SAIP AD5
LAC West – ATS Route Connectivity Improvements
Stage 1 Assessment Meeting

Tuesday 17th July 2018

Agenda

- Revised Statement of need
- Background
- Baseline and concepts for development
- Issues and benefits arising from proposed change
- How to address identified issues
- Draft Timescales and First Three Planned Gateway Assessments
- Engagement so far and planned
- Next steps
- AOB

Statements of Need – Original and First Revision

In order to reduce the need for 'late' stack swaps from OCK to BNN, to remove some traffic from Sectors 23, 8, 4, 7 27 as well as significantly reduce flight plannable track mileage establish CDRs from the London/Shannon FIR Boundary across the NWMTA and into TC Midlands /NW Deps - exact details to be developed during simulation.

Current situation
Traffic from the Irish FIR boundary into UK airspace essentially uses two main high-level flows, one from central/northern Eire across the Irish Sea over the north Welsh coast towards the Manchester area, and the other from southern Eire across southern Wales towards the London area.

Issue or opportunity to be addressed, and the cause
The proportions of eastbound flights using the southern flow increased after the Irish FIR implemented Free Route Airspace in 2010. This proportion-change means some Heathrow arrivals need to be "stack swapped" from the OCK hold to the BNN hold more often and at short notice, causing tactical complexity for NATS Swanwick LAC S23 & LTMA controllers.
There is an opportunity to add an additional flow in the "gap" between the two main flows, linking central/northern Eire diagonally NW/SE across Wales towards the London area (for some LTMA arrivals and also for UK overflights).

Desired outcome
Partial redressing of the balance between the main flows, reducing complexity for S23 & LTMA controllers.
Additional flightplanning options for airline operators, whether landing in the UK or overflying.
Reduction in flightplan/actual track miles flown in UK airspace with consequential fuel/emissions and route charge savings for aircraft operators.

Specific challenges
Managing the proportions of traffic using the new system of flows so that no single flow causes issues to the network.

Revised Statement of Need (July 2018)

Current situation

Traffic from the Irish FIR boundary into UK airspace essentially uses two main high-level flows, one from central/northern Eire across the Irish Sea over the North Wales coast towards the Manchester area, and the other from southern Eire across southern Wales towards the London area. There are limited flight planning options for LTMA overflights from Irish airspace over mid-Wales. There are also limited flight planning options to access the Midlands are to and from the southwest.

Issue or opportunity to be addressed, and the cause

The proportions of eastbound flights using the southern flow increased after the Irish FIR implemented Free Route Airspace in December 2009. This proportion-change means some Heathrow arrivals need to be "stack swapped" from the OCK hold to the BNN hold more often and at short notice, causing tactical complexity for NATS Swanwick ATC. There is an opportunity to add an additional flow in the "gap" between the two main flows and make additional connectivity improvements in this area as part of a single airspace change deployment.

Desired outcome

Partial redressing of the balance between the main flows for Heathrow arrivals.
Additional flightplanning options for aircraft operators, whether landing in the UK or overflying.
Reduction in flightplan track miles flown in UK airspace with consequential fuel/emissions and route charge savings for aircraft operators.

Specific challenges

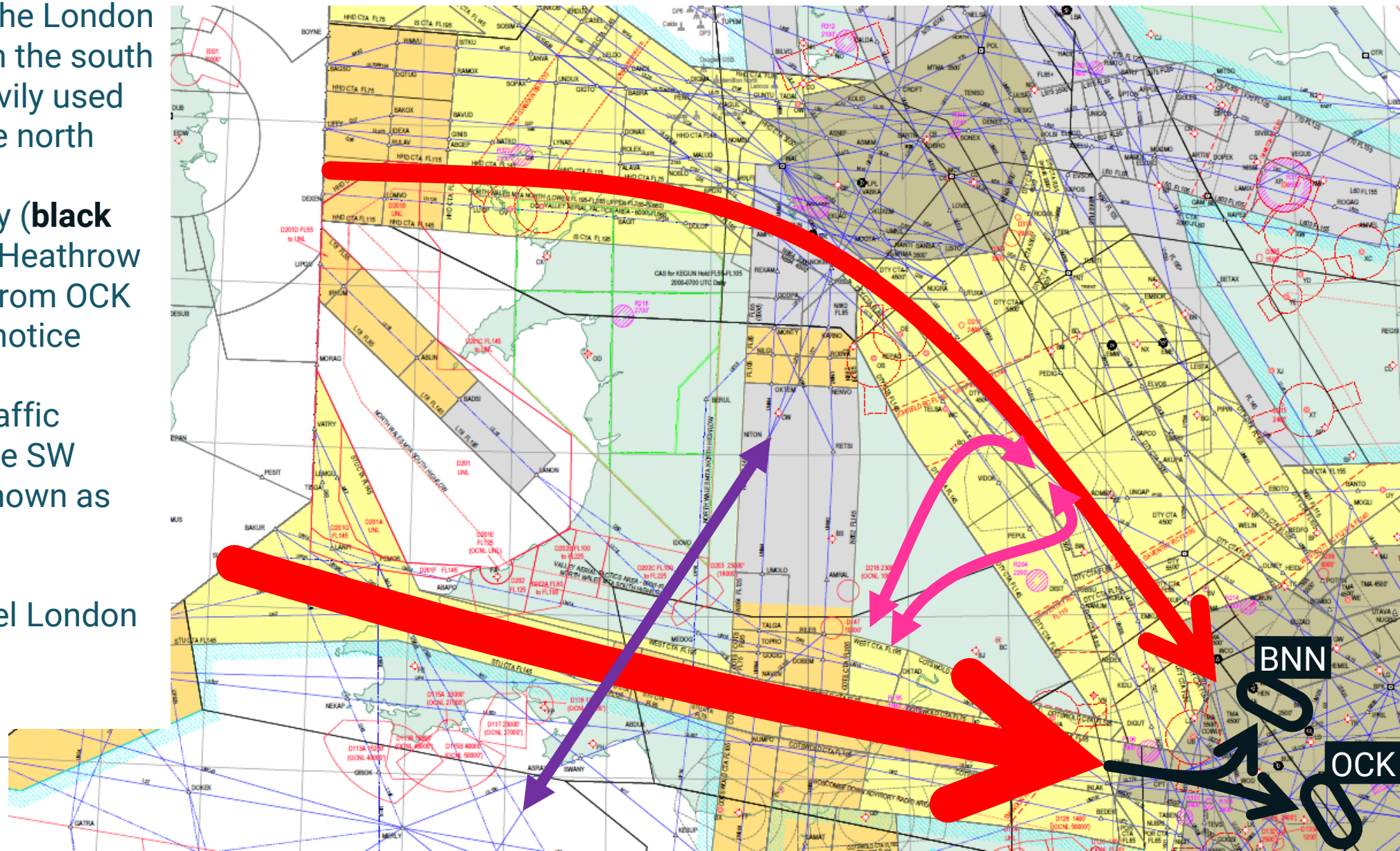
Managing the proportions of traffic using the new system of flows so that no single flow causes issues to the network.

