the design is not always efficient, it can create delay and tactical intervention is often required
- Our airspace hasn't kept up with the capabilities and technologies of modern aircraft
- Airspace Modernisation is now part of UK Government policy
  - CAA Airspace Modernisation Strategy
- NATS has a legal responsibility to implement a European mandate of Free Route Airspace

Scope of Changes



- Systemisation of ATS routes within BCN and BHD using the capabilities of PBN to enable a new route network above 7,000ft
- Interface with airports within the West airspace, including Bristol, Cardiff & Exeter
- Work with neighbouring countries, Prestwick Centre to the north and London TC to the east to make our interfaces more efficient
- Systemised solution to interaction between routes and Danger Areas
- Introduction of Free Route Airspace within LD1 airspace, FL245-305 and above
- Vertical and lateral sectorisation review
- 54,000 square miles of airspace!

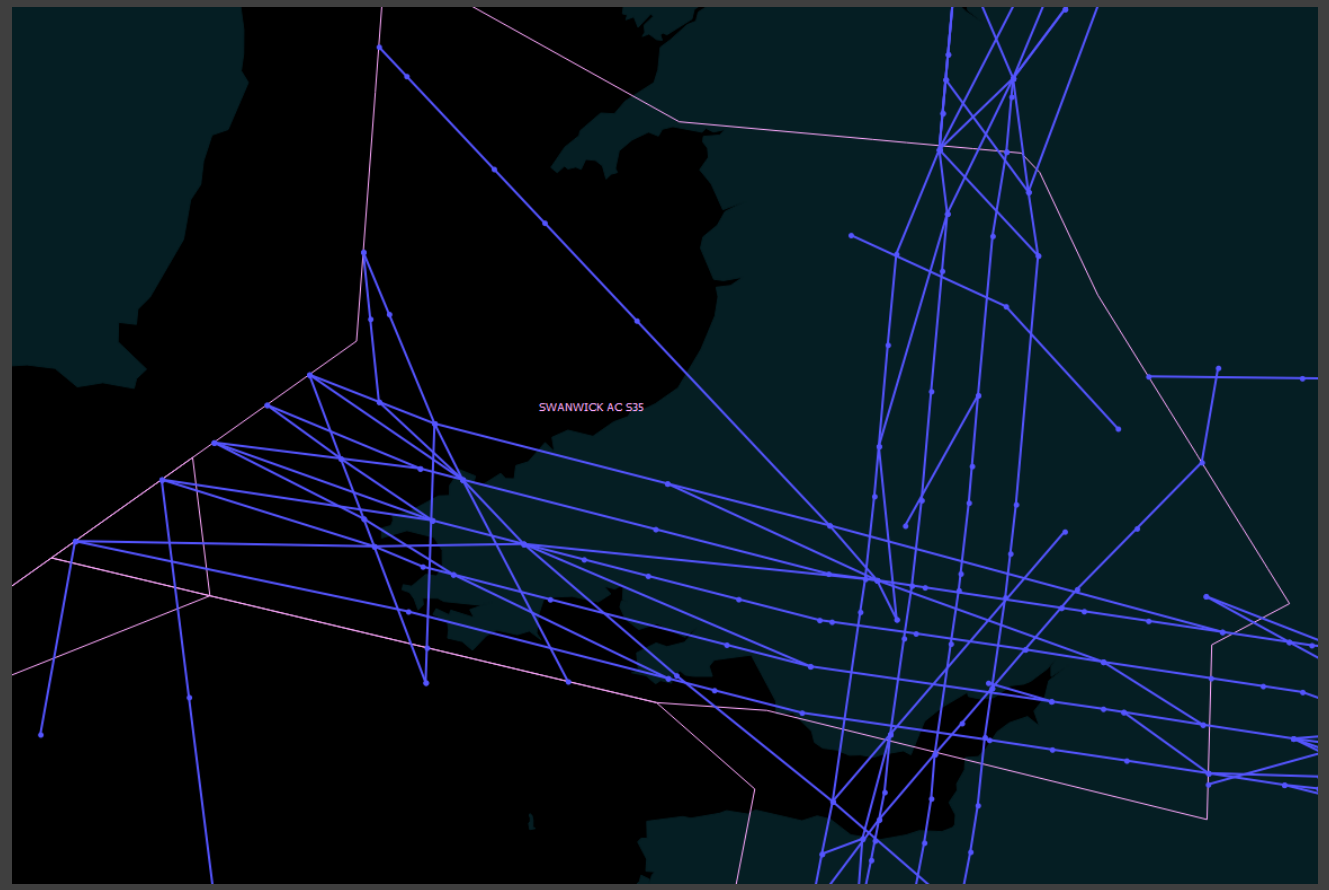
What is Systemisation?

