Ministry of Defence

ACP-2020-24

E-7 WEDGETAIL OPERATING AREAS

GATEWAY DOCUMENTATION:
STAGE 2 DEVELOP & ASSESS

STEP 2A AIRSPACE CHANGE DESIGN OPTIONS
AND
DESIGN PRINCIPLE EVALUATION

Drafting and Publication History

Issue	Date	Change Summary
V1.0	9 Feb 23	Submitted to CAA
V2.0	22 Mar 23	Amendments following CAA feedback on V1.0
V2.1	2 Apr 24	Minor insertion to The Proposal

Revision Number	Affected part	Revised By	Notes
V1.0	N/A	Project Lead	Initial Issue
V2.0	The Proposal	Project Lead	Page 5 - Highlighting only 1 area used at a time
V2.0	Design Option Analysis	Project Lead	Page 9 - New
V2.0	FIR and UIR Engagement	Project Lead	Page 10 - New
V2.0	FRA	Project Lead	Page 11 - New
V2.0	Evaluation	Project Lead	Page 21 - Option 0 - Revised in toto
V2.0	Evaluation	Project Lead	Page 22 - Option 1 - Revised in toto
V2.0	Evaluation	Project Lead	Page 24 - Option 2 - Revised in toto
V2.0	Design Options Summary	Project Lead	Page 26 - Revised
V2.1	The Proposal	Project Lead	age 11 - New. Engagement Feedback and Impact on Designs - summary (Table)

Contents

References

1. CAP 1616 Airspace Change Process (*4th Ed, March 2021*)
2. CAP 740 UK Airspace Management Policy
3. CAP 2091 CAA Policy on Minimum Standards for Noise Modelling
4. Email from DAATM to CAA outlining justification for limited engagement (dated 15 Jul 20)
5. Email from CAA to DAATM & MOD accepting justification for limited engagement (dated 20 Jul 20)

Introduction

Where are we in the Airspace Design Process?

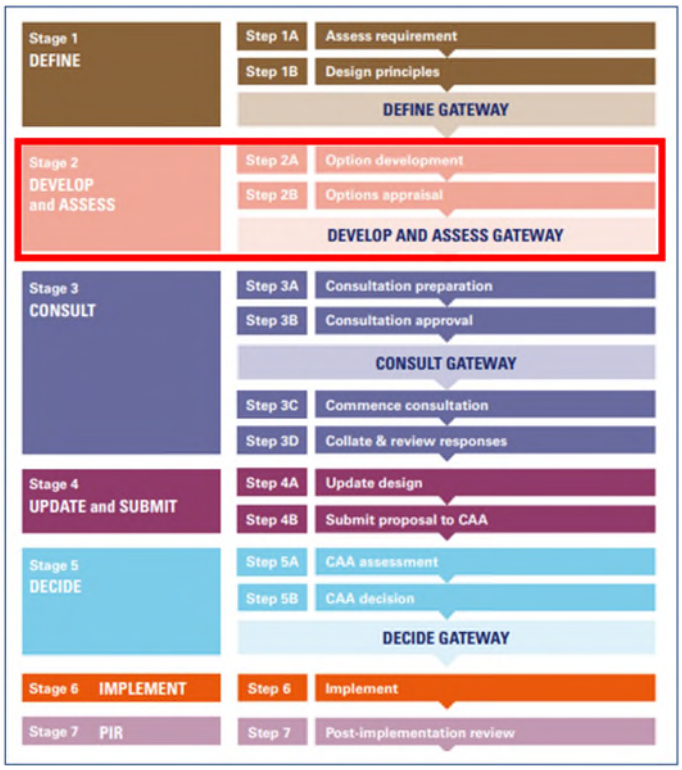


Figure 1. CAP1616 Airspace Change Process

Following the initial CAP1616 ***Stage 1 – Define*** phase, we are now in ***Stage 2 – Develop and Assess***, whereby we (the ISTAR Force as the change sponsor) is looking to establish one or more options to meet the Statement of Need (SoN – detailed later), aligned with the design principles agreed during stage 1. We will then look to make an appraisal of the impact, both positive and negative, of the potential options.

Why is the change needed?

Since 1991 the E-3D AEW Mk 1 Sentry has been the Royal Air Force's AEW&C (Airborne Early Warning and Control) platform. The aircraft have also sat as part of the NATO AEW&C fleet, contributing a 25% share of force output on training and operations. Developments in technology elsewhere, and the ageing of the airframes, has reduced the operational effectiveness of the E-3D fleet and so, in 2018, the UK MOD elected to replace the E-3D with the more modern, 5th generation E-7 AEW Mk1 Wedgetail. Currently operated by air forces in Australia, Turkey and South Korea, the aircraft represents a step change in capability and will bring the UK's airborne command and control capability into the 21st century. In order to capitalise on this new capability to the utmost, airspace change is required to enable most effective use of the E-7 sensor suite.

What was the statement of need for this proposal?

Currently the E-3D Sentry AEW Mk 1 utilises the UK AEW areas for UK training and operations. In 2023[1] the E-7 Airborne Early Warning Wedgetail Mk 1 will enter RAF service. Though fulfilling the same role as the Sentry, advances in technology mean that the Wedgetail will not be able to utilise exactly the same orbit areas. The Wedgetail will be required to fly approximately 100 nm by 20 nm racetracks. Best use can be made of some of the existing orbit areas (e.g. UK 1, 7 and 9) as they are both large enough to accommodate the Wedgetail flight profile and are appropriately located to enable Wedgetail to provide a service to its forecast traffic and trade. The existing orbit areas may still be utilised by NATO/visiting forces partners as the UK will retain its NATO commitment in this respect. Therefore, whist the extant orbit areas must remain in place for the time-being, there is a requirement for new orbit areas to be created where the current areas are not sufficient.

[1] E-7 In Service Date (ISD) has moved to Q3/4 2024.

Design Principles

During ***Stage 1 – Define***, the MOD established the case for limited stakeholder engagement on the grounds of:

- The GA community has no vested interest – all airspace changes will be within class C airspace.
- The Airlines should not be considered as stakeholders given that there is no desire to establish segregated airspace.
- The likely airspace changes will not be of interest to aerodromes due to being above FL195.

Following acceptance of this rationale by the CAA it was deemed that NATS (National Air Traffic Services) would be the primary stakeholder, with the caveat that, should at any point it deems that wider stakeholder engagement is required they will be brought in to consult on the proposal.

Table 1 details the Design Principles that were agreed at Stage 1 of ACP 2020-24 in consultation with NATS and MOD stakeholders.

Table 1. Design Principles

DP ID	**Agreed Design Principle**
a	Must be safe. The defined airspace must provide ATS providers a known traffic environment to ensure safe separation against GAT.
b	Defined areas must be sufficient in location to achieve training and operational objectives.
c	Defined areas must be the minimum dimension to achieve task.
d	Minimise the impact to Commercial Air Traffic flow, sector complexity and sector capacity.
e	Airspace management and FUA principles will be applied to ensure collaborative decision-making protocols and management processes are established.
f	Defined areas shall not be segregated airspace but will align to current or revised procedures detailed within current NATS/MOD interface documents.
g	The defined areas will detail the separation standard required between GAT and the OAT using the designated area.
h	The design shall seek to rationalise existing areas where appropriate.
i	The design shall minimise the impact on all ATM stakeholders. This will include NATS and other ANSPs (including foreign ANSPs) so as not to over complicate airspace, sector design and service provision.

The Proposal

This ACP aims to establish a set of designated, non-segregated areas for use by the E-7 Wedgetail following introduction into RAF service in 2023. The following sections of this document aim to establish the specifics of each orbit area, why they are part of the proposal and the likely impact each will have. Ultimately, the Sponsor believes that development of this airspace will help to maintain the predicted traffic environment whilst allowing for best employment of the E-7 Wedgetail in defence tasks and hopes to make this case in the coming sections of this document.

Throughout this proposal, the assumption is held that RAF sortie rates for E-7 will be approximately 1 per day, with 2 per day in some instances. Whilst it is not possible to forecast the likelihood of these instances – it will only be for certain types of large-scale exercise activity and rare national security requirements, on a frequency not likely to exceed a few days annually. This assumption is based on fleet size (3 airframes), endurance (circa 8-10 hours unless air-to-air refuelled) and permitted annual flying hours. The fleet will be based at RAF Lossiemouth in Scotland. UK operations will predominantly be from RAF Lossiemouth, with rare exceptions for exercise and certain operational activity.

It is important to note that, on current planned timelines the NATO Airborne Early Warning & Control Force will continue to operate the fleet of 14 E-3A aircraft until at least 2035. This includes UK activity for both training and operations. It is therefore essential that the existing series of AEW orbits remain in place. Concurrent use of overlapping E-3 and E-7 orbit areas will not generally be required but may occur on a highly infrequent basis for short (< 60 mins) periods to facilitate area handover between platforms.

The dimensions for proposed E-7 areas are 100x20nm, which allows for best tactical employment of the Multimode Electronically Scanned Array (MESA) radar. The sensor is best employed perpendicular to the threat direction, or to airspace in which a control service is being provided. Each area is being requested for FL270-350. However, much like the E-3, the aircraft will request a single level within this band, and once established at that height it is unlikely to deviate unless atmospheric conditions require it, or if requested to do so. Any such altitude adjustment would always be in consultation with ATC. Similarly, as per the E-3, E-7 is Reduced Vertical Separation Minima (RVSM) compliant, and the radar safety clearance (known as RADHAZ) is not greater than that of the E-3 ensuring that separation requirements are not increased.

The Sponsor did previously consider larger operating areas which would encompass the areas proposed within this document, however, whilst this would facilitate greater tactical freedom, it would result in the loss of a significantly larger portion of airspace available to other military and civilian operators. It is for this reason that such an option was eliminated early in the design process.

Whilst vastly different in terms of capability, the core role of the E-7 Wedgetail is the same as that of the E-3. As such, the proposed airspace set out in the remainder of this document is, in broad geographical terms, similar to that of the E-3 orbits areas. Wherever possible, proposed areas have been formulated so as to be incorporated either wholly within, or predominantly within the existing orbit areas. This is with an intent to minimise airspace complexity. It must also be noted that, whilst a successful outcome to this ACP would result in E-7 areas overlaid on E-3 orbit areas, concurrent activation of both overlapping areas will rarely, if ever be required. The only instance that concurrent activation would be required, that the Sponsor can reasonably foresee, would be if an extended duration defence tasking meant that one of the platforms had to conduct a handover of the task to the other.

This ACP covers 21 unique E-7 operating areas, however only one area will routinely be activated at any one time. Very occasionally two areas may be activated for concurrent E-7 operations, but this will not be on a frequent basis.

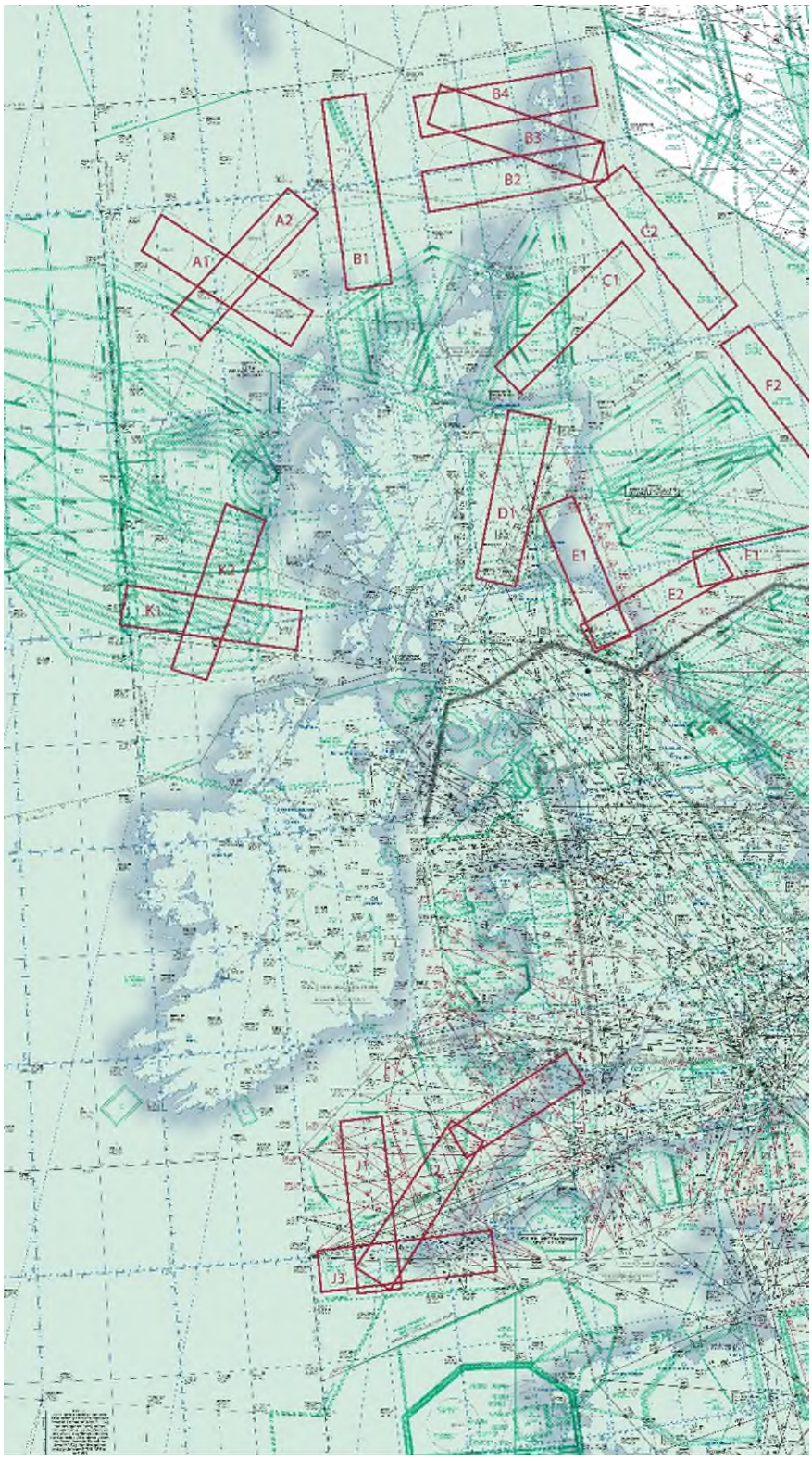
Table 2 (overleaf) provides a summary of the proposed areas, with a Sponsor assessment of likely frequency of use rated as high, medium, or low. This assessment is derived from analysis of the defence tasks at classification above that of this document, and historic E-3 requirements.

High usage classification is for an area which is likely to be used on a weekly basis, predominantly for support to fast jet and air-to-air refuelling activity.

Medium usage classifies an area which is likely to be activated on an approximately monthly basis for national security requirements or for non-standard exercise activity.

Low usage is an area which needs to exist predominantly for national security purposes. The Sponsor assesses likely frequency of activation to be 1-3 times per year.

Figure 2. Proposed Area Locations



Figs 2 and 3 collectively show a pictorial representation of proposed E-7 areas within the UK FIR (the current E-3 areas and circular orbits can be seen in hashed light grey on the chart). Wherever possible the E-7 areas, and E-3 areas are coincident. Annexes A and B, along with Appendix A, highlight discussion with NATS on those proposed E-7 areas which had impact on ATS route structures (East Anglia, Bristol Channel and SWAPS). It should be noted that the proposed E-7 areas are non-segregated, and airlines can be routed through them.

Fig 2 shows Northern Scotland, Northern N Sea and West Coast areas.

Figure 3. Proposed Area Locations

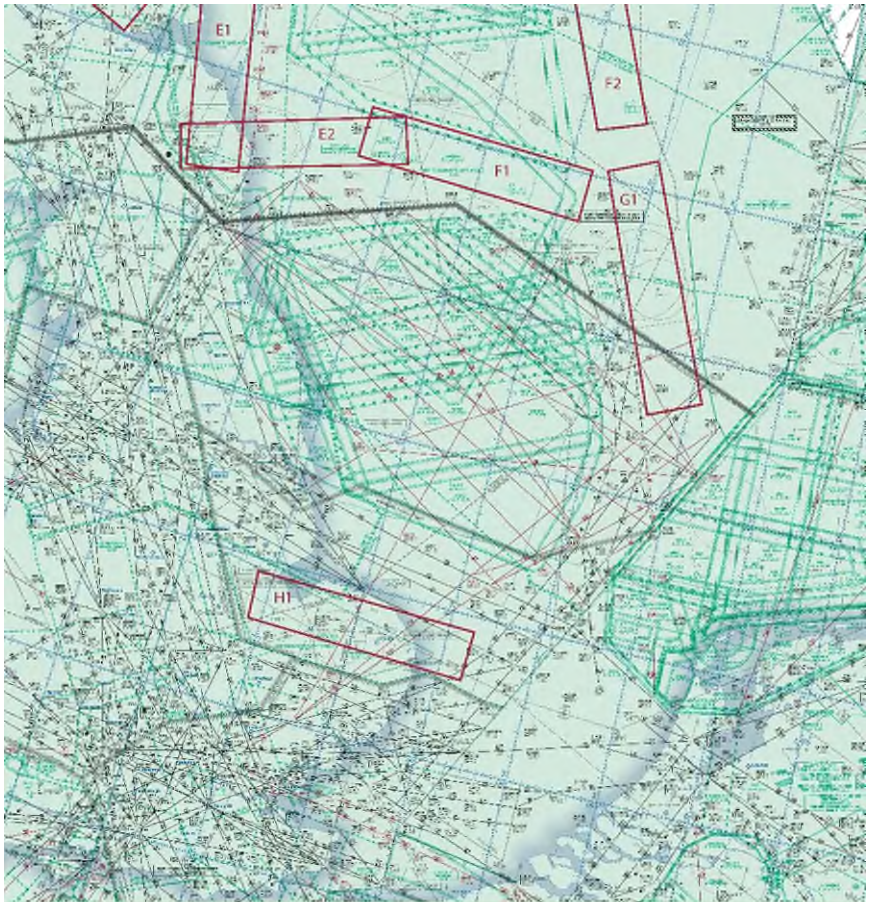


Fig 3 shows areas proposed within the North Sea (primarily around the D323 complex and East Anglia.

Table 2. Summary of Proposed E-7 Areas

Area	Location[2]	Tolerances	Requirements
1 A1-A2	North West UK (UK 11)	Based on location of UK 11. Areas could be orientated in any direction inside existing UK 11.	To support QRA[3] activity and also tracking on missile tests.
2 B1-B4	North UK (UK 12)	Based on location of UK 12. Areas could be orientated in any direction inside existing UK 12.	To support QRA activity and also tracking on missile tests. Support activity in D712s/FJMDAs[4].
3 C1-C2	Moray (UK 10)	Based on location of UK 10. Orientated to support fighter activity in D613 complex. Current race area orientation provides best radar look.	Orientated to support fighter activity in D613 complex. Support to QRA activity. Tactical scenario inclusion. Radar footprint predominantly over water.
4 F2	East of 613 RA3	Built upon RA3.	Orientated to support fighter activity in D613 complex. Enables best radar look into 613 complex. Tactical scenario inclusion.
5 D1	Aberdeen (UK 9)	Built upon UK 9. Could accept 80nm legs.	Orientated to support fighter activity in D613 complex. Tactical scenario inclusion.
6 E1	Newcastle	Could accept 80nm legs. Similar location to UK 5 which is too small for Wedgetail.	Would enable enabling fighter activity in both 323s/613s to be supported. Radar footprint predominantly over water.
7 E2	RA5	Built upon RA5. Similar location to UK 5 which is too small for Wedgetail.	Built upon RA5. Would enable enabling fighter activity in both 323s/613s to be supported. Radar footprint predominantly over water.
8 F1	RA7	Built upon RA7. Intrudes into 323 complex, so reliant on airspace not being booked.	Enables activity in 323 complex to be supported. Tactical scenario inclusion.
9 G1	East of 323	Similar to UK 6 which is not large enough for Wedgetail operations.	Enables fighter activity in 323 complex and RA8 to be supported. Tactical scenario inclusion.
10 H1	Norwich (UK 3)	Built upon UK 3. Orientation enables best radar look.	Enables support to HVEs[5] in London such as Olympics/ NATO & G7 summits.
11 I1	Cardiff (UK2)	Orientation enables best radar look into Welsh MDAs, could take 80nm legs.	Enables support to fighter activity in Welsh MDAs.
12 J1-J3	SW Apps (UK 1)	Based on location of UK 1. Orientation enables support of Naval exercises or activity in D064 depending on tasking.	Orientation enables support of Naval exercises/FOST[6] or activity in D064.
13 K1-K2	West UK (UK 7)	Based on location of UK 7. Race areas could be orientated anyway inside existing UK 7.	To support QRA activity and any West Scotland exercises such as JOINT WARRIOR.

Expected Frequency of Use (see page 6) - High Medium Low

[2] The bracketed UK areas are extant E-3 operating areas.
[3] QRA – Quick Reaction Alert – Typhoon at high readiness alert for defence tasks at RAF Coningsby and RAF Lossiemouth.
[4] FJMDAs – Fast Jet Managed Danger Areas.
[5] HVEs – High Value Events.
[6] FOST – Flag Officer Sea Training – Royal Navy training and evaluation unit.

Stakeholders

In *ACP-2020-24 Stage 1B DEFINE Submission (submitted 12 Feb 2021)*, the Sponsor made the case for, and it was presented to and agreed by the CAA (at References 4 and 5) that this ACP would comprise:

1. MOD internal
2. National Air Traffic Services (NATS) – with an ability to represent airlines

The rationale that the Sponsor proposed, and the CAA accepted, for this limited engagement was the following:

- It is a working assumption that the proposed orbit areas will not be segregated.
    - The defined areas will allow interaction on the NATS equipment to ensure controllers are alerted to a potential confliction.
    - Confliction resolution will be tactically managed against the specific aircraft, not the airspace.
    - The airspace will define the scope of the area where the E7 has non-deviating status, which is similar to how the current E3 orbit areas.
- Due to the levels required for orbit, the areas will be fully contained in Class C.
- Through engagement and negotiation, we believe that NATS are likely to influence the location of the orbit areas, hopefully this process will naturally mean that NATS will be able to provide some kind of indication on potential impact on airlines.
- If there are any activation protocols to be worked through, input may be requested from the NATS/MOD joint and integrated Airspace Management Cell.

Throughout the development of this Stage 2 submission, it has become evident that Swanwick Mil ATC play a fundamental role in management of the existing AEW&C orbits on a day-to-day basis. Whilst they have previously been consulted on the E-7 proposal, the Sponsor wishes to make clear that from here on in they will be brought in for closer consultation on the development of E-7 airspace and operating procedures.

For further detail on this decision please consult *ACP-2020-24 Stage 1B DEFINE Submission (submitted 12 Feb 2021)*.

Design Option Development – analysis

In early 2021 the ISTAR Force Headquarters commenced analysis on the requirement for bespoke airspace for the E-7 Wedgetail. Initial MOD meetings involved the ISTAR Force Headquarters (ISTAR FHQ), 8 Squadron (the then E-3D operating squadron), Air Capability, and RAF personnel operating on RAAF (Royal Australian Air Force) E-7 in Australia. The collective Subject Matter Experts (SMEs) considered current E-3 orbit locations and dimensions to assess suitability for E-7 use. Feedback from the RAAF embedded team stressed the importance of flying the aircraft on long straight legs to optimise MESA radar performance. As a result an initial design model was generated, evolved, and circulated with NATS for initial feedback. Following this initial feedback some of the proposed areas were amended and the revised proposal re-circulated for consideration. It became apparent that a change in airspace would be required and that an ACP iaw CAP1616 would need to be submitted. The ISTAR FHQ lead on this requirement in consultation with the afore mentioned SMEs and the following 3 pathways became apparent.

- Option 0: Do Nothing - E-7 would operate in the extant E-3 orbits throughout the UK.
- Option 1: Do Minimum: Utilisation of existing MDAs and modified E-3 orbits.
- Option 2: Dedicated E-7 Wedgetail Operating Areas

Engagement

Full records of the engagement that has taken place during Stage 2 of this ACP are detailed within the annexes of this document.

Stage 2 engagement commenced with NATS in Spring 2021, with the first consultation meeting taking place via Microsoft Teams on 12 May 21. The Sponsor discussed the Statement of Need, and it was agreed that it would require an amendment to be more representative of changes across the FIR, having previously been biased towards those within the North Sea airspace. This amendment was actioned, and the revised Statement of Need was published on 22 Jun 2021.

Beyond this, discussion about each proposed area took place. NATS identified that they would require some time to fully assess the impact of the some of the areas and that mapping resolution limited full analysis, particular those in the Southwest and Area 10 due to its proximity to the London TMA. For the remainder of the areas, they key discussion points included:

- Limited conflictions with Managed Danger Areas (MDAs)
- Simultaneous activation of Air-to-Air Refuelling Areas (AARAs) ivo the proposed E-7 areas

The sponsor made note of these concerns but highlighted that MDA conflictions are unlikely to be an issue to MABCC process (Swanwick Military ATC's Military Airspace Booking and Coordination Cell) and through close coordination of exercise activity during mission planning. Whilst concurrent AARA and E-7 area activations are potentially more likely, close coordination through ASACS (Air Surveillance and Control System) and military ATC will likely prevent this. Historic E-3 evidence suggests that both of these assumptions are rational.

On 28 Jun 21 the follow up consultation meeting was held. At this event Areas 10, 11, and 12 were discussed. It was highlighted by NATS that the location of Area 10 could be problematic, particularly at altitudes below FL300. Optimum E-7 operations tend to be above this height with some lower instances for atmospheric conditions. The idea of splitting the area into two or even three parts to minimise impact was raised and will be considered more widely at Stage 3 of this ACP.

NATS highlighted impact on climbing and descending traffic, both North/South and East/West. For this reason it was stated that operations at FL270 would be beneficial. This will be considered when development of standard operating procedures is conducted as we move closer to introduction to service. Beyond this, NATS queried the likely use of the airspace in terms of reason on frequency. Based on historic E-3 evidence it is likely that this area will be used on fewer than 10 occasions per annum for support of non-standard fast jet training activity and for national security requirements in highly limited cases.

Area 12 did not raise any significant concern for NATS with the exception of slight moves. The Sponsor did ask if NATS would have concerns should the entirety of the existing AEW Area 1 could be utilised for E-7 options, but NATS stressed that this should not be done in the interests of maintaining predictability of E-7 flight patterns.

Engagement beyond NATS, Eurocontrol and internal MOD was not identified or required iaw Stage 1 agreement on limited stakeholder engagement, but the sponsor recognises that it is likely that further limited engagement is likely once this Stage 2 documentation is published on the CAA portal.

FIR and UIR Engagement

The proposed dedicated E-7 areas directly affect the London (EGTT) and Scottish (EGXP) UIRs. By nature of bordering on these UIRs there may be some cross border impact on the France UIR (LFFF), Brussels UIR (EBUR), Amsterdam FIR (EHAA), Koebenhaven FIR (EKDK), Polaris FIR (ENOR) and Shannon UIR (EISN). Engagement has already commenced with NATS regarding geographical locations of the proposed E-7 areas and impacts in the London and Scottish UIRs. Engagement with Eurocontrol has also commenced regarding the cross FIR/UIR border impacts and flow management. Further engagement is planned with Eurocontrol during Stage 3 Consult phase when current and predicted future flow levels will be discussed in more detail.