Background

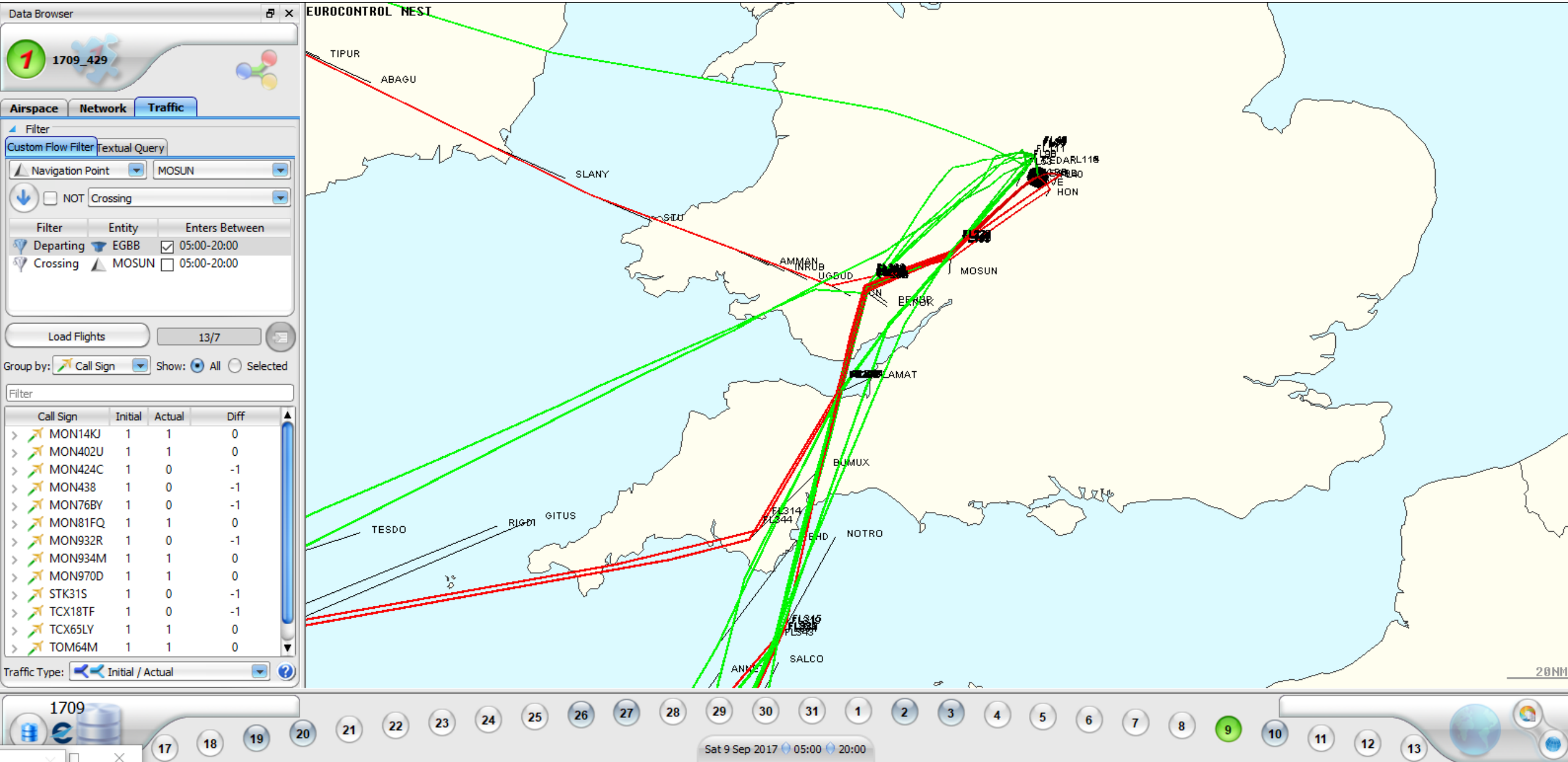
- The IAA's ENSURE (FRA) project significantly changed the proportion of flows between Eire and the UK
- Increased complexity at NATS Swanwick
- Traffic forecast to increase, complexity would increase
- Flow balancing is needed
- Development incorporated into SAIP project
  - SAIP aims to deliver enabled fuel savings to airline operators as primary driver for AD5
  - Other airspace changes were taken out of scope – weren't seen to deliver the benefits required
  - That decision was reviewed – wider scope of AD5 is now preferred, spreads benefits across more operators
- EGBB traffic to/from SW often routes outside CAS via MOSUN, formerly serviced by MoD
  - Birmingham Airport Ltd (BAL) submitted ACP for Rwy 33 MOSUN SIDs
  - MoD have withdrawn ATSOCAS service for EGBB MOSUN traffic
  - NATS could incorporate a CAS service (partial, TBC) to EGBB MOSUN traffic in this SAIP AD module

