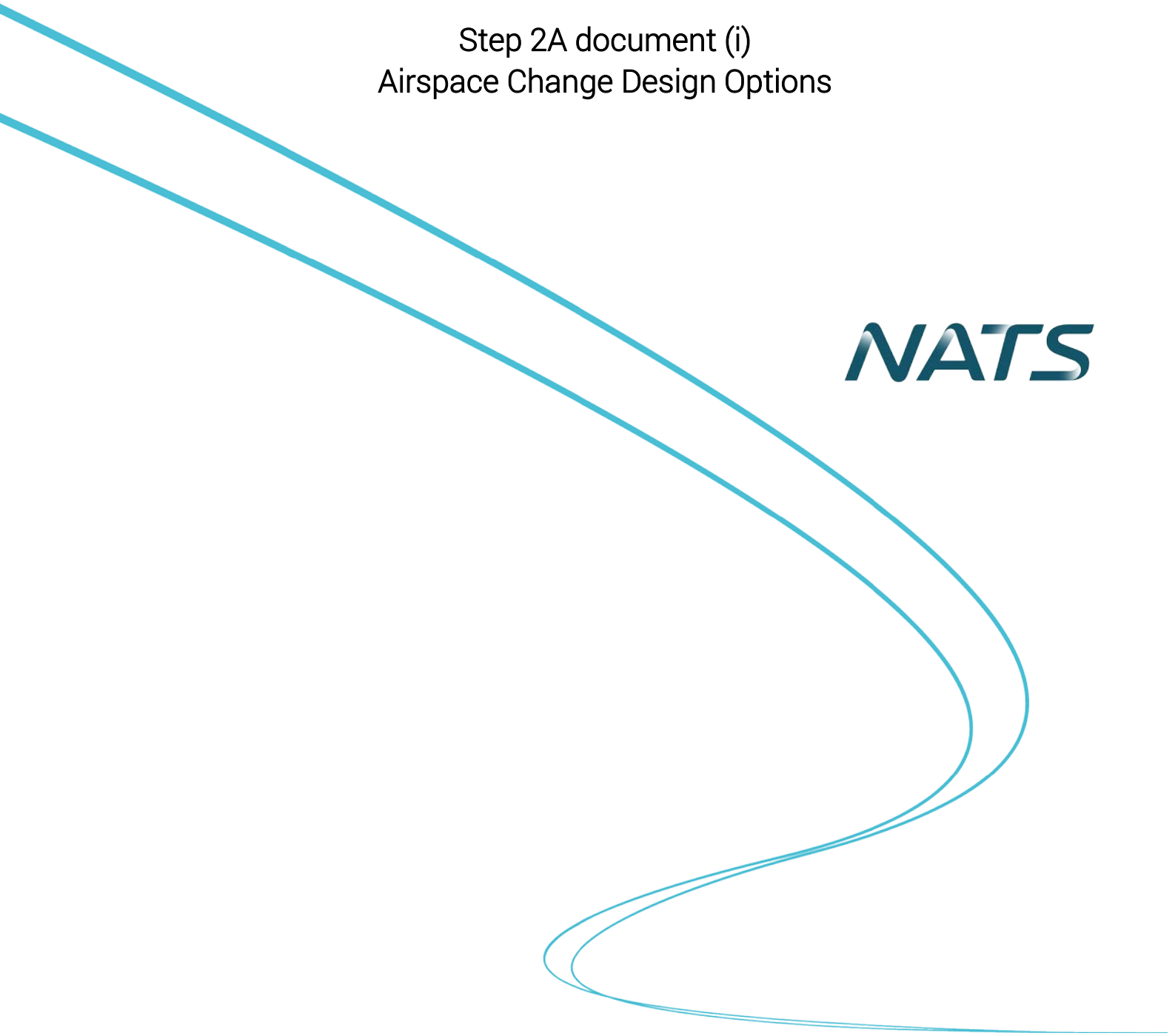
Operational Service Enhancement Project:-
P18 Extension of Times of Availability NATEB – ADN

Gateway documentation:
Stage 2 Develop and Assess

Step 2A document (i)
Airspace Change Design Options



NATS Public

Roles

Action	Role	Date
Produced	Airspace Change Specialist NATS Airspace Change Compliance & Delivery	October 2021
Reviewed Approved	ATC Lead NATS	October 2021
Reviewed Approved	Airspace Implementation Manager NATS	October 2021
Reviewed Approved	OSEP Project Manager NATS	October 2021

Drafting and Publication History

Issue	Month/Year	Changes this issue
0.5	September/ 2021	Draft shared with stakeholders for feedback
1.0	October 2021	Draft for submission to CAA Section 3 updated to reflect engagement Annex A- Engagement Evidence included

Contents

1. Introduction

1.1 This document forms part of the document set required in accordance with the requirements of the CAP1616 airspace change process.