FRA

Throughout the design process both FRA and non-FRA has been considered. The co-location of the proposed E-7 areas with existing E-3 areas has in many respects deconflicted E-7 operations with commercial air traffic. The flexibility brought by FRA should further reduce the impact of E-7 operations on Class C air traffic given the increased variability in routing options. Moreover, as the proposed E-7 areas are non-segregated airliners can route through them with mandated vertical and lateral clearances. Additionally the E-7 will be able to climb or descend within the operating area to deconflict with airline traffic with minimal impact on radar performance, in most instances.

Engagement Feedback and Impact on Designs - summary

Stakeholder	Feedback	Impact
NATS	Areas 10, 11 and 12 (H1, I1 and J1-3) were the only proposed areas that caused any significant concern to NATS.	Consideration to splitting Area 10 (H1) into 2 or 3 parts will be considered at Stage 3. Main impact below FL300.
		Area 11 (I1) will only be used on a very occasional basis (likely less than 10 occasions per annum). Ops at FL270 will be considered and deconfliction tactically managed.
		Area 12 (J1-J3) minor changes to area co-ordinates implemented.
NATS	Confliction of E-7 operating areas with MDAs - safety.	MDA conflictions are unlikely to be an issue due to MABCC process (Swanwick Military ATC's Military Airspace Booking and Coordination Cell) and through close coordination of exercise activity during mission planning.
NATS	Simultaneous activation of Air-to-Air Refuelling Areas (AARAs) ivo the proposed E-7 areas - safety.	Whilst concurrent AARA and E-7 area activations are potentially more likely, close coordination through ASACS (Air Surveillance and Control System) and military ATC will prevent this.
Euro Control	Flow control to/from Europe would be a consideration when North Sea Areas were active.	To be considered in more depth during Stage 3 CONSULT. Post pandemic flow rates would need to be assessed. Impact should be minimal as non-segregated airspace and areas and frequency of use very similar to E-3 operations which have been managed tactically and successfully over the past 30 years.
		The introduction of FRA within the London and Scottish UIRs should also assist with routings and flow control.
MOD (Internal)	Areas must meet operational and training requirements.	The minor changes to the initial proposals are accepted by the MOD as they still allow all operational and training requirements to be met.

Current Situation

Figure 4. Current AEW Orbit Locations

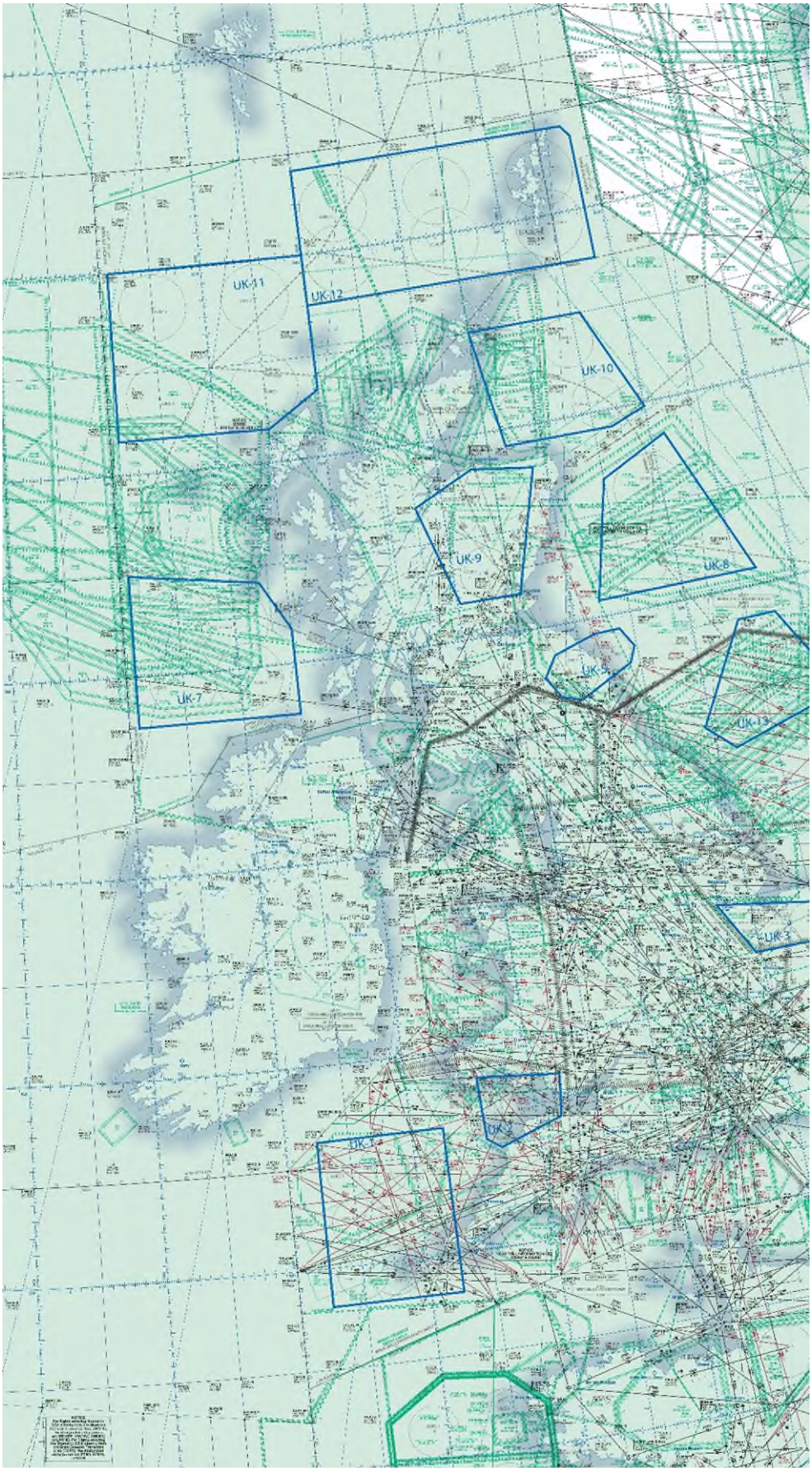


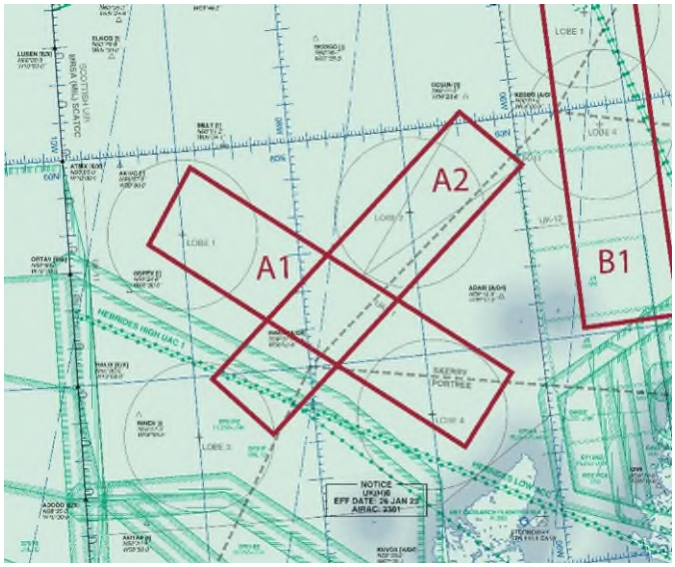
Figure 5. Current AEW Orbit Locations

The current E-3 orbit areas comprise lateral and vertical boundaries (highlighted in blue), in which there are a series of lobes (generally 15nm radius – grey circles) on which the E-3 establishes a circular orbit, or when tactical requirements demand it, 2 lobes are used to facilitate a "racetrack" or "figure 8" flight pattern. The areas are non-segregated airspace to ensure the most efficient use of airspace possible. This has proven to work well for the life of the E-3 fleet so far, and it is for this reason that the Sponsor wishes to propose non-segregated airspace for use by the E-7 Wedgetail. The areas are strategically located around the UK to enable both training with Fast Jets, predominantly in the North Sea (D323 complex), and provide optimum locations for national defence and security tasks. These orbits are also used by the NATO E-3 Force. The orbit areas are activated by Swanwick Mil on the day of use by a Military pre-note that is submitted approximately 2 hours prior to ETD. A single Flight Level is also requested. The airspace is non-segregated which allows civil traffic to route through the area with Swanwick Mil and the Civil sector providing tactical coordination. The E-3 will remain in the area at the assigned Flight Level (normally FL310) for the duration of the task. Any change of Flight Level or change of area is requested by the crew through Swanwick Mil and will not be implemented until coordinated by both Swanwick Mil and the Civil sector. The E-3 is RVSM capable allowing vertical separation with other traffic to be reduced to 1000ft above FL290. The RADHAZ of the main sensor poses no safety issues as long as standard ATC separation is achieved. The E-3 crew notifies Swanwick Mil when the sensor is radiating.

Impacts of proposed areas on existing environments/ATS structure

Annexes A and B, along with Appendix A, highlight discussion with NATS on those proposed E-7 areas which had impact on ATS route structures (East Anglia and Bristol Channel and SWAPS). It should be noted that the proposed areas are non-segregated, and civilian air traffic can be routed through them. Below is a summary of the proposed areas by geographical region.

Figure 6. A1-A2 Outer Hebrides

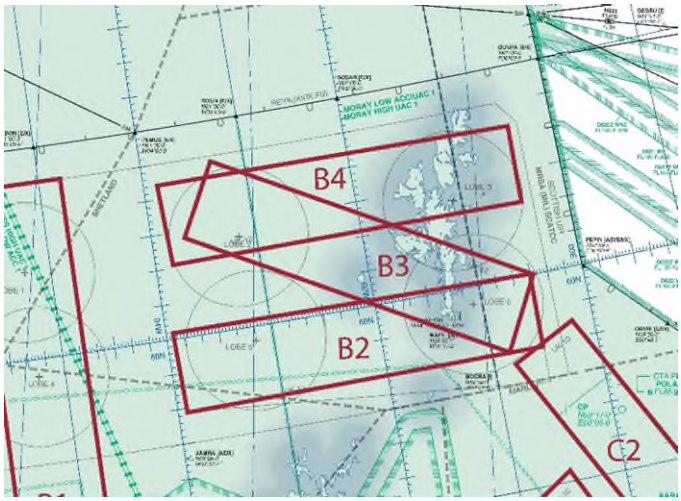


Outer Hebrides (FL270-350)

Within AEW UK 11

Limited impact on high level air routes and FRA

Figure 7. B1-B4 Outer Hebrides



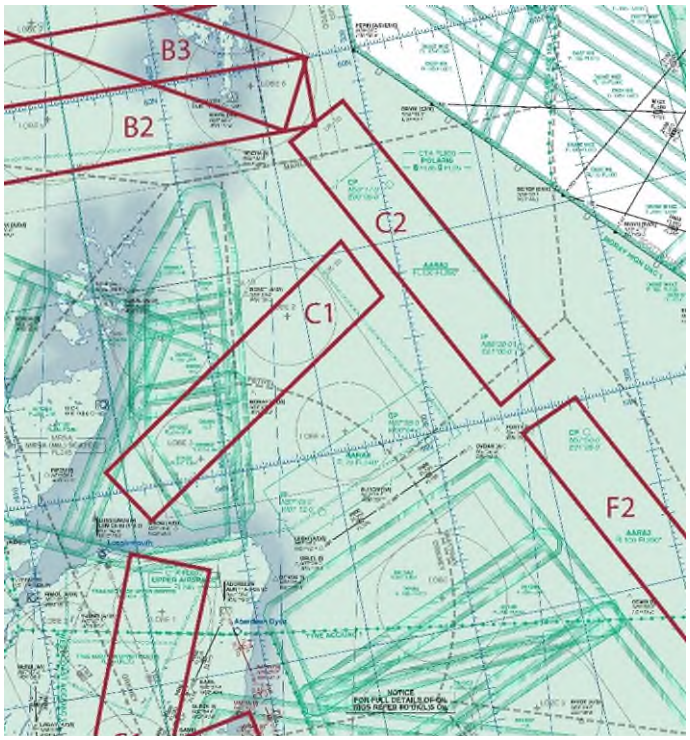
North Capes/Shetlands (FL270-350)

B2-4 within bounds of AEW UK 12. Area B1 extends south towards D712.

Limited impact on high level air routes and FRA

Coord with Swanwick Mil regarding concurrent activation with D712.

Figure 8. C1-C2 Moray Firth



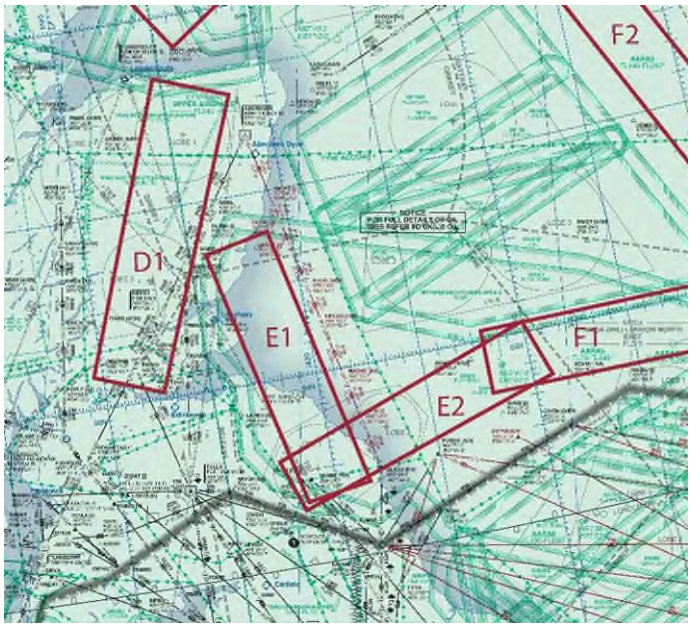
Moray Firth (FL270-350)

C1 predominantly within AEW UK 10. Some overlap with D712 and D809 series (up to FL550). Coordination with Swanwick Mil.

C2 new area to E of UK 10. Overlap with AARA2 (FL100-290) – coordination via Swanwick Mil or pre-flight planning.

Limited impact on high level air routes and FRA.

Figure 9. D1 and E1-E2 East Coast



Scottish Highlands (FL270-350) – D1

Predominantly within AEW UK9. Extends slightly south IVO Edinburgh and Glasgow Aerodromes. No effect on SIDS/STARS due to altitude.

Limited impact on high level air routes and FRA.

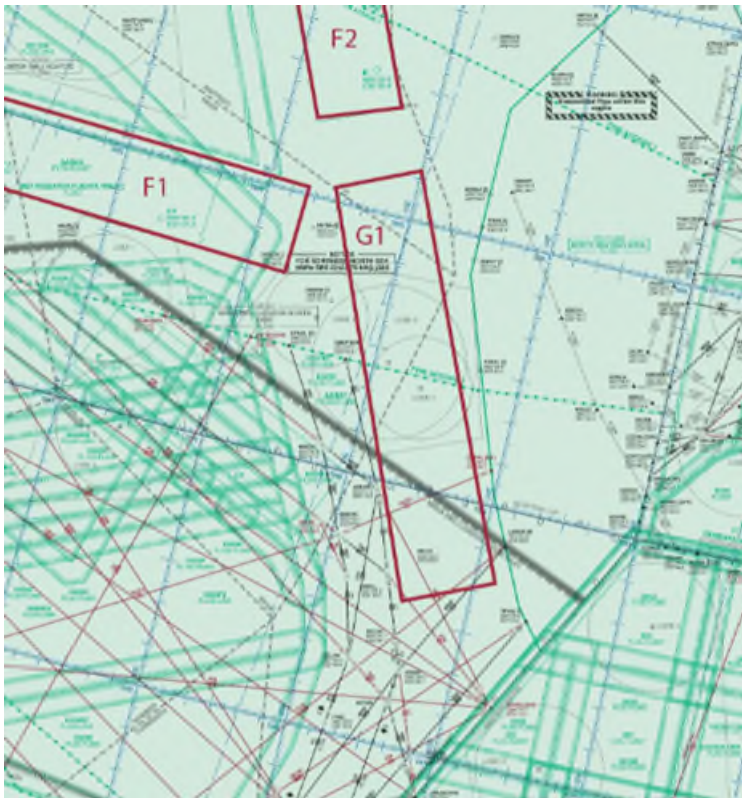
East Coast (FL270-350) – E1 + E2

Limited overlap with AEW UK5 at southern boundaries.

E1 IVO Edinburgh and Newcastle Aerodromes. No effect on SIDS/STARS due to altitude.

E2 IVO Newcastle Aerodrome only. No effect on SIDS/STARS due to altitude. Located above AARA5 (FL070-240) and between D323 and D613 series danger areas, coordination will be managed through Swanwick Mil/ASACS.

Figure 10. North Sea



North Sea (FL270-350) – F1 + F2

F1 located above AARA5 (FL070-240) and between D323 and D613 series danger areas, coordination will be managed through Swanwick Mil/ASACS.

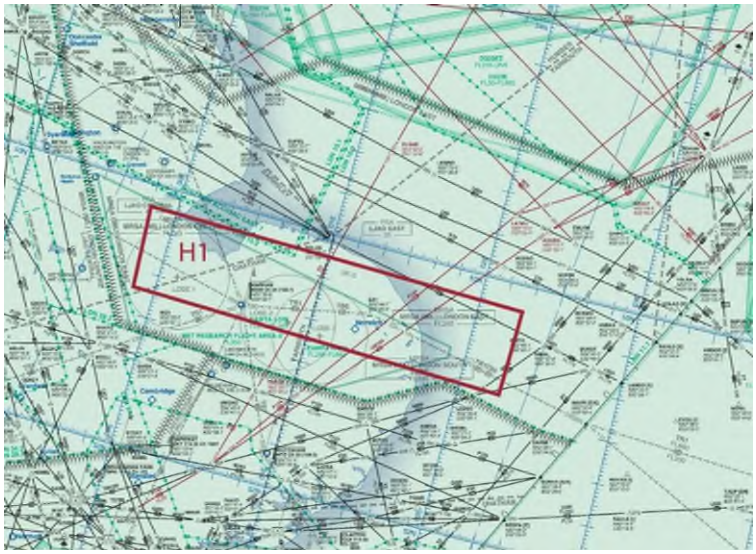
F2 to E of D613 complex and above AARA3 (FL100-290) – coordination through Swanwick Mil/ASACS.

North Sea South (FL270-350) – G1

Located E of D323 danger area complex IVO AEW UK6. SE corner is approx. 20nm of UK UIR boundary. Notification of area activation will ensure adjacent ATC are aware.

Upper airways routing N-S when D323 complex activated but traffic likely to be above E-7 operating level.

Figure 11. H1 East Anglia



East Anglia (FL270-350) – H1

Offset slightly N of AEW UK3 providing greater lateral separation from London Centre, and south of European air routes (e.g Y70). Above D207 dangers area (SFC-FL230). E edge is approx. 25nm from UK UIR boundary. Notification of area activation will ensure adjacent ATC are aware.

IVO Marham, Lakenheath, Mildenhall, and Norwich Aerodromes but assessed as limited impact due to altitude.

Figure 11. I1 and J1-3 Bristol Channel and SWAPS

Bristol Channel (FL270-350) – I1

Contained within boundaries of AEW UK1 and 2. Overlap with D064 danger area complex, and AARA12 (FL070-280), coordination by Swanwick Mil. South of South Wales danger areas and to the West of Bristol and Cardiff Aerodromes, assessed as no impact due to altitude.

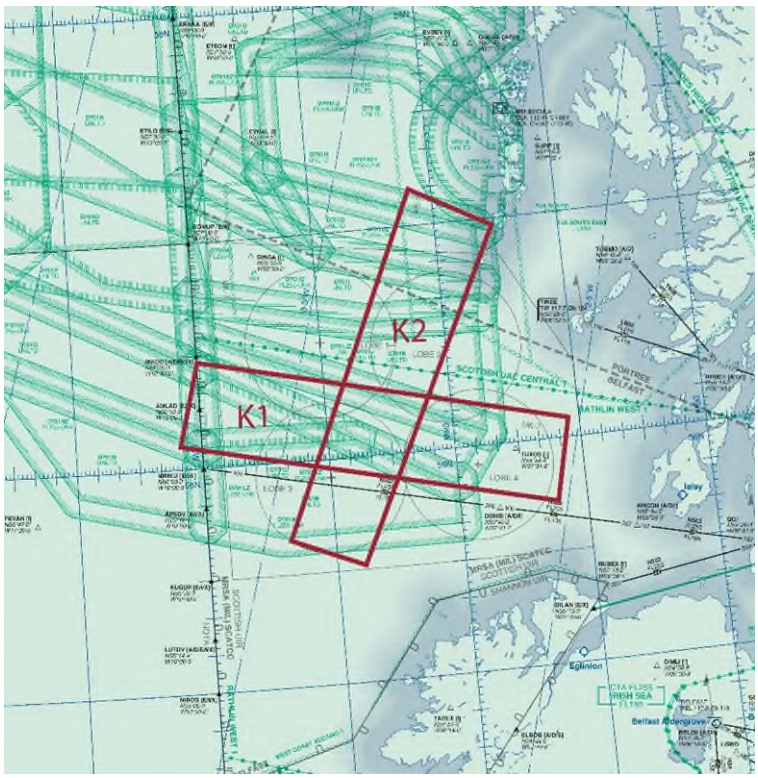
Possible limited impact on oceanic traffic climbing and descending from/into London.

South-West Approaches (FL270-350) – J1-3

Predominantly contained within boundaries of AEW UK1, the exception being J3 which extends slightly E and W. Overlap with D064 danger area complex, and AARA11 (FL080-260) and AARA12 (FL070-280), coordination by Swanwick Mil.

NW corner of J1 is within 10nm of UK UIR boundary. SE corner of J3 within approx. 20nm of UK UIR boundary. Notification of area activation will ensure adjacent ATC are aware.

Figure 12. K1-K2 Benbecula



Benbecula (FL270-350) – K1 and K2

Predominantly contained within boundaries of AEW UK7, the exception being K2 which extends slightly N.

Overlap with D701 danger area series. Benbecula range coordination required through Swanwick Mil.

Possible limited impact on oceanic traffic.

Options Development – Use of Design Principles

Table 3. Design Principles with supporting criteria

DP ID	**Agreed Design Principle**
a	**Must be safe**. The defined airspace must provide ATS providers a known traffic environment to ensure safe separation against GAT. - Areas are geographically located away from other significant airspace structures to the maximum extent possible. - Proposed E-7 areas will help maintain the predicted traffic environment.
b	Defined areas must be **sufficient in location** to achieve **training** and **operational** objectives. - Areas developed for predominantly training purposes are located close to MDA complexes and exercise areas, e.g. East coast. - Areas for national security, operational activity are strategically located around UK coastline.
c	Defined areas must be the minimum dimension to achieve task. - Area lengths are optimised at 100nm allowing for best use of the E-7 Wedgetail sensor suite to achieve Defence Tasks.
d	Minimise the impact to Commercial Air Traffic flow, sector complexity and sector capacity. - E-7 areas are predominantly located within extant E-3 orbit areas to minimise complexity. These areas were previously determined to have minimum impact on air traffic flow. Co-location with E-3 orbit areas also makes maximum use of available airspace for AEW activity whilst reducing impact on airlines.
e	Airspace management and FUA principles will be applied to ensure collaborative decision-making protocols and management processes are established. - Standard operating procedures will be established to align with current E-3 orbit activation, normally minimum of 2 hours prior to use. - Any movement between areas whilst airborne will be coordinated through Swanwick Mil in liaison with Civ ATC prior to relocation.
f	Defined areas shall not be segregated airspace but will align to current or revised procedures detailed within current NATS/MOD interface documents. - Areas will be non-segregated allowing for maximum flexible use of airspace by airlines.
g	The defined areas will detail the separation standard required between GAT and the OAT using the designated area. - E-7 is RVSM complaint and RVSM Status will be promulgated through Swanwick Mil on establishment of an area. - RADHAZ is no greater than that of the E-3.
h	The design shall seek to rationalise existing areas where appropriate. - All proposed areas are aligned with existing AEW orbit areas to the maximum extent possible.

i	The design shall minimise the impact on all ATM stakeholders. This will include NATS and other ANSPs (including foreign ANSPs) so as not to over complicate airspace, sector design and service provision. - Areas have been located away from arterial air route systems and are only within close proximity to adjacent UIRs/FIRs in a limited number of cases. Advanced warning of use of these E-7 areas to adjacent sectors will facilitate flow control. ATC will coordinate.

Assessment Criteria

DP ID	Agreed Design Principle	Qualitative Criteria
a	Must be safe. The defined airspace must provide ATS providers a known traffic environment to ensure safe separation against GAT.	Met: Safe, predictable environment Partial: Safe but diminished predictable traffic environment Not-met: Negative impact on safety
b	Defined areas must be sufficient in location to achieve training and operational objectives.	Met: Areas allow for optimum sensor usage Partial: Limitations on sensor usage would exist Not-met: E-7 rendered incapable of meeting defence tasks
c	Defined areas must be the minimum dimension to achieve task.	Met: Areas must be a minimum of 100x20nm Partial: Random areas required Not-met: Area lengths less than 100x20nm
d	Minimise the impact to Commercial Air Traffic flow, sector complexity and sector capacity.	Met: No impact to airliners Partial: Impact by some proposed areas in some geographical areas. Mainly approaches and departures to London area. Not-met: Significant impact to routing of airliners
e	Airspace management and FUA principles will be applied to ensure collaborative decision-making protocols and management processes are established.	Met: Minimal impact on existing airspace management principles Partial: Some impact requiring enhanced coordination or operating procedure amendment Not-met: Significant overhaul of operating procedures and coordination required to ensure collaborative decision making and maintenance of known traffic environment.
f	Defined areas shall not be segregated airspace but will align to current or revised procedures detailed within current NATS/MOD interface documents.	Met: Non-segregated airspace fully aligned with existing procedures Partial: Some limited deviation from existing procedures Not-met: Segregated airspace
g	The defined areas will detail the separation standard required between GAT and the OAT using the designated area.	Met: New areas are vertically and laterally displaced from key airspace structures Partial: Compromise between OAT and GAT for operational requirements Not-met: Some confliction between areas and upper airways structure
h	The design shall seek to rationalise existing areas where appropriate.	Met: All new areas are co-located with current AEW orbit areas except for national security requirements Partial: Proportional number of areas are within existing airspace, some outside

		Not-met: New areas largely beyond existing structure
i	The design shall minimise the impact on all ATM stakeholders. This will include NATS and other ANSPs (including foreign ANSPs) so as not to over complicate airspace, sector design and service provision.	Met: Routines, flow control and airway usage not compromised Partial: Occasional re-routing and deconfliction is required Not-met: Re-routing, flow control and significant deconfliction between OAT and GAT required

Evaluation

Option 0: Do nothing

Should dedicated E-7 airspace not be established the E-7 would operate in the extant E-3 orbits.

1. Use of current E3 orbits

a. The E-7 would operate in the extant E-3 orbits.
b. This would limit tactical manoeuvre and significantly limit the operational capability of the E-7's MESA radar which needs to be perpendicular to any threat.

