

CAA CAP 1616 Options Appraisal Assessment (Phase I Initial)

Title of Airspace Change Proposal:	London Airspace Management Programme (LAMP) Deployment 2, 3 & 4		
Change Sponsor:	NERL		
ACP Project Ref Number:	ACP-2020-043, ACP-2020-044, ACP-2020-045		
Case study commencement date:	02/03/2023	Case study report as at:	05/06/2023

Account Manager: [REDACTED]	[REDACTED]	Airspace Regulator (Engagement & Consultation): [REDACTED]	[REDACTED]	IFP: [REDACTED]	[REDACTED]	OGC [REDACTED]	[REDACTED]
Airspace Regulator (Technical): [REDACTED]	[REDACTED]	Airspace Regulator (Environmental): [REDACTED]	[REDACTED]	Airspace Regulator (Economist): [REDACTED]	[REDACTED]	ATM (Inspector ATS Ops): [REDACTED]	[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 impact of the options (including Do Nothing (DN) / Do Minimum (DM))		Status
1.1	Are the outcomes of the Initial Options Appraisal (IOA) (Phase I) clearly outlined in the proposal?	
1.1.1	Has the change sponsor completed an Initial Options Appraisal? [E12]	Yes. The Sponsor has included an Initial Options Appraisal in Table 10 of each airport's Stage 2 submission
1.1.2	Does the Initial Options Appraisal include: - a comprehensive list of viable options; - a clear description of the baseline scenario; - an indication of the environmental impacts; - a high-level assessment of costs and benefit involved	<p>The Master document lists the possible options for arrival structure in paragraph 5.1. Figure 4 of each airport module contains a matrix of the viable options. Section 3 of the Master document, and corresponding sections within each of the Airport documents contain a clear description of the baseline scenario, which is identical to the Do Nothing scenario.</p> <p>The environmental impacts of each option are set out in each Table 10.</p> <p>Section 3.5 contains high level assessments of the costs and benefit for each option in separate tables.</p> <p>The sponsor has presented a radar traffic density/heat map for arrival and departure traffic flows between FL70-FL245 based on data collected during 5-11 August 2019 for the LTMA. A map of lower ATS route structures within the LTMA has also been provided. Arrival heat maps with proportions of traffic flows have also been presented in the individual airport modules. These are accompanied by a map of current-day SIDs, STARs and holds. Traffic density maps for Luton (24 Feb – 31 Aug 2022) and Northolt (1 Jan – 21 Aug 2022) are based on other dates due to specific local circumstances.</p> <p>The sponsor has also presented traffic figures (arrivals, departures and total movements) sourced from Central Flow Management Unit (CFMU) data for 2019 to 2022 for all 12 airports. The predominant aircraft types and operators have also been identified. The sponsor has</p>

		also accounted for traffic operating at other LTMA airports and overflights.	
1.1.3	Has the sponsor stated on what criteria the comprehensive list of viable options has been assessed?	Section 3.5 states the criteria used to assess the options.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.4	Where options have been discounted as part of the IOA exercise, does the change sponsor clearly set out why?	The Sponsor marks in red each time an option fails an assessment of one of the criteria, and notes which option is rejected. It could be clearer on which options for rejection are critical in the decision, and which are less important.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.5	Has the change sponsor indicated their preferred option(s) as a result of the IOA (Phase I - Initial)? [E12]	No. The Sponsor states that: "there is not yet enough detailed quantified data to make a statement on preferred option(s). Compromises and trade-offs may be necessary between airports taking part in the FASI regional airspace change. Appropriate quantitative assessments and trade-offs will be carried out as part of Stage 3 to allow a preferred option to be selected prior to consultation."	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
1.1.6	Does the IOA (Phase I - Initial) detail what evidence the change sponsor will collect, and how, to fill in any evidence gaps and how this will be used to develop the Options Appraisal (Phase II - Full)?	According to the Sponsor: "Appropriate quantitative assessments and trade-offs will be carried out as part of Stage 3 to allow a preferred option to be selected prior to consultation." This is very vague and should be clarified. In terms of environmental assessments, the sponsor states that quantitative analysis of en-route network fuel burn and emissions will be done at Stage 3 based on BADA and fast time simulations. The sponsor notes that NERL does not intend to "Produce noise analyses (unless related to ATS route changes below 7,000 ft and not within the scope of one of the FASI associated airport ACPs)." The sponsor has also identified AONBs and NPs within the LTMA limits and has stated that "Should it transpire that an option will impact on an AONB/NP below 7,000ft, the relevant stakeholder(s) will be informed and engaged with."	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.7	Does the plan for evidence gathering cover all reasonable impacts of the change? [E12]	It is impossible to say whether all reasonable impacts of the change are covered, as the plan is so vague.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

