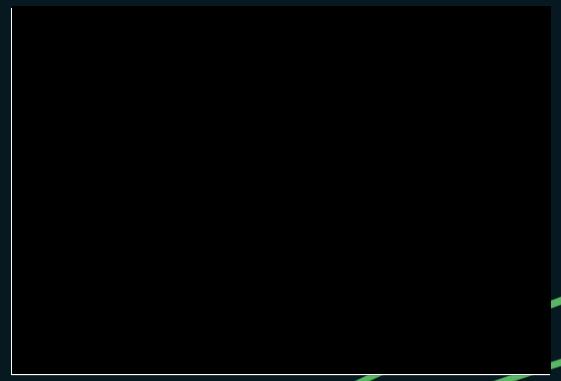
Future Airspace Strategy Implementation (North)

ScTMA Edinburgh - Network Changes (ACP-2019-74)

Stage 1 Assessment Meeting

4th February 2020



NATS

NATS Unclassified

Agenda

- Statement of need
- Background
- Justification
- 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 (ref. V2-26, 12-Feb-2020 – original submitted in Oct 2019)

5. Statement of Need

Please provide a brief 'Statement of Need' clearly explaining what issue or opportunity this proposal is seeking to address.

Further information can be found in CAP1616 *

This airspace change will propose to make changes to the Scottish TMA airspace and ATS route network including STARs.
The proposed changes will interface with SIDs and arrival transitions serving Edinburgh airport.
Edinburgh airport is currently in the process of proposing changes to their SIDs/Arrival transitions under a separate ACP.
The changes proposed to the Scottish TMA by this ACP will be coordinated with, and will complement, the airport's proposals.

Current Situation
Conventional procedures serving Edinburgh airport are not PBN and will soon be made obsolete by the planned decommissioning of several conventional navigation beacons.

Issue to be addressed
Consideration of traffic flows between Glasgow and Edinburgh. Introduction of improved holding arrangements and ATS routes will reduce conflicts by systemising the traffic, also reducing fuel burn & CO2 emissions for flights using these routes.
New routes and STARs may be required to provide network connectivity for new SIDs/ Arrival transitions as proposed by Edinburgh airport.
This proposal forms part of the plan for delivering the Airspace Modernisation Strategy.

Cause
Legacy ATS structure requires modernisation in accordance with the Airspace Modernisation Strategy.

Background

- Edinburgh Airport is progressing proposals to modernise the low-level routes below 7000ft.
- NATS will have to modify the route network above 7000ft to interface with the new Edinburgh route designs.
- NATS will also take this opportunity to make improvements to the enroute network. This will be achieved by considering improved holding arrangements and ATS routes, with the goal of systemising traffic to maximise capacity and resilience, while minimising environmental impacts.
- Edinburgh Airport is the 6th busiest Airport in the UK, and the busiest in Scotland. In 2018 there were 130,016 flights.

FASI-N Partnership

- FASI-N ScTMA partnership structure;
  - NATS is responsible for the ACP for changes to the route network above 7000ft including STARs
  - EAL is responsible for the ACP for routes below 7000ft (SIDs and PBN arrival transitions). As such EAL will be responsible for engagement and consultation with local stakeholders

- The Airspace Change Organising Group (ACOG) to provide guidance and coordination

FASIN ScTMA ACPs

- In accordance with the Airspace Modernisation Strategy the legacy airspace structure in the Scottish Terminal Manoeuvring Area (ScTMA) is being modernised and redesigned. The Future Airspace Strategy Implementation (North) ScTMA programme of changes includes ACPs by several sponsors as shown below.

Justification

The proposed changes are in accordance with the Airspace Modernisation Strategy.

The changes to the enroute network provide connectivity for the low-level changes proposed by Edinburgh Airport. Together these two sets of changes will provide synergies yielding environmental and capacity benefits.

The VOR rationalisation programme requires that reliance on ground based navigation aids is removed by changing to Performance Based Navigation (PBN).

Objectives

- Maintain and improve on the current levels of safety within the Scottish TMA.
- Increased capacity
- Improve resilience in the management and systemisation of Edinburgh arrivals and departures;
- Utilisation of PBN STARs /ATS Routes
- Reduce controller and pilot workload through systemisation.
- Minimise impact of interactions between Glasgow and Edinburgh.
- Improved ATS routes will reduce environmental impacts
- Enable improvements to lower route network including PBN SIDs and Arrival transitions
- Minimise CO_2 emissions per flight (end to end, whole of flight)
- Remove reliance on ground-based navigation aids

Impacts / Benefits

ATS Units

- Systemisation will reduce the complexity of interactions between Glasgow and Edinburgh traffic therefore enhancing capacity through a reduction per flight in ATC workload
- Systemisation will result in better traffic presentation to/from Prestwick Centre ATC
- Systemisation will maintain or improve PC Safety performance
- Create a network capable of handling increased future capacity growth from airfields within the ScTMA

Civil Air Traffic

- Reduction in delays
- Improved climb & descent profiles
- Improvement in cockpit workload
- Reduction in fuel burn
- Improvement in 3Di performance

MoD / Operational Air Traffic

- Minimal anticipated operational impact

General Aviation and Sport & Recreational Aviation

- Changes to some CAS bases possible which may allow release of CAS
- Willingness to evolve low level airspace design
- Relieve infringement risk in relation to low level CAS and deliver simplification of boundaries

Environmental Impacts: CO_2 Emissions

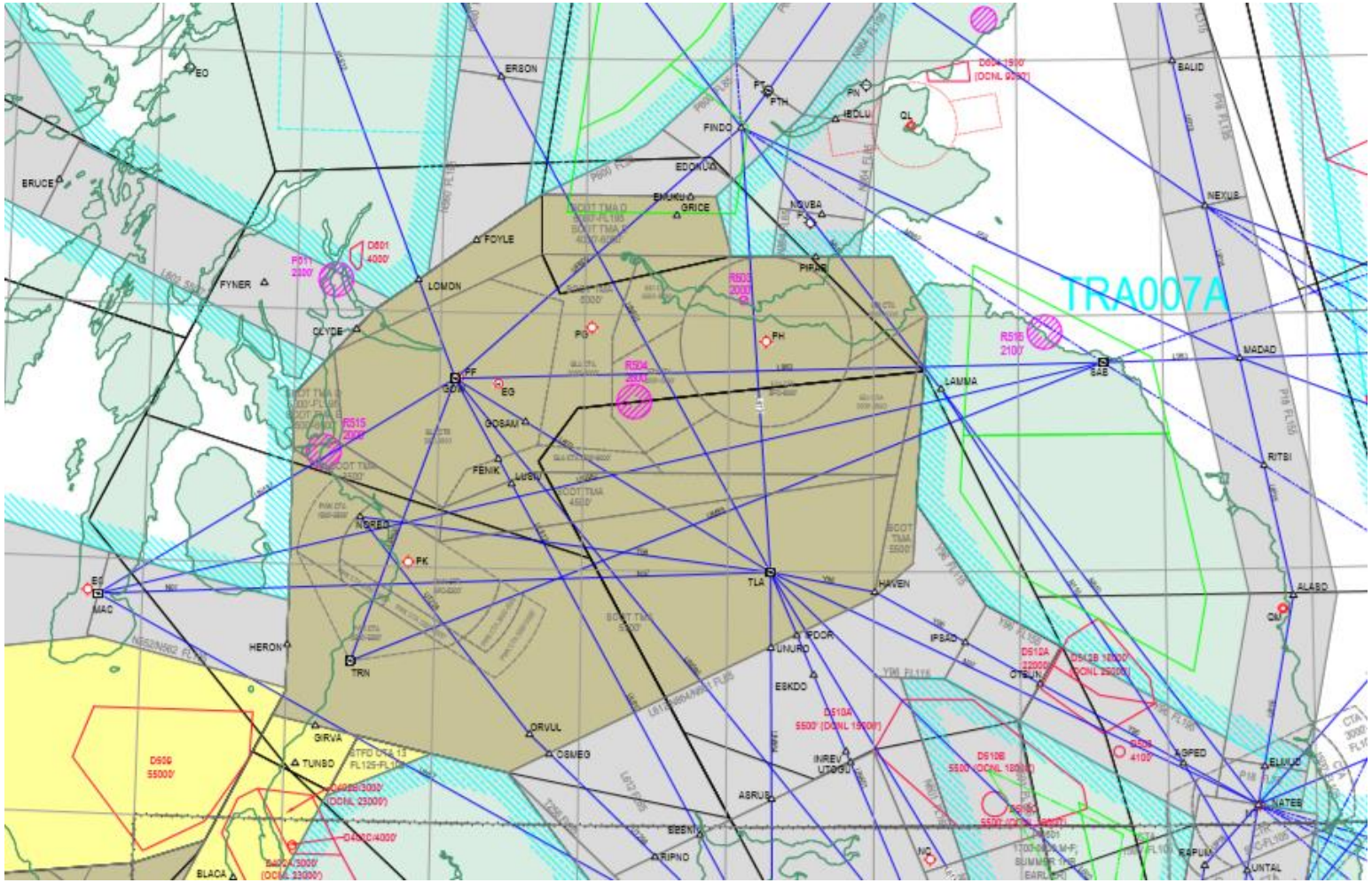
- The proposed changes will improve climb & descent profiles, enabling consistent continuous climb departures (CCDs) and continuous descent approaches (CDAs).
- The target is for a reduction in average CO_2 emissions per-flight.
- A 3DI (3 Dimensional Inefficiency) analysis of the current and proposed airspace will also be performed to quantify the benefit of the proposed changes.