1.2 This document aims to provide adequate evidence to satisfy:
Stage 2 Develop and Assess Gateway, Step 2A Airspace Change Design Options.

1.3 The CAA reference is ACP-2021-020.

2. Options development – brief history

2.1 NATS "Operational Service Enhancement Project (OSEP)" aims to deliver small scale changes across NERL airspace between now and 2025. The changes will deliver benefits through enabled fuel savings to customers, reduced routing inefficiency, safety improvements and alleviating capacity hotspots.

2.2 As part of this project, NATS has identified a need to increase the hours of availability of a Conditional Route (CDR) contained within UK Air Traffic Service (ATS) route P18.

2.3 P18 includes a CDR between NATEB and ADN, shown in Figure 1. This CDR is categorised as a CDR 1 meaning it is a permanently plannable route with the following availability:

- *Fri (or the day preceding a PH) 1500 (1400) to Mon (or the day following a PH) 1000 (0900); Tue-Fri 0530-0900 (0430-0800). May-Sep, Mon-Thur 1900-0900.*

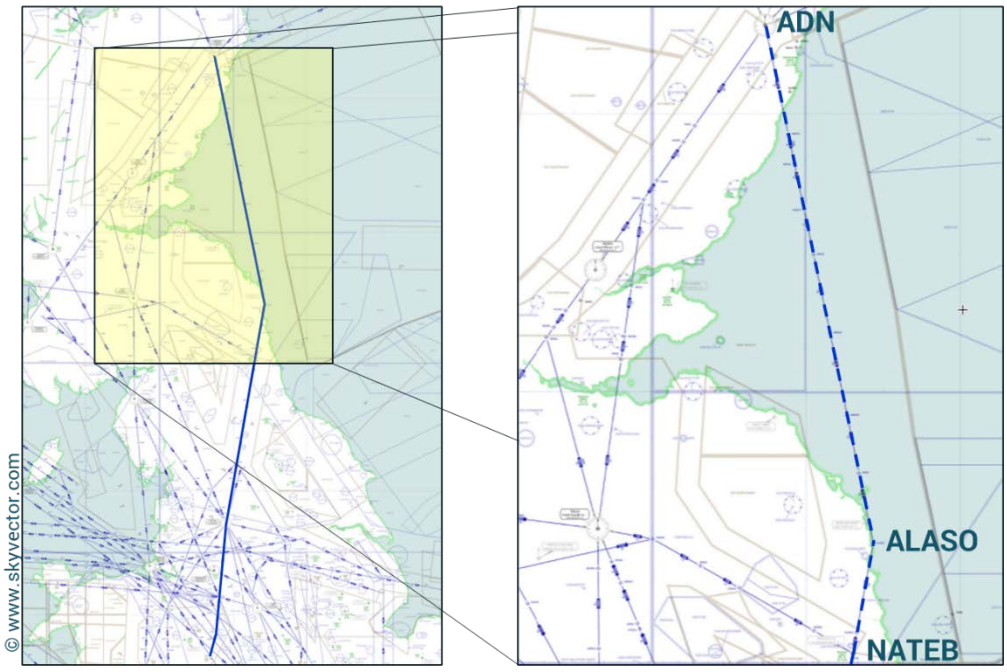


Figure 1: (L) P18 route; (R) CDR 1 portion of P18, NATEB - ADN

2.4 Outside of this availability aircraft are required to flight plan alternate, less efficient routes which result in increased fuel burn and CO_2 emissions. However, during hours of unavailability aircraft are able to request via Air Traffic Control (ATC) to route along the track of P18 without the protection of Controlled Airspace (CAS) which is managed on a case by case basis. The aircraft which are tactically granted a routing via the nominal route of P18 during inactive periods benefit from a shorter route, reduced fuel burn and subsequently emit fewer greenhouse gases,. However, these aircraft will have had to plan for, and fuel, based upon their original longer flight plan and therefore will burn more fuel than necessary to carry the excess weight of the fuel (fuel uplift). Increasing the hours of availability of P18 will reduce the

need for operators to fuel for the longer route, reducing their weight, thus delivering further reductions in fuel burn and greenhouse gas emissions

2.5 Increasing the hours that this portion of P18 is available would reduce routing inefficiency, reduce land overflight, improve predictability whilst also improving fuel efficiency, thus reducing greenhouse gas emissions. It would also provide the protection of CAS for all users of P18, including those that request ad hoc access outside the current hours of availability.

