

# NATS Free Route Airspace – Deployment 3 & 4

## 'FRA D3 & D4 (Borders & Central)'

### Stage 1 Assessment Meeting

Date: 11 October 2021

[REDACTED] – Airspace Evolution Manager

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Consultant

[REDACTED] – Airspace Change Specialist

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- Statement of need
- Background
- Concepts for development
- Scalability & Process, Engagement & Consultation
- Issues and benefits arising from proposed change
- How to address identified issues
- Provisional indication of the appropriate scaling level and notes re Process Requirements
- Draft Timescales and First Three Planned Gateway Assessments
- Next steps

# Statement of Need (DAP1916) – Deployment 3



In response to the CAP1711 Airspace Modernisation Strategy, NATS is progressing with a programme to implement Free Route Airspace (FRA) in a phased manner across UK airspace.

This ACP proposes the introduction of the third deployment of FRA and associated changes to the underlying airspace structure across the following ATC sectors:

- Lakes
- North Sea
- IOM
- Sector 29
- East
- Dean Cross South
- Montrose South
- Humber

# Statement of Need (DAP1916) – Deployment 4



In response to the CAP1711 Airspace Modernisation Strategy, NATS is progressing with a programme to implement Free Route Airspace (FRA) in a phased manner across UK airspace.

This ACP proposes the introduction of the fourth deployment of FRA and associated changes to the underlying airspace structure across the following ATC sectors:

- Daventry
- Central
- Clacton
- Channel

## Introduction:

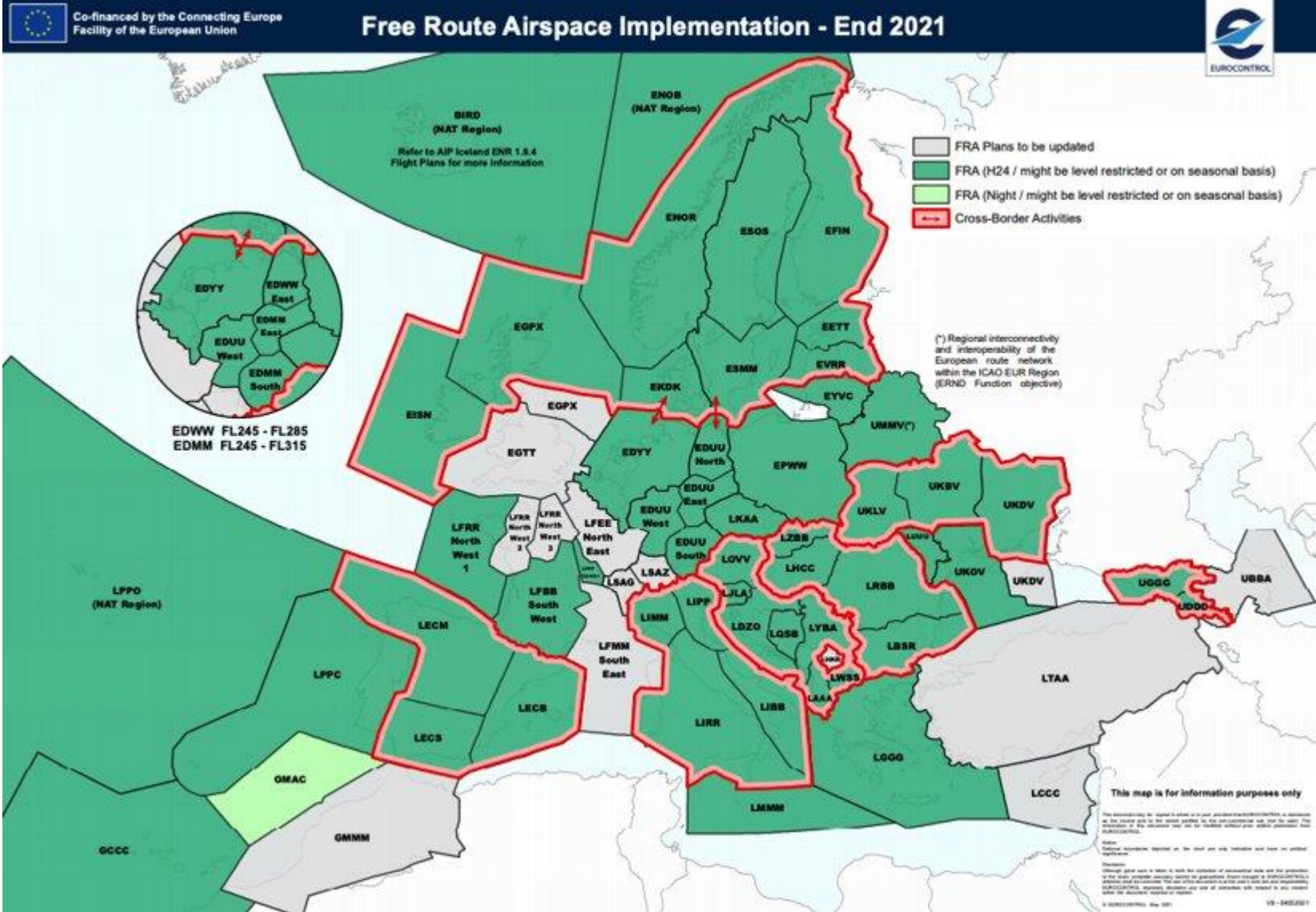
NATS has a long-term strategy to establish all upper airspace as FRA which is driven by several factors:

- Free Route Airspace is Initiative 2 of the CAA's Airspace Modernisation Strategy (AMS) (CAP1711)
- FRA implementation is a target of the Eurocontrol Single European Sky ATM Research (SESAR) programme, and has been committed to by Borealis Alliance members, to implement a seamless FRA across member ANSPs.

The purpose of this briefing is to inform the CAA regarding the developments of the NATS Free Route Airspace Programme and the planned Airspace Change Proposal in accordance with the CAP1616 process.

The concept of Free Route Airspace allows aircraft to flight plan and fly between waypoints and not be constrained to follow the current network of routes.

# Background: Cross Border FRA



# Background: FRA Concept

NATS intends to implement FRA across UK Airspace in 4 large-scale deployments:

- Deployment 1: FRA FL255+ PC Airspace & Deployment 2.1: FRA FL245+ PEMAK triangle/TAKAS box
- Deployment 2: FRA FL245/305 South-west Swanwick Airspace

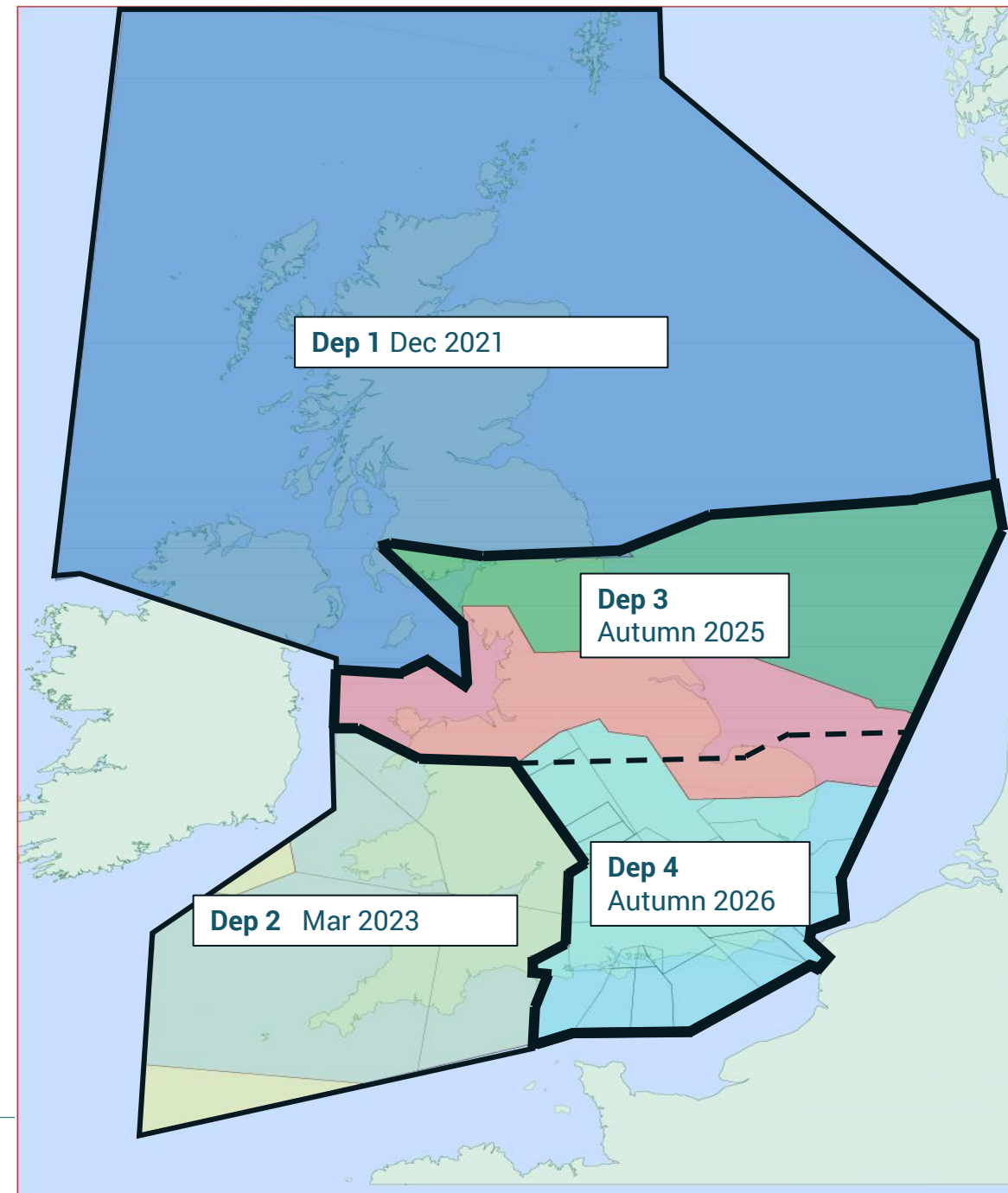
ACPs for these changes are already underway.