Baseline (do nothing):

- **Red** lines illustrate traffic leaving Eire towards the London region. The flow from the south is generally more heavily used than the flow from the north
- Heathrow arrivals only (**black** lines) – if OCK is full, Heathrow arrivals are rerouted from OCK to BNN, often at late-notice
- **Pink** lines illustrate traffic ATSOCAS between the SW network and EGBB, known as MOSUN traffic
- **Purple** line – high level London FIR overflights only



Baseline – current use of MOSUN



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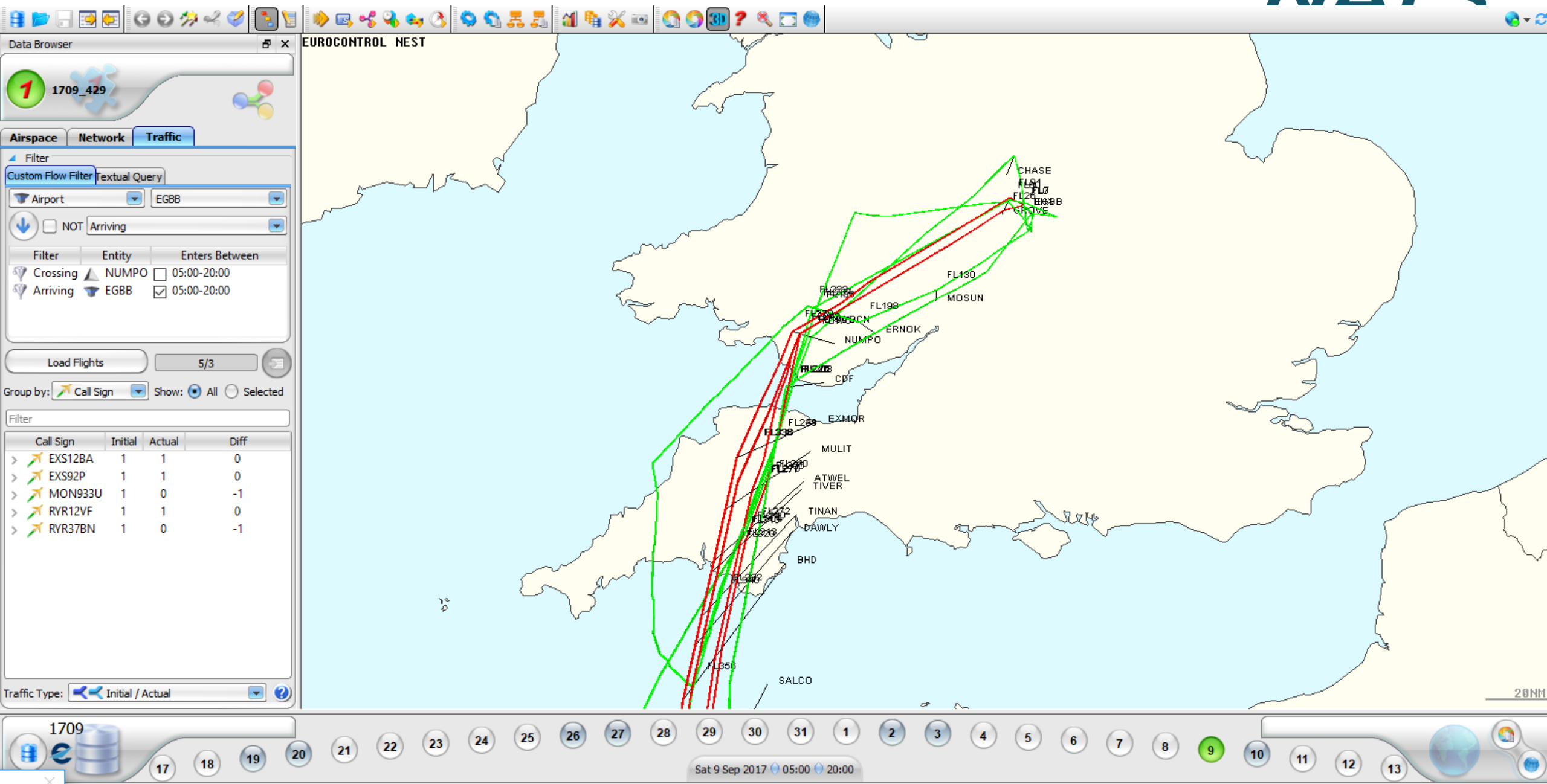