2. Impacts of the proposed airspace change					Status
2.1	Are there direct impacts on the following:				<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2.1.1	<i>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) – No reasonable costs that one would expect to consider, at this stage, have been omitted.</i>				
2.1.2	Airport/ANSPs	Not applicable	Qualitative	Quantified	Monetised
	- Infrastructure		X		
	- Operation		X		
	- Deployment		X		
2.1.3	- Other(s)				
	Commercial Airlines/General Aviation	Not applicable	Qualitative	Quantified	Monetised
	- Training		X		
	- Economic impact from increased effective capacity		X		
2.1.4	- Fuel burn		X		
	- Other(s)		X		
	General Aviation	Not applicable	Qualitative	Quantified	Monetised
2.1.5	- Access		X		
	Military	Not applicable	Qualitative	Quantified	Monetised
2.1.6		X			
	Wider society, i.e., wider economic benefits, capacity resilience	Not applicable	Qualitative	Quantified	Monetised
	Greenhouse gas		X		

	Capacity/resilience		X		
2.1.7	Other (provide details)	Not applicable	Qualitative	Quantified	Monetised
	Communities – air quality		X		
	Communities – noise impact on health and quality of life		X		
2.2	<p>Are there direct beneficial impacts on air traffic control / management systems? Provide details.</p> <p>The Hybrid Systemisation would: ‘...enable the flexibility to access routes separated by design, leading to increased capacity and resilience to disruption. Also, as traffic levels increase, this capacity improvement would reduce the frequency of delays compared with the baseline. This option would therefore yield a capacity and resilience improvement over the baseline.’</p> <p>There are high level qualitative statements regarding the overall impacts of the airport arrival structure options some, at least maintain the current ‘...delay absorption, disruption recovery, access to other users, airport capacity, network capacity, and ATCO workload’. Some describe disbenefits, such as ‘increase to ATCO workload’. Until the overall design options are considered holistically the descriptions given are acceptable at this stage.</p>				<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2.3	<p>Where impacts have been monetised, what is the overall value (expressed in net present value (NPV)) of the project?</p> <p>N/A</p>				
2.4	<p>Has the sponsor provided an accurate and proportionate assessment of the proposed airspace change impacts?</p> <p>The Sponsor has provided brief qualitative assessments of the proposal. It states that appropriate quantitative assessments and trade-offs will be carried out as part of Stage 3 to allow a preferred option to be selected prior to consultation. However, this statement is lacking in detail.</p>				<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

3. Changes in air traffic movements and projections				Status
3.1	If the proposed airspace change has an impact on the following factors, have they been addressed in the proposal?			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		Not applicable	Qualitative	Quantified/ Monetised
3.1.1	Number of aircraft movements	X		