Subsequent implementations (Deployment 3 & 4) aim to:

- align with the Airspace Modernisation Strategy
- progress the international commitment to Borealis Alliance FRA
- reduce CO2e emissions
- deliver benefit in fuel savings for customers
- reduce complexity in the upper airspace
- enhance service delivery

Modernising Airspace is a key factor for NATS.

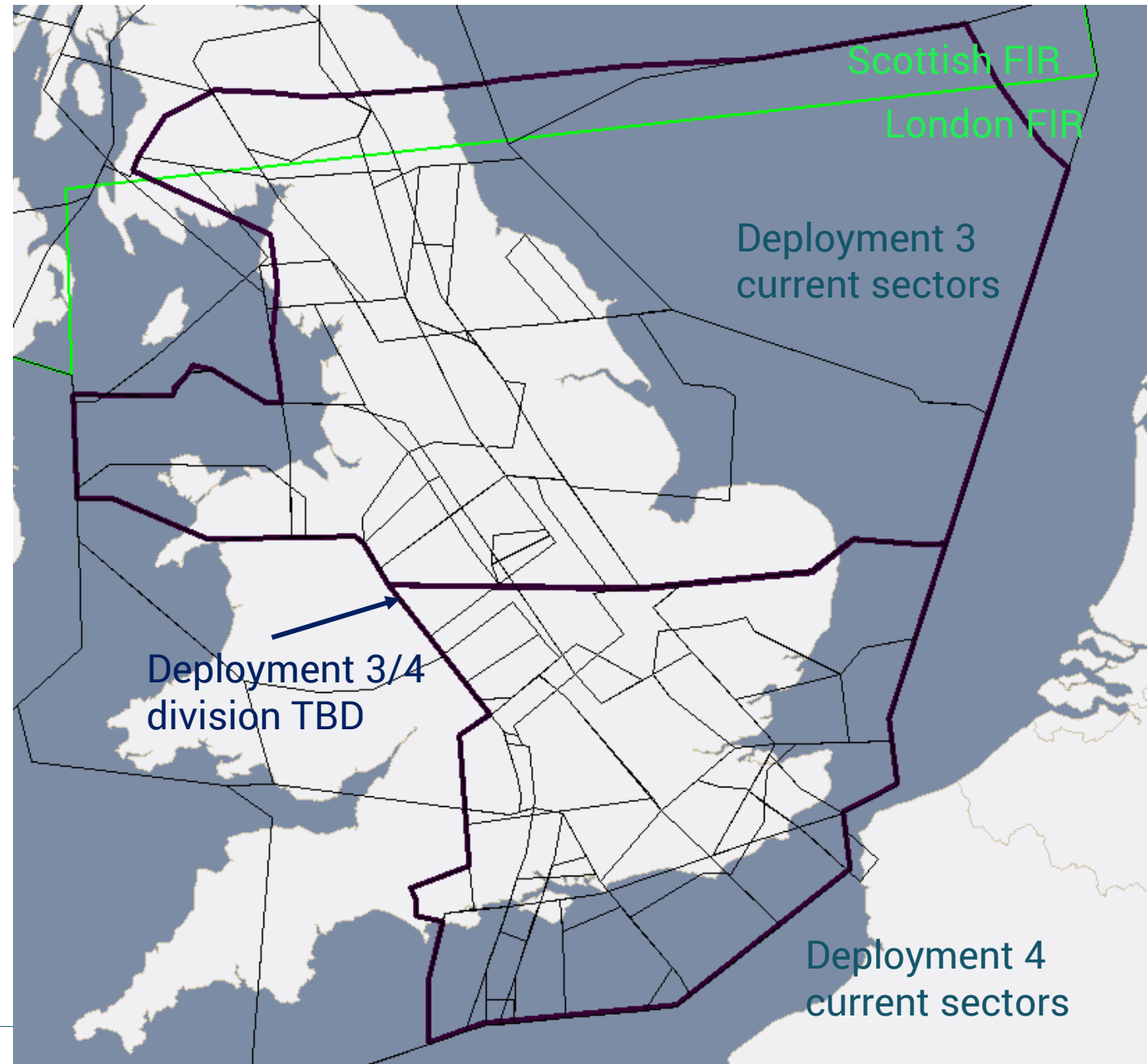
Delivery of FRA beyond the EU mandated requirements aims to maximise delivery of fuel, service, capacity and safety benefits across UK airspace.