Design Principle Evaluation	**Option No: 0**		
Option Name: Do Nothing	~~ACCEPT~~/REJECT		
Description of option: E-7 would operate in the extant E-3 orbits throughout the UK.			
Design Principle a	NOT MET	PARTIAL	MET
Must be safe. The defined airspace must provide ATS providers a known traffic environment to ensure safe separation against GAT. Continued operation within the extant published E-3 orbits would ensure ATS providers with a predictable traffic pattern.			
Design Principle b	NOT MET	PARTIAL	MET
Defined areas must be sufficient in location to achieve training and operational objectives. The E-3 circular lobes embedded with the extant E-3 operating areas are not optimised for the E-7 MESA radar. This radar must be beam on to any threat/airspace to function optimally. Any other orientation significantly degrades the radar picture and would reduce the detection capability rendering it unable to provide tactical/ATC services to aircraft under its control.			
Design Principle c	NOT MET	PARTIAL	MET
Defined areas must be the minimum dimension to achieve task. The E-3 circular lobes would prohibit the E-7 from achieving its operational task. The E-7 requires a 100nm x 20nm box to optimise its radar.			
Design Principle d	NOT MET	PARTIAL	MET
Minimise the impact to Commercial Air Traffic flow, sector complexity and sector capacity. Utilisation of the extant E-3 areas would allow ATS units to continue to deconflict with known and predictable traffic patterns.			
Design Principle e	NOT MET	PARTIAL	MET
Airspace management and FUA principles will be applied to ensure collaborative decision-making protocols and management processes are established. RVSM compliance, coordination with ATC, flight planning, and notification will ensure that the predictable traffic environment is maximised.			
Design Principle f	NOT MET	PARTIAL	MET
Defined areas shall not be segregated airspace but will align to current or revised procedures detailed within current NATS/MOD interface documents.			

Operation in extant E-3 areas is non-segregated and complies with current NATS/MOD interface documents.			
Design Principle g	NOT MET	PARTIAL	MET
The defined areas will detail the separation standard required between GAT and the OAT using the designated area. Operation in extant E-3 areas would continue to provide separation between GAT and OAT.			
Design Principle h	NOT MET	PARTIAL	MET
The design shall seek to rationalise existing areas where appropriate. The E-7 would use the extant E-3 operating areas.			
Design Principle i	NOT MET	PARTIAL	MET
The design shall minimise the impact on all ATM stakeholders. This will include NATS and other ANSPs (including foreign ANSPs) so as not to over complicate airspace, sector design and service provision. If the E-7 utilises extant E-3 areas, there will be minimal/no impact on other ATM stakeholders beyond that which already exists.			

Option 1: Do minimum

Should dedicated E-7 airspace not be established, the existing MDAs and modified AEW areas already established in the UK would be utilised. Therefore, operation of the E-7 Wedgetail could continue with restrictions:

1. **Utilisation of existing MDAs and modified E-3 AEW orbit areas**

    a. The E-7 would, whenever possible, establish a pattern within the existing orbit areas but flying straight tracks rather than circular orbits. These tracks are likely to extend outside the extant E-3 areas for optimal radar performance.
    b. The E-7 would also utilise the current UK MDA structure, however several of these are too small, geographically located in the wrong position and are unlikely to be available for the full duration of E-7 tasking due to other Mil users requiring their activation.
    c. This would not enable optimum use of the E-7 sensor suite, limiting both operational and training effectiveness. In some cases the E-7 would not be able to fly a pattern perpendicular to its working airspace, thus rendering it unable to complete defence tasks.

Design Principle Evaluation	**Option No: 1**		
Option Name: Do Minimum	~~ACCEPT~~/REJECT		
Description of option: Utilisation of existing MDAs and modified E-3 orbits			
Design Principle a	NOT MET	PARTIAL	MET
Must be safe. The defined airspace must provide ATS providers a known traffic environment to ensure safe separation against GAT. Operational necessity will result in flight patterns outside existing MDAs/AEW orbit areas. This would reduce the predictable traffic environment resulting in a more complex ATC solution.			

Design Principle b	NOT MET	PARTIAL	MET
Defined areas must be sufficient in location to achieve training and operational objectives. Existing MDAS and modified AEW areas will not provide the lateral airspace required to meet both training and operational outputs of the E-7. The areas are mostly too small and geographically in the wrong location to optimise the MESA radar.			
Design Principle c	NOT MET	PARTIAL	MET
Defined areas must be the minimum dimension to achieve task. Current MDAs/AEW orbits are not compatible with E-7 MESA radar requirements. Operational effectiveness would be greatly diminished.			
Design Principle d	NOT MET	PARTIAL	MET
Minimise the impact to Commercial Air Traffic flow, sector complexity and sector capacity. It is more likely that the E-7 will need to operate outside extant MDAs/AEW orbit areas, thus increasing impact on other airspace users and increasing coordination requirement.			
Design Principle e	NOT MET	PARTIAL	MET
Airspace management and FUA principles will be applied to ensure collaborative decision-making protocols and management processes are established. RVSM compliance, coordination with ATC, flight planning, and notification will ensure that a predictable traffic environment is maximised.			
Design Principle f	NOT MET	PARTIAL	MET
Defined areas shall not be segregated airspace but will align to current or revised procedures detailed within current NATS/MOD interface documents. Extant airspace is non-segregated and is used IAW NATS/MOD rules and regulations however operating outside them to maximise long straight legs for the MESA radar will increase co-ordination and complexity.			
Design Principle g	NOT MET	PARTIAL	MET
The defined areas will detail the separation standard required between GAT and the OAT using the designated area. It is more likely that the E-7 will need to operate outside extant MDAs/AEW orbit areas, thus increasing impact on other airspace users and increasing coordination requirement.			
Design Principle h	NOT MET	PARTIAL	MET
The design shall seek to rationalise existing areas where appropriate. It is more likely that the E-7 will need to operate outside extant MDAs/AEW orbit areas, thus increasing impact on other airspace users and increasing coordination requirement.			
Design Principle i	NOT MET	PARTIAL	MET
The design shall minimise the impact on all ATM stakeholders. This will include NATS and other ANSPs (including foreign ANSPs) so as not to over complicate airspace, sector design and service provision.			

It is more likely that the E-7 will need to operate outside extant MDAs/AEW orbit areas, thus increasing impact on other airspace users and increasing coordination requirement.

Option 2: Dedicated E-7 areas

Dedicated E-7 areas would meet all 9 Design Principles allowing the aircraft to complete its training, operational and defence tasks to the optimum whilst not impinging on commercial operations and maintaining the predictable traffic environment.

Design Principle Evaluation	**Option No: 2**		
Option Name: Dedicated E-7 Areas	ACCEPT/~~REJECT~~		
Description of option: Dedicated E-7 Wedgetail Operating Areas			
Design Principle a	NOT MET	PARTIAL	MET
Must be safe. The defined airspace must provide ATS providers a known traffic environment to ensure safe separation against GAT. The proposed areas ensure that that a predictable traffic environment is generated within designated operating areas.			
Design Principle b	NOT MET	PARTIAL	MET
Defined areas must be sufficient in location to achieve training and operational objectives. The proposed areas are geographically located and orientated to provide optimal sensor coverage of training and operational airspace.			
Design Principle c	NOT MET	PARTIAL	MET
Defined areas must be the minimum dimension to achieve task. Minimum airspace has been used whilst facilitating optimum MESA radar performance.			
Design Principle d	NOT MET	PARTIAL	MET
Minimise the impact to Commercial Air Traffic flow, sector complexity and sector capacity. Areas are non-segregated and thus have minimal impact on commercial airline routing either on the extant airways structure or under FRA protocols as they are introduced into the UK. Airlines can route through the proposed E-7 areas as long as lateral and vertical separation is maintained by ATC. The E-7 is RVSM compliant.			
Design Principle e	NOT MET	PARTIAL	MET
Airspace management and FUA principles will be applied to ensure collaborative decision-making protocols and management processes are established. RVSM compliance, coordination with ATC, flight planning, and notification will ensure that the predicted traffic environment is maximised.			
Design Principle f	NOT MET	PARTIAL	MET
Defined areas shall not be segregated airspace but will align to current or revised procedures detailed within current NATS/MOD interface documents.			

Proposed airspace is non-segregated and will be used IAW NATS/MOD rules and regulations.			
Design Principle g	NOT MET	PARTIAL	MET
The defined areas will detail the separation standard required between GAT and the OAT using the designated area. Dedicated E-7 operating areas will maximise predictability, limit complexity and ensure mandated separation criteria are met.			
Design Principle h	NOT MET	PARTIAL	MET
The design shall seek to rationalise existing areas where appropriate. The majority of new areas are super-imposed on extant E-3 orbit areas. A small number of new areas have been created to meet operational requirements.			
Design Principle i	NOT MET	PARTIAL	MET
The design shall minimise the impact on all ATM stakeholders. This will include NATS and other ANSPs (including foreign ANSPs) so as not to over complicate airspace, sector design and service provision. Impact on all airspace users is minimised through maintenance of a predictable traffic environment. Engagement did result in amendment to some proposed areas to ensure minimum impact.			

Design Options Summary

Table 4. Design Options Summary

	Option	Description
0	Do Nothing	Operate in extant E-3 orbits. This will limit the operational effectiveness of the E-7 Wedgetail sensor, hindering its ability to fulfil defence tasks. In summary, the E-7 would operate in the same manner and areas as the E-3.
1	Do Minimum	Operate in MDAs and modified E-3 areas. This will limit the operational effectiveness of the E-7 Wedgetail sensor, hindering its ability to fulfil defence tasks. In many instances, operation outside of the extant E-3 orbits would be required as the current areas are too small. This would reduce predictability and planning for other airspace users, increase complexity and workload for ATS units and limit the tactical effectiveness of the E-7.
2	Create dedicated E-7 areas	Create new E-7 Wedgetail areas, predominantly co-located with existing AEW orbit areas. This option meets all the DPs, enhances safety, reduces complexity, maintains the predictable traffic environment, and meets the operational requirements of the MOD.

Stakeholder Engagement

This table details engagement that has taken place with stakeholders during Stage 2 consultation.

Participating Stakeholder	Engagement date and method	Discussion	Impact/influence on ACP?
NATS	12 May 2021 Online meeting	Slide pack and minutes at Annex A.	
NATS	28 Jun 2021 Online meeting	Minutes attached at Annex B.	
NATS & CAA	21 Jun 2022 Online meeting	Minutes attached at Annex C.	
Eurocontrol and CAA	7 Sep 22	Transcript attached at Annex D.	Initial engagement with Eurocontrol (with CAA in attendance) regarding assessment of proposal.
MOD	14 Sep 22 MAUWG (Military Airspace Users Working Group)	Summary of ACPs; highlighted that E-7 ACP is in progress (not formally minuted).	
MOD	8 Feb 23 MAUWG	Stage 2A and 2B raised.	No concerns raised. Swanwick Military ATC present at meeting. Aware of Stage 3 consultation in Q2.

Annexes:

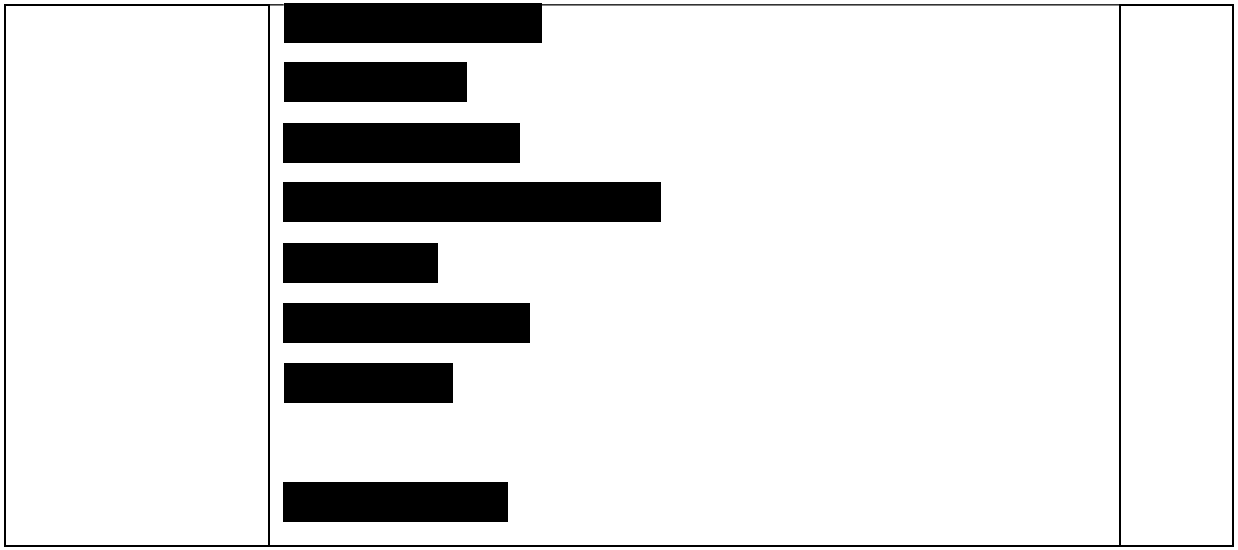
ANNEX A; Minutes of the E-7 ACP Stage 2 Mtg with NATS held via Teams on 12 May 21

ANNEX B; Minutes of the E-7 ACP Stage 2 Mtg with NATS (Swanwick) held via Teams on 28 Jun 21

ANNEX C; 20220701 ACP-2020-24 E-7 Wedgetail AEW Orbit Areas Stage 2 Notes from Meeting with CAA 21 Jun 2022

ANNEX D; Transcript of meeting with Eurocontrol and CAA on 7 Sep 22

APPENDIX A: Raw Engagement Records



ANNEX A: **Minutes of the E-7 ACP Stage 2 Mtg with NATS held via Teams on 12 May 21**

Date Issued: 13 May 21

F[redacted]nce: 20210513-E-7_ACP_Stage_2_Mtg_with_NATS-O

Minutes of the E-7 ACP Stage 2 Mtg with NATS held via Teams on 12 May 21

Stakeholders

Present

Chair

Sec

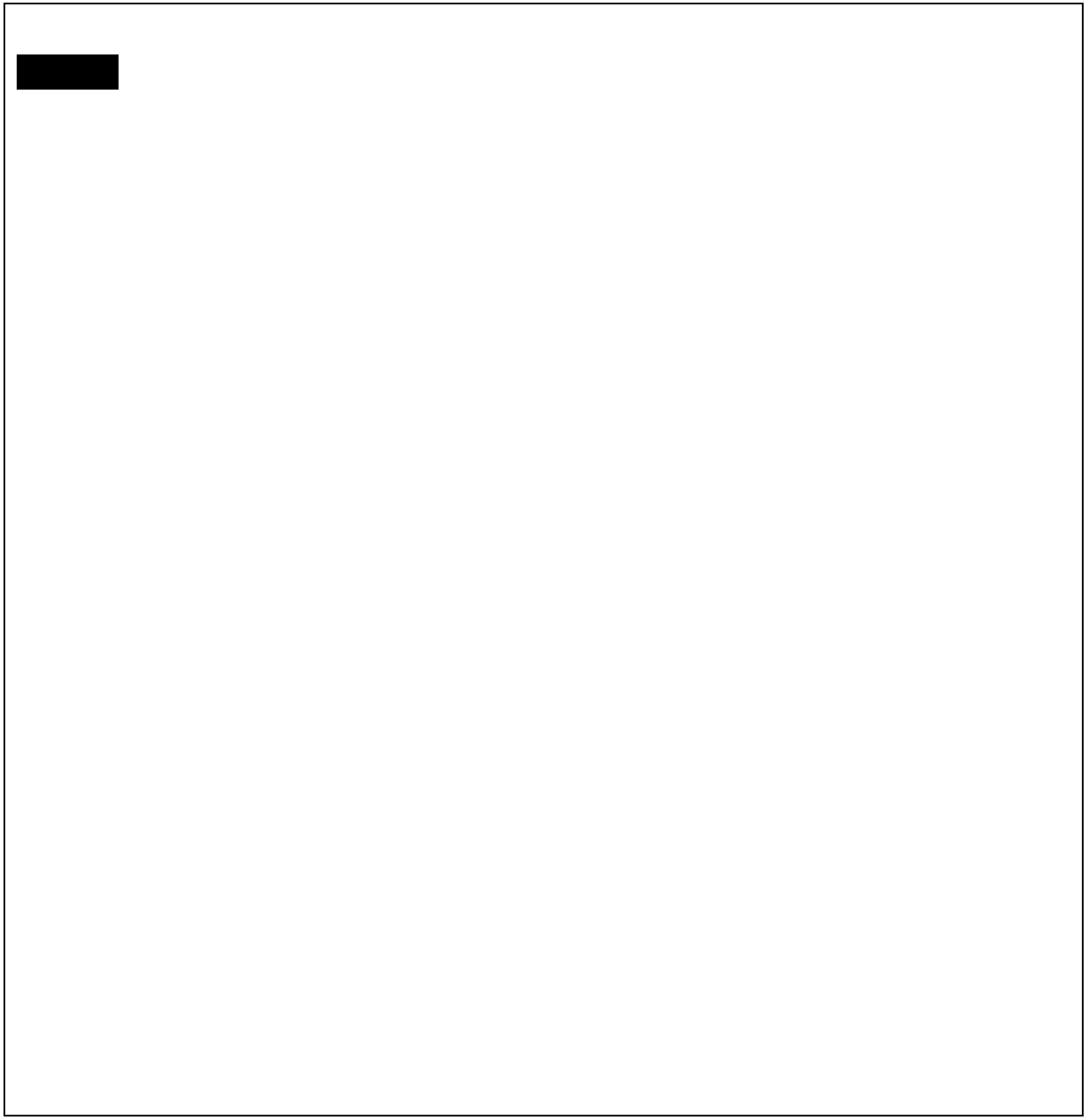
[redacted]

Apologies

[redacted]

Introduction

The meeting started with a brief introduction and then everybody on the call introduced themselves ~~explaining their current role and why they were involved in the process.~~



Statement of Need

talked through the Statement of Need:

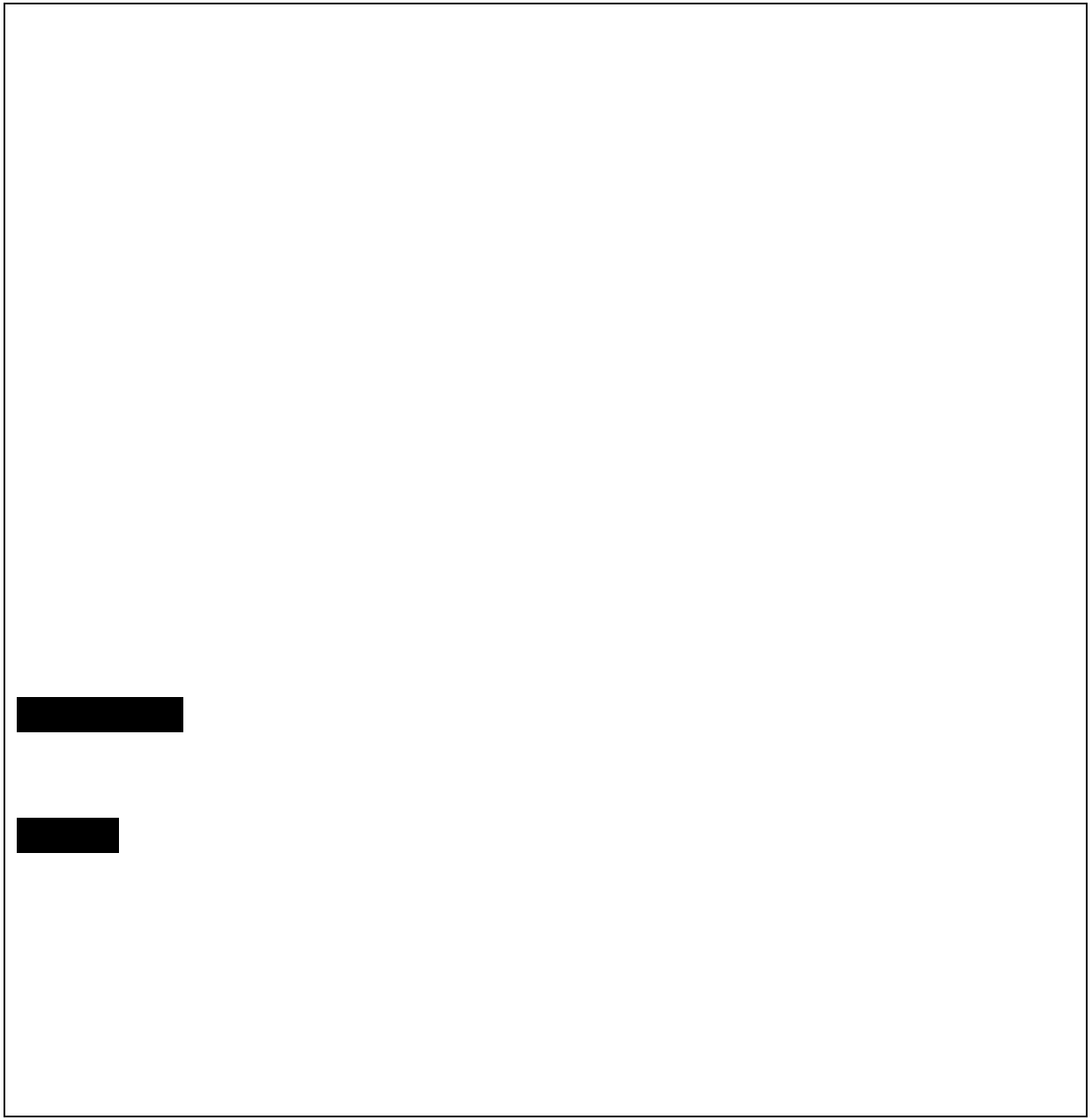
'Currently the E-3D Sentry AEW Mk 1 utilises the UK AEW areas for UK training and operations. In 2023 the E-7 Airborne Early Warning Wedgetail Mk 1 will enter RAF service. Though fulfilling the same role as the Sentry, advances in technology mean that the Wedgetail will not be able to utilise the same orbits, although existing ones may still be utilised by our NATO / visiting forces partners. The Wedgetail will be required to fly 100nm by 20nm raceareas. In some UK AEW areas such as UK 1, 7 and 9 these racearea parameters can be accommodated in the existing airspace structure. However, agreed structures / routes or suitable orbit / racearea areas will be required in the North Sea area where the current Orbit Areas are not sufficient.'

There was a discussion about the need to expand the SoN to cover more than the North Sea areas. **Action:** There would be an update required to the SoN and map of the geographical area affected by the ACP on the CAA Portal to reflect the need for a wider change.

talked through the need for limited stakeholder engagement. There would be a review of the limited stakeholder engagement before Stage 3 to check that this was still the correct path to follow. The need for reference to Non-Deviating Status was discussed and it was felt that this could be removed. The process for how areas would be activated would be established later but would be similar to that used by the E-3.

Action: will confirm that RADHAZ parameters don't exceed 1000ft vertical and 5nm horizontal separation and confirm that E-7 would be RVSM compliant.

Areas



[redacted] then displayed charts highlighting the proposed operating areas for initial feedback from NATS. (For depiction of the areas see Annex A) The aim of this feedback was to reveal any initial showstoppers for area placement before more accurate areas were plotted. A good discussion was had about all the areas, and the following feedback was received from NATS:

North

Area 1: No major issues with this location. Keep out of D701, would mainly be in the way of cruising traffic and thus easier to deconflict.

Area 2: No major issues with this location. Keep away from 61N as that is airspace delegated to Reykjavík. Suggest relocating Area 2 8 NMS to the south.

Area 3: Intrudes slightly into D809. Using RA4 would conflict with climbers and descenders out of Aberdeen. Could Area 3 be moved further East to overlap RA2 and thus avoid confliction with D809?

Area 4: Area 4 is above RA3. The area could go above RA3. Further discussion required about deconflicting tanker activity from orbit area use and how either area would be activated / operated concurrently.

Area 5: This area could conflict with traffic pushed East by TDA597. Likely if TDA597 was active then E-7 would be operating inside it as part of the Ex (Already discussed with the MOD sponsor of TDA597). RA1 is in close vicinity of Area 5, the potential to establish an area above RA1 for E-7 operations was discussed. This plan would be depend on radar look into D613 from that location.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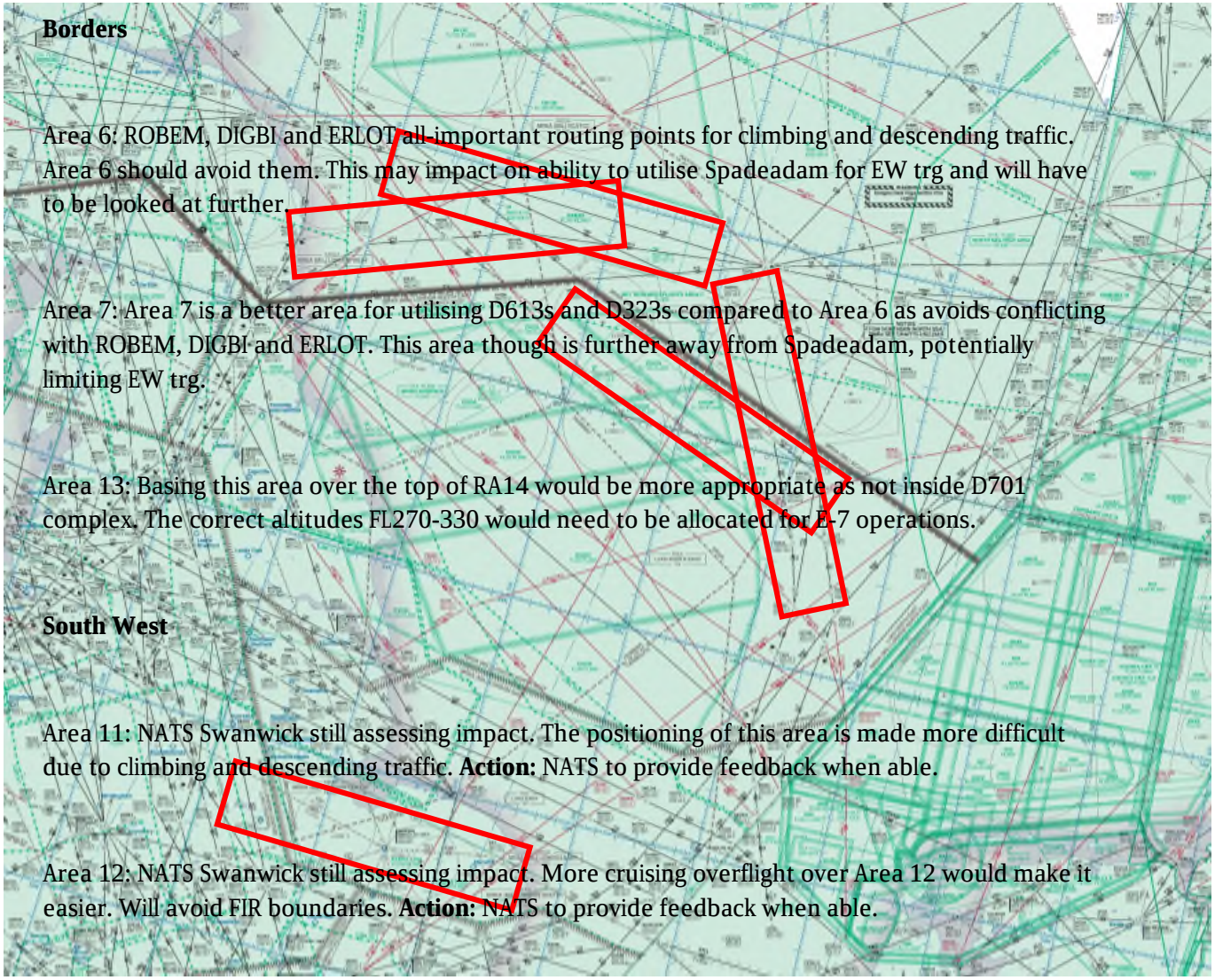


Borders

Area 6: ROBEM, DIGBI and ERLOT all important routing points for climbing and descending traffic. Area 6 should avoid them. This may impact on ability to utilise Spadeadam for EW trg and will have to be looked at further.