- An airspace route network where aircraft follow a structured route system, with routing based on their departure point and/or destination
- Particularly effective in airspace with climbing and descending aircraft as it will reduce complexity, therefore improve safety, increase capacity and reduce delay (ground & airborne)
- Route design is predicated on the use of Performance Based Navigation (PBN) which enables very accurate track conformance to routes. This allows the distance between routes to be minimised (e.g. parallel routes separated by 7nm)
- The allocation of traffic on routes is driven by traffic data, both historical and future, and the input from sector controllers
- Although systemisation reduces the amount of controller intervention required, there will still be instances where controllers will need to use tactical intervention (e.g. radar headings) to resolve conflictions

What is Free Route Airspace?

- A specified airspace within which airlines may freely plan a route between a defined entry point and exit point, with the possibility to route via intermediate waypoints, without reference to the published route network (subject to airspace availability)
- Most effective in less complex airspace and/or when aircraft are in level flight
- Airspace users can flight plan their preferred route, **reducing fuel burn and CO_2 emissions**
- This can lead to a better distribution of flights instead of them being concentrated over a single reporting point of a published route(s)

LD1: Design Basics

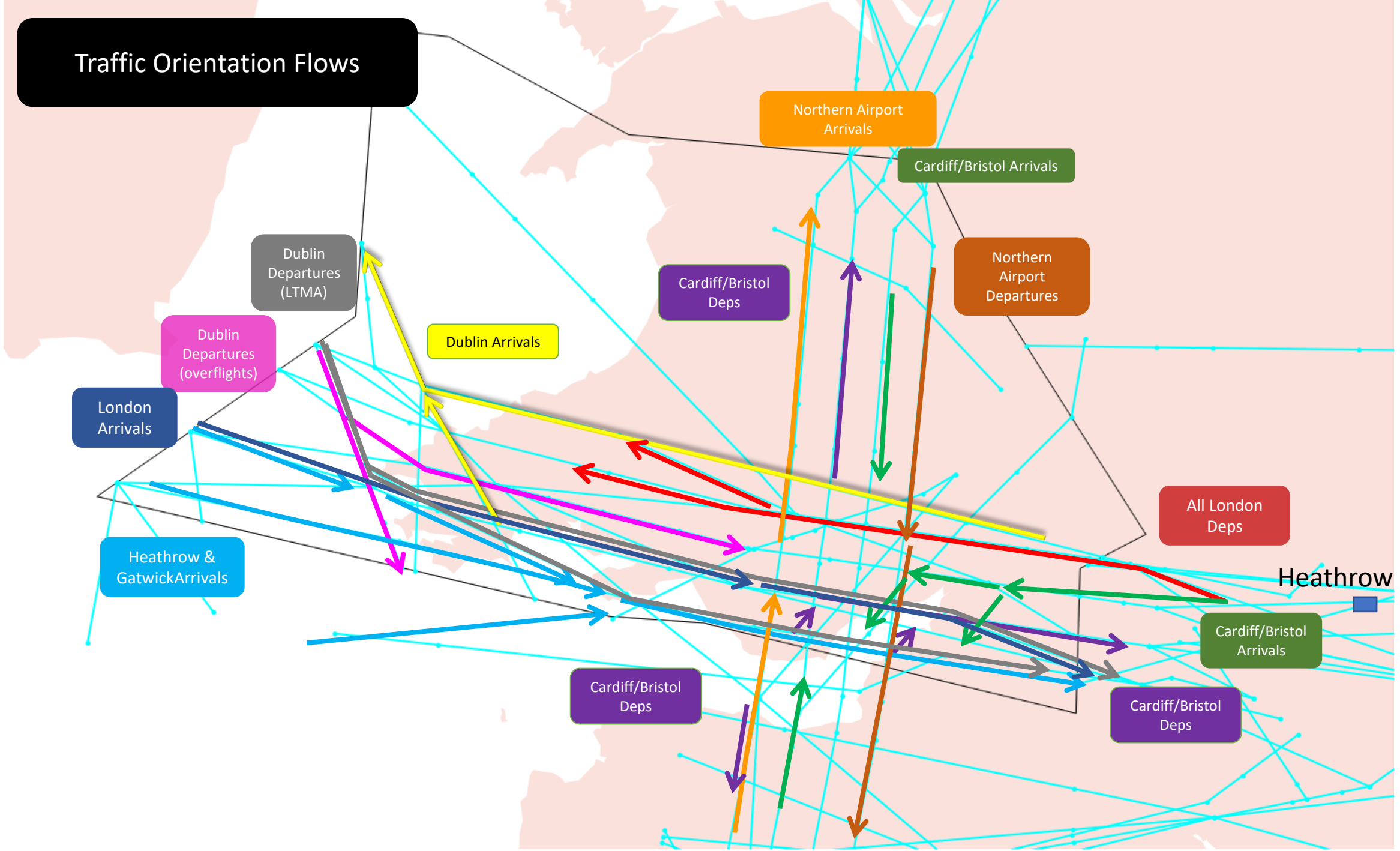


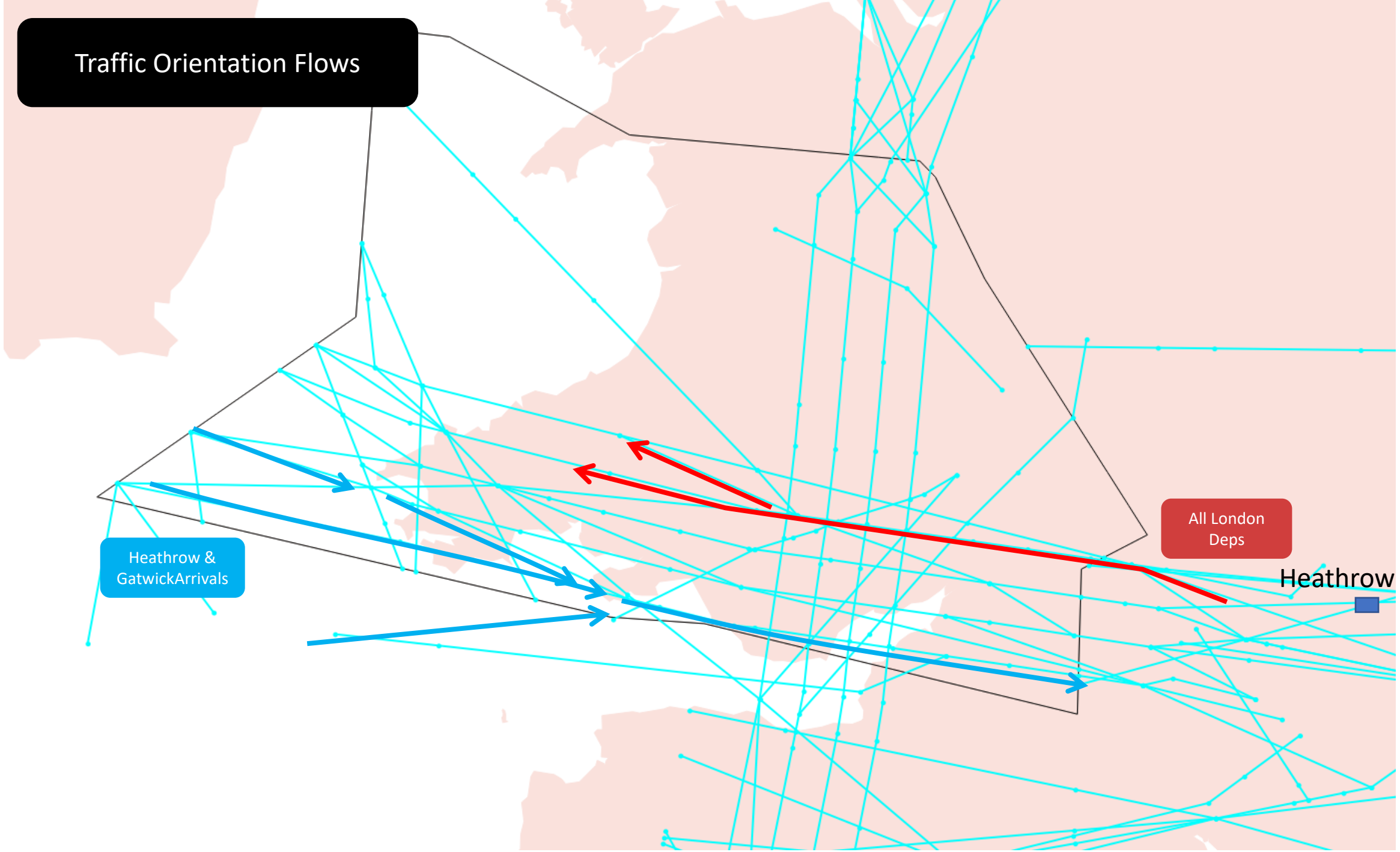
Systemised Airspace:

- 5 new east-west routes
- 4 new north-south routes
- Between 7000ft and ~24500ft

FRA Volume:

- FRA airspace introduced above ~24500ft (exact height TBC)


Traffic Orientation Flows
Northern Airport Arrivals
Cardiff/Bristol Arrivals
Dublin Departures (LTMA)
Cardiff/Bristol Deps
Northern Airport Departures
Dublin Departures (overflights)
Dublin Arrivals
London Arrivals
All London Deps
Heathrow & GatwickArrivals
Heathrow
Cardiff/Bristol Arrivals
Cardiff/Bristol Deps
Cardiff/Bristol Deps


Traffic Orientation Flows
Heathrow & GatwickArrivals
All London Deps
Heathrow

Impact On Non Dependent Airports

- Heathrow's ACP area adjoins the LD1 ACP area. LD1 is focussed on the BCN and BHD Sector groups which do not directly interface with Heathrow approach or Heathrow departures
- Stack utilisation at OCK and BNN will not be impacted by these changes. Aircraft would be at ~14000ft at the interface between the LD1 and Heathrow ACP areas as today
- Departures to, and arrivals from the west will benefit from the increased capacity that would be provided by LD1, and therefore LD1 serves as an enabler for future development at Heathrow
- Subsequent changes to the route network which may be required to accommodate a future Heathrow ACP are expected to be considered in future airspace deployments

Impact On Non Dependent Airports

- No change to CPT SID or current tactical procedures
- Outbound Standing Agreement will rise from 13000ft to 15000ft – more fuel efficient and better climb profile
- 2019: Of 33000 flights, 9 were below ~7000ft at CPT, with average ~13000ft
- Slight lateral change to Inbound Procedures between BEDEK & NIGIT
- 2019: Of 24000 flights to BEDEK, 3 were below ~7000ft

Next steps

- Consultation 6th Sept to 29th Nov 21
- Planned O date Q1/2 2023

Thank You