2.6 This change has subsequently been highlighted in the CAA Airspace Classification Review. In this review, it was proposed that by extending the availability of P18, less traffic would use P600. This expected lower utilisation of P600 could potentially remove the need for lower levels of P600, allowing a partial reclassification of these lower levels. Any change to P600 is outside the scope of this ACP and is mentioned here purely as a potential future change enabled by this ACP.

3. Stakeholder Engagement

3.1 Initial engagement, where indicative support of a change to the hours of availability of P18 was sought and received from the following stakeholders:

- Aberdeen Airport
- Aberdeen ATC
- Aberdeen ACC
- Aberdeen Flight Operations Performance and Safety Committee (FLOPSC)
- Airlines
- MoD

3.2 As the development of the design options has progressed, further engagement has taken place with relevant stakeholders. Table 1 below gives a summary of the design option engagement that has been undertaken and planned.

Date	Meeting	Attended by
26/02/2021	Prestwick (PC) Technical Review and Implementation Group (TRIG)/ Service Performance Improvement Group (SPIG) Meeting	PC TRIG/SPIG representatives
29/04/2021	NATEB Workshop	Various NATS representatives
30/04/2021	Teams Meeting	NATS, Aberdeen Airport (EGPD), Manager ATC/ Watch Manager (MATC/WM)
14/05/2021	Teams Meeting	NATS, EGPD MATC/WM
09/06/2021	Teams Meeting	NATS, EGPD Airport and ATC
17/06/2021	Teams Meeting	NATS and AGS
29/06/2021	Teams Meeting	NATS and MoD
29/07/2021	Aberdeen International FLOPSC	NATS and EGPD FLOPSC

03/09/2021	Aberdeen International ACC (AIACC)	NATS and AIACC

Table 1: Summary of Stakeholder Engagement Activity

3.3 Initial engagement on the proposed change to the P18 availability has been positive.

3.4 These Design Options have been shared with the relevant Stakeholders identified for the Stage 1 Design Principle engagement. Following engagement, no update was required to the draft Design Options.

3.5 Engagement was received from Aberdeen Airport (Including FLOPSC and ACC), Aberdeen ATC, British Helicopter Association the British Gliding Association and DAATM, Stakeholder engagement is evidenced in Annex A.

3.6 This proposal aims to increase the hours of availability of P18, subsequently reducing land overflight whilst reducing CO_2 emissions (between 150 and 250 kg CO_2 emissions per affected flight) and the corresponding reduction in fuel burn As this proposal is expected to lead to an increase in traffic arriving into and departing from Aberdeen airport to/from the southeast (along P18) with a corresponding reduction to/from the southwest (along P600); this change has the potential to affect the distribution of flights within existing traffic flows below 7000 ft within the Aberdeen airport Control Area/ Zones (CTA/ CTR). Within these areas aircraft are naturally dispersed as arrivals and departures are vectored by ATC and do not use Standard Instrument Departures (SIDs) or Standard Terminal Arrival Routes (STARs), which would concentrate the tracks over the ground. The potential impact below 7000ft is limited to the areas in close proximity to the airport. We therefore consider the scaled engagement undertaken with the MoD, NATMAC representatives, Aberdeen ATC, Aberdeen Airport as well as their Consultative Committee as proportionate to the change and we do not intend to engage further afield.

4. Baseline (do nothing) description

The following pages describe the baseline (do nothing) scenarios.

A 'Do Nothing' option representing the current day operation must be included and is used as the baseline against which all other options are measured.

This ACP is limited to the CDR portion of the UK lower ATS route P18. When available, this CDR provides operators with a more direct route between NATEB and Aberdeen (ADN) via the following waypoints:

NATEB – ELMUD – ALASO – RITSI – MADAD – NEXUS – BALID – UPGET – OKPAL – RATPU – ADN

Within the Standard Route Document (SRD) this CDR is available for aircraft arriving and departing Aberdeen to the South as well as a link to upper airspace for aircraft departing Kirkwall to Norwich or Humberside airports. Kirkwall departures to the south are typically FL70 or above abeam Wick, approximately 70 NM before joining P18.

The CDR portion of P18 has the following availability listed in the UK AIP:

Fri (or the day preceding a PH) 1500 (1400) to Mon (or the day following a PH) 1000 (0900); Tue-Fri 0530-0900 (0430-0800).