# Concepts for development

- Design options will need to align with:
  - D1 & D2 FRA models
  - ERNIP FRA Guidelines
  - EU NM FRA Design Guidelines
  - CAP 1711
- Design development is required to determine precise boundary between the 2 deployments and FRA implementation level
- Delivery of single ACP with separate deployments with following benefits:
  - Reduce impact on stakeholders
  - Efficiency gains for CAA
  - Efficiency gains for NATS

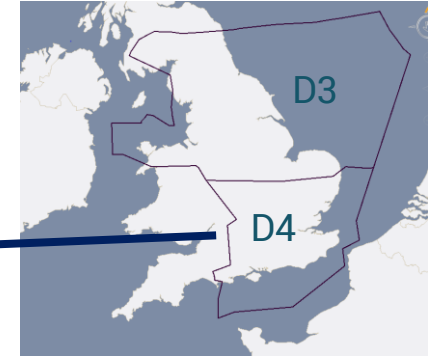
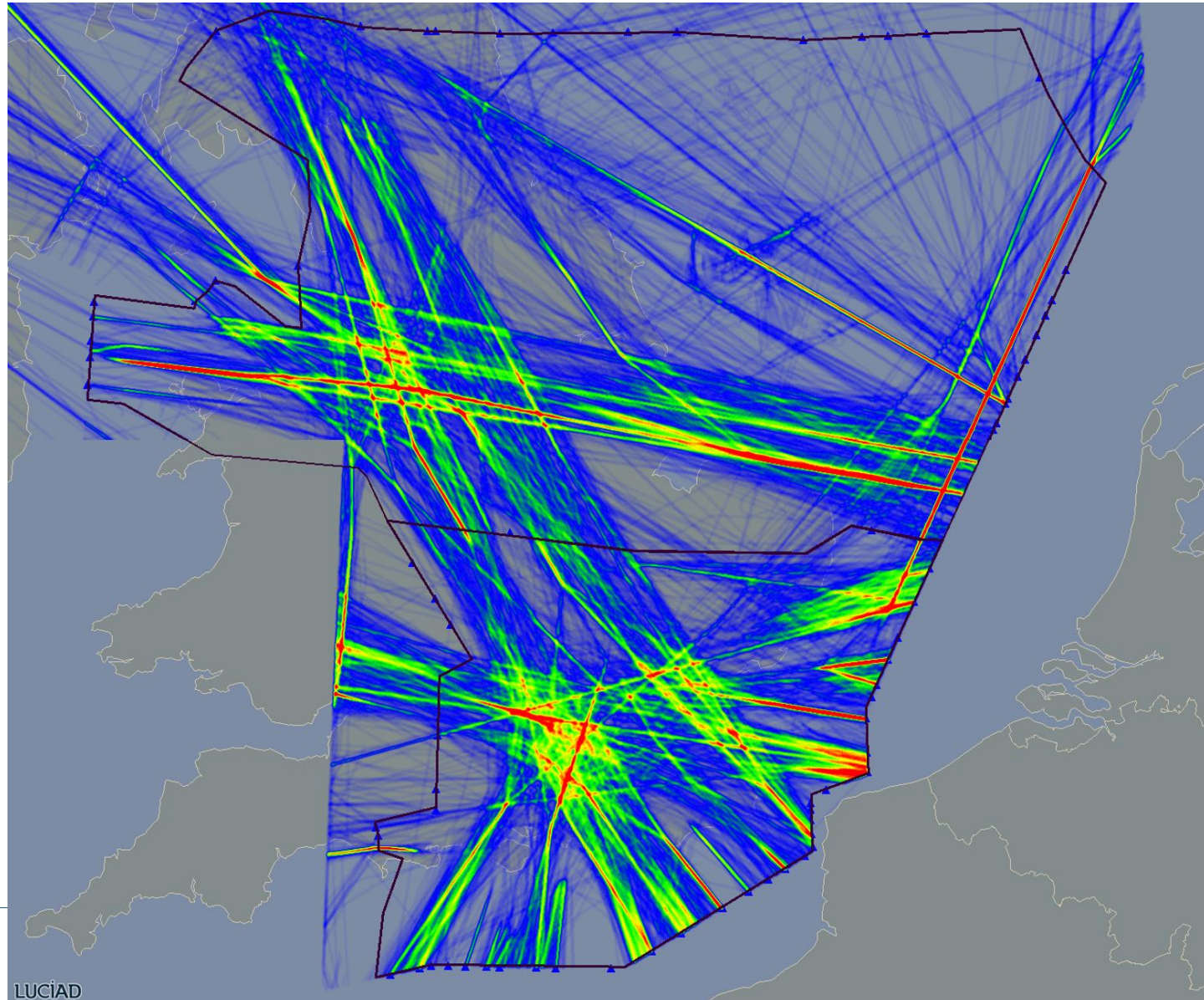