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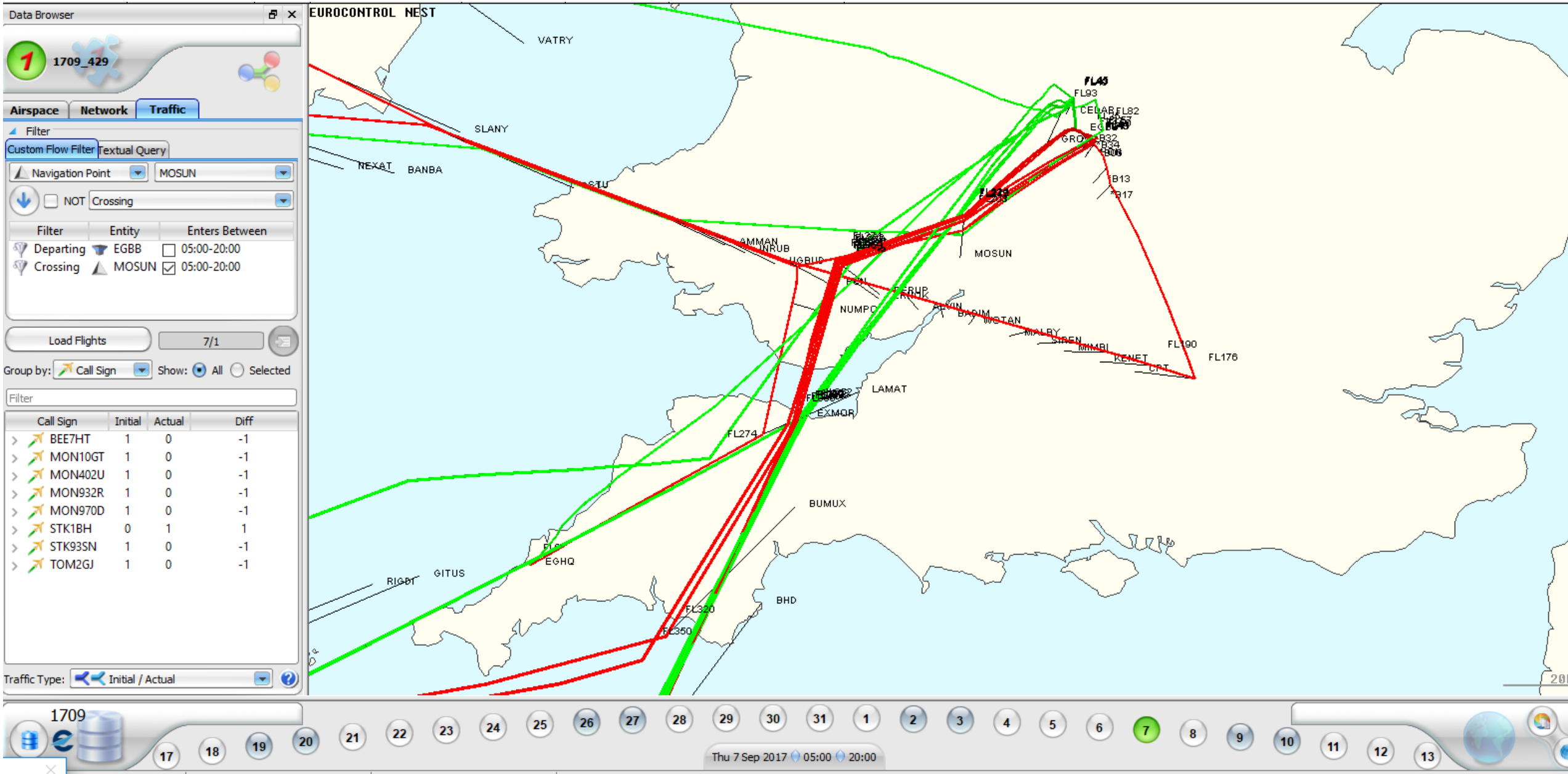