May-Sep, Mon-Thu 1900-0900.

Outside of these hours, aircraft are required to flight plan a longer route avoiding the CDR portion of P18. For example, an aircraft departing Aberdeen for Birmingham according to the SRD would have to flight plan via

Glasgow (GOW) when P18 is not available, a total planned distance of 330.4 NM. Whereas, when P18 is available, the planned distance is reduced to 302.1 NM. Both routes are shown in Figure 2. However, it should be noted that outside of these hours, aircraft are able to request clearance to route via P18 from ATC, accepting a reduced level of service. Outside of Controlled Airspace, controllers provide pilots with a UK Flight Information Service that offers information, guidance and/or instructions relating to aircraft observed in their vicinity to aid their safe deconfliction. Ad hoc requests are managed tactically by ATC on a case by case basis and may be approved or declined depending upon workload.

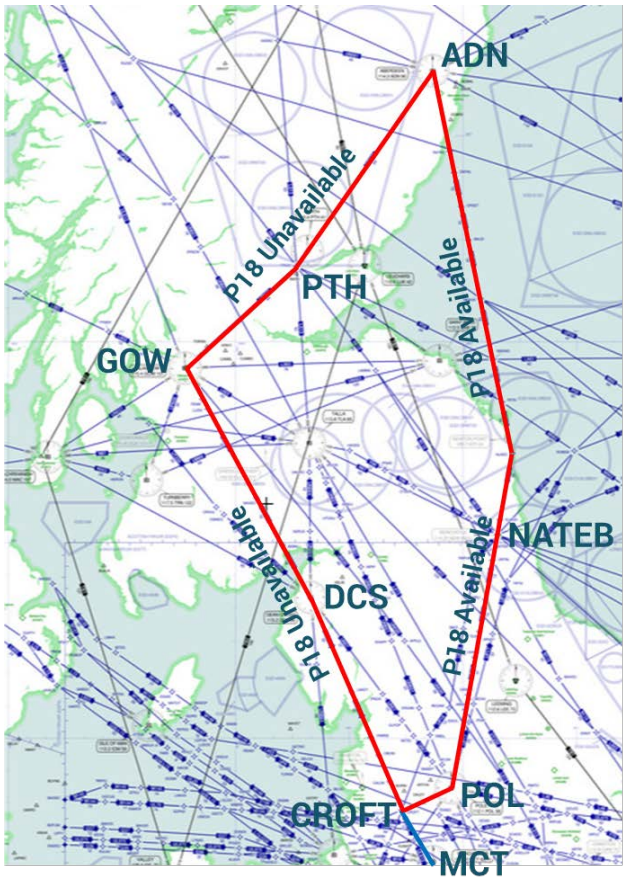


Figure 2: Comparison of the flight plannable routes for an aircraft routing from Aberdeen to Birmingham.

4.1 Potential Danger Area

The portion of P18 which is a CDR currently has no permanent Danger Area (DA) associated with it. However, the MoD have conducted airspace trials in the vicinity of P18 for a new DA. The trial area is shown in Figure 2.

