

CAA Operational Assessment

Title of airspace change proposal	Removal of En-Route Dependencies from TRN DVOR	
Change sponsor	NATS	
Project no.	ACP-2019-17	
SARG project leader		
<i>Case study commencement date</i>	20 Sep 2019	
<i>Case study report as at</i>	21 Nov 2019	
<p><i>Instructions</i></p> <p>In providing a response for each question, please ensure that the 'status' column is completed using the following options:</p> <ul style="list-style-type: none"> • yes • no • partially • n/a <p>To aid the SARG project leader's efficient project management it may be useful that each question is also highlighted accordingly to illustrate what is:</p> <p>resolved Green not resolved Amber not compliant Red</p>		
Executive Summary		
<p>This Airspace Change Proposal (ACP) relates to the removal of en route Instrument Flight Procedures (IFPs) dependent on the Turnberry VOR Navigation Aid (TRN).</p> <p>This ACP is therefore aligned with the relevant UK, European and Global policies relating to ground-based navigation aids and ATS Route names.</p> <p>It is explicitly intended to have no material impact to flight paths.</p>		
1.	Justification for change and options analysis (operational/technical)	Status
1.1	Is the explanation of the proposed change clear and understood?	Yes

	This ACP is primarily focused on en-route IFPs, in the UK AIP, which use Turnberry DVOR (TRN) as a materially important navaid. The scope of the proposal includes standard instrument arrival routes (STARs) and their associated holding patterns, referring to TRN as a conventional navaid and ATS routes which reference the VOR, where NATS is the primary air navigation services provider (ANSP).	
1.2	Are the reasons for the change stated and acceptable?	Yes
	Forms part of agreed UK and international policy to reduce reliance on VOR navigation aids and to improve network efficiency. Improvements and amendments to published procedures will also be carried out as part of this ACP.	
1.3	Have all appropriate alternative options been considered, including the 'do nothing' option?	Yes
	Four options were considered, including do nothing. Only option 2 (<i>Examine the use of existing STARS and holds from a practical point of view, re-evaluate how they are used and how the network may be improved by rationalising/truncating/replicating them in a considered manner</i>) adequately addresses the internationally agreed strategic aims to remove the enroute dependencies on VORs.	
1.4	Is the justification for the selection of the proposed option sound and acceptable?	Yes
	The proposed option is the only one which meets all the Design Principles. There is an accepted slight disbenefit as a result of the truncations, due to the necessary addition of a published hold level. However, this is considered to be negligible (<5%) and only apparent as a result of the level being added under the policy. The proposal has been refined during its development to take account of operational experience with recent similar ACPs.	
2.	Airspace description and operational arrangements	Status
2.1	Is the type of proposed airspace design clearly stated and understood?	Yes
	Changes are to enroute IFPs and ATS Routes. There are no impacts to airspace boundaries.	
2.2	Are the hours of operation of the airspace and any seasonal variations stated and acceptable?	Yes

	H24	
2.3	Is any interaction with adjacent domestic and international airspace structures stated and acceptable including an explanation of how connectivity is to be achieved? Has the agreement of adjacent States been secured in respect of High Seas airspace changes?	N/A
	N/A	
2.4	Is the supporting statistical evidence relevant and acceptable?	Yes
	None required	
2.5	Is the analysis of the impact of the traffic mix on complexity and workload of operations complete and satisfactory?	N/A
	No change to traffic mix.	
2.6	Are any draft Letters of Agreement and/or Memoranda of Understanding included and, if so, do they contain the commitments to resolve ATS procedures (ATSD) and airspace management requirements?	No
	<p>No changes to existing arrangements.</p> <p>Any resulting editorial amendments to supporting documents will be implemented at the next general update.</p>	

2.7	Should there be any other aviation activity (low flying, gliding, parachuting, microlight site etc) in the vicinity of the new airspace structure and no suitable operating agreements or ATC Procedures can be devised, what action has the change sponsor carried out to resolve any conflicting interests?	N/A
	No impact as no practical change to the route structure in terms of controlled airspace boundaries etc.	
2.8	Is the evidence that the airspace design is compliant with ICAO SARPs, airspace design & FUA regulations, and Eurocontrol guidance satisfactory?	YES
	No changes to airspace boundaries or usage. Revised Instrument Flight Procedures have been reviewed and approved by a CAA Instrument Flight Procedure Regulator.	
2.9	Is the proposed airspace classification stated and justification for that classification acceptable?	N/A
	No change to airspace classification.	
2.10	Within the constraints of safety and efficiency, does the airspace classification permit access to as many classes of user as practicable?	N/A
	There are no changes to the existing access arrangements.	
2.11	Is there assurance, as far as practicable, against unauthorised incursions? (This is usually done through the classification and promulgation.)	N/A
	This ACP introduces no change to the current levels of risk associated with unauthorised incursions. The affected airspace is already controlled.	

