CAA CAP 1616 Options Appraisal Assessment (Phase III Final)

Title of Airspace Change Proposal:	Removal of EGSS LYD 6R/5S SIDs		
Change Sponsor:	NATS En-Route Ltd (NERL)		
ACP Project Ref Number:	2020-66		
Case study commencement date:	15/02/2021	**Case study report as at:**	12/04/2021

Account Manager: N/A	**Airspace Regulator (Engagement & Consultation):** [redacted]	**IFP:** [redacted]	**OGC:** N/A
Airspace Regulator (Technical): [redacted]	**Airspace Regulator (Environmental):** [redacted]	**Airspace Regulator (Economist):** [redacted]	**ATM (Inspector ATS Ops):** [redacted]

Instructions

To aid the SARG project leader's efficient project management, please highlight the "status" cell for each question using one of the four colours to illustrate if it is:

Resolved - GREEN | Not Resolved – AMBER | Not Compliant – RED | Not Applicable - GREY

Guidance

The broad principle of economic impact analysis is **proportionality**; is the level of analysis involved proportionate to the likely impact from that ACP? There are three broad levels of economic analysis; qualitative discussion, quantified through metrics, and monetised in £ terms. The more significant the impact, the greater should be the effort by sponsors to quantify and monetise the impact.

1. Background – Identifying the Do Nothing (DN) /Do Minimum (DM) scenarios			Status
1.1	**Are the outcomes of DN/DM scenarios clearly outlined in the proposal?**		☒ ☐ ☐ ☐
1.1.1	Has the change sponsor produced an Options Appraisal (Phase III - Final) which consists of the Full appraisal with any refinements or changes made as a result of the Stage 2 formal consultation with stakeholders? [E24]	Yes, the change sponsor has produced the Final Options Appraisal that is attached to the main submission document EGSS LYD SIDs Stage 4B. It consists of Full Options Appraisal and the refinement that explains how the sponsor narrowed down its proposed options compared to the previous stage.	☒ ☐ ☐ ☐

2. Direct impact on air traffic control					Status
2.1	**Are there direct cost impacts on air traffic control / management systems?** **If so, please provide below details of the factors considered and the level in which this has been analysed.**				☒ ☐ ☐ ☐
2.1.1	*Examples of costs considered (please add costs that have been discussed, and any reasonable costs that the Airspace Regulator (Technical) feels have NOT been addressed)*				
		Not applicable	Qualitative	Quantified	Monetised
2.1.2	Infrastructure changes		X	N/A	N/A
2.1.3	Deployment		X	X	£65,000
2.1.4	Training	X			
2.1.5	Day-to-day operational costs / workload / risks	X			
2.1.6	Other (provide details)	X			
2.1.7	**Comments:** The sponsor estimated that this change would require approximately £65,000 for implementation and adaptation of systems.				
2.2	**Are there direct beneficial impacts on air traffic control / management systems?** **If so, please provide details and how they have been addressed:**				☐ ☐ ☐ ☒
2.2.1	*Examples of benefits considered*	Not applicable	Qualitative	Quantified	Monetised

2.2.2	Reduced work-load	X			
2.2.3	Reduced complexity / risk	X			
2.2.4	Other (provide details)	X			
2.2.5	**Comments:**				
2.3	**Where monetised, what is the net monetised impact on air traffic control (in net present value) over the project period?** The net monetised impact is -£65,000 for the implementation of the change and adaptation of systems.				
2.4	**Are the direct impacts on air traffic management analysed accurately and proportionately?** Yes, the sponsor included a proportionate impact assessment for air traffic management/control. Due to the scalability of level 2C ACPs, the analysis is carried out qualitatively and quantitatively where possible for all impacts which is concluded to be proportional for this ACP.				☒ ☐ ☐ ☐

3. Changes in air traffic movements / projections					**Status**
3.1	**What is the impact of the ACP on the following and has it been addressed in the ACP proposal?**				☐ ☐ ☐ ☒
		Not applicable	Qualitative	Quantified	Monetised
3.1.1	Number of aircraft movements		X		
3.1.2	Type of aircraft movement		X		
3.1.3	Distance travelled		X		
3.1.4	Area flown over / affected	X			
3.1.5	Other impacts	X			
3.1.6	**Comments:** There will be no increase in movements because of this change; however, during the consultation the sponsor stated that <2 flights a day might fly the DET 1D SID, an RNP1 SID off runway 04, because of the LYD 5S/6R SIDs being removed. The DET 1D SID avoids Great Dunmow. Given that only 96 aircraft flew the LYD SIDs in 2019, less than 2 flights a day can be considered as negligible. There is no extra distance travelled as the DET SIDs are coincident with the LYD SIDs which are being removed.				