Environmental: Over-flight/Noise

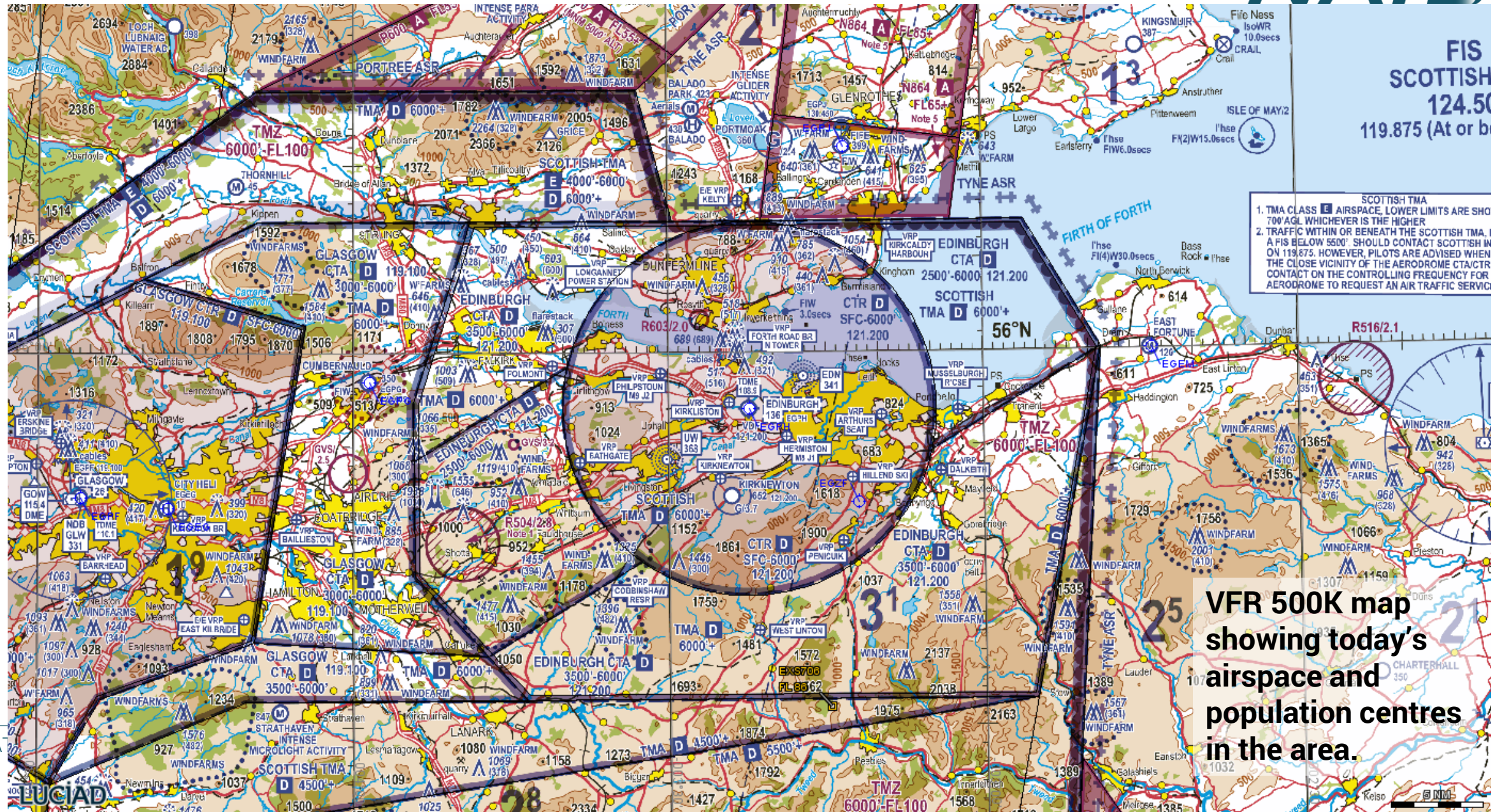
Analyses required

- No noise analysis required for changes above 7000ft.
- CO_2 emissions analysis will be performed