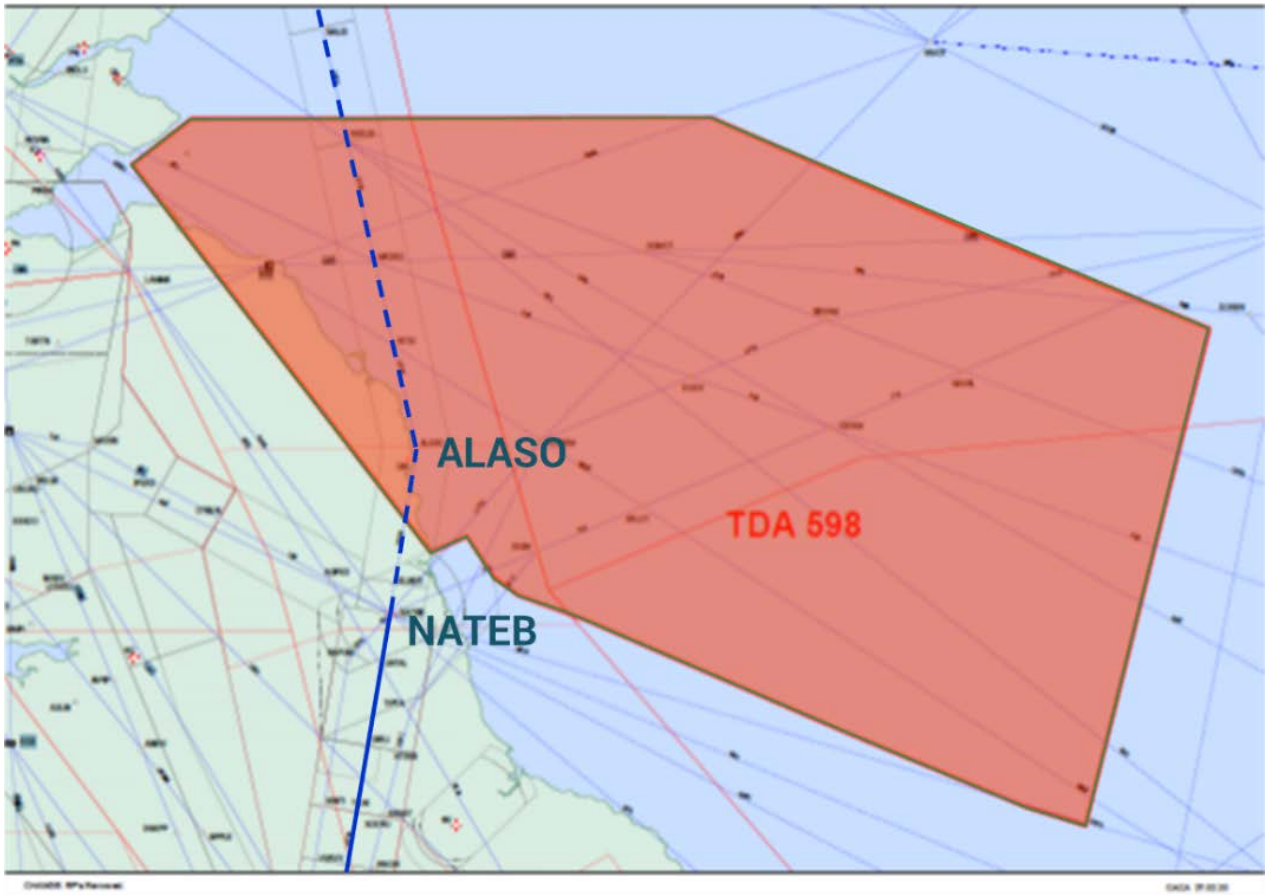


Figure 3: Location of MoD airspace trials for a new Danger area in the vicinity of P18.

Following these trials, the MoD initiated an ACP, ACP-2020-026, to introduce a new permanent DA. It is anticipated that this DA will broadly reflect the trial area shown in Figure 2. This danger area is anticipated to be activated for defined hours within two periods of 2 weeks per year. This may change to ensure that MoD requirements are met in the future. This ACP will consider this information as well as any further engagement form the MoD in its design as the development of a permanent DA will have a direct impact on this ACP. Design options included in this ACP include options for the MoD to notify NATS up to the day preceding operation (D-1) of planned use, allowing the closure of the P18 CDR when required for MoD activities. Any conditions surrounding this closure will be included in an amended Letter of Agreement (LOA) between NATS and the MoD.

5. Concept Overview

Besides the baseline (Do Nothing) option, this document discusses a single concept of extending the hours of availability of this CDR. Extending the hours of P18 was identified during the CAA airspace clarification review as a desirable change as this would move traffic from P600 to P18 which could enable the base of P600 to be raised.

Three design options varying the availability of this CDR are considered below.

Increasing the availability of the CDR portion of P18 will predominantly impact flights above FL70. The exception to this is between OKPAL and RATPU where the base of P18 is below FL70. Aircraft arriving into Aberdeen are already being vectored for their approach before reaching OKPAL and departures have reached FL70 by RATPU. This ACP is anticipated to impact approximately 16 flights per day and could save between 150-250 kg fuel per flight. These flights are currently able to tactically request clearance from ATC to fly via P18. These requests are considered by ATC on a case by case basis subject to ATC workload. A discernible difference to stakeholders on the ground will only be noticeable for those flights which do not currently request to route via P18 or for which ATC are unable to allow to route via P18. Considering this, we proposed at the assessment meeting that this ACP should be categorised as a Level 2C change. In line with CAP1616 definitions we now consider that this ACP should be a scaled Level 1 change with engagement limited to the MoD, NATMAC, Aberdeen Airport and ATC as well as the airports Consultative Committee.

6. Option 1: Permanent H24 usage as ATS Route

6.1 Option 1 sees the conversion of this existing CDR into a permanent H24 ATS route following the same published route as the extant ATS route. The predicted benefits of this design include:

- Flight plannable H24 with no restrictions,
- Increased safety by the addition of a permanent ATS route,
- An increased predictability for Aircraft operators and ATC,
- A reduction in planned fuel uplift,
- Reduction in land overflight,
- Reduction in P600 traffic.