3.2	**Has the forecasting of traffic done reasonably using best available guidance (e.g. DfT WebTAG, the Green Book, Academic sources…etc?)** The proposed change is not expected to impact on traffic patterns or flight behaviour, including the number of flights, thus, no traffic forecasts were required to be submitted or considered as part of the assessment. The sponsor states that there will be '*no foreseeable change to capacity or tracks over the ground*', further stating that there will be '*no increase in the number of aircraft departing Stansted via LYD as a result of the ACP.*' The sponsor does note that this ACP introduces the possibility that aircraft currently flying a LYD 6R/5S departure could now be instructed to fly a DET 1D departure, a noise preferential route to avoid Great Dunmow. The sponsor illustrates that the centrelines of the conventional DET SIDs and the DET 1D SID are coincident and *'<2 flights a day on average*' could be instructed to fly a DET 1D departure, therefore this increase of aircraft using the DET 1D can be considered as negligible.	☐ ☐ ☐ ☒
3.3	**What is the impact of the above changes (3.1) on the following factors?** This ACP affects airspace design below 7,000 ft, however the sponsor states that this proposal '*will not lead to a change in the number of flights or flightpaths: lateral or vertical tracks of any aircraft routing currently flown'* and subsequently '*there is no expected impact on noise*'. This ACP has therefore been scaled as Level 2C as the proposal will not alter traffic patterns or flight behaviour below 7,000 ft, where the environmental impacts are consistent with the Altitude-Based Priorities in which CO_2 emissions were considered an environmental factor. It is anticipated that there will be a '*negligible impact*' to fuel efficiency and CO_2, however the overall effect is expected to be '*positive*' as aircraft will fly and flight plan a reduced distance of 21NM at 5,000 ft on the DET SIDs / extension of ATS Route M604. The sponsor states that the impact on CO_2 emissions cannot be calculated. As this is a Level 2C ACP and the anticipated impact to CO_2 emissions is expected to be positive, the qualitative assessment and explanation provided by the sponsor is adequate. The sponsor does note that this ACP introduces the possibility that aircraft currently flying a LYD 6R/5S departure could now be instructed to fly a DET 1D departure, a noise preferential route to avoid Great Dunmow. The sponsor illustrates that the centrelines of DET 1S and DET 1D SIDs are coincident and *'<2 flights a day on average*' could be instructed to fly a DET 1D departure, therefore this change can be considered as negligible. A high-level statement by the sponsor concludes that an assessment of the impacts upon noise, local air quality and tranquillity are not applicable as this ACP is a Level 2C change. As this ACP is not expected to *'lead to a change in the number of flights or flightpaths: lateral or vertical tracks of any aircraft routing currently flown'* this is an appropriate conclusion to reach and is proportional given the nature of the changes being made.	

		Not applicable	Qualitative	Quantified	Monetised
3.3.1	Noise	X			
3.3.2	Fuel Burn		X	N/A	N/A
3.3.3	CO2 Emissions		X	N/A	N/A
3.3.4	Operational complexities for users of airspace	X			
3.3.5	Number of air passengers / cargo	X			
3.3.6	Flight time savings / Delays	X			
3.3.7	Air Quality	X			
3.3.8	Tranquillity	X			

3.4 Are the traffic forecast and the associate impact analysed proportionately and accurately according to available guidelines (e.g. WebTAG or the Green Book?)

The sponsor has only provided the below current traffic numbers for 2019 and 2020 (Jan-Sep). According to the table, the sponsor explained that ,9% of aircraft flew over the DVOR in 2019 and the remaining were tactically vectored by air traffic control which demonstrates that most aircraft are tactically instructed to leave the SID by ATC prior to reaching LYD.

Year	Flight Planned Via LYD	Actually flew over LYD
2019	1,076	96
2020[1] (January - September)	504	15

Table 1: Flight details for Stansted Airport LYD departures

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It is stated in the Final Options Appraisal that some aircraft operators calculate fuel based on the flight plan. By removal of the SIDs and effectively reducing the 5,000ft level portion of the flight, aircraft will be able to plan to fly with less fuel