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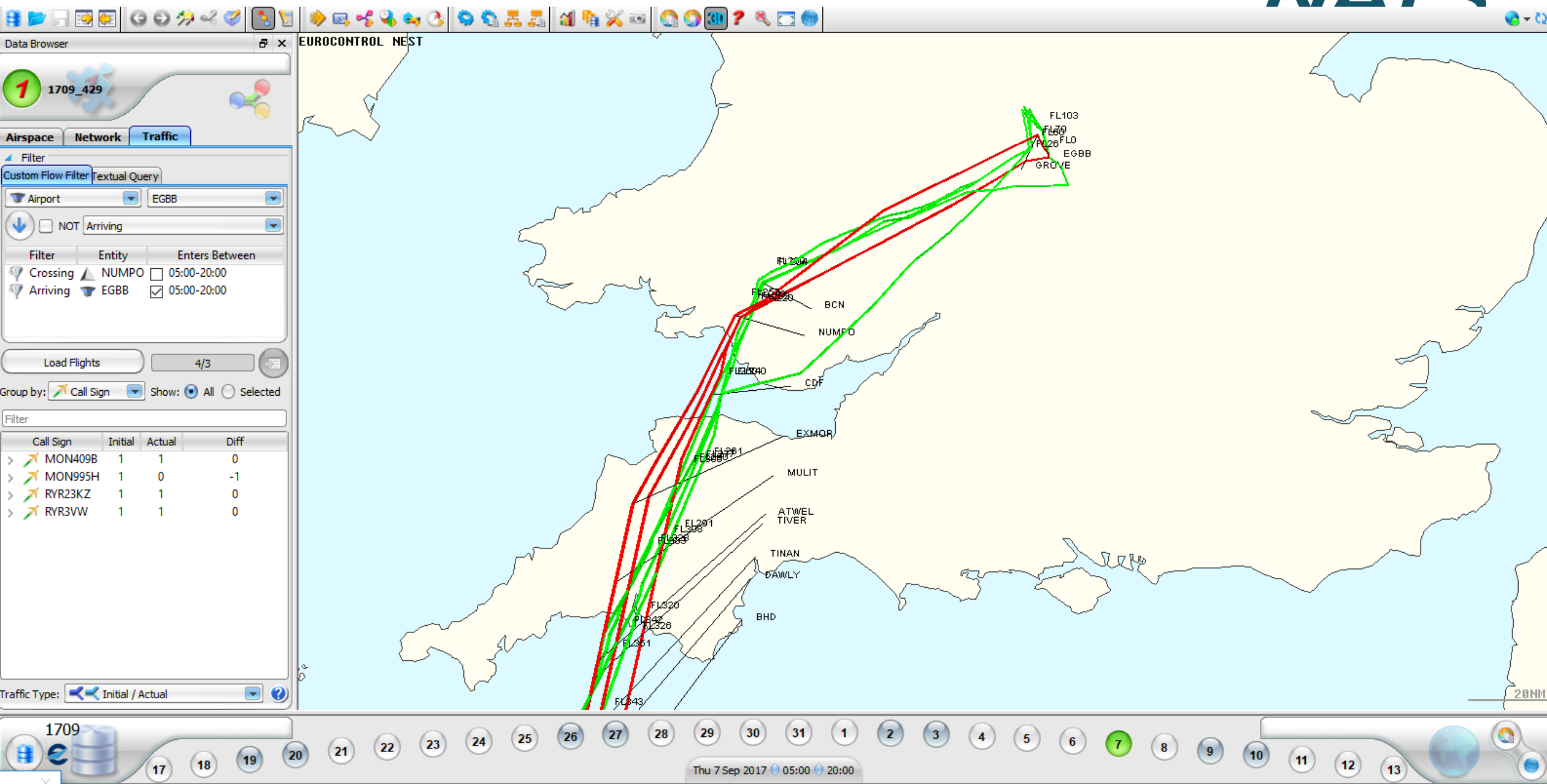
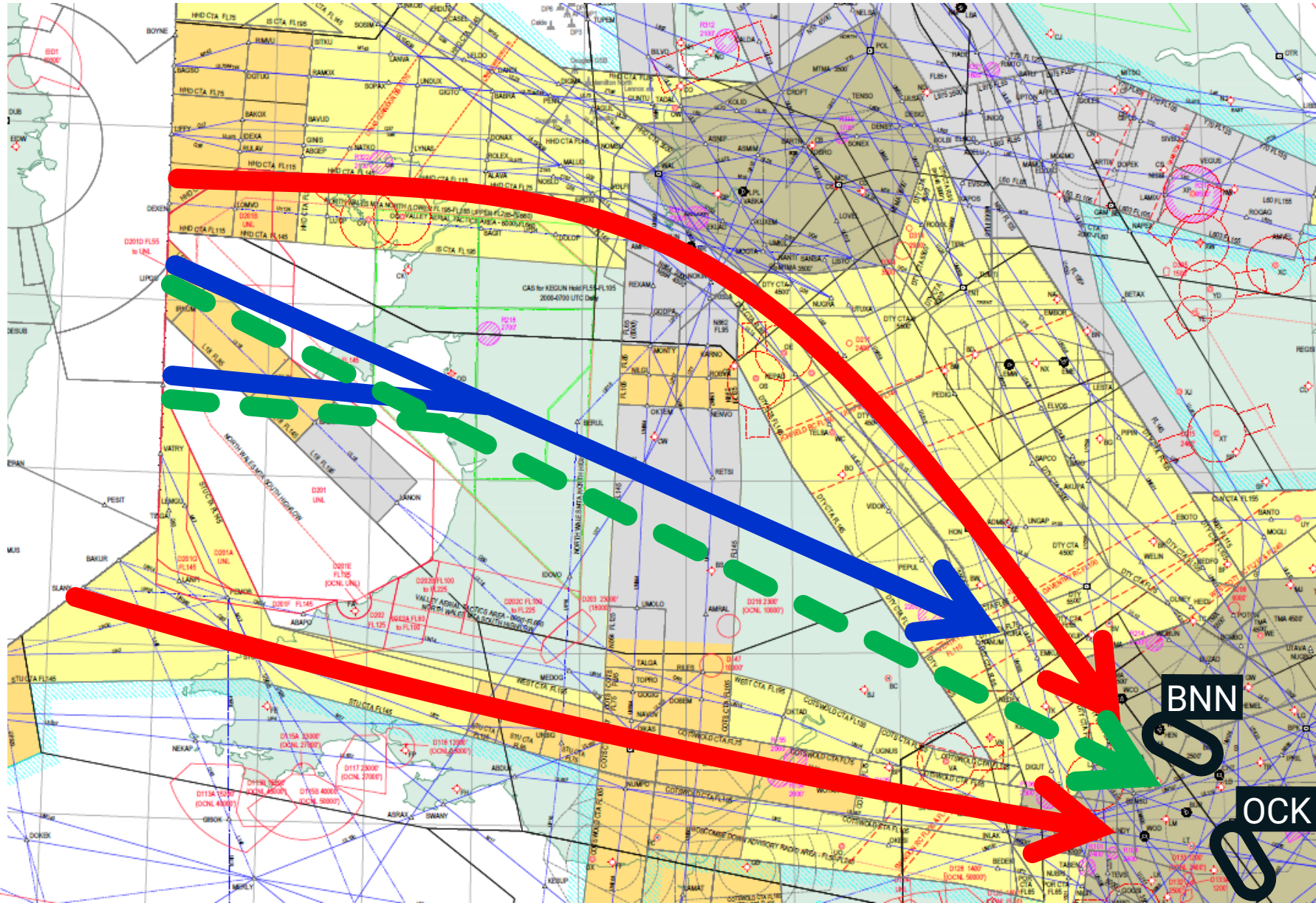