6.2 This option does not consider the development of a new DA by the MoD.

7. Option 2: H24 CDR - availability subject to D-1 notified MoD activity (NATS preferred)

7.1 Option 2 extends the availability of this existing CDR H24. The route will follow the same published route as the extant airway. The predicted benefits of his design include:

- Flight plannable H24 subject to MoD requirements,
- Increased safety by increasing the availability of the CDR,
- An increased predictability for Aircraft operators and ATC,
- A reduction in planned fuel uplift,
- A reduction in land overflight,
- A reduction in P600 traffic.

7.2 This option includes the availability of the CDR being subjected to D-1 notified MoD activity. This will allow for the closure of the CDR as required by the MoD notifying NATS of their planned use of their proposed new DA up to the day preceding use. Thus, considering the development of a new DA being proposed by the MoD.

8. Option 3: Extended hours CDR- availability subject to D-1 notified MoD activity

8.1 Option 3 increases the availability of this existing CDR. Should this Option progress, the total increase and the timings of availability will be decided during the Stage 3 consultation. The route will follow the same published route as the extant airway. The predicted benefits of his design include:

- Increased flight plannability subject to MoD requirements,
- Increased safety by increasing the availability of the CDR,
- An increased predictability for Aircraft operators and ATC,
- A reduction in planned fuel uplift,
- Reduction in land overflight,
- Reduction in P600 traffic.

8.2 This option includes the availability of the CDR being subjected to D-1 notified MoD activity. This will allow for the closure of the CDR as required by the MoD notifying NATS of their planned use of their proposed new DA up to the day preceding use. Thus considering the development of a new DA by the MoD.

9. Conclusion and Next Steps

9.1 In this document we have described a proportional and reasonable number of options which address the issue to be addressed from the SoN.

9.2 The next document, Step 2A(ii), will evaluate the design options listed in this document against the design options developed during Stage 1B, reducing the longlist to a shortlist for appraisal.

10. Glossary

ACC	Airport Consultative Committee
ACP	Airspace Change Proposal
AGS	AGS Airports Ltd
AIP	Aeronautical Information Publication
ATC	Air Traffic Control
ATS	Air Traffic Service
CAA	Civil Aviation Authority
CAP1616	Civil Aviation Authority Publication 1616: Airspace Change (Guidance on the regulatory process for changing the notified airspace design and planned and permanent redistribution of air traffic, and on providing airspace information)
CAS	Controlled Airspace
CDR	Conditional Route
CO_2	Carbon Dioxide
CTA	Control Area
CTR	Control Zone
D-1	The day preceding
DA	Danger Area
DAATM	Defence Airspace and Air Traffic Management
EGPD	Aberdeen Airport
FLOPSC	Flight Operations Performance and Safety Committee
H24	24 hours a day
LOA	Letter of Agreement
MATC/WM	Manager ATC/ Watch Manager
MoD	Ministry of Defence
NATMAC	National Air Traffic Management Advisory Committee
NATS	UK Air Navigation Service Provider
NERL	NATS En Route Ltd
NM	Nautical Mile
OSEP	Operational Service Enhancement Project
PC	Prestwick
PH	Public Holiday
SoN	Statement of Need
SPIG	Service Performance Improvement Group
SRD	Standard Route Document
TRIG	Technical Review and Implementation Group

11. Annex A- Engagement Evidence

11.1 Excerpt of Minutes of meeting between NATS and Aberdeen Airport/ATC on 9th June 2021 relating to design Options (See Stage 1B Ref 3)

7) Design Options considered

NATS presented draft design options which align with the SoN and accommodates known MOD plans with regards to the expected danger area. These will be shared with Stakeholders in due course to comply with the CAP1616 stakeholder engagement process.

Aberdeen questioned what is meant by D-1 in the design options. **NATS** stated that it is the "day before" but a formal cut off time would have to be included within the LoA to allow increased predictability. The D-1 definition is widely established within current SUA / CDR management.

11.2 Excerpt of Minutes of meeting between NATS and MOD on 29th June 2021 relating to design Options (See Stage 1B Ref 5)

7) Design Options considered

NATS presented draft design options which align with the SoN and accommodates known MOD plans with regards to the expected danger area. These will be shared with Stakeholders in due course to comply with the CAP1616 stakeholder engagement process.

DAATM agreed the design options presented are proportional and will provide formal feedback during the CAP1616 Stage 2 and 3 engagement as required.