2.12	Is there a commitment to allow access to all airspace users seeking a transit through controlled airspace as per the classification, or in the event of such a request being denied, a service around the affected area?	N/A
	This ACP involves no new controlled airspace.	
2.13	Are appropriate arrangements for transiting aircraft in place in accordance with stated commitments?	N/A
	This ACP involves no new controlled airspace.	
2.14	Are any airspace user group's requirements not met?	No
	This ACP is explicitly designed to have no material impact on any airspace user group.	
2.15	Is any delegation of ATS justified and acceptable? (If yes, refer to Delegated ATS Procedure).	Yes
	There are no changes to the existing delegated ATS arrangements.	
2.16	Is the airspace design of sufficient dimensions with regard to expected aircraft navigation performance and manoeuvrability to contain horizontal and vertical flight activity (including holding patterns) and associated protected areas in both radar and non-radar environments?	N/A
	There are no changes to existing Controlled Airspace or other airspace boundaries.	

2.17	Have all safety buffer requirements (or mitigation of these) been identified and described satisfactorily (to be in accordance with the agreed parameters or show acceptable mitigation)? (Refer to buffer policy letter.)	N/A
	There are no changes to the airspace structure requiring re-consideration of the safety buffer requirements.	
2.18	Do ATC procedures ensure the maintenance of prescribed separation between traffic inside a new airspace structure and traffic within existing adjacent or other new airspace structures?	Yes
	There are no changes from the current operations.	
2.19	Is the airspace structure designed to ensure that adequate and appropriate terrain clearance can be readily applied within and adjacent to the proposed airspace?	Yes
	All affected airspace is over 7,000ft above mean sea level and thus has adequate terrain clearance (the highest point in the UK is Ben Nevis, which is sufficiently below 7,000ft to ensure adequate terrain clearance).	
2.20	If the new structure lies close to another airspace structure or overlaps an associated airspace structure, have appropriate operating arrangements been agreed?	Yes
	All airspace affected by changes to IFPs is controlled by Prestwick Terminal Control who have been directly involved in the development of the proposal. All changes relating to other units' airspace are purely to do with the renaming of ATS Routes.	
2.21	Where terminal and en-route structures adjoin, is the effective integration of departure and arrival routes achieved?	Yes
	There are no changes to departure routes in this proposal. There are no changes to the connectivity between the relevant en-route and terminal structures. The proposed changes are technical and will not alter lateral or vertical traffic dispersion. The connectivity to the STAR truncations, that form part of this submission, have been checked with the relevant operational representatives and will be unaffected by the proposed change.	

3.	Supporting resources and communications, navigation and surveillance infrastructure	Status (CNS)
3.1	Is the evidence of supporting CNS infrastructure together with availability and contingency procedures complete and acceptable? The following are to be satisfied:	Yes
	<ul style="list-style-type: none"> • Communication: Is the evidence of communications infrastructure including RT coverage together with availability and contingency procedures complete and acceptable? Has this frequency been agreed with AAA Infrastructure? 	N/A
	There are no new communications infrastructure requirements. Standard radio-fail contingency procedures remain appropriate.	
	<ul style="list-style-type: none"> • Navigation: Is there sufficient accurate navigational guidance based on in-line VOR or NDB or by approved RNAV-derived sources, to contain the aircraft within the route to the published RNP value in accordance with ICAO/ Eurocontrol standards? For example, for nav aids, has coverage assessment been made, such as a DEMETER report, and if so, is it satisfactory? 	Yes
	DEMETER coverage diagram included as part of the NATS Design document and assessed as satisfactory for the airspace affected by this ACP.	
	<ul style="list-style-type: none"> • Surveillance: Radar provision – have radar diagrams been provided, and do they show that the ATS route/airspace structure can be supported? 	N/A
	There are no changes to tracks over the ground. Existing radar coverage will suffice.	
3.2	Where appropriate, are there any indications of the resources to be applied, or a commitment to provide them, in line with current forecast traffic growth acceptable?	N/A
	<p>Not applicable. This proposal is not directly linked to any anticipated growth in traffic or change in traffic mix.</p> <p>There are no resource implications.</p>	

4.	Maps/charts/diagrams	Status
4.1	<p>Is a diagram of the proposed airspace included in the proposal, clearly showing the dimensions and WGS84 co-ordinates?</p> <p>(We would expect sponsors to include clear maps and diagrams of the proposed airspace structure(s) – they do not have to accord with aeronautical cartographical standards (see airspace change guidance), rather they should be clear and unambiguous and reflect precisely the narrative descriptions of the proposals.)</p>	Yes
	<p>This proposal affects some ATS routes, STARs and Holds, not a single contiguous airspace block. Multiple diagrams have been provided showing the individual affected structures.</p> <p>WGS-84 coordinates for the relevant points will remain as those already published in the existing AIP.</p>	
4.2	Do the charts clearly indicate the proposed airspace change?	Yes
	<p>All changes to holds and STARs are clearly indicated on the relevant charts.</p> <p>There no changes to the horizontal dimensions of the routes to indicate on the charts.</p>	
4.3	Has the change sponsor identified AIP pages affected by the change proposal and provided a draft amendment?	Yes
	TRN AIP VOR Removal Changes	
4.4	Has the change sponsor completed the WGS84 spreadsheet and submitted to the CAA for approval?	Yes
	Revised version (v2.0) re-submitted and accepted.	
5.	Operational impact	Status