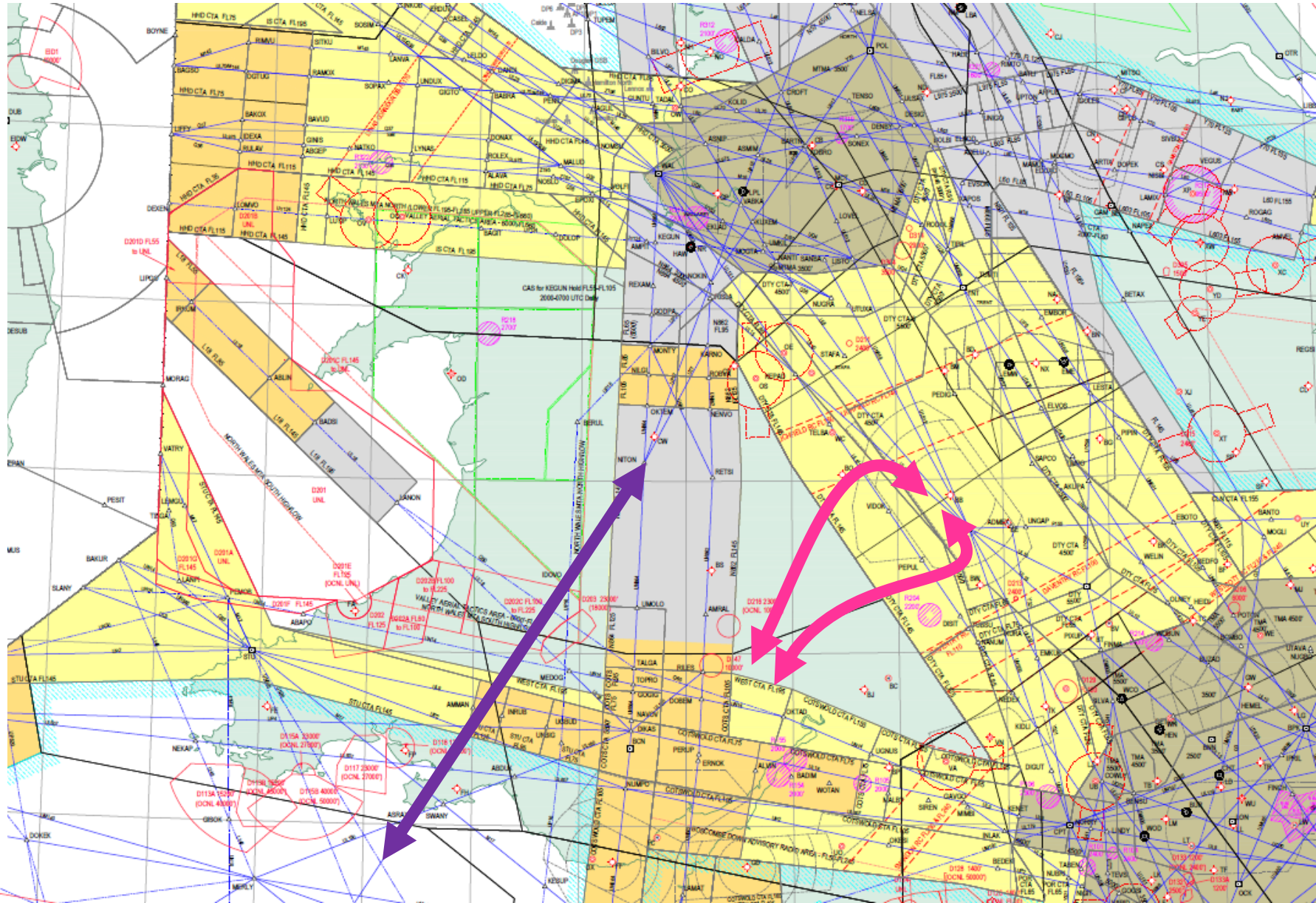
Concepts for development – LL arrivals, LTMA overflights

- **Blue** line illustrates potential tactical flow for some Heathrow arrivals – would require CAS for descent, east of the N-S corridor
- **Green** line illustrates potential high level overflight shortcut – no new CAS
- This is conceptual, the start/end points may change, merge or split during development
- North Wales Military Training Area (NWMTA) in use at high levels (FL285+) would constrain route availability
- Concept is to provide flightplan options for tactical balancing of flows



Concepts for development – BB and CC arrs/deps

- **Pink** line illustrates current EGBB MOSUN traffic
- Concept is to provide CAS and ATS route(s) to serve MOSUN traffic without changing traffic flows below 7,000ft
- Links with Birmingham Airport's Rwy 33 MOSUN ACP (in progress)
- Rwy 15 deps – no change to today's typical MOSUN tracks
- **Purple** line unchanged, now serves EGCC arrs/deps from/to SW (high level, no new CAS)
- NWMTA constrains availability



Benefits for LTMA arrival

- Reduce complexity in S23…
  - Move some EGLL arrivals from DTY
- Reduce complexity in TC SW Deps/TC OCK
- Make available for…
  - LTMA overflights
  - EIDW deps.
- Reduce track mileage and CO_2
  - Generate enabled fuel savings
- Better distribution of EGLL arrivals between OCK & BNN stacks
- Reduce late-notice stack-swaps OCK to BNN

Issues for LTMA arrivals

- Work is required to develop a concept fitting Level 2 change criteria
- EGLL arrivals descend over areas previously rarely overflown by such traffic (albeit **not** at low level as defined in CAP1616)
- Depending on how the **blue** flow is managed, may change the proportion of LL arrivals using BNN vs OCK…
  - Potential change in frequency of low-level flightpaths over areas which are **already** overflown
    - BNN - More over N London/Bucks/Oxon
    - OCK - Less over S London/Surrey
  - If so, probable Level 1 change
  - Qualitatively, cost would be high due consultation