11.3 Excerpt of Minutes of meeting between NATS and Aberdeen Airport FLOPSC 29th July 2021 relating to design Options (See Stage 1B Ref 6)

OSEP – P18

[redacted] gave a presentation regarding the Operational Service Enhancement Project, relating to the extension of P18 times of availability between NATEB – ADN. The project aims to incorporate small-scale changes to alleviate capacity hotspots, improve workload areas for controllers and pilots, save fuel and reduce timescales. The CAA's set of design principles have been sent out to operators and we have received some responses. A meeting will be held with the CAA soon to discuss the next stage of the process.

Airway P18 NATEB – ADN availability is currently Friday (or the day preceding a PH) 1500 (1400Z) to Monday (or the day following a PH) 1000 (0900Z): Tuesday to Friday 0530-0900 (0430-0800Z), May to September this would be Monday to Thursday 1900-0900. The proposal is for the availability of this section of P18 to be available on an H24 basis. Compared to the current restricted use, it is estimated that this would save approx. 150-250kg CO2 per flight and would have the advantage of moving more traffic over the North Sea instead of over land.

Whilst not introducing a new route there could be a potential impact from traffic below 7000ft. Primarily this would involve flights that would currently operate on P600 outside P18 times using P18 which may move their tracks slightly in the initial approach and departure phase. Another advantage of this proposal is to provide more predictable flight planning capabilities as an extension of the existing times would give operators better confidence to plan flights on P18.

Design options:

1- Do nothing.
2- H24 ATS route – P18 becomes permanently flight plannable.
3- H24 CDR – availability subject to D-1 notified MoD activity (NATS preference).
4- Extended hours CDR – subject to D-1 notified MoD activity.

With regards to timescale, stakeholders will be formally consulted in November or December this year with a view to achieving a formal ACP approval by mid-April of 2022 and putting the new procedures in place by the end of 2022, implemented in AIRAC 09/2022.

11.4 Excerpt of Minutes of meeting between NATS and Aberdeen Airport/ ACC on 3rd September 2021 relating to design Options (See Stage 1B Ref 8)

(5) NATS Airspace Change – C. Dare (NATS)

[redacted] presented an overview of the Airspace Change proposal for the P18 airway. A copy of the slides are attached for information.

[redacted] thanked NATS for the update.

11.5 Email to Stakeholders requesting feedback on Draft Design Options Document 17 September 2021

Dear Colleague,

NATS are progressing an Airspace Change Proposal to amend the hours of availability of UK CDR P18 between ADN-NATEB.

We are currently at Stage 2 of the CAP1616 Airspace Change process. This stage involves preparing and evaluating Design Options for this change. Please find attached a copy of our Stage 2A(i)- Design Options document which provides 3 options as to how this can be implemented.

At this stage of the Airspace Change Process we are required to provide evidence that design options have been developed and influenced by stakeholder feedback. As such, we would like to invite your feedback on these options by 1st October 2021.

At the next stage of the process, you will be formally consulted on the best design option(s)

Kind regards

NATS Airspace Change Team

11.6 Follow-up Email to Stakeholders requesting feedback on Draft Design Options Document 24th September 2021

Dear Colleague,

NATS contacted you on 17th September 2021 (See below) requesting feedback on our design options to amend the hours of availability of UK CDR P18 between ADN-NATEB.
We understand that not everyone is going to be able to respond, however should you wish to respond we would appreciate your input by 1st October so that we can consider your feedback.

Kind regards

NATS Airspace Change Team

11.7 Email Response of DAATM to Design Options, 12th August 2021

Good Afternoon All,

As promised, please find some initial feedback from the MOD reference OSEP P18 ACP following our initial mtg back in Jun.

In summary, 'no showstoppers' have arisen at this time, which is good news, but please be aware that this initial high level feedback may alter, or more points arise, as we go through the stages of the CAP1616 process and during consultation.

Design option 2 is one that the MOD would object to as it does not support DP5. All of the other options appear to support DP5, but require further engagement. The MOD believe that of Design Options 2, 3 and 4; Design Option 3 is the most suitable to fit the DPs and lessen the impact to MOD activity.

Leuchars – minimal impact, a couple of the military instrument departures would need 'capping' at a level to remain outside/below CAS, but this is the case for one of them to the NW of Leuchars already underneath CAS. Their ATS provision is only outside CAS and there will be no requirement to enter CAS with Leuchars, as ATS inside CAS will be given by Swk Mil or ASACS. No further requirement to engage.