3.1.2	Number of air passengers / cargo	X			
3.1.3	Type of aircraft movements (i.e., fleet mix)	X			
3.1.4	Distance travelled		X		
3.1.5	Operational complexities for users of airspace	X			
3.1.6	Flight time savings / Delays		X		
3.1.7	Other impacts	X			
	Comments: The airport modules contain single sentence, qualitative impact assessments for each of the criteria listed above.				
3.2	<ul style="list-style-type: none"> Has the sponsor used the most up-to-date, credible and clearly referenced source of data to develop the 10 years traffic forecast and considered the available guidelines (i.e., the Green Book and TAG models) in a proportionate and accurate manner? [B11 and E11] Has the sponsor explained the methodology adopted to reach its input and analysis results? [B11 and E11] <p>The sponsor has presented historic traffic data from 2019 to 2022 based on CFMU data and a network traffic forecast from 2023 to 2037, with 2027 set as the first implementation year. The forecast figures are based on Eurocontrol's STATFOR October 2022 base forecast until 2027 with a long-term average growth rate of 1.9% used to extend the forecast from 2028 until 2037.</p> <p>The general fleet mix of aircraft operating within the LTMA and major current traffic flows and route orientations into and out of the LTMA are assumed to remain unchanged over the forecast period as compared to the baseline. The sponsor also acknowledges that traffic data presented in this ACP might differ from local airport data due to differences in sources (flight plans, actual flights). The sponsor also states that traffic forecasts for each deployment phase and area will be developed separately at Stage 3 along with the distribution of LTMA traffic growth between competing airports.</p>		<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
3.3	<p>Has the sponsor developed an assessment of the following environmental aspects?</p> <p>The sponsor has qualitatively assessed the impact on GHG emissions as potential occurrence of other environmental impacts below 7,000 ft. due to this ACP are currently unknown. Impacts below 7,000 ft. have therefore not been considered at this stage, however, should consequential impacts below 7,000 ft. be identified as design options mature, these will be assessed accordingly at Stage 3.</p>		<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
		Not applicable	Qualitative	Quantified	Monetised

3.3.1	Noise	X			
3.3.2	Operational diagrams	X			
3.3.3	Overflight	X			
3.3.4	CO2 emissions		X		
3.3.5	Local air quality	X			
3.3.6	Tranquillity	X			
3.3.7	Biodiversity	X			
3.4	What is the monetised impact (i.e., Net Present Value (NPV)) of 3.3? (Provide comments) Not provided.				

4. Economic Indicators of the ACP		Status
4.1	What are the qualitative / strategic impacts described in the ACP? The main impact seems to be shortening of routes and reduction of delays due to simplification of the airspace. There are minor changes to other stakeholders, such as the need for retraining for ANSP personnel.	
4.2	What is the overall monetised and non-monetised (quantified) impact of the proposed airspace change? N/A	
4.3	What is the Net Present Value of the proposed options? Has the sponsor used this information to progress/discount options? Has the sponsor provided the benefits-costs ratio (BCR) of the proposed options and used it to support the choice of the preferred options? [E44] N/A	
4.3.1	If the preferred option does not have the highest NPV or BCR, then has the sponsor justified the reasons to progress this option? [B50 and E23] N/A	
4.4	Have the sponsors provided reasonable justification for the proportionality of analysis above? No, the sponsors should provide more justification for the proportionality of the analysis provide.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

5. Other aspects	
5.1	N/A

6. Summary of the Initial Options Appraisal & Conclusions	
6.1	<p>Could be much clearer on the evidence gathering and sources used.</p> <p>The Sponsor has produced an improved and more detailed evidence gathering plan.</p>

Outstanding issues		
Serial	Issue	Action required
1	No plan for evidence gathering	<p>Provide plan for evidence gathering for Stage 3.</p> <p>The Sponsor has produced an improved and more detailed evidence gathering plan.</p> <p>05/06/2023: The Change Sponsor has satisfactorily addressed this post gateway action</p>
2	Lack of justification for proportionality of analysis	<p>Provide such justification</p> <p>05/06/2023: The Change Sponsor has satisfactorily addressed this post gateway action</p>

CAA Initial Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)	[REDACTED]	[REDACTED]	25/05/2023
Airspace Regulator (Environmental)	[REDACTED]	[REDACTED]	24/05/2023