Benefits for Mids/CC Traffic

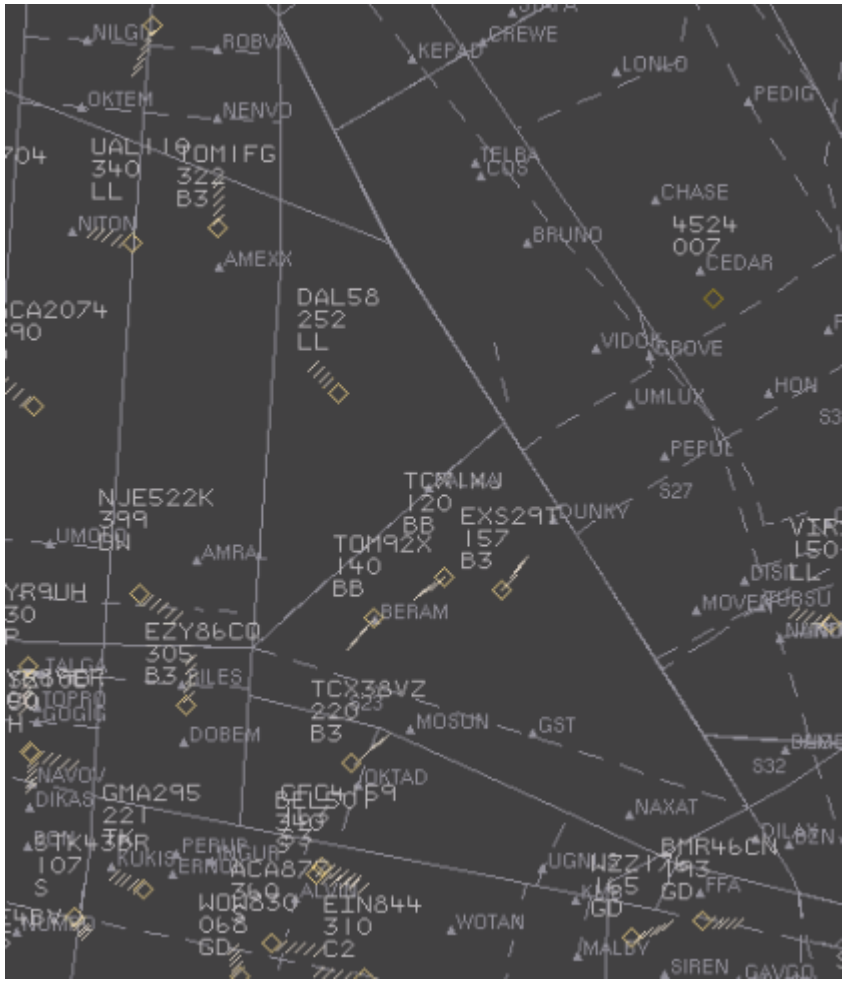
- Plan to deliver CAS for Midlands traffic to/from SW was a stated benefit of original LAMP project, and expected by AOs in RP2
- Subsequent withdrawal of ATSOCAS service by the military, plus recent traffic growth and capacity constraints, has increased focus on this area
- Use of CAS required for OCK/BNN offload would be maximised by inclusion of Midlands traffic to/from SW – more efficient
- Initial AO feedback is positive

Issues for Mids/CC Traffic

- Scope – difficult to balance – where to stop?
- Inclusion of EGNX traffic is complex and involves more sectors
- Fuel saving benefits may be difficult to quantify – flights currently route this way, it may be more flightplanning choice
- Some may fuel for a longer flightplanned route due to uncertainty of service provision
- Work is required to develop a concept fitting Level 2 change criteria

Update from AD5 Real-Time Simulations

- Simulations are often needed to prove general viability in order to release project funding - complements CAP1616 process
- Short series of one-off development sims run for TC Mids and AC West included testing of:
  - Viability of ATS routes serving Birmingham MOSUN traffic
  - Impact on TC Mids of CDR offload route for EGLL OCK/BNN
  - Eastbound overflight improvements
  - Sector boundary changes
- More RTS planned in Autumn 2018



Design principle discussion – specific DPs, priorities TBC:

- Safety – is always the highest priority
  - Improve safety by reducing the time/distance BB MOSUN traffic is outside CAS
- Operational – Increase in flightplanning options gives more choice for operators & ATC flexibility to balance busy flows
- Operational – Minimise impact on NERL training
  - Scope - fewer sector group ATCOs to be trained means easier, quicker implementation
  - Balance to be struck – bigger change means more sectors means increased benefits, but increased project complexity
- Environmental – No change to traffic patterns below 7,000ft to meet CAP 1616 Level 2 requirements
  - EGLL arrivals via BNN instead of OCK – limited in number to remove need for Level 1 ACP
  - EGBB rwy 33 UMLUX SID to MOSUN ACP in progress, consider how to include rwy 15 deps without Level 1 ACP
  - EGBB arrivals to arrive on track GROVE via new STAR (same hold entry – no change)
- Environmental – Reduce flightplan mileage and associated fuel uplift/burn where appropriate
  - Some EGLL, EGCC, overflight traffic would benefit
  - Some EGBB MOSUN traffic may slightly benefit, but the traffic flow already exists ATSOCAS (mostly “no change”)
- Technical – Minimise impact on other airspace users (GA, MoD)
  - Recognise that there would be impacts
  - Employ new CAS where particularly useful, consider application of PBN to minimise need

Addressing the identified issues

- Do nothing – baseline arrangements continue

- **Blue** flow for some EGLL arrivals – tactical offload route, not flightplannable
  - In 2017, circa 2,600 EGLL arrivals were stack-swapped OCK to BNN
  - Tactically limit EGLL arrivals to a similar annual number (allow for forecast increases)
  - No change to traffic pattern below 7,000ft, expected Level 2A change – preferred