Swk Mil – Would require the same access rights as is currently the case when P18 is active, i.e. the ability to 'take 5' or coordinate. Mil ac will still general handle in that area and also transit through P18 when active. Will require further engagement/consultation.

As well as Swk Mil, ASACS and other Autonomous Radar Units would expect the same access requirements that are in place now and documented in the relevant LoA.

The MAMC (Military Airspace Management Cell), part of the AMC, have asked if P18 will be permanently associated with the DA airspace solution for ACP-2020-026 (i.e. what has been TDA D598 and D597)?

A query ref the ability for MOD to close the route at D-1 arose. It refers to closing the route during 'planned' MOD activity, as an example, the activation of the DA airspace that will be the solution to ACP-2020-026. This implies that there could be other times when the MOD could close P18? The MOD would like to discuss this more to understand how the current LoA pertaining to P18 clawback will be relevant to this ACP and discuss other times where MOD access may be required. Additionally, reference ACP-2020-026, I note that it is estimated that the DA solution will be activated ~2 weeks per year. Currently TDA D597 is being activated for around 3 hours at a time up to 9 times over a 2 or 3 week period, twice a year. This is not set in stone for ACP-2020-026, however, the frequency and number of activations will be agreed upon and formalised between the MOD and NATS within that ACP, so this will need to be taking into account by both ACPs as we move forward. This is an update from the mtg minutes as the TDA for D597 activations have been approved in the meantime.

Hopefully that all makes sense? I hope this provides some useful feedback and idea of the areas for further discussion at this stage. Please do not hesitate to contact me if you require more info and I look forward to working with you on this ACP.

Regards

[redacted]

[redacted] | SO2 Airspace Operations | Defence Airspace and Air Traffic Management | Aviation House | 1E Beehive Ringroad Crawley West Sussex RH6 0YR | Civilian Telephone: [redacted]

[redacted]

11.8 Email Response of the British Helicopter Association to draft Design Options 17th September 2021

NATS

The BHA has no objections to the proposal and looks forward to your selection of the best design option

Yours

[redacted]

CEO BHA

11.9 Email Response of Aberdeen Airport ACC to draft Design Options 24th September 2021

Good Morning [redacted]

Please see attached

AIACC have no comments or objections to the proposal

Regards

[redacted]

[redacted]

11.10 Email Response of the British Gliding Association to draft Design Options 1st October 2021

Thank-you for contacting the British Gliding Association on this matter.

We note that the proposal is motivated by reduction of track miles with consequent savings on time, cost and emissions.
We also note that the proposal has the potential to significantly reduce traffic on P600 and that this may allow P600 base levels to be increased although such a consequential change lies outside the scope of the current proposal.

Our formal response to the proposal is therefore as follows:-

1 Although we see no direct benefit to gliding (in fact the proposal effectively increases the hours of existence of CAS - something which we would not normally welcome) we are pleased to support the case for reducing track miles and emissions by greater CAT use of P18.

2 We are also pleased to support the stated potential for raising P600 base levels which could\should arise as a consequence of the change. Any raising of P600 base levels would significantly facilitate wave soaring activities in the area. We believe that a simultaneous change in classification from Class A to Class D or E would also be appropriate, potentially allowing the simplification or removal of existing LoAs which permit gliders to request access to the Class A airway.

3 We request that a suitable mechanism is put in place to ensure that Item 2 above is not forgotten. While we understand that P600 changes are not in scope for this change we agree that there will undoubtedly be consequential changes to P600 traffic and wish to be

assured that these will be properly evaluated, ideally as part of the Post Implementation Review.

Finally we would appreciate acknowledgement of receipt of this email.

[redacted]
For and on behalf of the British Gliding Association

11.11 Email Response to the British Gliding Association to draft Design Options 1st October 2021

Dear [redacted]

Thank you for your positive feedback and support of the P18 availability Change. Your feedback is acknowledged and will be included in the submission.

Your assessment of the motivation behind the change is correct and the potential to raise the base of P600 following this change was highlighted in the CAA's airspace classification review.

As you have commented any change to P600 is outside the scope of this ACP. Its inclusion within this document was to highlight the potential benefit of raising the base of P600 which could be enabled by the availability extension of P18. As this change is relating to the extended availability of P18, the PIR is likely to be limited to number of flights moving from P600 to P18. P600 will still be available for aircraft to flight plan and use if they so choose, although we anticipate the preference will be to use the shorter, more efficient route via P18.

From your response we understand you support this change but have no preference to the option.

Kind regards

[redacted]

NATS

[redacted]
Airspace Change Specialist

End of document