	which means the overall impact should be positive. The sponsor has not quantified the fuel burn impact because they indicated the actual fuel uplift was difficult to quantify. [redacted] The proposed change is not expected to impact on traffic patterns or flight behaviour, including the number of flights, thus, no traffic forecasts were required to be submitted or considered as part of the assessment. The sponsor states that there will be '*no foreseeable change to capacity or tracks over the ground*', further stating that there will be '*no increase in the number of aircraft departing Stansted via LYD as a result of the ACP.*' This ACP affects airspace design below 7,000 ft, however the sponsor states that this proposal '*will not lead to a change in the number of flights or flightpaths: lateral or vertical tracks of any aircraft routing currently flown'* and subsequently '*there is no expected impact on noise*'. This ACP has therefore been scaled as Level 2C as the proposal does not alter traffic patterns or flight behaviour below 7,000 ft, where the environmental impacts are consistent with the Altitude-Based Priorities in which CO_2 emissions were considered an environmental factor. It is anticipated that there will be a '*negligible impact*' to fuel efficiency and CO_2, however the overall effect is expected to be '*positive*' as aircraft will fly and flight plan a reduced distance of 21NM at 5,000 ft on the DET SIDs / extension of ATS Route M604. The sponsor states that the impact on CO_2 emissions cannot be calculated. As this is a Level 2C ACP and the anticipated impact to CO_2 emissions is expected to be positive, the qualitative assessment and explanation provided by the sponsor is adequate. A high-level statement by the sponsor concludes that an assessment of the impacts upon noise, local air quality and tranquillity are not applicable as this ACP is a Level 2C change. As this ACP is not expected to *'lead to a change in the number of flights or flightpaths: lateral or vertical tracks of any aircraft routing currently flown'* this is an appropriate conclusion to reach and is proportional given the nature of the changes being made.	
3.5	**What is the total monetised impact of 3.3? (Provide comments)** N/A	

4. Benefits of ACP					**Status**
4.1	**Does the ACP impact refer to the following groups and how they are impacted by the ACP?**				
		Not applicable	Qualitative	Quantified	Monetised
4.1.1	Air Passengers	X			
4.1.2	Air Cargo Users	X			

4.1.3	General aviation users		X	N/A	N/A
4.1.4	Airlines		X	N/A	N/A
4.1.5	Airports	X			
4.1.6	Local communities		X		
4.1.7	Wider Public / Economy		X	N/A	
4.1.8	**Comments:** The sponsor stated that removal of the LYD 6R/5S SIDs and use of DET SIDs extension of ATS Route M604 would provide fuel saving because the aircraft will be able to fly carrying less 'excess' fuel as a result of the extension. The sponsor states that there will be negligible impact on the local community as there will be no discernible changes, due to the DET SIDs being coincident with the LYD SIDs. In addition, once the DVOR is decommissioned it will lead to an annual saving of circa £10,000; this is currently planned for 2023. The proposal meets Design Principle (DP) 3; '*The proposed changes should minimise any changes to actual flight behaviours – laterally, vertically or in dispersal*' and DP 4; '*The proposed airspace change should minimise the impact on stakeholders, including ground-based stakeholders and other airspace users*.' As a result of this, the sponsor states that there will be a negligible impact on the local community.				

4.2	**How are the above groups impacted by the ACP, especially (but not exclusively) looking at the following factors: below:**	
4.2.1	Improved journey time for customers of air travel	N/A
4.2.2	Increase choice of frequency and destinations from airport	N/A
4.2.3	Reduced price due to additional competition because of new capacity	N/A
4.2.4	Wider economic benefits	Potentially less fuel carried for EGSS departures that route via LYD and therefore a positive overall impact on wider society.
4.2.5	Other impacts	N/A
4.2.6	**Comments:**	
4.3	**What is the overall monetised impacts associated with 4.1 and 4.2 the above?** N/A	
4.4	**What are the non-monetised but quantified impacts of the above? (Insert details of description)** N/A	

4.5	**What are the qualitative / strategic impacts described above?** The Sponsor stated the proposed technical flight planning change is necessary to remove the dependency on the LYD DVOR which is planned to be removed from service.
4.6	**What is the overall monetised benefits-costs ratio (BCR) of the policy? Is it more than 1?** N/A
4.7	**Have the sponsors provided reasonable justification for the proportionality of analysis above?** Yes, the sponsor stated the technical flight planning change will not have any impact on aircraft tracks over the ground. ☒ ☐ ☐ ☐
4.8	**If the BCR is less than 1, are the quantitative and qualitative strategic impacts proportional to the costs of the ACP?** N/A

5. Other aspects	
5.1	N/A

6. Summary of Assessment of Economic Impacts & Conclusions	
6.1	It is stated in the IOA that some aircraft operators calculate fuel based on the flight plan. By removal of the SIDs and effectively reducing the 5,000ft level portion of the flight, aircraft will be able to plan to fly with less fuel which means the overall impact should be positive. The minimum requirement for this scalable Level 2C change is the qualitative analysis around each costs and benefits which is completed by the sponsor in the Full and Final Options Appraisals. The technical flight planning change will not have any discernible impact to aircraft tracks over the ground and the objective of the change is to remove dependency on the LYD DVOR which is planned to be removed from service.

Outstanding issues?

Serial	Issue	Action required
1	-	-
2		

CAA Initial Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)	[redacted]	[redacted]	08/04/2021
Airspace Regulator (Environmental)	[redacted]	[redacted]	08/04/2021
Airspace Regulator (Technical)	[redacted]	[redacted]	01/04/2021
ATM – Inspector ATS (Ops)	[redacted]	[redacted]	26/03/2021