- **Green** flows – tactical availability, negotiate with MoD on NWMTAs

- **Pink** flows – requires CAS, likely FL65-75 based on analysis of current MOSUN arrs/deps
  - May not provide much fuel benefit, but would make fuel planning more predictable
  - MOSUN traffic gains CAS which may impact GA – balance to be struck
  - No change to traffic pattern below 7,000ft, expected Level 2A change – preferred

- **Purple** flow – new CAS unlikely to be required
  - May not provide much fuel benefit, but would provide additional flexibility and flightplanning options

- Other airspace users to consider – new CAS likely to be FL75+
  - MoD – NWMTA, Brize Norton, DTY Radar Corridor FL100-FL110,
  - Gliding community – general headroom in the vicinity, also how often are Welsh Gliding Areas used?
  - Powered GA – local aerodromes

Timescales – CAP1616 planning

• Stage 1 Define	
• General stakeholder engagement	
• Design principles engagement round 1	
• Draft design principles document	
• Design principles engagement round 2	
• Final design principles document	
• Stage 1 Gateway Assessment document deadline	17/08/18 Stretch target, more likely Sept 2018 TBC
• Gateway Assessment	31/08/18 Stretch target, more likely Sept 2018 TBC
• Stage 2 Develop and Assess	
• Options development	
• Options appraisal	
• Stage 2 Gateway Assessment document deadline	12/10/18
• Gateway Assessment	26/10/18
• Stage 3 Consult	
• Prep, admin, Gateway	Up to Dec 2018
• Launch	New Year 2019
• Collate results, feedback report	Spring 2019
• Stage 4 ACP	
• Update design	Spring 2019
• Submit ACP	Early summer 2019
• Stage 5 CAA Decision	July 2019
• Stage 6 Implement	AIRAC11/2019 (10/10/19)

Planned gateway dates may change
See minutes for finalised timeline

Engagement – so far, and planned

- IAA meeting 27/02/18, further TBC
- BAL meeting 11/17/18
- EGBB based AOs scheduled for 20/7/18, with BAL assistance
- DAATM introductory meeting 13/07/18
- DAATM joint meeting with SWN military controllers scheduled for 27/7/18
- HAL phone calls/emails, plan to present at community noise forum or similar 14/8/18
- EGLL and EGCC based AOs – engagement plan TBC
- GA – via GA Alliance (in particular with BGA), engagement plan TBC

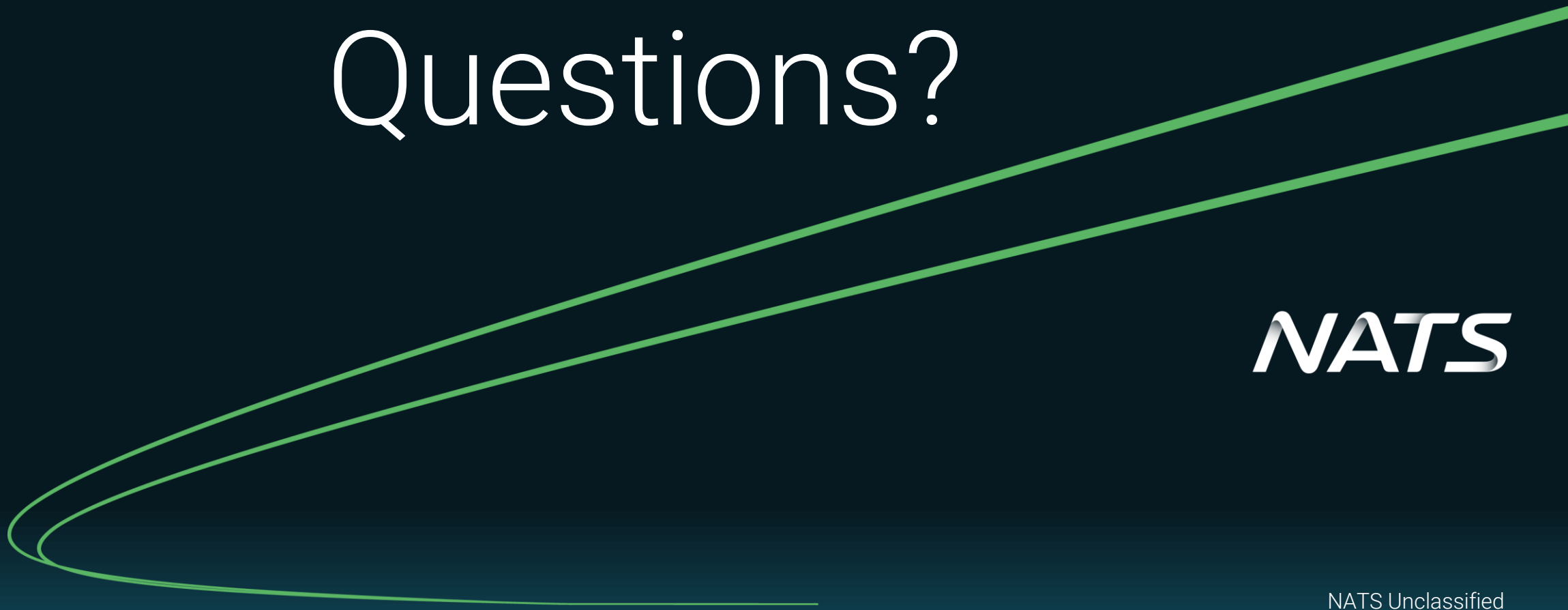
Next steps

- Prepare and submit minutes of this meeting to complete Stage 1A
- Consider NATMAC engagement for DPs

  (may be more effective engaging the subset groups directly, as per previous slide)
- Complete two rounds of stakeholder engagement for DPs
- Produce DP document to complete Stage 1B

AOB

Questions?



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