ScTMA surrounding Airspace

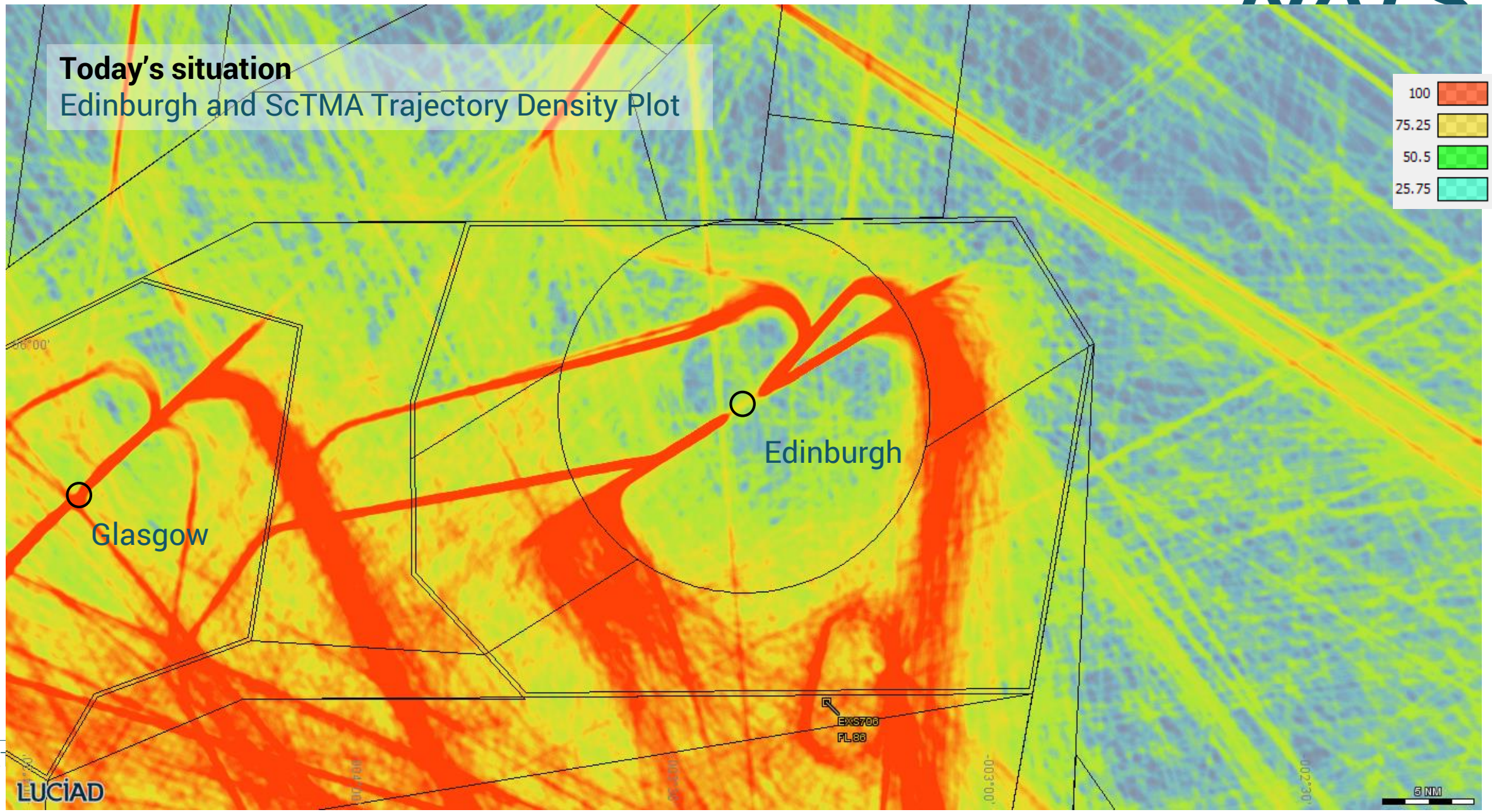


Baseline, Extant Airspace

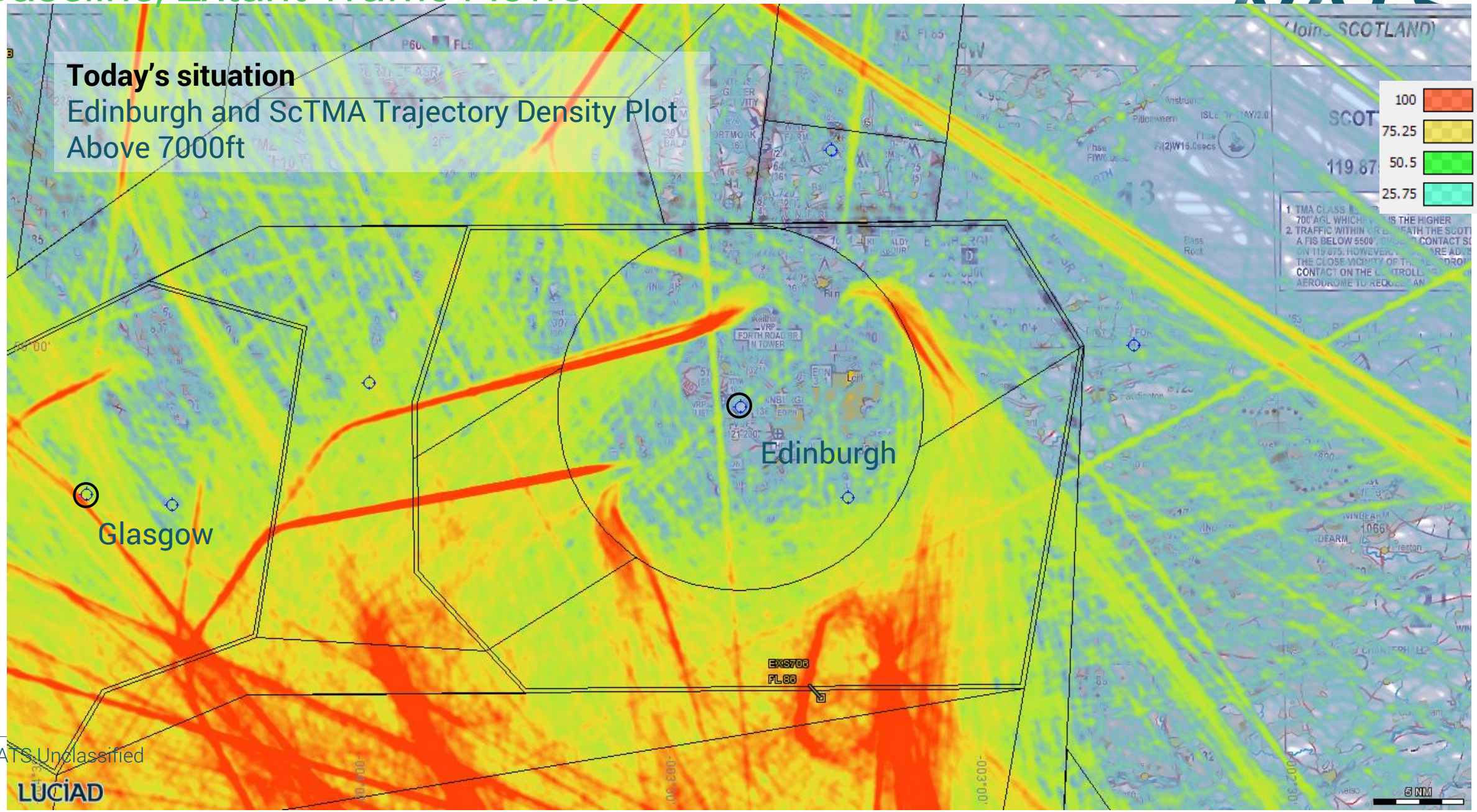


VFR 500K map showing today's airspace and population centres in the area.

Baseline, Extant Traffic Flows



Baseline, Extant Traffic Flows



Current ScTMA Issues

- Confluence of northbound routes in the vicinity of LANAK and TARTN holds results in significant ATC workload
- Edinburgh TLA southbound departures conflict with both Glasgow and Edinburgh arrivals adding to complexity
- Confluence of both Glasgow and Edinburgh traffic south of Glasgow leads to high controller interaction and workload
- Traffic exiting UK FIR via North Sea leads to extended track mileage and complexity crossing with Glasgow and Edinburgh arrival traffic
- Highly Tactical Sectors, requiring ATC intervention to deliver a safe and efficient service.

Desirable outcome

Through collaboration and cooperation with Edinburgh Airport and other stakeholders:

- Maintain and improve on the current levels of safety within the ScTMA
- Improve resilience in the management of Edinburgh and Glasgow arrivals
- Reduce controller and pilot workload through systemisation of inbound and outbound aircraft
- Minimise impact of each airport's tactical situation on the other.

Airline Engagement

Engagement with the airlines will take place through the NATS Airspace and Flight Efficiency Partnership and Lead Operator Carrier Panel meetings.

(Attended by BA, BA City Flyer, Delta, FlyBe, EasyJet, Lufthansa, Jet2, KLM, RyanAir, SAS, United, Virgin)

Note this will cover the majority of Edinburgh Airport operators

Other Operators (such as LoganAir) will be engaged with direct.

Stakeholder Engagement

The following stakeholders will be engaged with during the CAP1616 process:

Airlines – The main airlines operating from Edinburgh Airport

Airports – adjacent airports such as Glasgow (EGPF)

MOD - via DAATM

NATMAC - 39 Organisations

Other Change Sponsors – of relevant airspace changes e.g. Glasgow

Note it is not intended to engage directly with local stakeholder representative groups.

Edinburgh Airport will be undertaking consultation on the proposed low level routes and impacts thereof

NATS will provide support where necessary to Edinburgh during consultation.

Summary of Benefits and Issues

Benefits

- Capacity benefits
- Compatible with AMS and future systemised network (FASIN)
- Improved climb and descent profiles resulting in a reduction in emissions

Issues

- Coordination between FASI-N ScTMA ACPs interactions between Edinburgh and Glasgow.
- Dependencies to be identified during stage 2.
- ACOG will assist in brokering resolution of conflicting requirements.

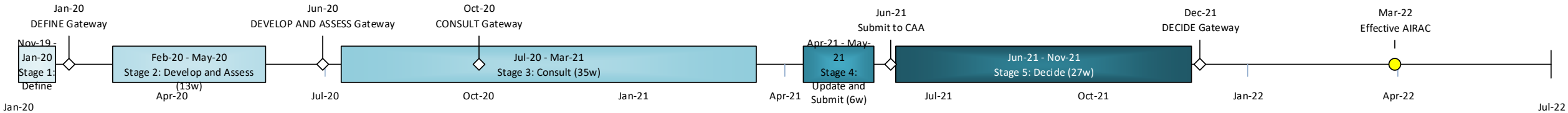
Provisional Scaling and Process Discussion

- FASI-N Airports ACPs will drive the design, and consult upon, routes and traffic distribution below 7000ft.
- The NATS network ACP will be coordinated and aligned with these ACPs.
- The Level for the network ACP is to be confirmed.