Area 7: Area 7 is a better area for utilising D613s and D323s compared to Area 6 as avoids conflicting with ROBEM, DIGBI and ERLOT. This area though is further away from Spadeadam, potentially limiting EW trg.

Area 13: Basing this area over the top of RA14 would be more appropriate as not inside D701 complex. The correct altitudes FL270-330 would need to be allocated for E-7 operations.

South West

Area 11: NATS Swanwick still assessing impact. The positioning of this area is made more difficult due to climbing and descending traffic. **Action:** NATS to provide feedback when able.

Area 12: NATS Swanwick still assessing impact. More cruising overflight over Area 12 would make it easier. Will avoid FIR boundaries. **Action:** NATS to provide feedback when able.

D323

Area 8: Avoid confliction with GIGUL, civil traffic has to be at FL320 here for transiting through NE MDA corners. Potential for orbits to be limited to not above FL300. Would have to examine using this orbit are if MDAs were being used by Combat Air.

Area 9: The further South this area is located the more difficult deconfliction becomes. Discussion was had to look at adjusting area to move it North or re-orient with a more West-East direction, though airspace to the East is given to the Copenhagen FIR. Routing point CUTEL won't be in use under Free Route Airspace.

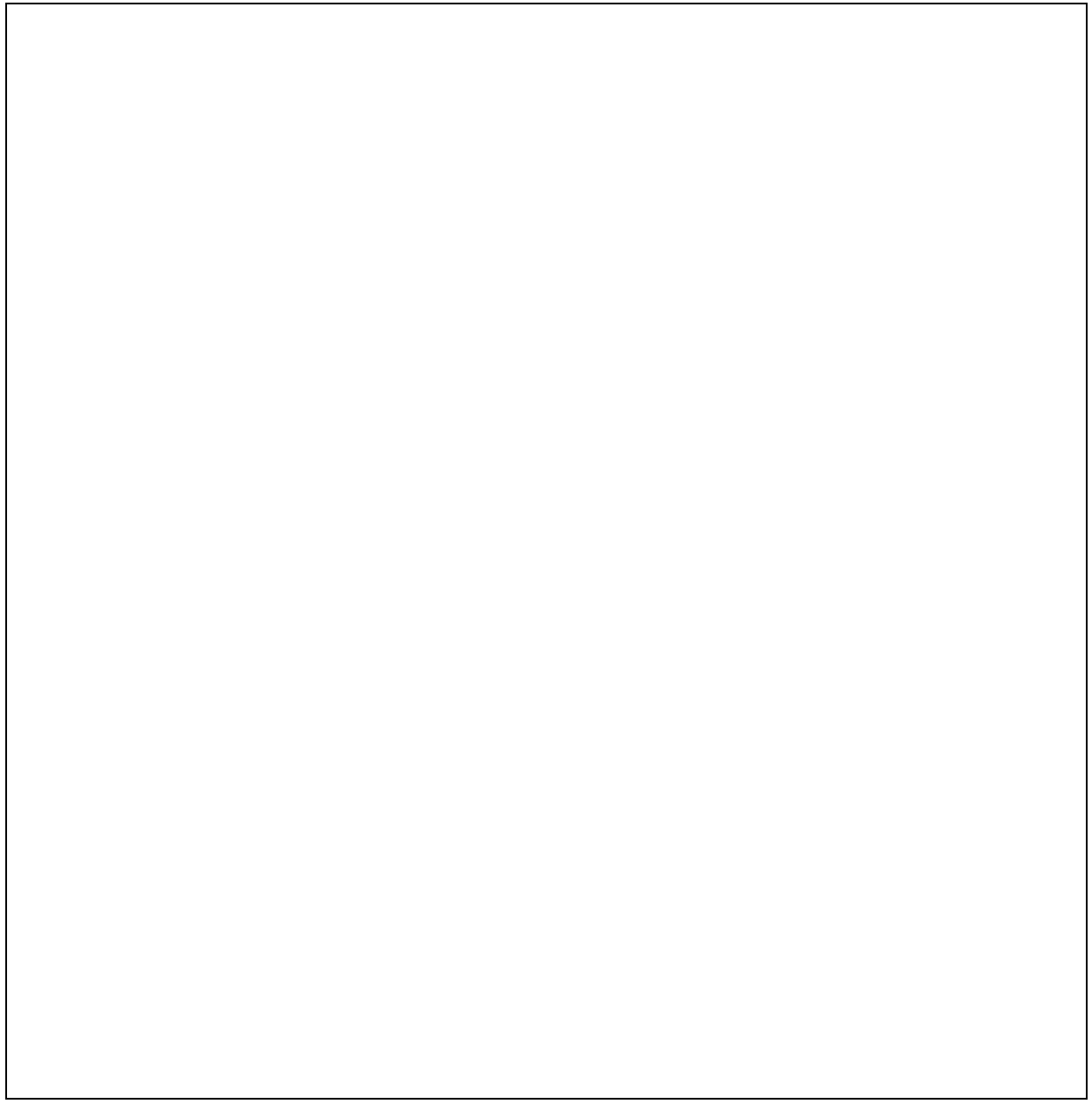
Area 10: NATS Swanwick still assessing impact. Congested airspace. Avoid intruding into Daventry & London TMA sectors. [redacted]ller would be easier to accommodate. Flt Lt Parr to assess the impact of reducing racearea size as it is an important location for any events in London.
Action: NATS to provi[redacted]n able.

Next Steps and AOB [redacted]

asked[redacted]ute Airspace considerations. The response was that arrival and departure p[redacted]more clearly defined. Again, easier to deconflict against cruising traffic than descending / climbing traffic.

identified the next steps in the process as providing the minutes, slide pack to attendees and arranging for a fu[redacted]k at the adjusted operating areas with the feedback from today. The discussion of providing ADQ compliant coordinates to NATS was discussed. DAATM currently have a few lines of investigation ongoing to address this issue and will report back in due course.

{Electronically released}



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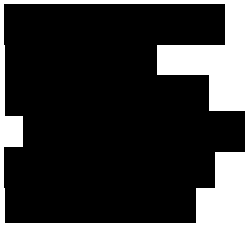
SO3 E-7 (Sec)

[redacted]

Annex A to E-7 ACP Stage 2 Mtg Dated 13 May 21 E-7 Proposed Operating Areas



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ANNEX B: **Minutes of the E-7 ACP Stage 2 Mtg with NATS (Swanwick) held via Teams on 28 Jun 21**

[redacted]

Date Issued: 2 Jul 21

[redacted]

File Reference: 20210702-E-7_ACP_Stage_2_Mtg_with_NATS (SWN)-O

[redacted]

Minutes of the E-7 ACP Stage 2 Mtg with NATS (Swanwick) held via Teams on 28 Jun 21

[redacted]

Stakeho[redacted]

Present

[redacted]

[redacted] Chair

[redacted] Sec

Apologies

[redacted]

[redacted]

The meeting started with a brief introduction and then everybody on the call introduced themselves [redacted]urrent role and why they were involved in the process. This meeting was to gather feedback that had been una[redacted]ble at the first meeting with NATS in May on areas concerning Swanwick.

[redacted]

NATS provided feedback for the following three areas: 10,11and 12.

[redacted]

Area 10

[redacted]

Area 10 sits over Norfolk and is designed to be utilised if supporting tasking in the London area. The feedback from Swanwick was that the area should be no further north or will impact Manchester inbounds. The Western end infringes the Daventry sector and the Eastern end impacts Clacton & North Sea. The area also sits over the EAMTRA. Discussion was had as to whether the area could be [redacted]ption of splitting the area into 2 / 3 sections and activating individually depending on requirement was discussed. If whole area required, it would be due to higher level tasking.

Regarding height it was felt that FL270 is difficult as ac need to reach that by DOLAS. FL 300 – 330 [redacted]optimal height. ISTAR FHQ felt that this area would be seldom utilised to support day to day tasking.

[redacted]

Difficult location due to climbers and descenders and airways crossing in North-South and East-West orientations. GAT is descending to FL310 at Brecon. An ideal height would be FL 270. NATS were [redacted]

[redacted]

keen to understand what an E-7 in that location would be supporting and how often the area would [redacted]

[redacted]

There were very few issues with Area 12. 12a requires to be moved slightly South to avoid Irish airspace and 12c shouldn't move any further South. MOD asked if there was any room for allocating the whole of existing UK1 to E-7 rather than inserting the 3 x racearea areas. NATS would prefer not [redacted]re difficult to predict the movement of the ac.

[redacted]

Next Steps and AOB

[redacted]

Whilst NDS is not an appropriate status to request for E7 operating in the Orbit Areas, it is anticipated that Swanwick Military will request a Cleared Flight Path with the relevant Sector(s) as per the current operational agreements between the MOD and NATS. This will be clarified as the [redacted] should be noted that the Orbit Areas will not be segregated and therefore Civil controllers will be [redacted]enter the areas providing that they achieve suitable separation against the E7 operating within them.

[redacted]

F[redacted] will look to disseminate the initial FHQ airspace coordinates in the next couple of weeks after considering feedback from the two meetings.

[redacted]

{Electronically released}

[redacted]

[redacted]
Flt Lt

SO3 E-7 (Sec)

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Annex C: 20220701 ACP-2020-24 E-7 Wedgetail AEW Orbit Areas Stage 2 Notes from Meeting with CAA 21 Jun 2022

Date Issued: 15 Jul 22

Notes of an E-7 ACP-2020-24 meeting with the CAA on 21 Jun 22

A meeting was called by the MOD to discuss several items in preparation for Stage 2 submission and Stage 3 process.

1 roductions were made:

MOD was represented by:

– UAS CDC
- – UAS CDC
- – ISTAR FHQ

CAA was represented by:

- – Account Manager
–Airspace Regulator (Technical)
- – out-going Account Manager
- T – Technical Regulator (Engagement and Consultation)
- - Technical Regulator (Economic - Options Appraisal)
- Technical Regulator (Environmental)

2. The MOD had requested the meeting and had supplied the following 5 questions before the meeting for consideration:
   a. Guidance on how to describe baseline options;
   b. Discuss how stage 3 works if there is only 1 stakeholder;
   c. Ascertain if a 12 week consult is required for a scaled down Stage 3;
   d. Confirm what the consultation requirements are likely to be;
   e. Establish the nuances between a Level 1 vs Level 2 submission.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

3. Guidance on how to describe baseline options:

- The Technical Regulator (Economic - Options Appraisal) advised how a baseline scenario should be provided. It is a description of the current [redacted] that takes place within the airspace in question, before any change has taken place. It is used as a point for comparison against what would happen if the proposed airspace design(s) were implemented and is specifically used within the options appraisal. It was thought that there might have to be a range of baseline scenarios described for this ACP since the MOD is proposing up to 13 different locations to place the orbit areas for E-7. More information could be found in CAP 1616 Table E2 pp 161.

- The Airspace Regulator (Technical) referred to the ERNIP Pt1 (Chapter 6) regarding airspace design methodology and suggested that the MOD [redacted] might find it useful to consider the section on reference scenarios, as this was akin to the CAA's baseline scenario, but included a description of a "pseudo" reference scenario. The options appraisal exercise is a comparison of what happens now against the impact of any new airspace design. The appraisal could / should consider not just the impact when the airspace was in use, but how often it was likely to be used and any concurrent use alongside other air assets / airspace structures. Analysis against the next and future Free-Route Airspace deployments should also be considered.

[redacted] suggested that NATS might prefer a phased approach to the implementation of the orbit areas.

ACTION: [redacted] to provide ERNIP link.

Post-mtg note: link provided; https://www.eurocontrol.int/publication/european-route-network-improvement-plan-ernip-part-1

[redacted]

4. Discuss how Stage 3 works if there is only 1 stakeholder:

- Whilst the MOD had agreement from the CAA to employ targeted stakeholder engagement through Stages 1 and 2 of the ACP, the MOD might [redacted] widening the stakeholder pool for Stage 3. The NATMAC would be a necessary addition, but there might be other industry stakeholders that should be consulted. One example was the Eurocontrol Network Manager (ECTL NM) who would be able to assess likely impacts of the proposed orbit areas and should be contacted asap. As the areas were close to several international borders it could be useful to engage with other bodies to assess any likely impact on flight planning, flow control, airspace capacity. Whilst it is thought that the impact of the orbit areas would be low, it would be advantageous to make contact early to assess.

ACTION: Shirley to provide contact details for the ECTL NM

[redacted]

- Where groups of stakeholders are considered as not impacted by the ACP, justification should be included in the consultation [redacted] tegy.

- Interaction with other MOD stakeholders is important too. The MOD advised that there is some internal engagement underway. Understanding [redacted]mulative impact of other ACPs (e.g. combat air) would be important.

5. Ascertain if a 12 week consult is required for a scaled down Stage 3:

[redacted]D could provide a rationale for a reduced consultation period in their draft consultation strategy for the CAA's consideration.

6. Confirm what the consultation requirements are likely to be:

[redacted]y the draft strategy document will identify the MOD's assessment of who would be consulted, what their needs might be, what the best means of communicating the consultation material would be and how to conduct further consultation activities. The MOD would provide a link to the CitizenSpace platform from the ACP portal. An introduction page is usually provided with details with an overview of the airspace change proposal and of what the MOD hopes to achieve through consultation. Embedded documents are likely to be a summary of the consultation [redacted]nt (although provision of a summary is not a requirement of the process, some change sponsors provide one based on an assessment of the needs of their different stakeholder groups), link to FAQ page, options appraisal.

7. Establish the nuances between a Level 1 vs Level 2 submission:

[redacted]

- The differences between a Level M1 and Level M2 ACP are broadly speaking:
  - Stakeholders – M2 only has to consider aviation stakeholders; no communities need to be considered;
  - Environmental and economic impact assessment requirements:
    [redacted]M2 does not have to consider noise and local air-quality, but must consider the consequential impact on civil air traffic on fuel burn and CO_2 emissions above 7000'.
  - M1 assessments must consider all environmental metrics. CAP 2091 advises on L1 noise modelling, CAP 1498 contains policy on overflight [redacted]noise assessment.

8. Miscellaneous,

[redacted]

- With regard to a L2, the MOD asked if WebTAG "must be" used where proposed airspace overlaps airways as per CAP 1616. It was explained that this would be decided at the Stage 2 Gateway but the general guidance was that for an L2 ACP, if the impact is positive there would be no need to use WebTAG but justification should be provided. If the impact of the ACP is negative, this should be monetised and quantified via [redacted]G.

ANNEX D: **Transcript of meeting held with Eurocontrol and CAA on 7 Sep 22**

[redacted]
0:0:0.0 --> 0:0:1.580
(Air-1Gp-ISTAR E7B SO3Pers)
Hi, Chrissy. You get accomplished, please.

[redacted]
0:0:8.400 --> 0:0:9.490
(DES MARSHALL-Hub Satellite PM)
Hello I'm invited.

[redacted]
0:0:10.890 --> 0:0:11.340
T (Air-1Gp-ISTAR E7B SO3Pers)
Hi.

[redacted]
0:0:14.460 --> 0:0:16.290

Hello, good afternoon, .

[redacted]
0:0:17.170 --> 0:0:18.90
(DES MARSHALL-Hub Satellite PM)

[redacted]
0:0:18.350 --> 0:0:18.940

Hi.

[redacted]
0:0:18.720 --> 0:0[redacted]
Air-1Gp-ISTAR E7B SO3Pers)
I.

0:0:19.840 --> 0:0:20.380
(Air-1Gp-ISTAR E7B SO3Pers)

[redacted]
0:0:21.40 --> 0:0:21.540

Out.

0:0:27.810 --> 0:0:34.70
[redacted]
I'm just waiting my colleague so from your side the will be only two of you or someone else.

0:0:37.40 --> 0:0:37.520
[redacted]
OK.

0:0:34.630 --> 0:0:38.100
[redacted] (DES MARSHALL-Hub Satellite PM)
And is about to join us and also from kinetic.

0:0:39.280 --> 0:0:40.820
[redacted]
OK, so give a bit of time.

0:0:41.190 --> 0:0:41.460
[redacted] (DES MARSHALL-Hub Satellite PM)
Yeah.

0:0:41.360 --> 0:0:45.220
[redacted] (Air-1Gp-ISTAR E7B SO3Pers)
still joining you in the in the room. . Sorry.

0:0:46.110 --> 0:0:46.360
[redacted] (Air-1Gp-ISTAR E7B SO3Pers)
OK.

0:0:44.790 --> 0:0:47.660
[redacted] (DES MARSHALL-Hub Satellite PM)
is? Yeah, she's in the room, but she's gonna dial in as well.

0:0:47.920 --> 0:0:48.610
(Air-1Gp-ISTAR E7B SO3Pers)
[redacted]Thanks.

[redacted]

0:0:52.100 --> 0:0:52.660
[redacted]uest)
I'm here.

0:0:53.830 --> 0:0:54.240
[redacted] (Air-1Gp-ISTAR E7B SO3Pers)
Hi,

0:0:53.750 --> 0:0:55.300
[redacted]uest)
[redacted] here. I did.

0:0:55.60 --> 0:0:55.770

Good afternoon.
[redacted]
0:0:56.870 --> 0:0:57.500

Hi [redacted].

0:0:57.930 --> 0:0:58.360
[redacted]
.

0:1:2.360 --> 0:1:2.820
[redacted]ir-1Gp-ISTAR E7B SO3Pers)
Hi g [redacted].

0:1:6.120 --> 0:1:7.450
[redacted] (Air-1Gp-ISTAR E7B SO3Pers)
Now we we got here at the minute.

0:1:9.340 --> 0:1:11.290

Again, you're muted,
[redacted]

[redacted]

0:1:12.430 --> 0:1:13.870
[redacted]
Hello. Hello, Chao.

0:1:11.310 --> 0:1:16.840
[redacted]
Hello. Yes, the double mute chow. How are we doing?

0:1:17.600 --> 0:1:18.490
[redacted]
Good, good.

0:1:23.160 --> 0:1:25.480
[redacted]
So I see waiting for .

0:1:30.790 --> 0:1:31.430
[redacted]
OK.

0:1:28.770 --> 0:1:31.480
[redacted]
Yes, we are joining hello, good afternoon.

0:1:34.770 --> 0:1:35.240
[redacted]ir-1Gp-ISTAR E7B SO3Pers)

0:1:42.900 --> 0:1:45.900
[redacted](EXT)
Good afternoon, from Eurocontrol.

0:1:47.760 --> 0:1:48.810
[redacted] (DES MARSHALL-Hub Satellite PM)
Good afternoon.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

0:1:58.450 --> 0:2:1.300
[redacted]
I think that's all we had from the CA side.

0:2:2.80 --> 0:2:6.770
[redacted]
OK. From our side also, it's OK someone else.

0:2:9.310 --> 0:2:12.760
(DES MARSHALL-Hub Satellite PM)
[redacted] might be it. Is it, unless you're waiting for anyone

0:2:13.300 --> 0:2:27.910

N[redacted] side, we are just three of us. So if it is OK from your side. Good afternoon everyone. We can start the meeting was a bit long time. We'll try to organize this meeting, but OK at the end we got it.

0:2:29.700 --> 0:2:37.350
[redacted]
So I w[redacted]d suggest that if someone of you can start even to refresh a little bit all the requests.

0:2:38.30 --> 0:2:46.420
[redacted]
Then maybe [redacted] can share something with you on initial analysis and some question we have and then we can see how to proceed.

0:2:48.680 --> 0:2:49.90
[redacted]ir-1Gp-ISTAR E7B SO3Pers)
Yep.

0:2:47.450 --> 0:2:49.400

Who would start from your side?
[redacted]
0:2:52.790 --> 0:2:53.140

OK.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

0:2:50.270 --> 0:3:18.150
[redacted] (Air-1Gp-ISTAR E7B SO3Pers)
Yeah, that that'll be me. Uh, [redacted]. Uh, just for the just for the wider audience. Well, for everyone in here. Thank you very much for your persistence, joining, joining this meeting and your involvement so far and sticking with us. I'm scheduler on tip reside in ISTAR force headquarters up at RAF Waddington. So my background is E3D. So I'm a controller from the mission crew side of the house there.

0:3:18.650 --> 0:3:38.860
[redacted] Air-1Gp-ISTAR E7B SO3Pers)
Uh. And with E3 moving on in those transitioning to E7, I'm knowing that in a staff job in Nice Tariff HQ, looking at particularly the the training and the org for the E7 and then as a bolt onto that, which in itself is a little problematic, we're looking at airspace as well for.

0:3:39.240 --> 0:3:41.140
(Air-1Gp-ISTAR E7B SO3Pers)
Uh. Well, primarily [redacted]

0:3:41.900 --> 0:3:59.780
(Air-1Gp-ISTAR E7B SO3Pers)
Did to day operations in the UK, which is kind of where we're at at the moment. And given that that's the kind of thing we need up and running for in service date, more on that to follow shortly. But so we're looking at UCSB based. We've then reached out into NATO with a view to establishing.

0:3:59.860 --> 0:4:7.130
[redacted] (Air-1Gp-ISTAR E7B SO3Pers)
And Espace across across Europe, again largely aligned with the the nature.

0:4:7.730 --> 0:4:25.530
[redacted] (Air-1Gp-ISTAR E7B SO3Pers)
Uh, a W55 that's already there. Uh, wherever we can. But we're we're much further ahead with the UK side of things than we are with the with the European. So the focus today just being the that was just for wider awareness. The focus today is on this on the UPS base and the UK SCP that we're looking to establish.

0:4:26.580 --> 0:4:41.330
[redacted] (Air-1Gp-ISTAR E7B SO3Pers)
And in terms of where we at with the seven program at the moment, just for wider awareness. So we currently looking to take the aircraft into service in the UK based out of our flossy mouth from.

0:4:42.720 --> 0:4:46.140
[redacted] (Air-1Gp-ISTAR E7B SO3Pers)
It's looking likely to be summer 2024.

0:4:47.600 --> 0:4:58.590
[redacted]ir-1Gp-ISTAR E7B SO3Pers)
There will be flying taking place on the I'll be on the severe register to the aircraft will still be. We'll still be Boeing at that point, but there will be flying taking place in the UK.

[redacted].850
(Air-1Gp-ISTAR E7B SO3Pers)
And I think.

[redacted]> 0:5:5.400
(Air-1Gp-ISTAR E7B SO3Pers)
Were published here Q2 2024. Realistically at the minute.

[redacted]90
(Air-1Gp-ISTAR E7B SO3Pers)
Uh, not all of that will require operational space. So we there will be scope to fly the aircraft in managed danger areas and and the like for for a lot of that test and evaluation work.

0:5:19.150 --> 0:5:19.740
(Air-1Gp-ISTAR E7B SO3Pers)
And then.

0:5:21.780 --> 0:5:38.970
(Air-1Gp-ISTAR E7B SO3Pers)
Come in service date of like like say Summer 2024 that's when we'll be looking to get the orbits up and running for day-to-day use for operational sort of training sorties and exercise activity as well.

0:5:40.640 --> 0:5:41.120
(Air-1Gp-ISTAR E7B SO3Pers)
Umm.

[redacted]110
Air-1Gp-ISTAR E7B SO3Pers)
First aircraft, as said summer 2024 and then we have a fleet of three aircraft which will be delivered to us over the next year or so.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

0:5:54.610 --> 0:5:59.420
[redacted] (Air-1Gp-ISTAR E7B SO3Pers)
And always up, they'll operate out of our if Lossiemouth, they'll always be 1 aircraft or.

0:6:0.360 --> 0:6:24.270
[redacted] (Air-1Gp-ISTAR E7B SO3Pers)
From the about the two year post ISD point, there'll be 1 aircraft in depth maintenance for a lot of the time. So forward fleet of two aircraft, of which it's likely that one will be deployed a lot of the times. So realistically everything we discussed today, we can think we can kind of be some assumptions on having one aircraft operating on a day-to-day basis within UK space.

0:6:26.460 --> 0:6:31.380
(Air-1Gp-ISTAR E7B SO3Pers)
Cool. I'll take any questions or points just at that point. That's kind of a quick overview just to kind of set the scene.

0:6:32.60 --> 0:6:35.670

OK, thanks for this introductory part.

0:6:35.750 --> 0:6:43.520

Uh, I didn't ask to introduce each of us. I believe each of us, we know more or less in when we're in another. But thanks for your introduction.

0:6:44.900 --> 0:6:57.910

From our side, the , do you ever disappoint some direct question to our colleague or do you prefer to share something from your sending? Then we we ask some [redacted] question.

0:7:1.270 --> 0:7:8.510
(EXT)
Yeah, well, there will be questions, but I think it's better to discuss on a on a picture.

0:7:9.0 --> 0:7:9.460

OK.

0:7:9.220 --> 0:7:12.800
[redacted]T)
Uh, so we have, I've seen.

0:7:13.420 --> 0:7:21.980
[redacted]T)
Uh, the PowerPoint that was sent to us is shared on the screen. We have a the.

0:7:23.470 --> 0:7:28.960
[redacted] (EXT)
UK p[redacted]sals for these areas we have modeled them as well.

0:7:30.710 --> 0:7:33.440
(EXT)
And questions will follow.
[redacted]
0:7:33.240 --> 0:7:45.480
(EXT)
1st is what do you expect from us to to with this airspace to see the impact on the traffic on the commercial traffic?
[redacted]
0:7:46.290 --> 0:7:47.190
(EXT)
If so.
[redacted]
0:7:47.890 --> 0:7:52.780
(EXT)
We need to know, apart from the the physical location.

0:7:53.990 --> 0:7:59.200
[redacted](EXT)
Which is 2D. So far we need to know the the vertical.

0:7:59.820 --> 0:8:4.270
[redacted] (EXT)
Uh extension of this uh areas.

0:8:5.950 --> 0:8:21.600
[redacted] (EXT)
Uh, we need to know the frequency of usage. We just understood from uh from uh. The presentation, uh, the introductory words that would be more or less on a daily basis. One aircraft in the air.

[redacted]50
(EXT)
Uh, where that's another issue that probably for you is to if it's clear now, OK, if not will be clarified overtime.

[redacted]--> 0:8:42.380
(EXT)
And at the time when we have this information available, we can start.

[redacted]790
(EXT)
Uh, the investigation, of course, because it's a horizon of 2024.