# Baseline (do nothing) – Deployment 3 & 4

FRA D3 & D4 Deployment Areas – current flight trajectories

**NATS**



Current traffic flows in FRA D3 & D4 area.

For the purposes of analysis, “do nothing” will be used as the baseline.

Luciad ATC Playback 2021

# Scalability & Process, Engagement & Consultation



This deployment of FRA must be implemented in line with previous UK deployments to ensure consistency across UK airspace.

- Stakeholders have previously been consulted on D1, D2.1 and D2 implementations so are familiar with FRA concept.
- FRA is already implemented throughout Europe, this is not a high interest airspace change for stakeholders

Reduce impact on stakeholders:

- Amalgamate to single ACP to reduce impact on stakeholders – reduce ‘stakeholder fatigue’ and only ask the same audience the same questions once
- Propose to utilize same FRA Design Principles to stakeholders for review
- Conduct single consultation, to maximize both quantity and quality of responses, but have separate deployments

Efficiency gains for CAA

- Reduce number of ACPS administered by CAA

Efficiency gains for NATS

- Significant reduction in workload
- Cost benefits can be passed on to customers

# Benefits

- Enables more efficient flight planning
- Enables reduced CO2e emissions
- Enables reduction in flight planned fuel uplift
- Removes DCTs
- Enables cross-border free routing

# Issues



- Dependencies with new ATM platform implementation
- Interfaces with lower airspace
- Complexities of international airspace boundaries/areas of delegated airspace
- Integration with UK FRA volumes

# Addressing the identified issues



- Dependencies with new ATM platform implementation  
Required to fully implement cross-border FRA
- Interfaces with lower airspace
  - Design of specified entry/exit points with connectivity to lower route network
  - Interdependent design with FASI
- Complexities of international airspace boundaries/potential complexities arising from NATS delivering ATS in neighbouring FIRs
  - Engaging & co-ordinating with multiple neighbouring ANSPs/states
- Integration with UK FRA volumes
  - Alignment with FRA D1 and D2 volumes.



Assessment meeting		Today	Doc Deadline
Stage 1 – Define		17/12/2021	03/12/2021
Stage 2 – Develop		25/03/2022	11/03/2022
Stage 3 – Consult		31/03/2023	17/03/2023
Stage 4 – Update and Submit		26/10/2023	
Stage 5 – Decide		22/02/2024	
Stage 6 – Implement	D3	27 Nov 2025	
	D4	Nov 2026	

- Expectation of Level 2C
  - All proposed changes are above FL200
- Options development work continues, to refine the concepts and fully define the scope
- Engagement plan to engage industry stakeholders, airlines, MoD, adjacent ANSPs and flight planners.
- Resubmit SoN for single ACP (ACP-2020-044) and withdraw ACP-2020-045

# Questions?

***NATS***