Edinburgh – May 2022

[redacted]

Edinburgh ACP Timeline



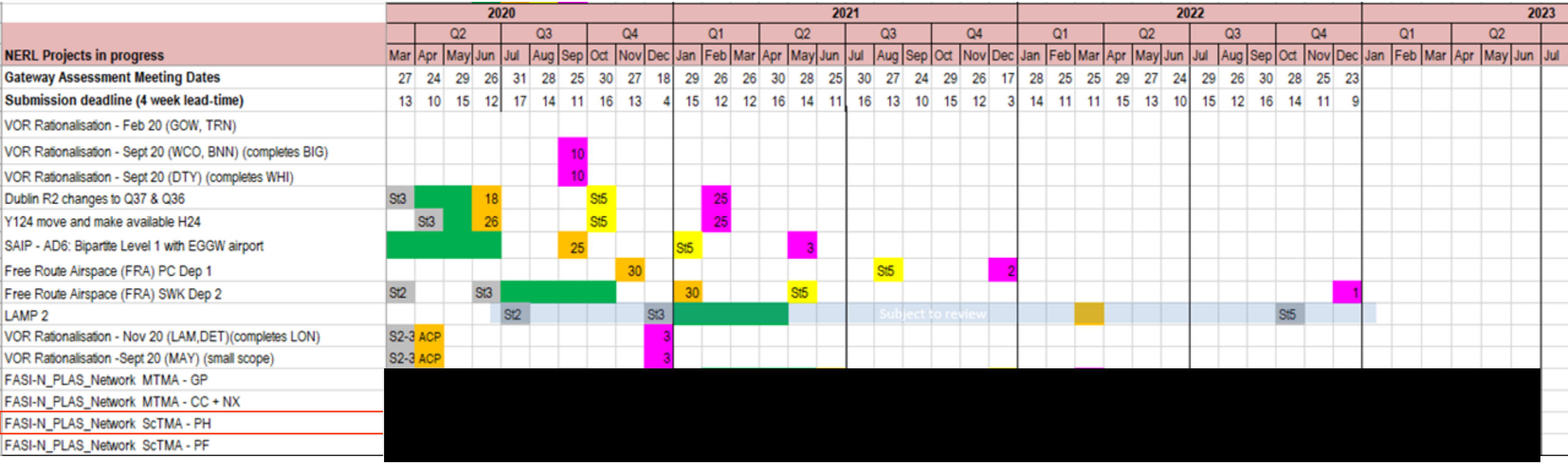
The NATS Implementation date is dependent on the Edinburgh ACP progress.

Draft Gateway Timescale

NATS proposed gateway timescales will be submitted via a separate timeline request form to the CAA before being agreed upon.

Engagement with EAL regarding coordination of dates is ongoing.

