

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 1 of 14

Title of Airspace Change Proposal	LAMP Phase 1a ACP – Luton & Northolt SID Switch – Module D
Change Sponsor	NERL
SARG Project Leader	██████████
Case Study commencement date	Issue 1 received 17 Feb 15. Commenced work after 3 Mar 15. Issue 2 received 19 Mar 15.
Case Study report as at	11 June 2015 (updated 27 Oct 15) V 1.2

Instructions

In providing a response for each question, please ensure that the 'Status' column is completed using the following options:

- Yes
- No
- Partially
- N/A

To aid the DAP Project Leader's efficient Project Management it may be useful that each question is also highlighted accordingly to illustrate what is resolved (Green), not resolved (Amber) or not compliant (Red) as part of the DAP Project Leader's efficient project management.

1.	Justification for change and "Option Analysis"	Status
1.1	Is the explanation of the proposed change clear and understood?	Yes

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 2 of 14

	<p>The proposal is to switch the Luton and Northolt DET SID departures over to the routing of the MATCH SID, joining existing ATS route Q295 as far as DAGGA, then at DAGGA, the departures will route via a new ATS route M85 which will be established routeing DAGGA-ITVIP (lower limit of FL85) where it will join existing routes to continental Europe.</p> <p>The actual SID switch does not constitute a traditional ACP submission as the MATCH SID is already an established routeing, however, the establishment of the new ATS route and its management warrants an ACP analysis.</p> <p>The revised routeing would be in operation H24. The DET SIDs are retained for use by positioning flights, but could still be used on a few occasions a year for flights routing to RINTI via Dover using L10 into French airspace should D138 complex be active above the normal limits which would preclude use of M85.</p>
1.2	<p>Are the reasons for the change stated and acceptable?</p> <p style="text-align: right;">Yes</p> <p>From the ACP Section 1, NATS advise that flights that currently depart Luton and Northolt Airports towards Kent (south east) are becoming more inefficient as the airspace they fly through becomes more congested. This proposal seeks to place most of these flights onto the existing eastbound departure flight paths, so that they may avoid the congestion; this would reduce the risk of delay, reduce fuel consumption and the amount of CO₂ generated.</p> <p>NATS advise that there would also be overall noise benefits since the aircraft would be able to climb more quickly on the MATCH routeing and people beneath the current departure route (south of BPK VOR) would be overflowed less; however, people beneath the eastbound departure route (the MATCH SID east of BPK VOR) would be overflowed more often.</p> <p>This change would also ensure that the Luton and Northolt operation fits into a wider LAMP Phase 1A programme of change to the use of airspace structures supporting airports in South East England. After initial ACP review, an amendment was added to the introduction:</p> <p>NATS believes that this part of the proposal is justified on the basis of the direct fuel and CO₂ benefits; however, it is also an enabler for the implementation of Point Merge at London City Airport. This is because the removal of extant SIDs from the DET routeing which are procedurally capped at 5000ft will enable the London City (LCY) departures to climb above the LCY arrivals which the proposal would reposition over the Thames Estuary (see Module C for details).</p> <p>In Section 2, NATS also advised that whilst this proposal has been designed so it could stand alone, it also forms part of the LAMP set of ACPs which will meet CAP725 requirements for the whole of the LAMP Phase 1A airspace development.</p>

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 3 of 14

	<p>The rationale is clear in that there are 2 reasons, the first to reduce fuel consumption and the amount of CO₂ generated. NATS then advise that there will be an overall noise benefit since the aircraft would be able to climb more quickly and people beneath the current departure route (south of BPK VOR) would be overflown less, but people beneath the eastbound departure route east of BPK VOR would actually be overflown more often, but this occurs where the departures are expected to be above 7000ft in the climb.</p> <p>The second, and more primary reason is that this proposal, along with the Stansted SID Switch, enables the revised design for LCY arrivals and departures to be implemented. As the impact of the change is above 7000ft, no specific consultation was initiated with environmental stakeholders (see ACP Section 6.7).</p> <p>Therefore the rationale for the change is clear in the ACP submission.</p>	
1.3	<p>Have all appropriate alternative options been considered, including the 'do nothing' option?</p> <p>The options were considered after extensive ATC simulation and included different positions to establish the point where the traffic turns south off Q295 onto the new ATS route. Options were discarded on the basis of controller inputs. The do nothing was considered; however, if this option was considered, it would preclude the CO₂ benefits being realised, but most significantly, if the SID switch cannot take place, the Phase 1A elements for the LCY changes cannot be implemented. The LCY changes rely on this SID switch being implemented as the SID switch enables Thames Radar to climb the LCY departures above the LCY arrivals flying the RNAV arrival transition. This is not currently possible due to the Luton, Northolt and Stansted SIDs routing to DET.</p>	Yes
1.4	<p>Is the justification for the selection of the proposed option sound and acceptable?</p> <p>The justification of this as a stand-alone proposal is acceptable given the fuel saving and CO₂ benefits to be realised (subject to ERCD assessment).</p> <p>The re-routing of the Luton and Northolt SIDs removes these flights from the southbound departure track of the LCY southbound departures and therefore the justification is appropriate, as otherwise, the LAMP Phase1A change could not be implemented.</p>	Yes
2.	Airspace Description and Operational Arrangements	Status
2.1	Is the type of proposed airspace clearly stated and understood?	Yes

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 4 of 14

	A re-routing of Luton and Northolt departing traffic onto the MATCH SID requires the establishment of a new ATS link route M85 routing from DAGGA-ITVIP, where the departures would join existing ATS routes. As the route alignment is through the lateral limits of Shoeburyness Danger Area complex (D138 normally active up to 13,000ft and occasionally 60,000ft by Notice to Airmen), the route will be a Conditional Route (CDR) 1 with a lower limit of FL 85. Note: the original ACP submission stated CDR2; following query from the SARG Case Officer (CO), this was amended to CDR1.	
2.2	Are the hours of operation of the airspace and any seasonal variations stated and acceptable?	Yes
	Re-routed SIDs are routed to DAGGA then ITVIP H24. The DET SIDs are still retained for use by positioning flights, but could still be used on a few occasions a year for flights routing to RINTI via Dover using L10 into French airspace should the D138 complex be active above the normal limits which would preclude use of M85.	
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?	Yes
	At MATCH, the departures join Q295 to DAGGA; the departures are then routed via a new Link route M85 to ITVIP (approx 13NM northwest of DVR VOR) where the departures will join ATS route (U)L10 for access to the European route network.	
2.4	Is the supporting statistical evidence relevant and acceptable?	Yes
	The traffic statistics were provided in the Bridging ACP at Section 4.2.	
2.5	Is the analysis of the impact of the traffic mix on complexity and workload of operations complete and satisfactory?	Yes
	The proposal has been subjected to real time development and validation simulation. NERL has advised that the workload on the CLN sectors is manageable, and that the traffic was successfully routed to ITVIP via the new Link Route. The ACP illustrates that traffic may be vectored off Q 295 at any point between MATCH and DAGGA which will vary depending on the position of the crossing inbound LTMA traffic. [REDACTED] did flag an issue regarding controller manpower when the sectors are busy. This is an ATM issue to be handled by NERL. The tactical usage is highlighted in the ACP Section 5.4 on page 12 with illustrations at Fig 5.	

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 5 of 14

2.6	<p>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?</p> <p>Although the alignment of the ATS Route M85 is through the Shoeburyness Danger Area complex, arrangements for FUA with existing routes aligned through the Danger Areas will be the same for M85 and are therefore provided for in the extant MoU with the Danger Area sponsor. The procedures for management of the CDR are highlighted in the ACP Section 5.2 page 11. If Danger Area activity precludes traffic using M85, a re-route via CLN and the new (U)M84 will become the flight planned route for the duration of danger area activity.</p>	Yes
2.7	<p>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 sponsor carried out to resolve any conflicting interests?</p> <p>[Comments]</p>	N/A
2.8	<p>Is the evidence that the Airspace Design is compliant with ICAO SARPs, Airspace Design & FUA regulations, and Eurocontrol Guidance satisfactory?</p> <p>The new link route is an RNAV 5 airway. Flexible use of airspace is provided for as outlined in 2.6 above and in the ACP Section 5.2.</p>	Yes
2.9	<p>Is the proposed airspace classification stated and justification for that classification acceptable?</p> <p>The airway M 85, is proposed within existing Class A up to FL195, and Class C above FL195; no new CAS is required.</p>	Yes
2.10	<p>Within the constraints of safety and efficiency, does the airspace classification permit access to as many classes of user as practicable?</p> <p>[Comments]</p>	N/A
2.11	<p>Is there assurance, as far as practicable, against unauthorised incursions? (This is usually done through the classification and promulgation)</p> <p>[Comments]</p>	N/A

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 6 of 14

2.12	<p>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?</p> <p>[Comments]</p>	N/A
2.13	<p>Are appropriate arrangements for transiting aircraft in place in accordance with stated commitments?</p> <p>[Comments]</p>	N/A
2.14	<p>Are any airspace user group's requirements not met?</p> <p>[Comments]</p>	N/A
2.15	<p>Is any delegation of ATS justified and acceptable? (If yes, refer to Delegated ATS Procedure).</p> <p>[Comments]</p>	N/A
2.16	<p>Is the airspace structure 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?</p> <p>The new airway is established within existing CAS.</p>	Yes
2.17	<p>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).</p> <p>The proposed ATS route is aligned through the D138 complex (Shoeburyness). In the main, traffic will be above the normal daily upper limits. When occasional danger area activity is NOTAMED up to the upper limit (max 60,000ft) (few times a year), the CDR 1 will be closed and traffic is rerouted via the newly established (U)M84. On this route, NATS controllers will still have to radar monitor flights to ensure they do not enter the danger area D138A (if active above FL105). SARG will issue a regulatory requirement for NATS to ensure this procedure is included in the relevant MATS Pt 2 entries.</p>	Yes
2.18	<p>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?</p> <p>Aircraft will be tactically separated from other traffic.</p>	Yes

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 7 of 14

2.19	<p>Is the airspace structure designed to ensure that adequate and appropriate terrain clearance can be readily applied within and adjacent to the proposed airspace?</p> <p>Lower limit of M 85 is FL 85</p>	Yes
2.20	<p>If the new structure lies close to another airspace structure or overlaps an associated airspace structure, have appropriate operating arrangements been agreed?</p> <p>The alignment of M85 through D138 complex will be made clear in the NATS / Shoeburyness MoU where extant FUA arrangements will also apply to CDR M85.</p>	Yes
2.21	<p>Where terminal and en-route structures adjoin, is the effective integration of departure and arrival routes achieved?</p> <p>The MATCH SID has connectivity with Q295 to DAGGA then M85 to ITVIP where it joins the existing route network.</p>	Yes
3.	Supporting Resources and CNS Infrastructure	Status
3.1	<p>Is the evidence of supporting CNS infrastructure together with availability and contingency procedures complete and acceptable? The following are to be satisfied:</p> <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 S&S Section? <p>[Comments]</p> <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? Eg. Navaids – has coverage assessment been made eg. a DEMETER report, and if so, is it satisfactory? <p>[Comments]</p> <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? 	<p>Yes</p> <p>Yes</p> <p>Not required</p>

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 8 of 14

	[Comments]
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	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 9 of 14

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?	Yes
	The re-routeing of departures can be managed with existing controller resource.	
4.	Maps/Charts/Diagrams	Status
4.1	Is a diagram of the proposed airspace included in the proposal, clearly showing the dimensions and WGS84 co-ordinates? (We would expect sponsors to include clear maps and diagrams of the proposed airspace structure(s) – they do not have to accord with AC&D aeronautical cartographical standards (see CAP725), rather they should be clear and unambiguous and reflect precisely the narrative descriptions of the proposals. AC&D work would relate to regulatory consultation charts only).	Yes
	The ATS route M85 is aligned within existing CAS.	
4.2	Do the charts clearly indicate the proposed airspace change?	Yes
	See ACP Section 5.1 page 10 Fig 4.	
4.3	Has the Change Sponsor identified AIP pages affected by the Change Proposal and provided a draft amendment?	Yes
	Route details for M85 have been provided and verified by SARG Mapping (confirmed 11 Jun 15).	
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 GAT, on OAT or on VFR general aviation traffic flow in or through the area.	
	Traffic can be adequately managed and integrated with all other routes in the south east.	
	b) Impact on VFR Routes.	N/A
	[Comments]	
	c) Consequential effects on procedures and capacity, ie on SIDS, STARS, holds. Details of existing or planned routes and holds.	Yes

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 10 of 14

	The re-routed SIDs can be managed on the MATCH SID routeing and integrated with all other routes in the south east which adds 8NM to the routeing compared with the DVR SID; however, this is offset by the benefits realised with the improved climb performance.	
	d) Impact on Airfields and other specific activities within or adjacent to the proposed airspace.	N/A
	[Comments]	
	e) Any flight planning restrictions and/or route requirements.	Yes
	The re-route is applicable H24, although the DET SIDs are still retained for use by positioning flights, but could still be used on a few occasions a year for flights routing to RINTI via Dover using L10 into French airspace should the D138 complex be active above the normal limits which would preclude use of M85. Restrictions will be detailed in the Standard Route Document / Route Availability Document.	
5.2	Does the Change Sponsor Consultation letter reflect the likely operational impact of the change?	Yes
	The re-route has been made clear to aviation stakeholders	
6.	Economic Impact	Status
6.1	Is a provisional economic impact assessment to all categories of operations and users likely to be affected by the change included and acceptable? (This may include any forecast capacity gains and the cost of any resultant additional track mileage).	N/A
	Not required.	

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 11 of 14

Case Study Conclusions – To be completed by DAP Project Leader	Yes/No
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Has the Change Sponsor met the DAP Airspace Change Proposal requirements and Airspace Regulatory requirements above?	Yes
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FUA arrangements for M85 will be agreed on the same lines as for those routes currently aligned through Shoeburyness danger areas.

This Module D of the LAMP ACP is an enabler for the LAMP Phase 1A change; the re-routed traffic now flight planning via the MATCH SID will be managed by ATC and integrated with other traffic en-route to ITVIP. The establishment of M85 is therefore satisfactory regarding integration with all other routes with the caveat that radar monitoring will be required when traffic is rerouted onto M84 via CLN when the infrequent activation of D138A is promulgated.

It is therefore essential that this module is approved.

Outstanding Issues

Serial	Issue	Action Required
1	Shoeburyness MoU	Amendments to be completed prior to implementation.

Additional Compliance Requirements (to be satisfied by Change Sponsor)

Serial	Requirement
1	NERL is to ensure that Radar Monitoring requirements for (UM)84 are detailed in the appropriate sections of the London Terminal Control and London Area Control MATS Part 2 (as per Module A).

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 12 of 14

Recommendations	Yes/No
Is the approval of the SoS for Transport required in respect of the Environmental Impact of the airspace change?	No
[Comments]	
Is the approval of the MoD required in respect of National Security issues surrounding the airspace change?	Yes
The MOD (DAATM) has agreed to the proposed routeing through the Shoeburyness Danger Area complex which will be managed through existing FUA arrangements.	
General Summary	
<p>From an operational point of view, the re-routeing of the DET SID is essential to enable the LAMP Phase 1A design for LCY to be implemented. The procedures have been tested in development simulations, and subsequent validation simulations. The re-routeing results in an extra 8NM track miles. The extra track miles is nevertheless offset by the CO₂ benefits realised by the improved climb profile on the MATCH SID which is not possible via the SIDs to DET.</p> <p>The rationale supporting the stand alone justification is acceptable from a CO₂ view point based on the forecast figures supplied; however, the environmental impacts of the re-route are detailed in the environmental assessment from ERCD.</p>	
Comments	

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 13 of 14

Observations			
Operational Assessment Sign-off/Approvals			
	Name	Signature	Date
Operational Assessment completed by (SARG AR Project Leader)			15 June 2015
Operational Assessment approved by (Head of Section)			
Case Study Sign-off/Approvals			
	Name	Signature	Date
Case Study Assessment Conclusions approved by (Head AAA)			

	Safety and Airspace Regulation Group	DAP 1C
Doc Type:	Annex C	Version: 1/2012
Title:	Airspace Change Proposal Operational Assessment	Page 14 of 14

SARG Group Director Comment/Approval

Approved subject to conditions.

Name <i>Simon</i>	Signature 	Date 16 Oct 15
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