[redacted]--> 0:9:2.460
(EXT)
Probably now it's not, uh, what? What if we start now? It will not be a perfect image of the the.

[redacted]
(EXT)
The impact due to the difficulty to to forecast the traffic in 2024.

[redacted]> 0:9:15.330
(EXT)
Uh, and probably it will be necessary to redo the exercise.

0:9:17.670 --> 0:9:23.460
[redacted]
Or when time when we are closer to the time of operations.

0:9:25.160 --> 0:9:25.460

[redacted]

0:9:25.550 --> 0:9:26.260
[redacted]
So.

0:9:27.160 --> 0:9:34.590
[redacted]
If you want to, you can share the what we have built, and myself on this.

0:9:36.400 --> 0:9:38.620
[redacted]
Uh. Action of.

0:9:39.990 --> 0:9:42.320
[redacted]
Acco[redacted]odating. Yeah. Yes, sure.

0:9:39.710 --> 0:9:45.500
[redacted]
Yeah. If I may, there is some before you start to share something, I see a gooey raised the answer with.

0:9:48.170 --> 0:9:50.870
[redacted]st wanted to Umm.

0:9:52.300 --> 0:9:54.270
Can you hear me? My computer seems to have frozen.
[redacted]
0:9:53.850 --> 0:9:55.260
(Air-1Gp-ISTAR E7B SO3Pers)
Yeah, yeah, you aren't clear.
[redacted]
0:9:54.790 --> 0:9:55.700
No, it's OK, it's OK.
[redacted]

[redacted]

0:9:55.730 --> 0:9:57.560

Thank you. Yeah, not quite sure what's going on there.

[redacted]9.350
G [redacted]
Uh, here we go.

[redacted]

Uhm.

[redacted]10:8.980
G
Yeah. So partly the the discussion between the the sponsor of this change and yourselves.

[redacted].430

The network manager Eurocontrol side is is somewhat down to me in the I'm trying to develop.

[redacted]:10:24.970

A more a a greater degree of dialogue when it comes to these these developments, whereas historically.

0[redacted]:10:32.180

Some of the sponsors have relied on Nats doing an element of of analysis and engagement.

[redacted]7.460

So we see, particularly with new entrants on a lot of technological.

[redacted]:11:7.700

Developments taking place over the As for the last few years, but also continuing for the next few years with free route and other concepts, Afua and all the other stuff that's coming in, I think it's really important now that there is a greater degree of dialogue directly between space change sponsors and the network manager facilitated by ourselves, this one here, I think broadly speaking, we are looking at probably a very light touch from the network management side.

[redacted]

0:11:8.240 --> 0:11:27.30

This is a in many respects a continuation of an existing procedure that was established for the E3D's and continues to do so, although the UK doesn't have its own E3D's now, obviously we're still supporting the NATO activities, so it's an extension of that which is very much a tactical operational procedure.

1.0

Yeah.

:11:58.260

But I felt it was important to establish his engagement so that network manager can provide that subject matter expertise input and if there was a need to do any analysis, if there is, they may not be. But it's just to look at what might be a proportionate response or at least confirmation from the network manager that you don't foresee any issues. I also think the other good reason for establishing this engagement is as we were hearing from Leon, that extended communication.

0:11:58.670 --> 0:11:59.410

About.

:12:4.320

Umm the the extension of these operations into the into the broader.

.0

Uh airspace outside the UK, so really good to have support from NM.

0:12:11.420 --> 0:12:25.670

es and the sponsor then it's obviously determining the level of of what might be anticipated for support. I think it will be light touch and as you said, if we're looking at introduction a little bit down the road then.

0:12:26.790 --> 0:12:36.190

It it's probably not a huge amount of analysis at the beginning, but obviously just confirmatory checks as the project evolves. So I just wanted to put that one out there.

[redacted]

0:12:36.820 --> 0:12:37.210
[redacted]
Thank you.

0:12:37.110 --> 0:13:3.680
[redacted]
I got thank thanks for for your comment to that is quite useful for what I could I could add to your general general comments. We are here to support any stakeholder comings from us. But for me it's also important that at a national level there is a a transparent process between all the different partners. So for me if you are approach by the sponsor directly to ask how many shroud vice.
[redacted]
0:13:5.100 --> 0:13:34.980

I would like to be sure that anyhow at the national level, there is a transparent process that all the different parts and CCA nuts and the sponsor are fully aware of what's going on. So for us this is keep we are a Technical Support or we offer whatever we can based on the request. But I wanna be sure that whatever we do is fully transparent for all the partners and that we have a meeting like it is with the. The fact I see.

0:13:35.60 --> 0:14:5.480
[redacted]
All the partners in the loop is exactly what what we need to do afterwards. If from the institutional part, if I could like it is CAA or or or nuts and so on, there is no problem. If you have some inputs directly from the sponsors, fine for me as well as you said probably this is 1 where the network impact assessment doesn't bring too [redacted]d on the clarification received about the the frequency.

0:14:5.550 --> 0:14:8.650

Way of the operations and so on. So having one per day.

0:14:9.770 --> 0:14:40.890
[redacted]
I believe that there will be difficult to have a simultaneous activation on different corridor, but OK could be something that we can clarify later on where we have a different additional information as mentioned by Christian. But I would like to ensure that for us the process will remain transparent with all the stakeholders at the national level that would be interested to know whatever outcomes from our analysis . I hope that is matching what you what you explain just before.
[redacted]
0:14:41.220 --> 0:14:49.510

Yeah, that's exactly what what we expect from sponsors from airspace change from the A side which completely mirrors what you've said. They're Thank you.
[redacted]

[redacted]

0:14:49.900 --> 0:15:19.710
[redacted]
OK, perfect. Thanks. OK, [redacted], you want to show some initial initial elements you mentioned it's important what C [redacted] said. And you know that targeting 2024, indeed the in the normal analysis, we do one of the key elements besides the additional information that we can ask to the sponsor about the dimension, the frequency eventually time window during the day when there are some kind of activities. The other key element.

0:15:19.820 --> 0:15:49.590
[redacted]
F key elements are the traffic demand. That is, of course, until 2024 could could change and that we need to see when make sense to to do, whether makes sense to do now and then redo later on or more closer to the time when we should have the operations. And the other important elements is to see in the time frame from now until 2024 if there are for instance in the pipeline.

0:15:50.210 --> 0:16:2.300
[redacted]
, significant airspace changing changes in in UK in this case that could also have an impact on the analysis we are doing. As I said in this case.

0:16:2.330 --> 0:16:24.110
[redacted]
The impact will be probably not too much, but just to set the scene or which are basically the elements, normally we consider for this kind of analysis and therefore this additional information we can do this exercise just to to provide the now inputs to your for your consideration, because at the end of the final decision is on your side.

0:16:25.250 --> 0:16:43.220
[redacted]
A
But these are the elements that we need to consider in this in in this process, just as initial consideration from my side, then Christian, if you or [redacted] can share something of if I understood you already start modeling something in a in a certain way.

0:16:45.540 --> 0:16:49.880
[redacted]
(EXT)
Yeah, it's OK we uh, we have, for example this.

0:16:53.280 --> 0:16:55.40
[redacted]
(EXT)
I don't know what you you see now.

0:16:55.740 --> 0:16:56.70
[redacted]
Mm-hmm.

0:16:56.470 --> 0:16:57.510
[redacted]ir-1Gp-ISTAR E7B SO3Pers)
Yeah, we're seeing that, I think.

0:16:57.640 --> 0:16:58.20
[redacted]
Yes. [redacted]

0:16:58.200 --> 0:17:1.970
[redacted]
Yes. So you see this is how you we model the.

0:17:2.50 --> 0:17:3.0
[redacted]
Uh. Yeah. And. [redacted]

0:17:4.140 --> 0:17:8.610
[redacted]
Using the the data you provided as coordinates for the.

0:17:9.710 --> 0:17:10.430
[redacted]
Orbits.

0:17:10.500 --> 0:17:10.920
[redacted]
The.

0:17:12.540 --> 0:17:18.710
[redacted]uch to say now. It's just a 2D representation of them.

0:17:20.210 --> 0:17:30.620
[redacted]t we produced also an updated version of airfare refuelling areas over in Europe, and some of them are.

0:17:31.550 --> 0:17:35.610
[redacted]
OK, more or less overlapping with the with this, uh, this.

0:17:37.250 --> 0:17:41.650
[redacted]
After reviewing areas tracks in in UK.

0:17:43.50 --> 0:17:51.780
[redacted]
But that's the problem that it's for for you about the utilization of the the airspace as I said.

0:17:52.590 --> 0:18:2.320

When we go closer to to model the operations, then we need the information, as I said about the the vertical.

0:18:3.670 --> 0:18:32.640

Utilization of these areas and the criteria for separation, if it's like a GT or like a E3D E 3D, normally I work styles, operations level and the separation is standard RVSM. In other situation we have to apply the the the last military aircraft separation 2000 feet.

0:18:32.730 --> 0:18:34.900

OK, these are details that will be.

0:18:34.980 --> 0:18:35.550

The.

0:18:49.70 --> 0:18:49.310

Yeah.

0:18:35.960 --> 0:18:54.400

Uh approached the when we run the the the the simulation of the effect because the environmental change significantly well with the FRA implementation UK in 2024, the traffic forecast of course.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

NATS

[redacted]

0:18:54.470 --> 0:18:54.890

There's.

0:18:57.290 --> 0:19:4.220

I don't wanna fly should have and how the distribution would be different that we have today?

0:19:12 [redacted]

Yeah [redacted]

0: [redacted]

Yeah, there are a lot of elements that we have to to discuss when we go to a more detailed analysis.

0:19:14.850 --> 0:19:15.840

If I may.

0:19:15.160 --> 0:19:16.910

This is what we have done, yes.

0:19:16.800 --> 0:19:47.870

Yeah. Thanks, Sir. , if I may, just looking at this map, one of the curiosity I have immediately, OK, we need to see for the analysis. I said one aircraft that they, I don't know how many corridors simultaneously or in the same day you expect it to activate, maybe clustering the corridor in a certain way. And then if this corridors activate show these areas. No corridors. Sorry these areas of activation as a certain link with the existing areas as shown in the picture. So they will be.

0:19:47.950 --> 0:20:18.320

his area with the existing one for combined operations or they are independent from any other kind of activities. So these are the set of additional information that in the meantime we can collect probably even if as we said, looking at the evolution of the airspace organization with the UK, that will come looking at that are other tables we are discussing all will.

[redacted]

0:20:18.880 --> 0:20:48.270

What do you know, the discussion with the with the UK about the reorganization, the Space Plus division, traffic demand, probably it a more detailed analysis could come later on one important point that the g already anticipated that normally this is speeds are managed tactically if I understood properly now with this new aircraft it will continue to be done like it is. It's also an important piece of information for us despite the kind of.

0:20:48.770 --> 0:20:52.100

Traffic analysis we can do so.

0:20:52.960 --> 0:21:13.40

I believe that we can proceed in two steps. The first is, at this stage, just to get a little bit more data from the sponsor and then eventually and can prepare based on the data received, can prepare a sort of, I don't say questionnaire a sort of questions.

0:21:13.120 --> 0:21:43.870

A that we need to get an answer to prepare for the analysis and then later on having a little bit better picture traffic demand more important to see the other project for the speech organization. We can fit better deep parameters and the elements for the analysis. This is how I would suggest to proceed. I don't know from your side if you have other proposal or other comments that would be help to.

0:21:43.980 --> 0:21:45.300

Find out how to proceed.

0:21:50.320 --> 0:21:56.810

it's Umm, it's . I'm just. Uh, thank you very much everyone. That's really, really useful and UM.

0:21:57.870 --> 0:22:0.780

I just wondering, , what the time frame is.

0:22:1.960 --> 0:22:11.80

For the ACP as to when this kind of information, the detail would be required if we felt there was, UM, value in running an analysis.

[redacted]

[redacted]

[redacted]

UAS CDC

[redacted]

[redacted]

[redacted]

0:22:12.290 --> 0:22:16.250

Is it something I need or we would need or MD would need 4?

0:22:18.350 --> 0:22:21.880

The full options appraisal or the final options appraisal.

0:22:23.380 --> 0:22:31.410

I I think it comes down to UM, the evolution of your of your options and it's understanding.

0:22:34.570 --> 0:22:35.860

Initially that.

0:22:36.860 --> 0:22:41.790

Stage two requirement would be A at the minimum we would expect the.

0:22:42.350 --> 0:22:43.150

Uh.

0:22:44.30 --> 0:22:46.30

Qualitative assessment.

0:22:47.290 --> 0:23:0.260

So that in itself could be a certain type of engagement with with NM and Nats, the AMC another organization to ensure actually if it looked something like this, what do you think the outcome would be?

0:23:1.500 --> 0:23:11.50

That in itself doesn't necessarily need to have a huge amount of of of analysis, but that in itself will be used to refine.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

UASCDC

0:23:11.750 --> 0:23:12.320

Umm.

0:23:13.10 --> 0:23:18.160

And update your understanding of how the airspace might operate and then that in itself identifies.

0:23:18.900 --> 0:23:24.120

Areas that you may then want to actually we want to look into that a little bit more than you go into that more.

0:23:24.780 --> 0:23:27.210

Uh indepth perhaps?

0:23:27.280 --> 0:23:28.140

The.

0:23:44.440 --> 0:23:44.780

Umm.

0:23:29.550 --> 0:24:1.560
G
Qualitative analysis that stage. So I think it it, it really can be seen as an iterative process. At what stage does it fall in naturally? Clearly what doesn't work is if you go into lots of in-depth analysis too soon, which is why I was cautioning an element of light touch to this to build up those relationships and start discussing what, firstly, what influences where these structures go. So , probably from your side it's understanding what are the constraints.

0:24:2.80 --> 0:24:32.230

And what are your assumptions? And then to challenge those as you go through the process, but you need to define what what is your baseline that you're starting from? Because as was saying that baseline is probably going to change, so you need to understand if it does change, it's seeing it, seeing what that change is going to be and when it's coming in and how and if that influences your design options, but it really is iterative, there is no standard model that says it needs to be exactly this, but if you can.

[redacted]

NATS

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

NATS

[redacted]

[redacted]

0:24:32.550 --> 0:24:35.140

You look at the requirements of CAP 1616.

[redacted]37.480 --> 0:24:46.440

With it being an iterative process, gaining in confidence, gaining in analytical data to the extent that is proportionate.

[redacted] --> 0:25:17.720

There is a case for not overdoing it. Uh, you start uh sponsor start to trip themselves up. If they end up going either two detailed too soon or just too detailed in general, that doesn't isn't justified if we're talking about one aircraft, possibly 2 aircraft. I think there's a consideration exactly as I think mentioned, or piano might mentioned. What assumptions do you have for the underlying activations of structures that are also maybe taking place?

0:25:18.160 --> 0:25:48.290

Either at the same time, coincidentally, or as part of the operation that's being undertaken. So if you're using one of the North Sea orbit areas, is that always going to be associated with D323 or one of the other areas? Might it be independent and you start to build upon understanding then as to what other constraints might come in, if you understand, it's gonna have a significant impact on the network. So if you say, well, we're gonna need one orbit area or one orbit level.

0:25:48.520 --> 0:25:49.310

Active.

0:26:8.420 --> 0:26:8.740

Umm.

0:25:50.40 --> 0:26:18.670

But is that associated with three 2-3? And what's then the impact of 701? Is is active at the same time? Does that then cause accumulative issue? So whilst on the face of it this is a replacement of an existing tactical process where you can see actually it's one flight level, it's the other bits that go along with it. The assumptions and the constraints that might then determine what the impact on the network is. That's probably quite a critical thing now given how?

0:26:19.410 --> 0:26:27.580

Uh ticularly moving to free route, but also with the anticipated increase in traffic levels. We're in a different place than we were maybe 10 years ago.

0:26:31.870 --> 0:26:32.170

Look.

0:26:29.300 --> 0:26:42.590

Slightly Waffly , but essentially it's this can be done in accordance with CAP 1616, exactly as intended. It's up to you to determine to what degree do you take that analysis in each stage.

0:26:43.290 --> 0:26:44.100

Does that make sense?

0:26:44.970 --> 0:26:45.440

Yeah, yeah.

0:26:44.600 --> 0:26:46.880

It makes it makes perfect sense.

0:26:48.180 --> 0:27:4.980

Thanks and I think that probably stage two which we are in at the moment, we've spoken to Nats and if you say you know we're now engaging with the network manager, but I don't, I'm not sure it's I think we've already touched on it, it's not.

0:27:5.830 --> 0:27:10.940

Necessarily good practice to do any analysis. Right now we need to look forward to.

0:27:14.570 --> 0:27:14.990

Yeah, you.

0:27:12.90 --> 0:27:19.820

To when the airspace is changing slightly and and I I hate it, I've got to understand future. Whatever it free route airspace, haven't I?

[redacted]

NATS

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

NATS

0:27:20.630 --> 0:27:21.90

Yeah.

0:27:23.610 --> 0:27:25.40

Yeah. Yes.

0:27:21.460 --> 0:27:26.270

Yeah. So it's already in place, so it needs to be factored in. Uh, and we've got we've got.

0:27:25.630 --> 0:27:26.820

No way to escape.

0:27:26.920 --> 0:27:27.910

No, no.

0:27:30.130 --> 0:27:30.470

Yes.

0:27:30.140 --> 0:27:30.990

Yeah, yeah.

0:27:31.860 --> 0:27:32.110

Yeah.

0:27:31.990 --> 0:27:32.300

Yeah.

[redacted]

[redacted]

[redacted]

UAS CDC

0:27:36.110 --> 0:27:36.420

Yeah.

0:27:40.10 --> 0:27:40.270

Umm.

0:27:43.50 --> 0:27:43.390

Yeah.

0:27:27.110 --> 0:27:56.350

No, we've got deployment. One is already in deployment. 2.1 is in and we've got deployment two, which hopefully will be deploying in March next year. So obviously deployment 3, which is the clav Northeast bit is gonna be quite critical to this project. I think the other thing I would say is that engagement is really, really good and a degree of analysis. But to the point where you understand what the influences are and what the triggers are, not necessarily what the answers are.

0:27:56.360 --> 0:27:56.710

Umm.

0:27:57.120 --> 0:28:17.710

So at this stage stage two is all about well, you know what things are going to determine where these structures go or what's going to stop these structures going in a certain place or what the other factor in to make it really complicated is, is what's going to determine whether there might be constraints on the space management aspects.

0:28:19.840 --> 0:28:20.110

Yeah.

0:28:28.720 --> 0:28:28.960

Umm.

[redacted]

[redacted]

0:28:36.710 --> 0:28:36.970

Yeah.

0:28:19.590 --> 0:28:40.260

So so there is a degree you can go to which says like we, we know we need to do more work but it's not proportionate to do lots of in depth work on all of those possible options. But let's have a look at what triggers or factors might influence how effective that airspace design is to be considered later on.

0:28:40.410 --> 0:28:41.670

Yeah, yeah.

0:28:42.960 --> 0:28:43.510
a
OK.

0:28:43.270 --> 0:28:44.750

And P , I don't think that's.

0:28:44.840 --> 0:28:53.300

And sort of out of step with what you might expect for the evolution of an airspace change. Anyway, if I understand correctly.

0:28:53.850 --> 0:29:24.180

What in theory get to to to make a more, uh, let's say, correct and precise analysis that the elements I mentioned before are those elements that we should take a normally we we take normally in consideration for for a deeper analysis. Now you mentioned several times where the deep or not and so on what I because depends also indeed uh how we're going to engage in this area if it is 1 level that are normally you manage tactically as a normal separation.

0:29:24.250 --> 0:29:55.800

Says we go in a certain direction. If it's a more levels and you need to close these areas, including the check on the floor plan implies something different. So what we can of, because I said from our side, we are here to help you and at which stage you want, meaning that if internally you decide a certain point that the way you expect to manage and so on. There is no really need to to make any specific assessment from a network perspective.

0:29:56.100 --> 0:30:8.80

[redacted] OK for us. So meaning that we do not want to impose any any kind of assessment if can help welcome from our side as well. So if you want and try to understand also your general consideration.

[redacted]

0:30:9.140 --> 0:30:37.990

[redacted] nd then my colleague can help me eventually. If I say something wrong to to get to help all of you to more or less understand what could be the kind of implication that establishing something could create in a network like yours and so on, or an with the tensional network level without looking at the precise additional information that could be the traffic demand evolution or the SP.

0:30:38.170 --> 0:30:40.860

The reorganization that will come and so on.

0:30:41.950 --> 0:31:13.320

[redacted]

With the additional data that Leon can provide in terms of vertical and I said Christian can drafting a number of bullet of additional information just for the sake of [redacted] e try to make a run. Consider the current traffic [redacted]

Gives you some. Uh. Can give you some indication. Uh, also to help you to understand. OK, I need something more precise. Deeper analysis. In this case. I know that I need to wait additional information that will come later on or with the kind of analysis we do in this in the brackets. Say if I may say that fictitious environment it's enough for us to understand.

0:31:43.500 --> 0:32:13.890

What we need to do, and thanks for the effort that is the way we can, I can propose eventually to proceed, if it's OK from your side, said we are here to help you. So if you say one way is better on the other way is so do like this is good. So we have already some some ideas or it's better to wait forever to have a deeper analysis is also OK for us so it's it's really according to your specific requirement at this stage.

0:32:20.480 --> 0:32:25.440

Like your piano? And I think from a uh, an airspace change perspective that would be.

0:32:26.330 --> 0:32:31.840

See how how you determine how that goes as as to what degree.

0:32:32.980 --> 0:32:48.140

Do you feel you need that? That deeper analysis and and Leon, some of the comments you've been putting in, in, in the remarks there in the chat, that's the sort of thing we're talking about when it comes to baselining, what's your starting point?

0:32:48.730 --> 0:32:49.910

Uh, yeah.

0:32:50.830 --> 0:32:51.560
(Air-1Gp-ISTAR E7B SO3Pers)
Yeah, sorry.

0:32:48.90 --> 0:32:52.620

OK, so I didn't see the. I didn't see the chat, so you already provide some information.

0:32:52.400 --> 0:32:53.0

Yeah.

0:32:53.20 --> 0:32:53.590

Uh.

0:32:55.510 --> 0:32:56.260

OK so.

0:32:52.690 --> 0:33:3.110
(Air-1Gp-ISTAR E7B SO3Pers)
Yeah. Sorry. I was gonna. I was gonna step in with with an answer to those questions that Christian raised earlier. Just just to kind of build on the picture that I sent from from the start, so.

0:33:3.180 --> 0:33:3.640
(Air-1Gp-ISTAR E7B SO3Pers)
To.

0:33:4.880 --> 0:33:20.290
(Air-1Gp-ISTAR E7B SO3Pers)
We're looking for vertical limits of 270 to 350, but that's just to give some flexibility in the operating height of the aircraft. Chances are all operate much like an E3 whereby it will establish a height within the orbit area.

0:33:20.770 --> 0:33:22.970
(Air-1Gp-ISTAR E7B SO3Pers)
Uh, and it will.

0:33:24.200 --> 0:33:29.330
(Air-1Gp-ISTAR E7B SO3Pers)
You know, and it will likely maintain that for the duration of of its orbit time.

0:33:31.550 --> 0:33:31.950
(Air-1Gp-ISTAR E7B SO3Pers)
Yeah.

0:33:33.140 --> 0:33:35.310
T (Air-1Gp-ISTAR E7B SO3Pers)
Well, yeah, yeah, absolutely.

0:33:36.100 --> 0:33:36.450
Air-1Gp-ISTAR E7B SO3Pers)
Yeah.

0:33:38.780 --> 0:33:39.60
(Air-1Gp-ISTAR E7B SO3Pers)
Yeah.

0:33:29.550 --> 0:33:39.760

Hours and hours and hours. If it's like the E3 from my recollection of controlling controlling those 290 or 310 going around in circles for hours, yes.

0:33:39.150 --> 0:33:40.190

Yeah, yeah.

0:33:39.820 --> 0:33:42.430
(Air-1Gp-ISTAR E7B SO3Pers)
That. There you go. You're absolutely. You're absolutely right. Go.

0:33:41.840 --> 0:33:43.80

Being that done that.

0:33:48.630 --> 0:33:49.20

Mm-hmm.

0:33:50.460 --> 0:33:50.760

Yeah.

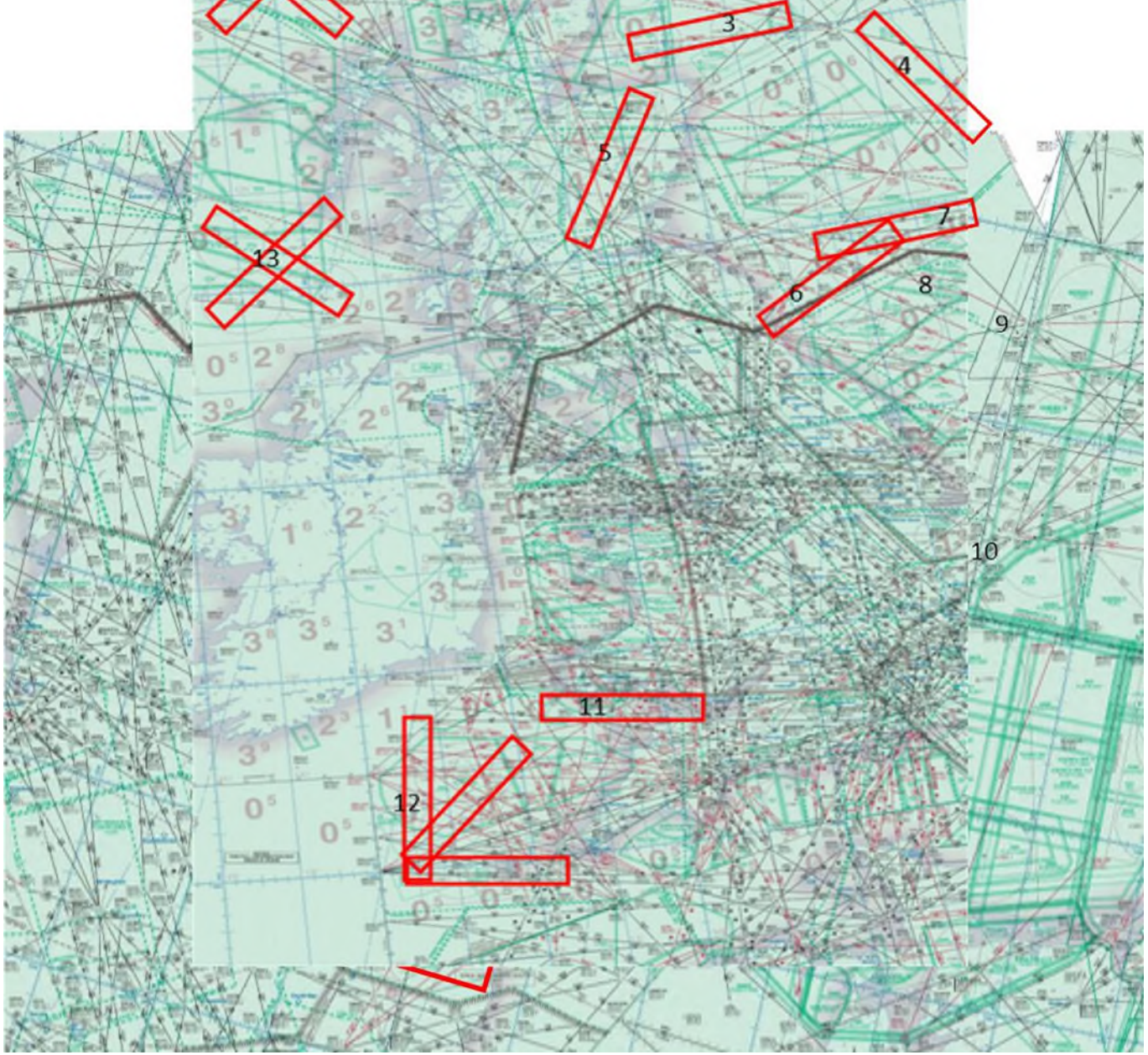
0:33:42.840 --> 0:34:6.160
(Air-1Gp-ISTAR E7B SO3Pers)
And it it is obvious Mr compliance. So I guess that that changes things just in in terms of the the traffic flow and the RAD has is same as the three as well. So we can just where there are steps that exist, sorry standard operations that exist for the E3 we can read across to the E7.