5.1	Is the change sponsor's analysis of the impact of the change on all airspace users, airfields and traffic levels, and evidence of mitigation of the effects of the change on any of these, complete and satisfactory? Consideration should be given to:	Yes
	a) Impact on IFR General Aviation traffic, on Operational air traffic or on VFR General Aviation traffic flow in or through the area.	No Impact
	This change only has an impact on aircraft using the affected ATS Routes and STARs. The following ATS Routes are being revised: ATS Routes (U)P600, N562, L186 and UM89 all include the TRN VOR. As part of this change the VOR element will be removed from the AIP entry for these routes however as the DME will be retained the 3LNC (TRN) will also be retained therefore there will be no impact to system adaptation. An update to the UK AIP will be required. The location of TRN DVOR/ DME would stay the same however, the description would be amended as TRN DME to denote the removal of the DVOR reference. The definition of the VOR would be removed from UK AIP ENR 4.1 but would need to be added to the airfield sections of the AIP as the VOR will continue to support SID procedures. This change will not introduce any changes to traffic patterns.	
	b) Impact on VFR Routes.	No Impact
	This change is wholly within existing controlled airspace.	
	c) Consequential effects on procedures and capacity, i.e. on SIDs, STARs, holds. Details of existing or planned routes and holds.	Yes
	Proposal explicitly amends STARs, ATS Routes and Holds but with no impact on capacity, by design.	
	d) Impact on airfields and other specific activities within or adjacent to the proposed airspace.	No Impact

	Administrative change only as far as the airports are concerned.	
	e) Any flight planning restrictions and/ or route requirements.	No Impact
	The sponsor considers that there will be no material changes from the current situation.	
5.2	Does the change sponsor consultation material reflect the likely operational impact of the change?	N/A
	Not applicable as there was no requirement for a formal consultation for this ACP. The CAA accepts that the level of engagement undertaken with impacted stakeholders and evidenced within the ACP submission meets the process requirements in this area.	
Case study conclusions – to be completed by SARG project leader		Yes/No
	Has the change sponsor met the SARG airspace change proposal requirements and airspace regulatory requirements above?	Yes
The sponsor has met the relevant regulatory requirements and therefore this proposal should be approved.		
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RECOMMENDATIONS/CONDITIONS/PIR DATA REQUIREMENTS		
	Are there any Recommendations which the change sponsor should try to address either before or after implementation (if approved)? If yes, please list them below.	No
<i>GUIDANCE NOTE:</i> Recommendations are something that the change sponsor <i>should try</i> to address either before or after implementation, if indeed the airspace change proposal is approved. They may relate to an area in which the change sponsor is reliant upon a third party to actually come to an agreement and consequently they do not carry the same ‘weight’ as a Condition.		
	Are there any Condition(s) which the change sponsor <u>must fulfil</u> either before or after implementation (if	No

approved)? If yes, please list them below.	
<p><u>GUIDANCE NOTE:</u> Conditions are something that the change sponsor <u>must fulfil</u> either before or after implementation, if indeed the airspace change proposal is approved. If their proposal is approved, change sponsors <u>must observe</u> any condition(s) contained within the regulatory decision; failure to do so <u>will usually</u> result in the approval being revoked. Conditions should specify the consequence of failing to meet that condition, whether that be revoking the ACP or some alternative.</p>	
Are there any specific requirements in terms of the data to be collected by the change sponsor for the Post Implementation Review (if approved)? If yes, please list them below.	Yes
<p><u>GUIDANCE NOTE:</u> PIR data requirements concerns any specific data which the change sponsor <u>must</u> collate post-implementation, if indeed the airspace change proposal is approved. Please use this section to list any such requirements so that they can be captured in the regulatory decision accordingly.</p> <p>Recorded flight data to demonstrate that there have been no material changes to flight paths or traffic distribution.</p>	
<p>General summary</p>	
<p>This ACP is intended to have no material impact on aircraft behaviours. It represents one of a series of enablers for the modernisation of UK airspace by removing reliance on out-dated navigation aids and the distinction between upper and lower ATS routes.</p>	
<p>Comments and observations</p>	
<p>Nil.</p>	

Operational assessment sign-off/ approvals	Name	Signature	Date
Operational assessment completed by:	AR Case Officer		21/11/19
Operational assessment approved by:	Principal Airspace Regulator		21/11/19
Manager Airspace Regulation comments: Nil			
Head AAA comment/ approvals	Name	Signature	Date
Operational assessment conclusions approved by:	Head AAA	Not Required	
Head AAA Comments:			
Group Director Safety and Airspace Regulation Group (GD SARG) decision/approval	Name	Signature	Date
GD SARG decision:	GD SARG	Not Required	

GD SARG comments: