Removal of the Stansted LYD 6R/ 5S SIDs

CAP1616 Stages 1-3
Multi-Gateway Documentation

V1.0

NATS Uncontrolled

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Contents

1. Executive Summary

This submission proposes that an ATS route is created from DET VOR to LYD VOR to replace the final segment of the Stansted LYD 6R/5S Standard Instrument Departures (SIDs); and hence would allow the removal of these SIDs. The DET 1R/1S SIDs which follow exactly the same track to DET would be used instead. This is a technical flight planning change and will not have any impact on aircraft tracks over the ground. This change is necessary to remove the dependency on the LYD DVOR which is planned to be removed from service.

2. Introduction

This document continues the CAP1616 process started with the Statement of Need submitted in August 2020 (Ref 1). The intent of this document is to summarise and satisfy the requirements of CAP1616 Stages 1-3. The CAA reference is ACP-2020-066, the link to the CAA progress page is here.

Please read this document in conjunction with the redacted version of the Assessment Meeting Slide Pack (Ref 2) already supplied, as references are made to slide numbers in that document. This is the primary reference material for illustrations of the SID amendment in this multi-gateway document.

3. Summary of this Proposal

This submission is focussed on and limited to removing the London Stansted LYD 6R/5S SIDs in order to reduce dependency on the LYD DVOR. This will facilitate the eventual removal and decommissioning of the LYD DVOR, in support of the wider NERL DVOR programme of work.

As further outlined in Section 5 below, NATS' preferred option is to completely remove the Stansted LYD 6R/ 5S SIDs. There would be no gap in the ATS network from removing these SIDs, as flights can continue to use the Stansted DET 1R/ 1S SIDs which are coincident with the LYD SIDs as far as DET. Alongside using the two DET SIDs and as part of this submission, NATS is proposing to extend existing ATS route M604 from DET to LYD in order to replace the removed portion of the LYD SIDs which is not covered by the DET SIDs. Therefore, this proposal would not introduce any change to lateral or vertical tracks.

This submission will identify Design Principles on best to remove the existing dependency on the LYD DVOR; potential design options for this; an evaluation of the design options against Design Principles; and a consultation strategy. There would be no change in fuel/ CO_2/ greenhouse gas emissions due to this proposal, because there would be no change to flightpaths: lateral or vertical tracks.

The referenced version of the Assessment Meeting slide pack (Ref 2) should be read alongside this document. This proposal is targeting an implementation date of AIRAC 05/2021 (20/05/2021) however, this is dependent on other CAA priorities and may affect the Stage 5 decision being reached in time.

4. Stage 1 Define

Step 1A Assess requirement

4.1 The Statement of Need for this ACP was submitted on 26th August 2020 and a CAA Technical Regulator was allocated in September 2020.

4.2 The Assessment Meeting was held over Microsoft TEAMs on 5th October 2020. NATS provided a short presentation which covered the Statement of Need, background of the change, potential design options and provisional timescales (Ref 2). The justification and technicalities of the change were discussed. This was attended by representatives from NATS and the CAA, as listed in the Assessment Meeting notes (Ref 3).

4.3 Information subsequently supplied by NATS to the CAA, and uploaded to the portal in October 2020, included:

- The Assessment Meeting presentation slide pack redacted for publication (Ref 2);
- The Assessment Meeting Minutes redacted for publication (Ref 3).

4.4 This proposal is limited to the Stansted LYD 6R/ 5S SIDs and how best to remove their outstanding dependency on the LYD DVOR. This submission is proposing to remove these two LYD SIDs; utilise the existing Stansted DET SIDs and expand ATS route M604 so that current connectivity is maintained.

4.5 There are no other en-route flight procedures, airport-based procedures or ATS Routes under consideration as part of this proposal.

4.6 The CAA agreed that this proposal falls under the Airspace Change Process with a provisional level of 2C, subject to the outcome of the Define Gateway.

4.7 This proposal is targeting an implementation date of AIRAC 05/2021, 20th May 2021. This is one of the four major annual NAS builds which this proposal can be implemented in, because the proposed changes affect the NAS adaptation.

Step 1A complete

Step 1B Design Principles

4.8 This submission is proposing to remove the outstanding dependency on the LYD DVOR from the Stansted 6R/ 5S SIDs, in order to facilitate the eventual removal and decommissioning of the DVOR. The following four Design Principles will be applied to the three potential design options of:
doing nothing (baseline); RNAV replicating the Stansted 6R/ 5S SIDs; or removing the Stansted 6R/ 5S SIDs (NATS' preferred option).

- The *Design Principle 1 (DP1)* with an overriding priority is that the proposed airspace change must maintain or enhance the current level of safety. This Design Principle cannot be compromised in any way and has therefore been assigned a *High* priority.
- *Design Principle 2 (DP2):* remove Stansted Airport procedure dependencies on the LYD DVOR through appropriate and proportional design changes. This Design Principle is the driving objective behind this airspace change and has therefore been assigned a *High* priority.
- *Design Principle 3 (DP3):* the proposed changes should minimise any changes to actual flight behaviours – laterally, vertically or in dispersal. This Design Principle has been assigned a *Medium* priority as the primary objective of this airspace change could still be achieved even if flight behaviours were impacted. However, in recognition of the impact that flight behaviours can have on airspace and ground/ based stakeholders, this should be included as an important principle; met where possible.

- *Design Principle 4 (DP4):* the proposed airspace change should minimise the impact on stakeholders, including ground-based stakeholders and other airspace users. This Design Principle has been assigned a *Medium* priority as the primary objective of this airspace change could still be achieved even if stakeholders were impacted upon. However, in recognition of the importance to minimise negative impacts on airspace and ground/ based stakeholders, this should be included as an important principle; met where possible.

Design Principle (DP)	Priority
DP1: The proposed airspace change must maintain or enhance the current level of safety	High
DP2: Remove Stansted Airport procedure dependencies on the LYD DVOR through appropriate and proportional design changes	High
DP3: The proposed changes should minimise any changes to actual flight behaviours – laterally, vertically or in dispersal	Medium
DP4: The proposed airspace change should minimise the impact on stakeholders, including ground-based stakeholders and other airspace users	Medium

Step 1B complete

5. Stage 2 Develop and Assess

Step 2A Options development

5.1 The airspace change design options considered are limited to the following:

Option 0 – do nothing (baseline)

A visual representation of the current SIDs can be found on Slide 5 of the Assessment Meeting slides (Ref 2).

Option 1 – RNAV replication of the Stansted LYD 6R/ 5S SIDs

A visual representation of this design option can be found on Slide 7 of the Assessment Meeting slides (Ref 2).

Option 2 (preferred) – remove the Stansted LYD 6R/ 5S SIDs

A visual representation of this design option can be found on Slide 9 of the Assessment Meeting slides (Ref 2).

Further information on the current traffic flows and usage can also be found on Slide 10.

5.2 Option 0 – Do nothing (baseline)

Option 0			REJECT
Description of option: Retain the Stansted LYD 6R/ 5S SIDs unchanged from the current AIP definitions.			
Design Principle 1: The proposed airspace change must maintain or enhance the current level of safety			MET
Summary of qualitative assessment: No change from today; the level of safety is therefore maintained.			
Design Principle 2: Remove Stansted Airport procedure dependencies on the LYD DVOR through appropriate and proportional design changes	NOT MET		
Summary of qualitative assessment: No change from today therefore, the Stansted SID dependencies on the LYD DVOR would remain.			
Design Principle 3: The proposed changes should minimise any changes to actual flight behaviours – laterally, vertically or in dispersal			MET
Summary of qualitative assessment: No change from today therefore, no change in flight behaviours.			
Design Principle 4: The proposed changes should minimise the impact on stakeholders, including ground-based stakeholders and other airspace users			MET
Summary of qualitative assessment: No change from today therefore, no impact on stakeholders.			

5.3 Option 1 – RNAV replication of the Stansted LYD 6R/ 5S SIDs

Option 1			REJECT
Description of option: RNAV replication of the Stansted LYD 6R/ 5S SIDs			
Design Principle 1: The proposed airspace change must maintain or enhance the current level of safety			MET
Summary of qualitative assessment: The conventional SIDs would be replicated as RNAV procedures therefore, the level of safety would be maintained if not slightly improved, due to increased precision. No potential safety issues identified.			
Design Principle 2: Remove Stansted Airport procedure dependencies on the LYD DVOR through appropriate and proportional design changes			MET
Summary of qualitative assessment: RNAV replication of the conventional Stansted SIDs would remove the existing dependencies on the LYD DVOR.			
Design Principle 3: The proposed changes should minimise any changes to actual flight behaviours – laterally, vertically or in dispersal		PARTIAL	

Summary of qualitative assessment: The conventional SIDs would be RNAV replicated thus maintaining the lateral and vertical profiles as currently defined. However, there could potentially be a change in dispersal at low levels (below 7,000ft) as tracks become more concentrated due to RNAV replication.			
Design Principle 4: The proposed changes should minimise the impact on stakeholders, including ground-based stakeholders and other airspace users		PARTIAL	
Summary of qualitative assessment: RNAV replication of the two Stansted SIDs will have no impact on other airspace users. However, more concentrated low-level tracks could create a change in noise impact for ground-based stakeholders.			

5.4 Option 2 (NATS' preferred option) – remove the Stansted LYD 6R/ 5S SIDs

Option 2			ACCEPT & PROGRESS
Description of option: Remove the Stansted LYD 6R/ 5S SIDs and use existing DET SIDs/ extend ATS Route M604 to replace the removed SIDs			
Design Principle 1: The proposed airspace change must maintain or enhance the current level of safety			MET
Summary of qualitative assessment: There would be no gap created in the network from removing the two SIDs; identical connectivity would be provided by a combination of the existing DET SIDs and extension of ATS Route M604. No potential safety issues identified.			
Design Principle 2: Remove Stansted Airport procedure dependencies on the LYD DVOR through appropriate and proportional design changes			MET
Summary of qualitative assessment: Removing the two conventional Stansted SIDs would remove the existing dependencies on the LYD DVOR.			
Design Principle 3: The proposed changes should minimise any changes to actual flight behaviours – laterally, vertically or in dispersal			MET
Summary of qualitative assessment: The connectivity provided by the two LYD SIDs will still be available from the coincident DET SIDs (up to DET) and extension of existing ATS Route M604 south from DET to LYD. The traffic mix, usage and profiles will therefore remain the same as today; introducing no change to lateral or vertical tracks.			
Design Principle 4: The proposed changes should minimise the impact on stakeholders, including ground-based stakeholders and other airspace users			MET
Summary of qualitative assessment: Removal of the two Stansted SIDs will have no impact on other stakeholders. There would be a seamless interface between the DET SIDs and extension of M604 (at DET). Given that the DET SIDs end inside Controlled Airspace and this airspace is continuous to the ATS Route, there would be no issues from either a flight planning acceptance or Air Traffic Control perspective. The radar plots in the Assessment Meeting slides (Ref 2) and draft Consultation Document (Ref 5) show that most aircraft are tactically instructed to leave the LYD SIDs and that flights are well above FL70 by DET.			

Step 2A complete

Step 2B Options Development

5.5 Using the four Design Principles, we have evaluated the three concept options, as summarised above.

5.6 *Option 0: Do nothing (baseline)* - although this design option does not introduce any safety risks, any change in flight behaviours or any impact on stakeholders; it does not remove the dependency on the LYD DVOR which is the key objective behind this airspace change. **Rejected.**

5.7 *Option 1: RNAV replication of the Stansted LYD 6R/ 5S SIDs* – this design option would remove the dependency on the LYD DVOR (the main driver behind this airspace change) alongside offering safety/ precision benefits from RNAV replication. However, there could potentially be an increase in track concentration at low levels (below 7,000ft) and therefore a noise impact for ground-based stakeholders. Although this design option achieves the main objective, it has the potential to negatively impact stakeholders alongside requiring a lot more work to complete than the preferred option (Option 2). **Rejected.**

5.8 *Option 2 (preferred): Remove the Stansted LYD 6R/ 5S SIDs* – achieves the removal of the outstanding dependency on the LYD DVOR alongside introducing no safety risks, resulting in no change to flight behaviours and having no impact on other stakeholders. Whilst RNAV replication (Option 1) is a valid option which would achieve the main objective behind this change, the preferred option is also considered proportional to the low traffic levels and actual usage of the SIDs.
A demonstration of the low current usage was provided through traffic figures and radar plots for 2019, on Slide 10 in the Assessment Meeting slides (Ref 2) and in the draft Consultation Document (Ref 5). This clearly shows that very few departures actually use the LYD SIDs today, with the majority being tactically instructed to leave the SID by ATC before reaching LYD. For the month of June 2019, no aircraft flew over LYD at less than FL200. **Accepted and progressed.**

5.9 **Safety Assessment**: Option 2 would maintain the current level of safety and no additional potential safety issues have been identified. As discussed during the Assessment Meeting (Ref 3), there would be no potential interface issues between the Stansted DET SIDs and the extension of current ATS Route M604. The SIDs and the ATS Route would be contained within Controlled Airspace with no issues from either a flight planning acceptance or ATC perspective. Option 2 would also not require any procedural design work or subsequent review work from the CAA; the changes will be covered as minor AIP updates.

5.10 **Engagement Activities:** NATS began to engage with, and work alongside Stansted Airport on this airspace change prior to submitting the Statement of Need to the CAA. NATS and Stansted Airport acknowledged that the legacy dependencies on the LYD DVOR need to be removed and agreed that NATS would be an appropriate change sponsor for this airspace change, with Stansted supporting. Stansted Airport have communicated the planned change with their Noise and Track Working Group and key airline stakeholders. Evidence of engagement activities completed so far can be found in the referenced engagement evidence document (Ref 4).

Step 2B Options Appraisal (Phase 1 Initial)

5.11 Initial Options Appraisal for Design Option 2 (NATS' preferred option): *Remove the Stansted LYD 6R/ 5S SIDs*

Group	Impact	Level of Analysis	Evidence
Communities	Noise impact on health and quality of life	N/A	As there are no proposed changes to lateral or vertical tracks there will be no impact on noise or quality of life. The preferred design option proposes to remove the two Stansted 6R/ 5S LYD SIDs and replace the removed connectivity by using the existing Stansted 1R/ 1S DET SIDs and extending existing ATS Route M604 south from DET to LYD. There would be no change in noise or air quality impacts. NATS therefore contends that this proposal falls under the airspace change process as a Level 2C proposal; and does not require noise analysis.
Communities	Air quality	N/A	The Stansted DET 1R/ 1S SIDs are identical with the LYD 6R/ 5S SIDs – which this proposal will remove – up to DET, which cover aircraft from departure up to 5,000ft. Therefore, there would be no changes below 1,000ft.
Wider society	Greenhouse gas impact	Monetise and quantify	The proposed changes would introduce no changes to lateral or vertical tracks therefore, no change to environmental impact.
Wider society	Capacity/ resilience	Qualitative	No change from today

Group	Impact	Level of Analysis	Evidence
General Aviation	Access	N/A	No change from today
General Aviation/ commercial airlines	Economic impact from increased effective capacity	Quantify	No change from today
General Aviation/ commercial airlines	Fuel burn	Monetise	This SID Truncation is justified on the basis of fuel saving. The LYD SID will be truncated by 21nm. Currently for flight planning purposes, these portions are flight planned to be flown at 4,000ft; however, aircraft are invariably climbed to higher levels subject to the traffic scenario at the time. Some Aircraft Operators calculate fuel required based on the flight plan. By truncating the SID and effectively reducing the 4,000ft level portion of the flight, the calculated fuel required will be less. Hence after the SID has been truncated the aircraft will be able to fly carrying less 'excess' fuel. The overall effect will be positive, and no flights will be penalised as a result of the change.
Commercial airlines	Training cost	N/A	There would be no training required, controllers will simply state a different route/ SID than the current label.
Commercial airlines	Other costs	N/A	Updates to FMS and flight planning systems will be completed via the routine AIRAC updates. There are no other known costs which would be imposed on commercial aviation.
Airport/ Air navigation service provider	Infrastructure costs/benefit	Qualitative and quantitative	There will be a requirement for changes in the airport electronic systems and documentation, to capture the SIDs removal and make users aware of the replacement options. These changes will drive any cost requirement.
Airport/ Air navigation service provider	Operational costs	N/A	There would be no associated operational costs.
Airport/ Air navigation service provider	Deployment costs	Qualitative and quantitative	N/A – this change would be introduced via briefings and bulletins for staff, with no additional training or simulation training/costs required. As stated above, controllers will state a different route/ SID than currently used.

5.12 **Conclusion**: Option 2 meets all four the Design Principles. There would be no impact on safety, flight behaviours or stakeholder impact; whilst also ensuring minimal operational impact.

End of Step 2B

6. Stage 3 Consult

Steps 3A-3B

6.1 Consultation is an essential part of the airspace change process, defined in CAP1616 and regulated by the Civil Aviation Authority (CAA).

6.2 Consultation allows NATS to formally engage relevant stakeholders on the proposed airspace change, inform them of the benefits and impacts of our proposal and to acquire valuable feedback to inform our final proposal.

6.3 NATS' primary stakeholder for this airspace change is Stansted Airport. As covered above - and demonstrated within the engagement evidence (Ref 4) - NATS has been working closely with Stansted Airport throughout this change and will continue to do so until after submission of the ACP. Stansted Airport will require administrative updates to their AIP sections.

6.4 NATS' proposed consultation strategy – as presented in the Assessment Meeting (Ref 2) – is to complete a targeted 2-week consultation: *Monday 2nd November 2020 – Monday 16th November 2020*.
This will be targeted at key stakeholders:
Stansted Airport, Stansted ACC (Airport Consultative Committee), Stansted Airport EIG (Environmental Issues Group) and Stansted Airport FLOPSC (Flight Operations Performance & Safety Committee). These groups cover Stansted Airport's main stakeholders including local community representatives and airlines who operate from Stansted.
Relevant members of NATMAC (National Air Traffic Management Advisory Committee) will also be contacted, which encompasses the MoD, wider airline groups and QinetiQ.

6.5 The consultation material will be available on the CAA's Airspace Change Portal. Although the consultation will be targeted at key stakeholders, the information will be publicly available and responses from any individual/ organisation are welcome and will be considered.

6.6 NATS will provide stakeholders with a consultation document which will outline the need for an airspace change; the different design options; NATS' preferred option; anticipated impacts; and an explanation on how to respond to the consultation.

6.7 The proposed removal of the Stansted LYD SIDs will have minimal/no impact on other airspace users since identical connectivity will be provided by usage of the existing Stansted DET SIDs and extension of ATS Route M604. The AIP and UK SRD will be updated to reflect these changes and M604 between DET and LYD restricted for use by EGSS departures only via the UK RAD. The RAD will also limit the usage of M604 between DET & LYD to traffic going to only the same routes and destinations that the LYD SID would have served. Asides from this, there are no other anticipated impacts on airspace or ground-based stakeholders.

6.8 Full options appraisal: unchanged from the Stage 2 options appraisal above.

End of Steps 3A-3B

7. Summary

7.1 This document details NATS' intention to remove the Stansted 6R/ 5S SIDs and thus remove their dependency on the LYD DVOR. This supports the wider DVOR programme of work and will facilitate eventually the LYD DVOR being decommissioned and physically removed.

7.2 NATS have provided three design options for this airspace change:
Option 0: Do nothing (baseline)
Option 1: RNAV replicate the Stansted LYD 6R/ 5S SIDs
Option 2 (preferred): Remove the Stansted LYD 6R/ 5S SIDs

7.3 The preferred and planned design option (Option 2) proposes to remove the two Stansted 6R/ 5S SIDs and replace the removed connectivity by using the existing DET SIDs (up to DET) and extending existing ATS Route M604 south from DET to LYD.

7.4 The proposed connectivity would remain entirely unchanged due to the current Stansted DET SIDs – which are coincident with the LYD 6S/ 5R SIDs up to DET – and the proposed extension of ATS Route M604 from DET to LYD. Unchanged connectivity and unchanged routes will result in unchanged flight behaviour and ultimately no change to traffic patterns over the ground.

7.5 As covered in Section 6 above, NATS will consult on this proposal, with a limited group of stakeholders over a 2-week period (*02/11/20 – 16/11/20*).

7.6 The below table summarises the proposed changes to the LYD SIDs and ATS Route M604:

Current Route/ SID	Current connectivity	Proposed connectivity	Proposed change and impact
ATS Route M604 (RNAV5)	*INBOB - INPUT - … - FRANE - DET*	*INBOB - INPUT - … - FRANE - DET - LYD*	Extend M604 south from DET to LYD No impact to connectivity or predicted change to flight behaviour.
EGSS LYD 6R SID	(RWY 22): *NEPNA - DET - LYD*	N/A – to be removed	Withdraw the EGSS LYD 6R SID. Identical routeing would be provided by EGSS DET 1R SID (up to DET) and proposed extension of ATS Route M604. Therefore, no impact to connectivity or predicted change to flight behaviour.
EGSS LYD 5S SID	(RWY 04): *NEPNA - DET - LYD*	N/A – to be removed	Withdraw the EGSS LYD 5S SID. Identical routeing would be provided by EGSS DET 1S (up to DET) and proposed extension of ATS Route M604. Therefore, no impact to connectivity or predicted change to flight behaviour.

Table 1: Proposed changes

8. Annex A: References

Reference	Title
1	*EGSS LYD SIDs - Statement of Need V1* Link to portal
2	*EGSS LYD SIDs - Stage 1A Assessment Meeting Slides* Link to portal
3	*EGSS LYD SIDs – Stage 1A Assessment Meeting minutes (redacted)* Link to portal
4	Stages 1-3 Engagement Evidence (redacted) Link to portal
5	Draft Consultation Document Submitted to the CAA

End of document