0:34:6.680 --> 0:34:25.660
Air-1Gp-ISTAR E7B SO3Pers)
And on the frequency, because I know that's cropped up a few times. As we've said, I think a good rule of thumb will be at most we can expect 111 aircraft flying in the UK per day and generally the endurance is a Max of 10 hours. So that's in good conditions and this is up in the north of Scotland. So it's likely to be less.

0:34:32.530 --> 0:34:32.980

OK.

0:34:26.280 --> 0:34:34.450
(Air-1Gp-ISTAR E7B SO3Pers)
Uh, so we're expecting probably in orbits of the most 8 hours now where it will.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0:34:37.90 --> 0:34:54.320
(Air-1Gp-ISTAR E7B SO3Pers)
Much, much like the E3 it there might be an instance where it bounces around from orbit to orbit, but at most we'd look to use two and in some situations three of the orbits a day and that would just be dependent upon weapons activity that we're looking to work.

0:34:53.430 --> 0:34:54.670

OK. Yeah.

0:34:54.540 --> 0:34:57.360
(Air-1Gp-ISTAR E7B SO3Pers)
And now I think.

0:34:58.420 --> 0:35:1.430
(Air-1Gp-ISTAR E7B SO3Pers)
Where it might differ from the E3 is.

0:35:4.350 --> 0:35:8.900
(Air-1Gp-ISTAR E7B SO3Pers)
With these orbits, there is we need them perpendicular to the working airspace.

0:35:10.440 --> 0:35:26.820
(Air-1Gp-ISTAR E7B SO3Pers)
Because of the, the sensor suite needs, it's it functions best when when side on to the to the working S basically, hence the. Hence the current locations and within the orbit there will be.

0:35:27.990 --> 0:35:35.290
(Air-1Gp-ISTAR E7B SO3Pers)
Whilst it weren't adjust height tactically, uh it will adjust heading more tactically. So whilst it might fly a race track.

0:35:37.650 --> 0:35:50.500
(Air-1Gp-ISTAR E7B SO3Pers)
It will at some point have to turn short of the end of the orbit, which just means, I guess, a little more unpredictability from an air traffic management side of things.

0:35:51.940 --> 0:35:54.790
(Air-1Gp-ISTAR E7B SO3Pers)
Had. Hence, you know, we kind of want these orbits because.

0:35:55.610 --> 0:36:4.480
(Air-1Gp-ISTAR E7B SO3Pers)
If if we look to I don't wanna deviate too much from from our call subject here. But you know the the Italians fly their AEW 1 long, long legs between NAV points.

0:36:5.620 --> 0:36:6.230
(Air-1Gp-ISTAR E7B SO3Pers)
But that.

0:36:6.990 --> 0:36:16.800
(Air-1Gp-ISTAR E7B SO3Pers)
It's just not really gonna work with the seven because it it's limits that tactical freedom, so it would massively limit how our ability to to train as we fight.

0:36:17.650 --> 0:36:19.100
(Air-1Gp-ISTAR E7B SO3Pers)
Actually Umm.

0:36:20.260 --> 0:36:20.900
(Air-1Gp-ISTAR E7B SO3Pers)
And then.

0:36:21.590 --> 0:36:23.640
(Air-1Gp-ISTAR E7B SO3Pers)
Frequency wise, just another thing I wanted to mention.

0:36:25.550 --> 0:36:34.530
(Air-1Gp-ISTAR E7B SO3Pers)
As as highlighted earlier, we're gonna establish the E 7 fleet in the UK. NATO currently forecast their E 3 fleet out to 2035.

0:36:36.70 --> 0:37:4.520
(Air-1Gp-ISTAR E7B SO3Pers)
And they like to come to the UK for weapons activity, so there would be a situation where we might have an E7 established on a northern orbit whilst NATO E3 is established on a different orbit within the UK. And I guess I've discussed with and that we might need to establish some procedures should that be the case, to deconflict there so that we're not blocking out big chunks of SPS with a couple of earwax flying different patterns as well.

0:37:5.180 --> 0:37:5.590
(Air-1Gp-ISTAR E7B SO3Pers)
Uh.

[redacted]

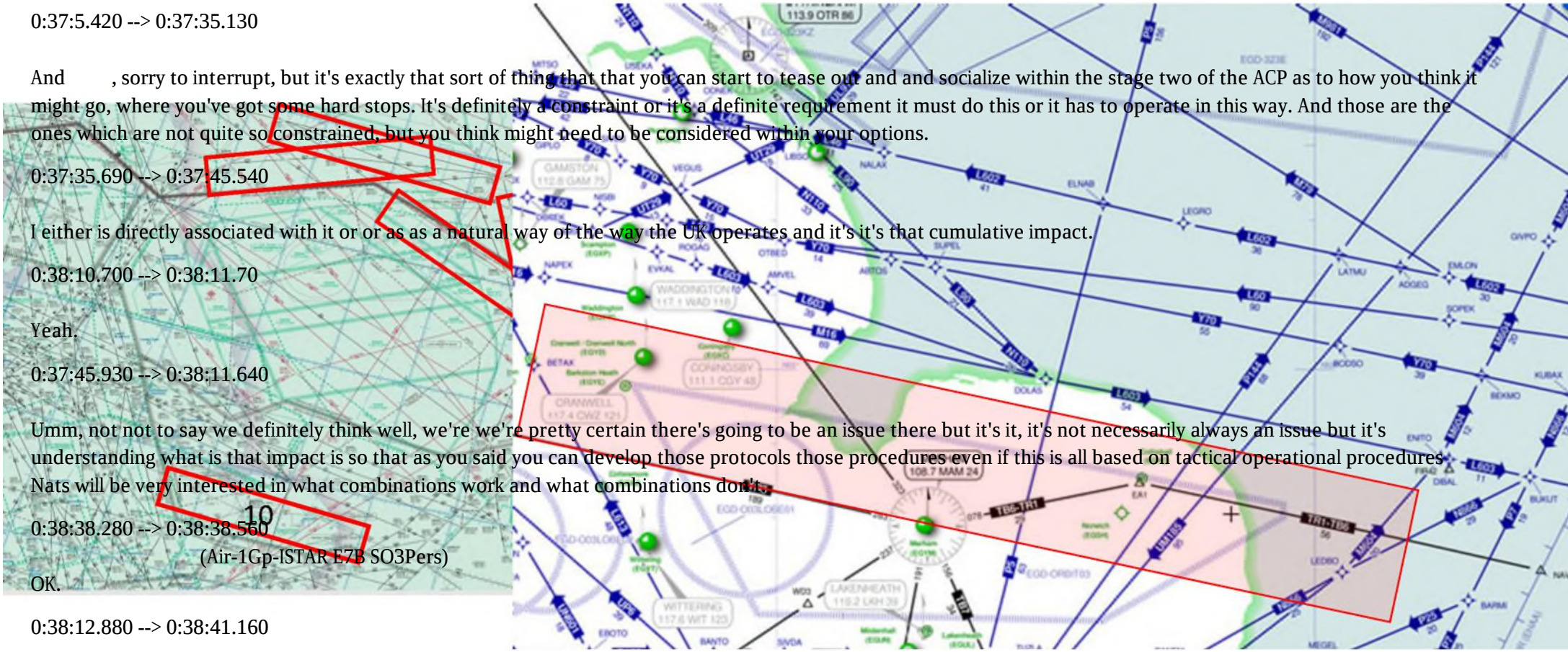
[redacted]

0:37:6.670 --> 0:37:7.660
(Air-1Gp-ISTAR E7B SO3Pers)
Yep, no place to.

0:37:29.180 --> 0:37:29.450
(Air-1Gp-ISTAR E7B SO3Pers)
OK.

0:37:5.420 --> 0:37:35.130

And , sorry to interrupt, but it's exactly that sort of thing that that you can start to tease out and and socialize within the stage two of the ACP as to how you think it might go, where you've got some hard stops. It's definitely a constraint or it's a definite requirement it must do this or it has to operate in this way. And those are the ones which are not quite so constrained, but you think might need to be considered within your options.



0:37:35.690 --> 0:37:45.540

I either is directly associated with it or or as as a natural way of the way the UK operates and it's it's that cumulative impact.

0:38:10.700 --> 0:38:11.70

Yeah.

0:37:45.930 --> 0:38:11.640

Umm, not not to say we definitely think well, we're we're pretty certain there's going to be an issue there but it's it, it's not necessarily always an issue but it's understanding what is that impact is so that as you said you can develop those protocols those procedures even if this is all based on tactical operational procedures. Nats will be very interested in what combinations work and what combinations don't.

0:38:38.280 --> 0:38:38.560
(Air-1Gp-ISTAR E7B SO3Pers)
OK.

0:38:12.880 --> 0:38:41.160

So it's pretty it's it's more of a check as to we don't think there's going to be any issues by doing it this way or you get to a point where it actually it's starting to look like there is going to be an issue. So you need to do more work to understand what those issues are and then what drives the solution to that is it a change in the orbit areas, is it change in operating procedures, is it a change in the airspace management type stuff? Because I don't suppose.

0:38:58.460 --> 0:38:58.920
A
Yeah.

0:38:41.750 --> 0:39:1.340

It it's a consideration here that you want to go down the route of establishing formalized special users space or some kind of airspace reservation, but even that as an assumption could be put into the ACP, so should it become a necessity then obviously you've got that in there. But I don't think that's where you want to go with this.

0:39:2.340 --> 0:39:11.860
(Air-1Gp-ISTAR E7B SO3Pers)
OK, thanks. Thanks, . Yep. So that's all good. I will. At least I'll try and start incorporating that in the in the docs as we build them up.

0:39:14.950 --> 0:39:35.660

OK. Yeah. I believe this kind of information could could be useful because as far as I understood and correct me, if I if I'm wrong g compared with the car and E3 the the management that will remain more or less the same with the same kind of tactical separation you provide by ATC. Now am I right?

0:39:39.440 --> 0:39:39.640
(Air-1Gp-ISTAR E7B SO3Pers)
Yeah.

0:39:37.230 --> 0:39:45.460

I think that's what you mean for, isn't it, Leon? So. So the existing procedures, unless they've changed in the last few years is is all based on like a prenotification?

0:40:10.770 --> 0:40:10.940
(Air-1Gp-ISTAR E7B SO3Pers)
Yep.

0:39:47.140 --> 0:40:15.410

There are certain orbit area or certain lobe in a in an orbit area is is expected for you utilized but that still permits tactical adjustment between those areas. I've been on the receiving and myself, could we move to UK orbit 6 lobe two or something and then it's through that tactical negotiation and it's done through like blocking off the flight level from the sector's perspective. So it's not utilization of airspace so much it's kind of.

0:40:15.540 --> 0:40:17.220

Is that tactical impact?

0:40:18.780 --> 0:40:19.290

And two.

0:40:18.590 --> 0:40:22.900

But we will be we will be into three airspace.

0:40:23.420 --> 0:40:23.710

Yeah.

0:40:23.890 --> 0:40:31.480

At that stage. So it's understanding that is going to introduce a need to examine and potentially change.

0:40:32.340 --> 0:40:32.500

Yeah.

0:40:32.340 --> 0:40:43.570

Even if it's a minor change, how that notification and how that is actually managed on the tactical perspective, and how does that impact on flight plans that got into this system?

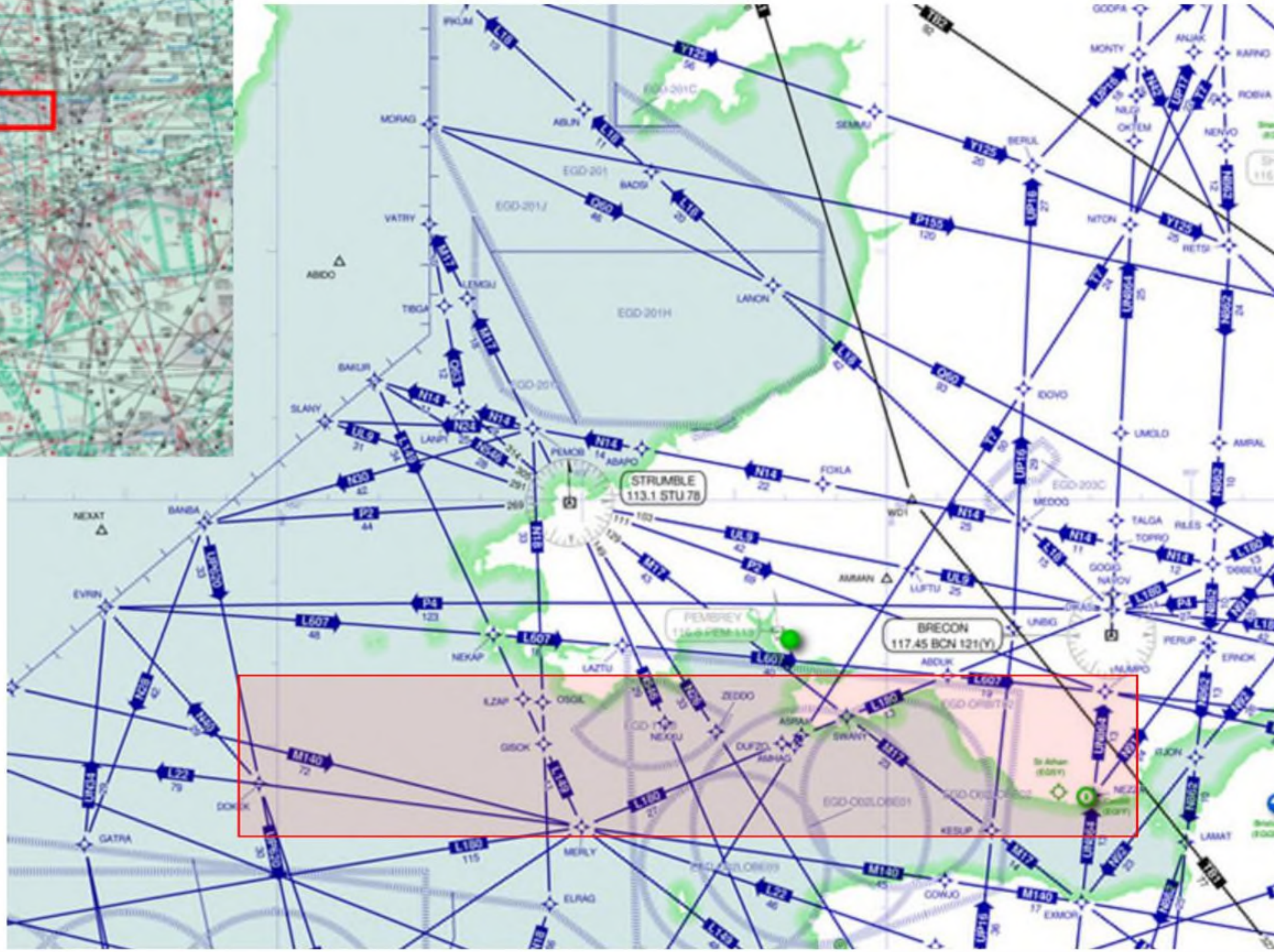
0:40:43.40 --> 0:40:57.850

Yeah, and that he, if I may, just additional piece of information for for us if you want to run something I said just initially we can do something to to help you the kind of separation you apply would be a standard achieve separation.

0:40:58.970 --> 0:41:3.660

You don't need to apply special separation from from this aircraft. Am I right?


11
12


STRUMBLE
113.1 STU 78
BRECON
117.45 BCN 121(Y)
MORAG
VATRY
BAKUR
SLANY
BANBA
EVRIN
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ABIDO
LANON
NITON
IDOVO
MERLY
ELRAG
GATRA
KESUP
SWANY
ZEDDO
GISOK
ILZAP
OSGIL
LAZTU
NEKAP
FOXLA
MEDOG
TALGA
EXMOR
LAMAT

0:41:4.240 --> 0:41:6.130
(Air-1Gp-ISTAR E7B SO3Pers)
Yeah, that's that's correct. We.

0:41:7.780 --> 0:41:15.470
(Air-1Gp-ISTAR E7B SO3Pers)
Like I said, they're obviously I'm compliant and the and the Rat house doesn't require anything above, above and beyond normal standard separation.

0:41:16.150 --> 0:41:17.660

OK, OK.

0:41:19.380 --> 0:41:34.730

OK, I'm asking and with the discussion we had and the the information we can get, maybe additional information can come up from our mind for , you already answered to some of the questions.

0:41:35.290 --> 0:41:51.880

Ohh we can have such a like a light in the brackets analysis to see for instance according to the level and the traffic flows just for the sake of provide the information to our colleagues.

0:41:52.220 --> 0:42:18.30

Uh, we can have such a kind of analysis, so maybe even, for instance, to understand if it is 270 as an impact, if it is 350 is another of course in terms of potential traffic impacted that even if it is tactically managed, could be useful for your local or consideration. I'm thinking about this how we can help you in a if necessary .

0:42:20.650 --> 0:42:28.440

Yes, thank you, . It's well said we can do an initial evaluation is not is not.

0:42:29.30 --> 0:42:29.300

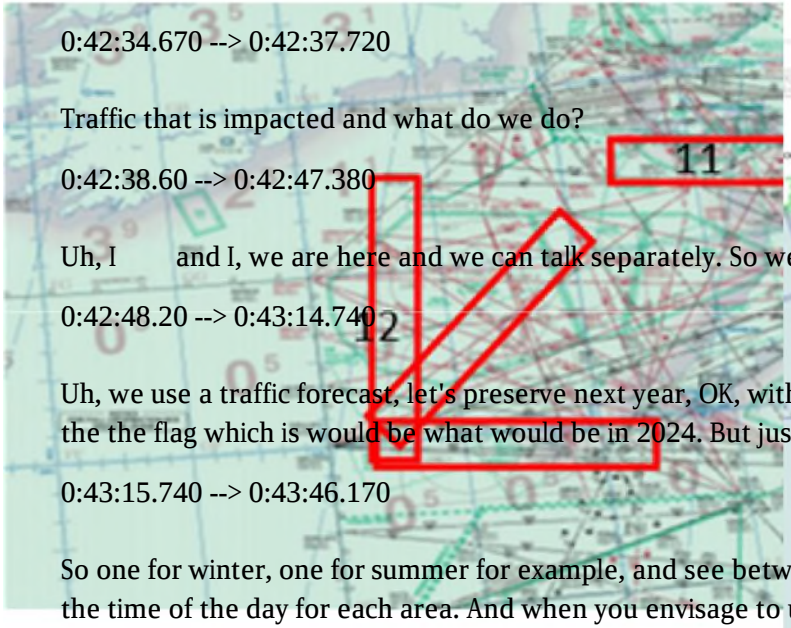
No.

0:42:30.510 --> 0:42:30.980

Indeed.

0:42:28.510 --> 0:42:33.110

Because of a proper assessment, but it's in a valuation of the.



0:42:34.670 --> 0:42:37.720

Traffic that is impacted and what do we do?

0:42:38.60 --> 0:42:47.380

Uh, I and I, we are here and we can talk separately. So we agreed to to do in this way.

0:42:48.20 --> 0:43:14.740

Uh, we use a traffic forecast, let's preserve next year, OK, with the existing environment, because there's a difficult now to to to model the the the full implementation of the the flag which is would be what would be in 2024. But just to have an idea because the flows with flower without flour will be basically more or less the same.

0:43:15.740 --> 0:43:46.170

So one for winter, one for summer for example, and see between this level. So as you suggested to 70350 to see what traffic is there and the distribution in time to see the time of the day for each area. And when you envisage to use the a combination to jump from one to, to to another orbit. Sorry to see which is the.

0:43:46.990 --> 0:43:52.960

Let's say most suitable or when you select the the the window of operation.

0:43:58.450 --> 0:43:58.910

Yeah.

0:44:13.760 --> 0:44:16.780

As for illustration, As for illustration, yeah.

0:43:54.20 --> 0:44:23.630

Which would be the impact now for sectors? It's more difficult because if we discuss on the current sectors, probably the information will not be very useful when the time will come for a, for a, for operation. But OK, we can have such an an information today for illustration. Exactly what I said. You know, for illustration will select one or two characteristic.

0:44:23.710 --> 0:44:26.370

The days and also.

0:44:27.70 --> 0:44:45.470

Also well, apply the airspace reservation in UM. Let's say normal day of of training with the activating activation of the military areas 323623. So you're even 701.

0:44:46.720 --> 0:44:48.980

In this way you can have.

0:44:50.610 --> 0:45:6.310

A base for for starting the the the discussion and uh building up. Uh. The procedures what are common for for with the E3D what will differ for that?

0:45:19.870 --> 0:45:20.170

Yeah.

0:45:8.10 --> 0:45:25.170
)
And then when the time will be closer to to the time of of having them operational in 2024, we can refine this this exercise with the the current data available at that time.

0:45:24.740 --> 0:45:30.310

Yeah, I would add that we can refine if necessary. So meaning with this initial.

0:45:30.940 --> 0:45:55.630

[redacted]

NATS

[redacted]

[redacted]

[redacted]

And let's say analysis we can we can provide to you this set of data even as examples and so on with the having some assumption that we are using, I would expect from your side that you will evaluate it if deeper whether deeper analysis is required or not and then we'll we'll perform accordingly. So sounds reasonable for all of you.

0:46:0.310 --> 0:46:5.720
(Air-1Gp-ISTAR E7B SO3Pers)
I mean from from my perspective, that sounds like it would be handy to have. But but I think it's probably

0:46:8.160 --> 0:46:9.390
(DES MARSHALL-Hub Satellite PM)
It's like a good option.

0:46:7.570 --> 0:46:9.860

Sounds it sounds like a good option to me.

0:46:10.510 --> 0:46:10.870

OK.

0:46:11.60 --> 0:46:12.250

Definitely. Thank you.

0:46:13.60 --> 0:46:13.520
a
Yes.

0:46:13.330 --> 0:46:13.780

OK.

0:46:14.990 --> 0:46:16.380

Would you like us to send?

0:46:23.510 --> 0:46:25.60

Yes, yes, we will.

0:46:26.860 --> 0:46:27.320

Yep.

0:46:17.800 --> 0:46:30.460

Send the the details over that you were you were talking about the about the times of day. The when the where the pickups of you send that over after this meeting and then and then you know you've got that in a separate.

0:46:31.190 --> 0:46:31.660

Umm.

0:46:32.480 --> 0:46:33.120

E-mail.

0:46:44.110 --> 0:46:44.450

Yes.

0:47:0.270 --> 0:47:0.570

Umm.

0:46:33.590 --> 0:47:4.820

Yeah. I will ask in said that to to, to send you something of the exact information to run this exercise, let's go like it is that we have in mind to complete the information that you already provided. And then what we need to discuss internally is a little bit more painful for us when because luckily we are not in early once we are well advanced in terms of time, but we'll try to.

0:47:4.950 --> 0:47:13.510

To put in our schedule and then we'll we'll advise you as well when we can provide such such a kind of initial feedback from your consideration.

0:47:16.980 --> 0:47:18.390

Yes, yes, of course.

0:47:15.320 --> 0:47:23.590

Can I just ask another question , when we get, I mean, I'm just wondering if there are any other organizations that.

0:47:24.250 --> 0:47:45.30

The EMODI or the sponsor should be should be engaging with at this stage or or will that fall out of the analysis? Will there be? Will there be anything obvious that comes out of the initial analysis to say, well, you have an impact across the international boundary with whoever it may be? Or is that likely to be something that comes out?

0:47:52.60 --> 0:47:52.640

Hmm.

0:47:47.0 --> 0:48:16.750

, I believe that at this stage we don't need to involve others. Said, for instance, for the analysis that when we look at the analysis of traffic, we look at not only in UK, we look at around and so on. Normally the information we use are those that we can grasp from the network activities. So in terms of area activation, for instance, we look at a day, as Christian mentioned. So one, normally you are locating UK and what is being done around the states.

0:48:16.820 --> 0:48:23.80

So this is more or less the kind of analysis we do not expect that this speech to involve others.

0:48:23.260 --> 0:48:23.880

Excellent.

0:48:26.140 --> 0:48:26.500

Hmm.

0:48[redacted]0 --> 0:48:33.900

Yeah.

0:48:35.40 --> 0:48:35.360

Umm.

0:48:50.370 --> 0:48:50.740

Umm.

0:48:24.320 --> 0:48:54.60

just just from my perspective, it it's exactly as you've described it there. You know, initial analysis is just to give you some food for thought as to what you think the impact might be if you start to see actually we think this is going to require some tactical or pre tactical interventions across the international border, say into the Netherlands or Norway or something like that because of something that network manager has identified might be.

0:48:54.630 --> 0:48:55.90

Yep.

0:48:57.130 --> 0:48:57.410

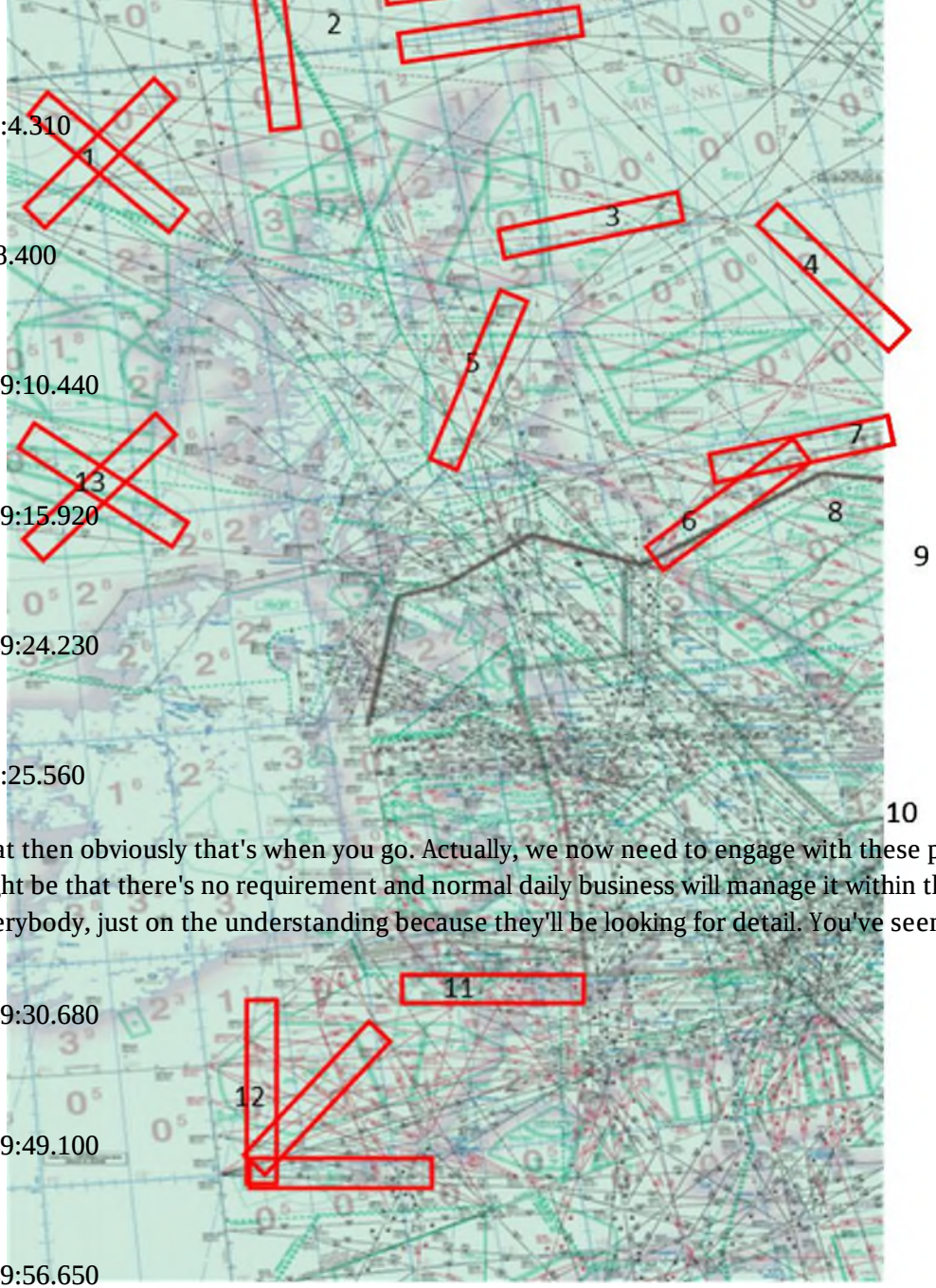
Umm.

0:48:59.460 --> 0:48:59.780

Yeah.

0:49:0.70 --> 0:49:0.320

Yeah.



0:49:3.850 --> 0:49:4.310

Yeah.

0:49:8.50 --> 0:49:8.400

Yeah.

0:49:10.130 --> 0:49:10.440

Yeah.

0:49:15.680 --> 0:49:15.920

Umm.

0:49:23.930 --> 0:49:24.230

Umm.

0:48:55.70 --> 0:49:25.560

Necessary to look at then obviously that's when you go. Actually, we now need to engage with these people because you might want them to participate in facilitating their activity. It might be that there's no requirement and normal daily business will manage it within the UK environment, but it's confirming that. But as you said, don't go reach out to everybody, just on the understanding because they'll be looking for detail. You've seen this for the other acps you've been involved with the want some detail as well.

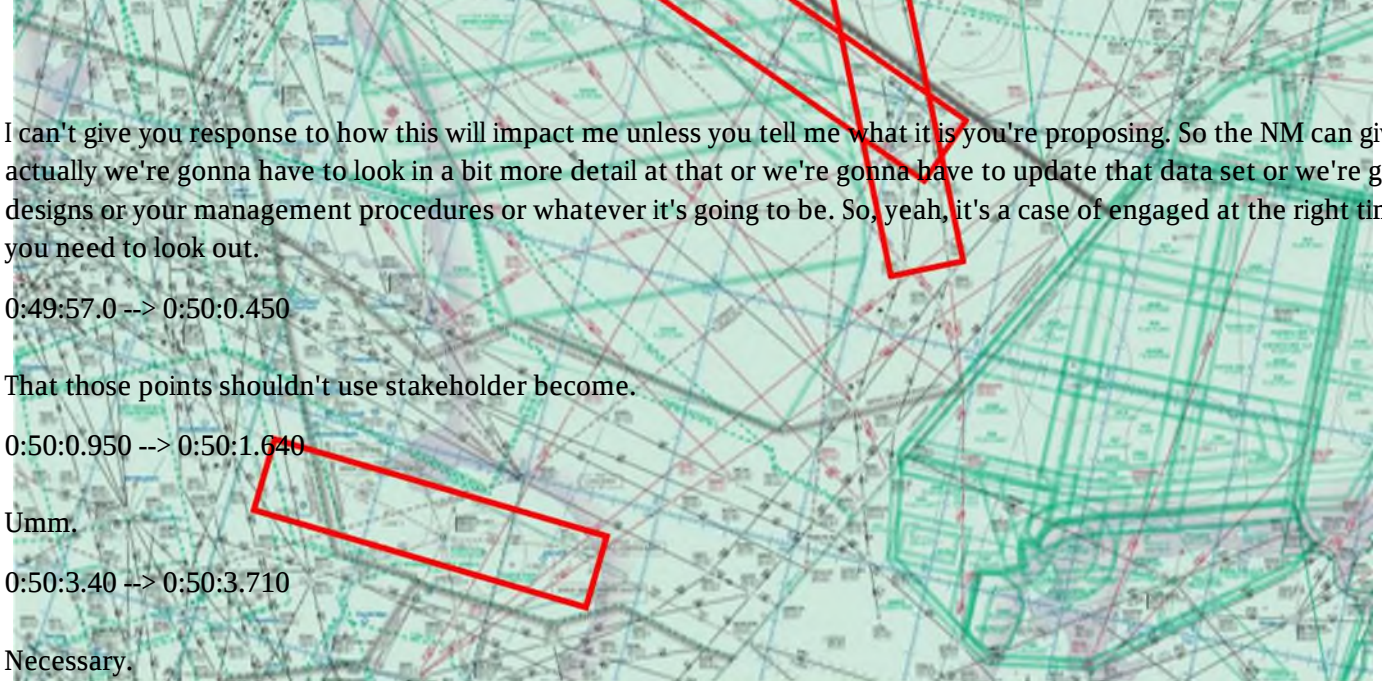
0:49:30.190 --> 0:49:30.680

Umm.

0:49:48.700 --> 0:49:49.100

Umm.

0:49:25.700 --> 0:49:56.650



I can't give you response to how this will impact me unless you tell me what it is you're proposing. So the NM can give you that initial first look analysis, which says actually we're gonna have to look in a bit more detail at that or we're gonna have to update that data set or we're going to have to revise our options or revise your designs or your management procedures or whatever it's going to be. So, yeah, it's a case of engaged at the right time with the right people, but be alive. Be aware that you need to look out.

0:49:57.0 --> 0:50:0.450

That those points shouldn't use stakeholder become.

0:50:0.950 --> 0:50:1.640

Umm.

0:50:3.40 --> 0:50:3.710

Necessary.

0:50:4.810 --> 0:50:5.820

Yeah. Thank you.

0:50:7.60 --> 0:50:21.180

OK. Just my last, so if it is OK for all of you just to to to confirm anyhow that this kind of initial analysis will be shared with the sponsor, but I would like to share with all of you if it is OK from your side.

0:50:24.900 --> 0:50:26.310

also for you, I suppose.

0:50:28.100 --> 0:50:30.110

Sorry, sharing the output from from.

0:50:36.580 --> 0:50:36.890

Yep.

[redacted]

0:50:29.850 --> 0:50:38.940

Now the initial analysis of the output of this exercise that we are running for the sponsor where I would like to keep all of you in the loop anyhow.

0:50:39.380 --> 0:50:44.710

That that's perfectly acceptable from from my perspective, I would expect to see that come through.

0:50:48.820 --> 0:50:49.250

Umm.

0:50:50.40 --> 0:50:50.450

OK.

0:50:45.420 --> 0:50:55.40

In the submission that we would formally get from from the sponsor as they as they, uh, as as they recede through the iterative process, there are stops.

0:50:55.770 --> 0:51:6.720

Whereby they're required to present us with information to to show us where they're at and what they've done so far and where they're going next kind of process. But there's absolutely no problem at all with you sharing that information.

0:51:7.100 --> 0:51:7.460

OK.

0:51:8.40 --> 0:51:9.170

Certainly not with the CAA.

0:51:10.170 --> 0:51:29.800

OK, so if it is OK for all of you, we we proceed like it is. So we we drop an e-mail with the additional information we need compare what to be able already in our pocket. We'll organize ourselves to see how to schedule the activities on top of the others.

0:51:30.400 --> 0:52:0.410
[redacted]

Uh, and will provide you sort of schedule when you can have this initial assessment and then you will cook internally and eventually come back to us for deeper analysis or other set of questions. We are always to answer to you probably when the initial analysis will be done on top of sending to you, we can also organize another uh Webex to explain a little bit the the outcome of the analysis that will be.

0:52:0.790 --> 0:52:5.780
[redacted]

Maybe easier for you to to digest and to to assess internally.

0:52:8.640 --> 0:52:10.320
(Air-1Gp-ISTAR E7B SO3Pers)

Yeah, that that would be great. Thanks, .

0:52:10.810 --> 0:52:11.220

OK.

0:52:12.800 --> 0:52:14.950
[redacted]

Other que[redacted]

0:52:1[redacted]

Or from my colleagues.

0:52:22.580 --> 0:52:23.110
[redacted]

OK.

0:52:20.820 --> 0:52:24.10

Nothing for me. . Thank you very much for your for your involvement.

0:52:24.670 --> 0:52:27.580
(Air-1Gp-ISTAR E7B SO3Pers)

Yeah. Yeah. Nothing from me. Me. . Thank you.

[redacted]

[redacted]

NATS

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

0:52:28.57 [redacted]

OK. [redacted]

0:52:29.240 --> 0:52:33.270

Uh, so [redacted] from our side.

0:52:36.450 --> 0:52:36.880

OK.

0:52:33.740 --> 0:52:43.880
G
Well, we are happy with the arrangements. We're wait for the the the e-mail from and will cross check with our requirements probably will.

0:52:59.330 --> 0:52:59.700

Yeah. [redacted]

0:53:2.410 --> 0:53:3.860

We wi[redacted]

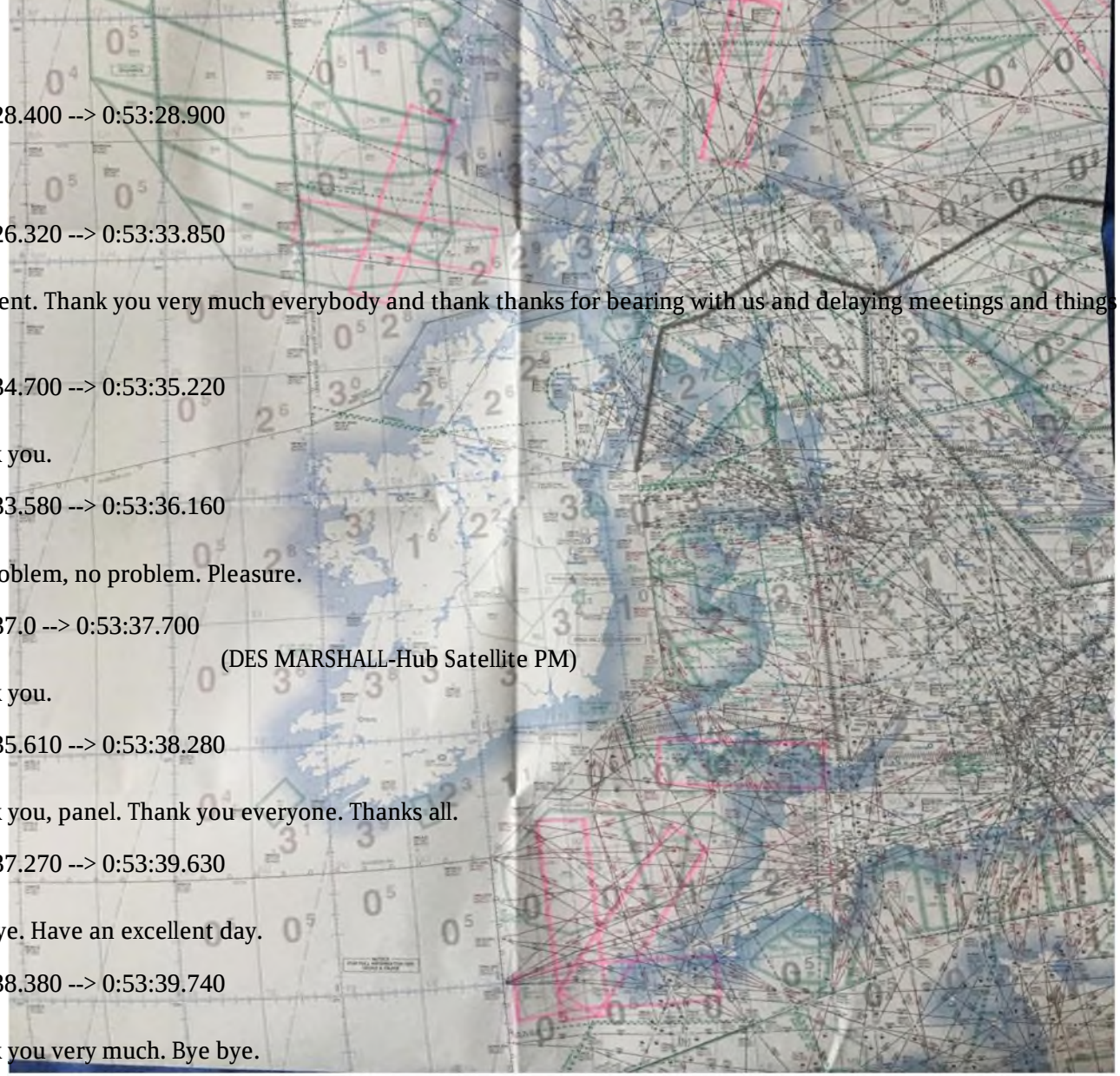
0:52:4[redacted]
G
Come to A to A to a common set of requirements to to do that, to mention that our geographical scope is the NM geographical scope, which is quite large, so don't worry about the interfaces with the bus trigger, Norway or the absolutely we we discussed mostly on flows, not the state borders so.

0:53:10.730 --> 0:53:12.220

Perfect. Thank you very much.

0:53:12.480 --> 0:53:24.910

OK, so say in this nothing that's from my side. Thanks for the for the Charter, the clarifications today and the ready to help you as much as we can.



0:53:28.400 --> 0:53:28.900

OK.

0:53:26.320 --> 0:53:33.850

Excellent. Thank you very much everybody and thank thanks for bearing with us and delaying meetings and things and rearranging. But thank you very much and Co.

0:53:34.700 --> 0:53:35.220

Thank you.

0:53:33.580 --> 0:53:36.160

No problem, no problem. Pleasure.

0:53:37.0 --> 0:53:37.700

(DES MARSHALL-Hub Satellite PM)

Thank you.

0:53:35.610 --> 0:53:38.280

Thank you, panel. Thank you everyone. Thanks all.

0:53:37.270 --> 0:53:39.630

OK, bye. Have an excellent day.

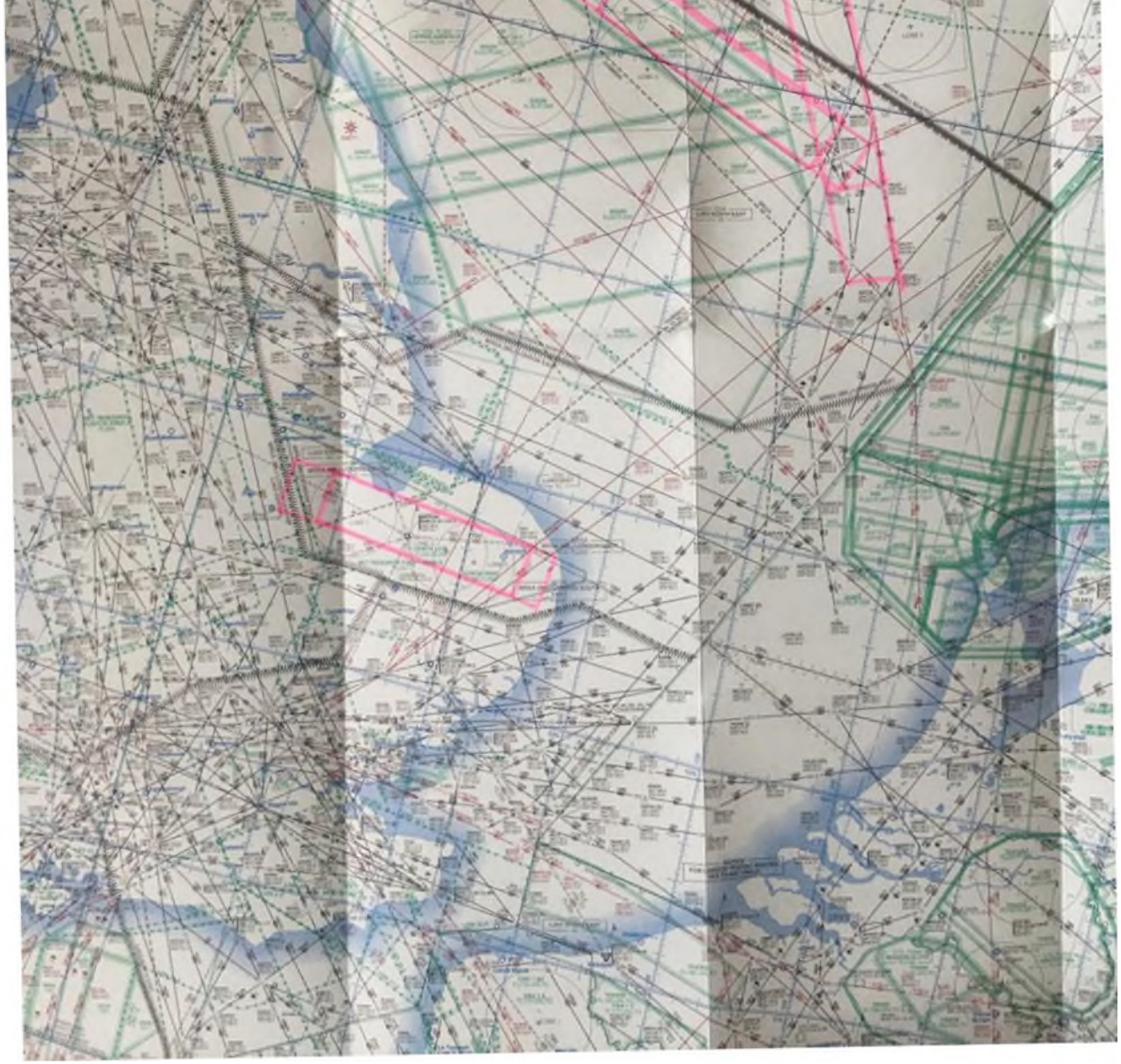
0:53:38.380 --> 0:53:39.740

J

Thank you very much. Bye bye.

0:53:36.640 --> 0:53:40.650

Yeah. OK. No, thank you. See you. Bye. Bye. Bye bye.



0:53:40.420 --> 0:53:40.730

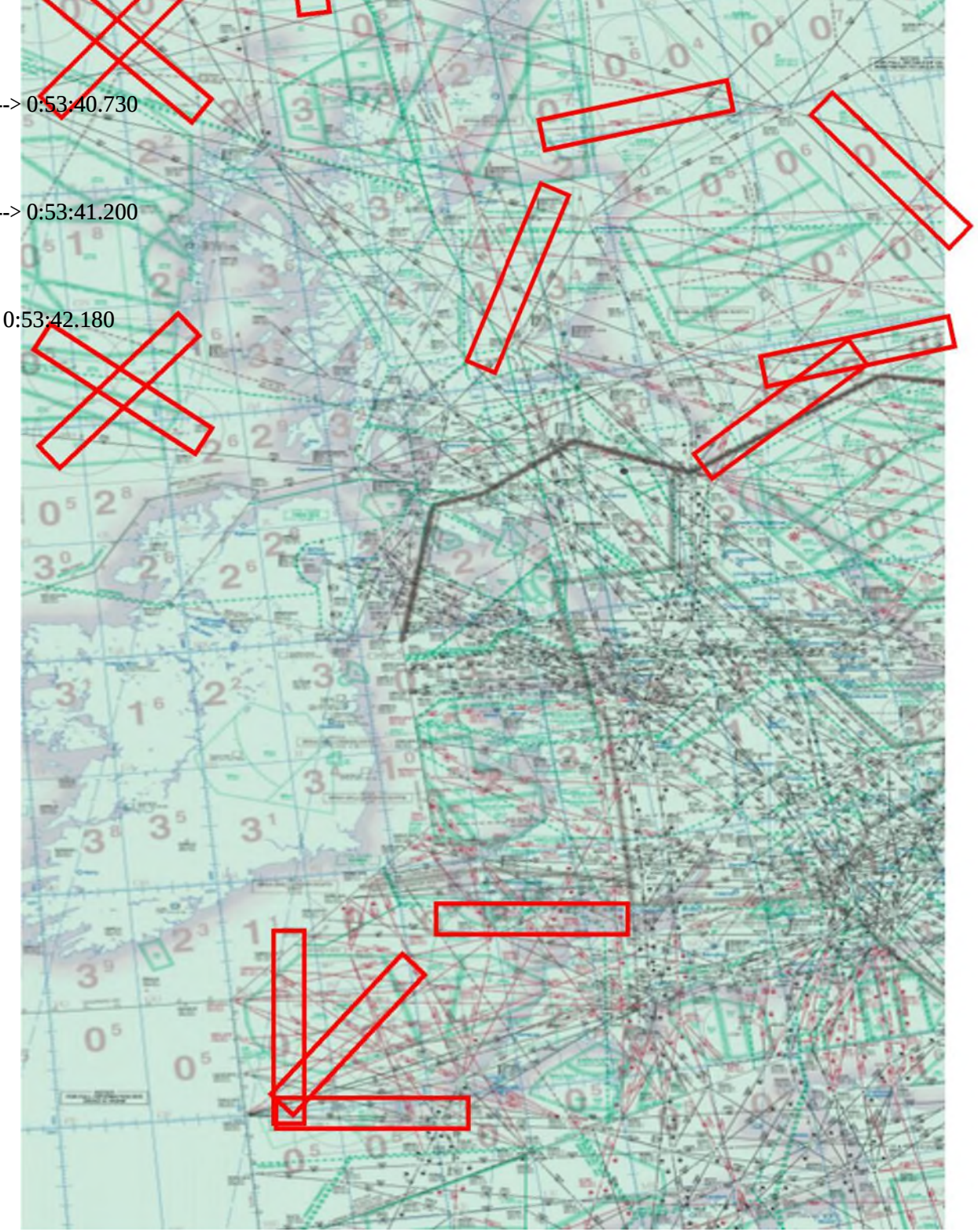
Aye.

0:53:40.480 --> 0:53:41.200

Bye bye.

0:53:42.0 --> 0:53:42.180

Bye.



August 2022 14:02:57

From:
Sent: 06 May 2022 12:36:43
To:

Cc: (8SQN-OIC Training Cell); (DAATM-AirspaceOpsSO2) (paul.watson373@modnet.r.mil.uk); GILES, Patrick A
Subject: RE: UC ACP-2020-24 E-7 WEDGETAIL - Stage 2 refresh
Sensitivity: Normal

No probs

All copied thanks. Enjoy the weekend!

Cheers

Jason Goodchild
ATM Development
Military Interface Lead
Airspace & Future Operations

C2-11
CTC
4000 Parkway, Whiteley,
Fareham, Hants PO15 7FL
www.nats.co.uk

NATS Internal

From:
Sent: 06 May 2022 11:34
To:
Cc:
< (DAATM-AirspaceOpsSO2) ( )
<
Subject: [EXTERNAL] RE: UC ACP-2020-24 E-7 WEDGETAIL - Stage 2 refresh

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Sorry from me this time – been likewise busy elsewhere.

The conversation with was simply to ascertain whether NATYS would like a meeting and he opted to leave that to you.

Nothing has changed from the MOD side, so we will progress with the DP evaluation and share with you for feedback. Simultaneously we will start the Stage 2 submissions to attempt the Gateway deadline.

ATM Specialist and ACP Manager
Defence UAS Capability Development Centre

From:
Sent: 29 April 2022 17:24
To:
Cc:
<
<paul.watson373@modnet.r.mil.uk>; GILES, Patrick A <Patrick.Giles@nats.co.uk>
Subject: RE: UC ACP-2020-24 E-7 WEDGETAIL - Stage 2 refresh

Hi ,

Sorry for coming back late in the week and not earlier - I've been engaged in Eurocontrol forums most of the week and just catching up post leave. Not sure what the conversation entailed I'm afraid but...

Have the options changed at all since the last meetings and discussions. Our feedback prompted the provision of the coordinates and my assumption is that the different areas (and their coordinates) provided were/are the options? Or the proposed design? (ie each tack provided is required?). We have not undertaken any further assessments on them as far as I'm aware whilst there has been a pause and I'm not sure how or if we can refresh the MOD teams design at this stage?

If nothing has changed then I would suggest that documenting them and progressing the process might be the most efficient way forward for your ACP to meet your gates. We can provide our formal responses through Patrick and the Policy team then.

Equally, if the team want to meet for restart/refresh/introduction then happy too.

Enjoy the long weekend!

Cheers

From:

Sent: 27 April 2022 13:02
To: >
Cc:
<
<
Subject: [EXTERNAL] RE: UC ACP-2020-24 E-7 WEDGETAIL - Stage 2 refresh

CAUTION: This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

,

and I spoke late yesterday. You are probably aware that he is happy for you to decide whether a meeting is required between MOD and NATS to refresh the options before we carry on. I could suggest that MOD gets on with the Design Principles Evaluation and shares with you before you decide.

Let me know what you would like to do.

ATM Specialist and ACP Manager
Defence UAS Capability Development Centre

From:
Sent: 26 April 2022 16:23
To: ' >
Cc: '
<
< >
Subject: RE: UC ACP-2020-24 E-7 WEDGETAIL - Stage 2 refresh

Hello again ,

Apologies for disturbing you by phone earlier.

I asked below for availability to slot a meeting in to bring things back up to speed. Having thought it through a bit further, maybe there is no need.

As far as the MOD is concerned, there has been no change in the requirement for E-7 when it comes into service. Again as far as we are aware, it is likely that nothing has changed from the NATS side. That being so, we would be keen to get on with compiling the Design Principles Evaluation for the Stage 2A and 2B submissions. We were aiming to start next week in order to achieve our June Gateway without too much drama.

If you are happy for us to accept all previous engagement as it stands, we are happy.

Let me know how you would like to proceed. If you would like a meeting, please provide some availability. We appreciate everyone is busy and under-resourced at the moment.

ATM Specialist and ACP Manager
Defence UAS Capability Development Centre

From:
Sent: 28 March 2022 17:20
To: '
Cc:

>
Subject: UC ACP-2020-24 E-7 WEDGETAIL - Stage 2 refresh

Hi ,

i am not sure what your capacity is like at the moment, but would like to arrange a meeting to get the E-7 ACP moving again. We had accomplished a fair amount of engagement last year before it became necessary to pause the work. We are now back on the case. Prior to pausing, we had worked up a selection of potential orbit area design options through several meetings with NATS ACP and operational staff. The amended design options were shared with NATS in July last year. i have attached a document with the updated areas in lat / long form, plus the minutes following our last meeting in July 2021. We received a response from (attached) acknowledging and providing no further comment to the minutes.

Could you provide some indication of when you would be able to meet with us (online worked well previously, but face-to-face is possible)? We are ready to get going, as we have our Stage 2 Gateway currently set for the end of June.

i would expect the first meeting to include an introduction of any new personnel from all 3 sides (QinetiQ, MOD & NATS) and a precis of progress made to date including discussion of the acceptability of the selection of design options proposed last July, identifying any requirement for further design changes.

The requirement for further meetings can be assessed, ultimately aiming at an appropriate selection to take through to Stage 2 analysis.

i am assuming that you have the minutes from the other previous meetings to hand where the design options were discussed. if not i can provide them to you.

Looking forward to hearing from you.

ATM Specialist and ACP Manager
Defence UAS Capability Development Centre

From:
Sent: 23 March 2022 10:55
To:
Cc:
Subject: RE: UC E-7 ACP POC

Morning

I'll be your NATS PoC on this one going forward.

Kind Regards

Manager, ATM Portfolio - Design & Benefits

www.nats.co.uk

NATS Internal

From:
Sent: 23 March 2022 09:05
To:
Cc:

Subject: RE: UC E-7 ACP POC

Morning

Hope you are well. I'm currently full time at Gatwick until November. I've copied in the team who are covering my role whilst I'm on secondment.

Regards

Gatwick Transition & Training Manager

NATS Internal

From:
Sent: 22 March 2022 16:30
To: >
Subject: UC E-7 ACP POC

Hi ,

Long time, no speak.

Just checking that you are still the E-7 ACP POC in NATS. QQ is having its Kick-off Meeting with E-7 Project Office and MOD commercial on Thursday at High Wycombe as we are finally on contract. We will be in touch shortly after to bring us all back up to speed and run over previous progress / refresh with new POCs in QQ & E-7.

Hope all well. Will be in touch.

ATM Specialist and ACP Manager
Defence UAS Capability Development Centre

received this email in error. QinetiQ retains personal data relating to our customers and partners for the purposes of conducting a business relationship, communicating and marketing to them as well as to providing invitations to upcoming events. Please see our Privacy Notice for further information. In accordance with our Privacy Notice, you have the right to withdraw your consent at any time. QinetiQ may monitor email traffic data and also the content of email for the

Archived: 10 August 2022 13:49:06
From:
Sent: 23 March 2022 10:54:44
To:
Cc:
Subject: RE: UC E-7 ACP POC
Sensitivity: Normal

Morning

I'll be your NATS PoC on this one going forward.

Kind Regards

Manager, ATM Portfolio - Design & Benefits

www.nats.co.uk

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From: k>
Sent: 23 March 2022 09:05
To:
Cc:

Subject: RE: UC E-7 ACP POC

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From:
Sent: 22 March 2022 16:30
To:
Subject: UC E-7 ACP POC

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Long time, no speak.

Just checking that you are still the E-7 ACP POC in NATS. QQ is having its Kick-off Meeting with E-7 Project Office and MOD commercial on Thursday at High Wycombe as we are finally on contract. We will be in touch shortly after to bring us all back up to speed and run over previous progress / refresh with new POCs in QQ & E-7.

Hope all well. Will be in touch.

ATM Specialist and ACP Manager
Defence UAS Capability Development Centre

7FL.

E-7 ACP - Proposed Orbit Locations

Area #				
1 (UK11)				
Area 1	5955.5N00853W	5936N00918W	5834.5N00645W	5852.5N00617W
Area 2	6003N00628W	5947N00558W	5858N00852W	5844N00823W
2 (UK12)				
Area 1	6050N00537W	6050N00447W	5902N00447W	5902N00537W
Area 2	5939N00355W	6002N00356W	6000N00030W	5929N00031W
Area 3	5939.5N00050W	6000N00028W	6048.5N00319W	6028N00341W
Area 4	6044N00352W	6021N00350W	6021N00026W	6043N00025W
3 (UK10)				
Area 1	5903N00030W	5844N00013W	5750N00249W	5807N00310.5W
Area 2	5945N00012W	5936N00048W	5804N00041E	5814N00116.5E
5 (UK9)				
Area 1	5741N00304W	5610N00405W	5602N00327W	5732N00221W
6 (UK5)				
Area 1	5647N00213W	5643N00250W	5520N00217W	5523N00141W
Area 2	5517.5N00219W	5534N00229W	5603.5N00000E	5545N00011E
4 / 7 (UK8)				
Area 1	5603N00024W	5602N00217E	5541.5N00216E	5543N00024W
Area 2	5801N00124E	5754N00050E	5618N00213E	5625N00246E
8 / 9 (UK6)				
Area 1	5603.5N00226.5E	5612N00300E	5443N00408.5E	5434N00334E
10 (UK3)	5255N00010W	5236N00008W	5234.5N00216E	5254N00216.5E
11 (UK2)				
Area 1	5137N00349W	5118N00337W	5046N00532W	5103.5N00544W
12 (UK1)				
Area 1	5115N00721W	5115N00643W	4937N00643W	4937N00721W
Area 2	5108N00541W	5054N00515W	4937N00653W	4952N00721W
Area 3	5003.5N00753W	4940N00753W	4940N00519W	5003.5N00519W
13 (UK7)				
Area 1	5605N00705W	5628N01000W	5606N01010W	5543N00714W
Area 2	5709.5N00811W	5658N00732W	5531N00847W	5539N00921W

Flt Lt
SO3 E-7

Official

Archived: 10 August 2022 13:50:43
From:
Sent: 20 July 2021 13:35:29
To: '

Cc:

Subject: 20210720-E-7 ACP Proposed Orbit Locations-O
Sensitivity: Normal
Attachments:
20210720-E-7 ACP Proposed Orbit Locations-O.docx ;

Good Afternoon

I hope everyone is well and not melting too much!

One of my actions from the last meeting was to provide the lats and longs of the proposed E-7 orbit areas. PFA a document containing the coords. We have taken the feedback from the initial meetings onboard, and tried to adjust the areas appropriately. We are though aware that we will need further dialogue to make sure what we propose suits everybody's requirements. The plan going forward is to algin the area nomenclature with those AEW orbits already in existence for the E3. That is why in the document in brackets you will see the UK AEW area the new areas align with.

Please get in touch if you have any questions.

Regards

Flight Lieutenant **RAF** | SO3 E-7 Wedgetail AEW Mk1 Pers | ISTAR Force HQ | RAF Waddington | Lincs LN5 9NB |

Archived: 10 August 2022 13:29:49
From:
Sent: 06 July 2021 11:30:24
To:

Subject: RE: 20210705- Swanwick_Mtg_Minutes-O
Sensitivity: Normal

Hello

Nick Bennett and I have reviewed the minutes and have no further comments apart from adding Nick's name to the attendees please.

Regards

Swanwick FRA Lead

k

4000 Parkway, Whiteley,
Fareham, Hants PO15 7FL
www.nats.co.uk

NATS Internal

From:
Sent: 05 July 2021 15:57
To:

Subject: 20210705-Swanwick_Mtg_Mi nutes-O

Afternoon All

Please find attached the minutes from the meeting last week. Please let me know if you have questions or queries.

Thanks for your continued engagement on this matter.

Regards

Date Issued: 2 Jul 21

File Reference: 20210702-E-7_ACP_Stage_2_Mtg_with_NATS (SWN)-O

Minutes of the E-7 ACP Stage 2 Mtg with NATS (Swanwick) held via Teams on 28 Jun 21

Stakeholders
Present

Chair

Sec

Apologies

Introduction

The meeting started with a brief introduction and then everybody on the call introduced themselves explaining their current role and why they were involved in the process. This meeting was to gather feedback that had been unavailable at the first meeting with NATS in May on areas concerning Swanwick.

Areas

NATS provided feedback for the following three areas: 10,11and 12.

Area 10

Area 10 sits over Norfolk and is designed to be utilised if supporting tasking in the London area. The feedback from Swanwick was that the area should be no further north or will impact Manchester inbounds. The Western end infringes the Daventry sector and the Eastern end impacts Clacton & North Sea. The area also sits over the EAMTRA. Discussion was had as to whether the area could be shortened. An option of splitting the area into 2 / 3 sections and activating individually depending on requirement was discussed. If whole area required, it would be due to higher level tasking.
Regarding height it was felt that FL270 is difficult as ac need to reach that by DOLAS. FL 300 – 330 would be a more optimal height. ISTAR FHQ felt that this area would be seldom utilised to support day to day tasking.

Area 11

Difficult location due to climbers and descenders and airways crossing in North-South and East-West orientations. GAT is descending to FL310 at Brecon. An ideal height would be FL 270. NATS were keen to understand what an E-7 in that location would be supporting and how often the area would be used.

Area 12

There were very few issues with Area 12. 12a requires to be moved slightly South to avoid Irish airspace and 12c shouldn't move any further South. MOD asked if there was any room for allocating the whole of existing UK1 to E-7 rather than inserting the 3 x racearea areas. NATS would prefer not as it would be more difficult to predict the movement of the ac.

Next Steps and AOB

Whilst NDS is not an appropriate status to request for E7 operating in the Orbit Areas, it is anticipated that Swanwick Military will request a Cleared Flight Path with the relevant Sector (s) as per the current operational agreements between the MOD and NATS. This will be clarified as the process continues. It should be noted that the Orbit Areas will not be segregated and therefore Civil controllers will be able to enter the areas providing that they achieve suitable separation against the E7 operating within them.

will look to disseminate the initial FHQ airspace coordinates in the next couple of weeks after considering feedback from the two meetings.

{Electronically released}

Flt Lt
SO3 E-7 (Sec)

Annex A to E-7
ACP Stage 2 Mtg
Dated 13 May 21

E-7 Proposed Operating Areas

E7 ACP response

Area 10

6 7

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Area 10

Map resolution is difficult to assess with confidence – Assumptions below on impacts

- ***This is in the current AEW UK 3 area – if further north then would impact traffic from Manchester TMA around DOLAS***
- ***It does however extend into S28/34 airspace , potentially blocking levels on UN601 , UP6 , UL613.***
    - ***This might increase DTY workload during activation***
- ***Likewise at the eastern extremity Area 10 will potentially block UN866 , UM604. And the CDR's P5, P144, UM185.***
    - ***This would generate a higher workload on S12 and at the boundary with North Sea and require a/c on P155 to be 1nm south of the centre line or vertically separated .***

The area goes beyond the EAMTA boundaries and UK 3 area. Would the airspace booking requirements be the same as present?

- ***Or would a D-1 Notam be required . The E-7 would use EAMTRA low 245-285 & high 285-660 under these proposals.***
- ***If only FL 270 & 280 were available with an civil option of FL290 , then GAT may be able to continue using the existing from the London TMA CDR's to minimise impacts.***

Area 10

- ***Racearea pattern approximately 100 x 20 NMS. This could perhaps be limited to fit the current constraints. i.e. 80x20nm , with co-ordinated extensions ?***
- ***Non-Deviating Status (NDS)? Tactical co-ordination options ?? NATS avoiding single a/c under NDS .***
- ***Operating block FL 270 – 330, but it can be reasonably flexible in the level selection / allocation in a day-to-day, task-by-task basis; Full level block or single – RVA or RVN?***
- ***Areas outside the airways structure in Class C airspace? See comments above.***
- ***None of existing areas on the eastern side of the UK are adequate in size for an E-7 racearea;***
- ***NATO E-3 orbit areas in the UK will need to remain;***
- ***1 or 2 ac simultaneously; In same Area and if so what levels and RVSM etc.***
- ***Overlap with existing E-3 areas;***
- ***Potential for new areas to be coincident with existing segregated airspace. 10/11/12 are not.***

Area 11

Area 11

Difficult to determine exact proposed location due to map resolution, have added map to try and assess the area. However, some approximate co-ordinates and or a high resolution map would assist a full impact assessment.

The response is assuming the worst case of location-

A 100 x 20m rectangle in the middle of our airspace at other levels would cause a lot of problems as it wouldn't leave enough room to go round to the north without entering the NWMTA and going south of it would either end up with traffic in S9's airspace and having to avoid the danger areas along the coast of Wales.

- ***It would impact the following major flows***
  - ***LTMA inbounds and outbounds -***
  - ***EIDW inbounds and outbounds***
  - ***Manchester TMA traffic, at eastern extremity of the Area, on the North south ATS route structure. Ideally, it***

needs to be somewhere else where it's not going to cause an unmanageable workload when the traffic returns.

If it has to be there, then the only acceptable level would be FL270 as it would allow us to get the majority of the LTMA and EIDW traffic above it and equally EIDW inbounds descending on top of it.

Assumption is to deconflict against the aircraft and not the airspace, but if we don't know where the aircraft is likely to turn we can only avoid the airspace without having to coordinate all our traffic with the relevant military controllers.

This might well be considerably more tricky if there are 2 aircraft in them as suggested, potentially at different levels

12 Areas

C

12 Areas

Map resolution is difficult to assess with confidence – Assumptions below on impacts

- ***12A penetrates Irish Airspace***
  - ***could cause routine conflicts for EICK - EVRIN/NORLA departures/arrivals at any of those levels though.***
- ***Depends on level block used and RVSM status, potential impact on Oceanic traffic access?***
- ***Can S09 penetrate the NDS airspace if E-7 is identified and co-ordination effected with Mil or take 5?***

- ***Racearea pattern approximately 100 x 20 NMS. Will this always be the full extent or larger/smaller area***
- ***1 or 2 ac simultaneously; In same Area and if so what levels and RVSM etc.***
- ***Areas outside the airways structure in Class C airspace? Not clear ATS routes though***
- ***Potential for new areas to be coincident with existing segregated airspace. 10/11/12 are not***

Archived: 10 August 2022 13:35:48
From:
Sent: 21 June 2021 15:36:26
To:

Subject: RE: 20210513-ACP_Stage_2_NATS_Mtg_Minutes- O
Sensitivity: Normal

Hi

I have finally received feedback on the impact on the SWN operation. It would probably be worth having another Teams call with the relevant SWN SMEs to discuss the feedback.

Would you like to propose some dates/times when you Team would be available?

Regards

Manager NATS Operational Policy

NATS Private

From:
Sent: 13 May 2021 15:44
To:

Subject: 20210513-ACP_Stage_2_NATS_Mtg_Minutes-O

Good Afternoon All

Thanks once again for attending the meeting yesterday, I think it was a great starting point to what will hopefully be a fruitful and productive engagement.

I have attached the minutes from yesterdays meeting for your review. Please on the NATS side let me know if there is anything regarding traffic flows etc you would like to alter for clarity.

Moving forward I will go away and explore the options regarding altering the orbits in the ways discussed yesterday. I would expect us to reconvene in a couple of months to review these changes.

Please get in touch if you have any questions.

Thanks again.

Regards

| SO3 E-7 Wedgetail AEW Mk1 Pers | ISTAR Force HQ | RAF Waddington | Lincs LN5 9NB |
| Email: r

Date Issued: 13 May 21

File Reference: 20210513-E-7_ACP_Stage_2_Mtg_with_NATS-O

Minutes of the E-7 ACP Stage 2 Mtg with NATS held via Teams on 12 May 21

Stakeholders Present

Chair

Sec

Apologies

Introduction

The meeting started with a brief introduction and then everybody on the call introduced themselves explaining their current role and why they were involved in the process.

Statement of Need

talked through the Statement of Need:

'Currently the E-3D Sentry AEW Mk 1 utilises the UK AEW areas for UK training and operations. In 2023 the E-7 Airborne Early Warning Wedgetail Mk 1 will enter RAF service. Though fulfilling the same role as the Sentry, advances in technology mean that the Wedgetail will not be able to utilise the same orbits, although existing ones may still be utilised by our NATO / visiting forces partners. The Wedgetail will be required to fly 100nm by 20nm raceareas. In some UK AEW areas such as UK 1, 7 and 9 these racearea parameters can be accommodated in the existing airspace structure. However, agreed structures / routes or suitable orbit / racearea areas will be required in the North Sea area where the current Orbit Areas are not sufficient.'

There was a discussion about the need to expand the SoN to cover more than the North Sea areas. **Action:** There would be an update required to the SoN and map of the geographical area affected by the ACP on the CAA Portal to reflect the need for a wider change.

talked through the need for limited stakeholder engagement. There would be a review of the limited stakeholder engagement before Stage 3 to check that this was still the correct path to follow. The need for reference to Non-Deviating Status was discussed and it was felt that this could be removed. The process for how areas would be activated would be established later but would be similar to that used by the E-3.
Action: Flt Lt Parr will confirm that RADHAZ parameters don't exceed 1000ft vertical and 5nm horizontal separation and confirm that E-7 would be RVSM compliant.

Areas

then displayed charts highlighting the proposed operating areas for initial feedback from NATS. (For depiction of the areas see Annex A) The aim of this feedback was to reveal any initial showstoppers for area placement before more accurate areas were plotted. A good discussion was had about all the areas, and the following feedback was received from NATS:

North

Area 1: No major issues with this location. Keep out of D701, would mainly be in the way of cruising traffic and thus easier to deconflict.

Area 2: No major issues with this location. Keep away from 61N as that is airspace delegated to Reykjavík. Suggest relocating Area 2 8 NMS to the south.

Area 3: Intrudes slightly into D809. Using RA4 would conflict with climbers and descenders out of Aberdeen. Could Area 3 be moved further East to overlap RA2 and thus avoid confliction with D809?

Area 4: Area 4 is above RA3. The area could go above RA3. Further discussion required about deconflicting tanker activity from orbit area use and how either area would be activated / operated concurrently.

Area 5: This area could conflict with traffic pushed East by TDA597. Likely if TDA597 was active then E-7 would be operating inside it as part of the Ex (Already discussed with the MOD sponsor of TDA597). RA1 is in close vicinity of Area 5, the potential to establish an area above RA1 for E-7 operations was discussed. This plan would be depend on radar look into D613 from that location.

Borders

Area 6: ROBEM, DIGBI and ERLOT all-important routing points for climbing and descending traffic. Area 6 should avoid them. This may impact on ability to utilise Spadeadam for EW trg and will have to be looked at further.

Area 7: Area 7 is a better area for utilising D613s and D323s compared to Area 6 as avoids conflicting with ROBEM, DIGBI and ERLOT. This area though is further away from Spadeadam, potentially limiting EW trg.

Area 13: Basing this area over the top of RA14 would be more appropriate as not inside D701 complex. The correct altitudes FL270-330 would need to be allocated for E-7 operations.

South West

Area 11: NATS Swanwick still assessing impact. The positioning of this area is made more difficult due to climbing and descending traffic. **Action:** NATS to provide feedback when able.

Area 12: NATS Swanwick still assessing impact. More cruising overflight over Area 12 would make it easier. Will avoid FIR boundaries. **Action:** NATS to provide feedback when able.

D323

Area 8: Avoid confliction with GIGUL, civil traffic has to be at FL320 here for transiting through NE MDA corners. Potential for orbits to be limited to not above FL300. Would have to examine using this orbit are if MDAs were being used by Combat Air.

Area 9: The further South this area is located the more difficult deconfliction becomes. Discussion was had to look at adjusting area to move it North or re-orient with a more West-

East direction, though airspace to the East is given to the Copenhagen FIR. Routing point CUTEL won't be in use under Free Route Airspace.

Area 10: NATS Swanwick still assessing impact. Congested airspace. Avoid intruding into Daventry & London TMA sectors. If orbit was made smaller would be easier to accommodate. Flt Lt Parr to assess the impact of reducing racearea size as it is an important location for any events in London. **Action:** NATS to provide feedback when able.

Next Steps and AOB

asked about future Free Route Airspace considerations. The response was that arrival and departure points will be more clearly defined. Again, easier to deconflict against cruising traffic than descending / climbing traffic.

identified the next steps in the process as providing the minutes, slide pack to attendees and arranging for a future meeting to look at the adjusted operating areas with the feedback from today. The discussion of providing ADQ compliant coordinates to NATS was discussed. DAATM currently have a few lines of investigation ongoing to address this issue and will report back in due course.

{Electronically released}

Flt Lt
SO3 E-7 (Sec)

Annex A to
E-7 ACP Stage 2 Mtg
Dated 13 May 21

E-7 Proposed Operating Areas

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Archived: 10 August 2022 13:04:29
From:
Sent: 18 May 2021 14:06:11
To:

Subject: 20210518-E-7 RADHAZ Distances-O
Sensitivity: Normal

Good Afternoon

Following on from out meeting last week, I had an action to provide the RADHAZ and RVSM status of the RAF E-7. One of our SEEDCORN personnel in Australia has provided the following information:

I have done some digging and the actual answer is within the Boeing Systems Operation Manual (SOM) Volume 2 (Document Number: WED-E7A-SOM-2-REL-1.7). The wording is below:

Intentional operation of the radar in Op-HI or Op-LO when traffic is within 700 feet vertical and 1,700 feet horizontal is prohibited.

Unfortunately I cannot release the actual document as its Boeing IP.

Also the Flight Crew Operations Manual (FCOM) has the following wording for RVSM:

Note: The type design reliability and performance of this airplane/engine combination has been evaluated in accordance with FAA Memorandum 91-RVSM, and is qualified for operation in RVSM airspace.

To this end I propose we agree to use the same ranges of 700 feet vertical and 1,700 feet horizontal for separation from the UK E-7 as we will be operating the same Multi-Role Electronically Scanned Array as the RAAF E-7. Our aircraft will also be RVSM compliant.

Regards

| SO3 E-7 Wedgetail AEW Mk1 Pers | ISTAR Force HQ | RAF Waddington | Lincs LN5 9NB |

From: (Air-1Gp-ISTAR E7B SO3Pers)
Sent: 13 May 2021 15:44
To:

Subject: 20210513-ACP_Stage_2_NATS_Mtg_Minutes-O

Good Afternoon All

Thanks once again for attending the meeting yesterday, I think it was a great starting point to what will hopefully be a fruitful

and productive engagement.

I have attached the minutes from yesterdays meeting for your review. Please on the NATS side let me know if there is anything regarding traffic flows etc you would like to alter for clarity.

Moving forward I will go away and explore the options regarding altering the orbits in the ways discussed yesterday. I would expect us to reconvene in a couple of months to review these changes.

Please get in touch if you have any questions.

Thanks again.

Regards

| SO3 E-7 Wedgetail AEW Mk1 Pers | ISTAR Force HQ | RAF Waddington | Lincs LN5 9NB |
| Email:

Sent: 13 April 2021 15:32
To:
Cc:

Subject: RE: UC ACP-2020-24 WEDGETAIL Stage 2 - Engagement Material

Hi

I have held the following dates and times. Can you please let me know what suits best? It might be better to go for the later dates as they give us more time to discuss issues

- 7th May, 1300-1400
- 12th May, 1030-1200
- 14th May, 1000-1200

Regards

Manager NATS Operational Policy
M: 0

NATS PRIVATE

From:
Sent: 13 April 2021 10:59
To:
Cc:

Subject: RE: UC ACP-2020-24 WEDGETAIL Stage 2 - Engagement Material

Your attachments have been security checked by Mimecast Attachment Protection. Files where no threat or malware was detected are attached.

Morning

No problem – we are all busy.

Here's the document sent as a PDF. Let me know if you still have problems.

ATM Specialist and ACP Manager
Defence UAS Capability Development Centre

Please consider the environment before printing this email.

From:
Sent: 13 April 2021 09:20
To: >
Cc:

Subject: RE: UC ACP-2020-24 WEDGETAIL Stage 2 - Engagement Material

Morning

Sorry this has slipped down the email to do list! I will propose some dates and come back to you.

For some reason our IT system is blocking the attachment. Could you try and send it as a PDF?

Regards

Manager NATS Operational Policy

NATS PRIVATE

From:
Sent: 08 April 2021 09:46
To:

Subject: RE: UC ACP-2020-24 WEDGETAIL Stage 2 - Engagement Material

Mimecast Attachment Protection was unable to create safe copies of your attachments.

Morning

Have you had a chance to look at the emailed attachment sent on 8 March? If so, would you like to suggest a week when you have availability to commence Stage 2 engagement?

I've attached it again in case it went AWOL.

ATM Specialist and ACP Manager
Defence UAS Capability Development Centre

From:
Sent: 08 March 2021 12:17
To:
Cc:

Subject: UC ACP-2020-24 WEDGETAIL Stage 2 - Engagement Material

Dear

ACP-2020-24 Stage 1 was successfully passed on 26 Feb, so onto Stage 2 Engagement for the airspace design options.

I attach a document which shows location requirements and some basic justification for the same. I suggest the next step is to set up a meeting between your team and MOD to begin discussing the requirement and to agree a schedule for Stage 2 including a means to progress. Pre-COVID we would have got around a table to discuss I'm sure. The Stage 2 Gateway is end-Jan 2022, so we may have the opportunity to meet in person eventually. For now though online meetings will prevail.

After you have had time to look at the attached, would you like to suggest some dates for this first meeting? We are prepped and ready to go pretty much.

ATM Specialist and ACP Manager
Defence UAS Capability Development Centre

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Area	Location	Tolerances	Justification
1	North West UK (UK 11)	Based on location of UK 11. Raceareas could be orientated in any direction inside existing UK 11.	To support ORA activity and also areaing on missile tests.
2	North UK (UK 12)	Based on location of UK 12. Raceareas could be orientated in any direction inside existing UK 11.	To support ORA activity and also areaing on missile tests. Support activity in D712s.
3	Moray (UK 10)	Based on location of UK 10. Orientated to support fighter activity in D613 complex. Current racearea orientation provides best radar look.	Orientated to support fighter activity in D613 complex. Support to ORA activity.
4	East of 613 RA3	Built upon RA3.	Orientated to support fighter activity in D613 complex. Enables best radar look into 613 complex
5	Aberdeen (UK 9)	Built upon UK 9. Could accept 80nm legs.	Orientated to support fighter activity in D613 complex.
6	Newcastle	Could accept 80nm legs. Similar location to UK 5 which is too small for Wedgetail.	Would enable enabling fighter activity in both 323s/613s to be supported.
7	RA5	Built upon RA5. Similar location to UK 5 which is too small for Wedgetail.	Built upon RA5. Would enable enabling fighter activity in both 323s/613s to be supported.
8	RA7	Built upon RA7. Intrudes into 323 complex, so reliant on airspace not being booked.	Enables activity in 323 complex to be supported.
9	East of 323	Similar to UK 6 which is not large enough for Wedgetail operations.	Enables fighter activity in 323 complex and RA8 to be supported.
10	Norwich UK 3	Built upon UK 3. Orientation enables best radar look.	Enables support to HVE such as Olympics/ G8 summit.
11	Cardiff	Orientation enables best radar look into Welsh MDAs, could take 80nm legs.	Enables support to fighter activity in Welsh MDAs.
12	SW Apps (UK 1)	Based on location of UK 1. Orientation enables support of Naval exercises or activity in D064 depending on tasking.	Orientation enables support of Naval exercises or activity in D064 depending on tasking.

13	West UK (UK 7)	Based on location of UK 7. Raceareas could be orientated anyway inside existing UK 7.	To support ORA activity and any West Scotland exercises such as JOINT WARRIOR.