Overview Snap-shot of NATS Gateways

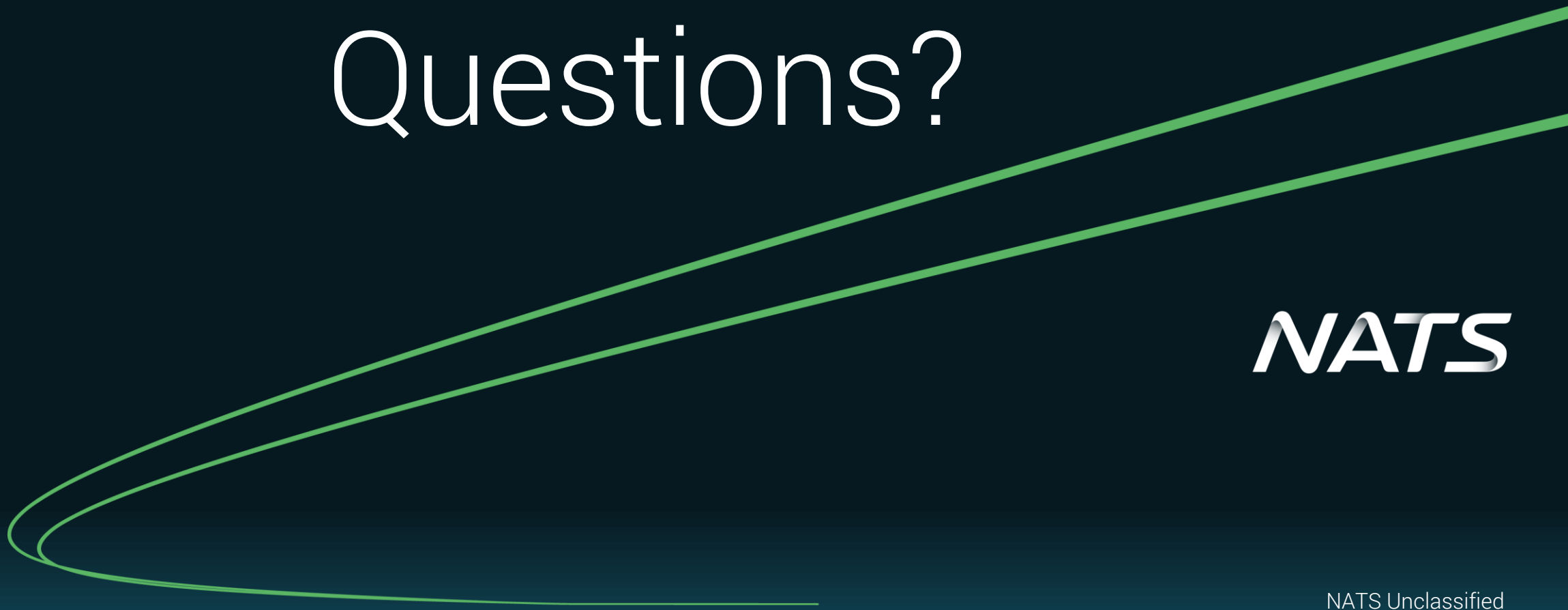


NERL Projects in progress	2020										2021												2022												2023						
		Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2		
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Gateway Assessment Meeting Dates	27	24	29	26	31	28	25	30	27	18	29	26	26	30	28	25	30	27	24	29	26	17	28	25	25	29	27	24	29	26	30	28	25	23							
Submission deadline (4 week lead-time)	13	10	15	12	17	14	11	16	13	4	15	12	12	16	14	11	16	13	10	15	12	3	14	11	11	15	13	10	15	12	16	14	11	9							
VOR Rationalisation - Feb 20 (GOW, TRN)																																									
VOR Rationalisation - Sept 20 (WCO, BNN) (completes BIG)							10																																		
VOR Rationalisation - Sept 20 (DTY) (completes WHI)							10																																		
Dublin R2 changes to Q37 & Q36	St3			18				St5				25																													
Y124 move and make available H24		St3		26				St5				25																													
SAIP - AD6: Bipartite Level 1 with EGGW airport							25				St5				3																										
Free Route Airspace (FRA) PC Dep 1									30									St5				2																			
Free Route Airspace (FRA) SWK Dep 2	St2			St3							30				St5																			1							
LAMP 2					St2					St3							Subject to review														St5										
VOR Rationalisation - Nov 20 (LAM,DET)(completes LON)	S2-3	ACP								3																															
VOR Rationalisation -Sept 20 (MAY) (small scope)	S2-3	ACP								3																															
FASI-N_PLAS_Network MTMA - GP																																								
FASI-N_PLAS_Network MTMA - CC + NX																																								
FASI-N_PLAS_Network ScTMA - PH																																								
FASI-N_PLAS_Network ScTMA - PF																																								

Engagement, and Next Steps

- Commence engagement with stakeholders on Design Principles
- NATS to liaise closely with EAL, GAL, ACOG and other stakeholders
- NATS to engage with airlines, airports, GA and MoD.
- NATS to support EAL where appropriate

Questions?



NATS