



## CAA CAP 1616 Options Appraisal Assessment (Phase III Final)

<b>Title of Airspace Change Proposal:</b>	Future Combat Airspace for Military Collective Training		
<b>Change Sponsor:</b>	MOD		
<b>ACP Project Ref Number:</b>	ACP-2020-026		
<b>Case study commencement date:</b>	01/08/2023	<b>Case study report as at:</b>	01/11/2023

<b>Account Manager:</b> [REDACTED]	[Grey]	<b>Airspace Regulator (Engagement &amp; Consultation):</b> [REDACTED]	[Yellow]	<b>IFP:</b> N/A	[Yellow]	<b>OGC:</b> Nil	[Dark Blue]
<b>Airspace Regulator (Technical):</b> [REDACTED]	[Green]	<b>Airspace Regulator (Environmental):</b> [REDACTED]	[Purple]	<b>Airspace Regulator (Economist):</b> [REDACTED]	[Light Blue]	<b>ATM (Inspector ATS Ops):</b> [REDACTED]	[Red]

<p><b>Instructions</b></p> <p>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:</p> <p style="text-align: center;"> <span style="background-color: green; padding: 2px;">Resolved - GREEN</span>                 <span style="background-color: yellow; padding: 2px;">Not Resolved – AMBER</span>                 <span style="background-color: red; padding: 2px;">Not Compliant – RED</span>                 <span style="background-color: grey; padding: 2px;">Not Applicable - GREY</span> </p>
<p><b>Guidance</b></p> <p>The broad principle of economic impact analysis is <b>proportionality</b>; 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.</p>

1. Background – Identifying the Do Nothing (DN) /Do Minimum (DM) scenarios		Status
1.1	<p><b>Are the outcomes of DN/DM scenarios clearly outlined in the proposal?</b></p> <p>The ‘do-nothing’ option is described for use as a baseline which informs the Department for Transport’s Transport Analysis Guidance (TAG) quantitative data. It is described in the table following paragraph 1.2.2: “Keep everything as it is currently, continue to use existing MDAs. Large Force Exercises will take place but continue to use existing MDAs”.</p>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.1	<p>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 3 formal consultation with stakeholders? [E24]</p> <p>Yes, the Sponsor has provided a “STAGE 4A, Update Design Options Appraisal (Phase III - Final)”.</p>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

2. Impacts of the proposed airspace change		Status			
2.1	<p><b>Are there direct impacts on the following?</b></p>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
2.1.1	<p><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)</i></p>				
2.1.2	Airport/ANSPs	Not Applicable	Qualitative	Quantified	Monetised
	- Infrastructure	X			
	- Operation		X		
	- Deployment			X	X
	- Other(s)	X			
2.1.3	Commercial Airlines/General Aviation	Not Applicable	Qualitative	Quantified	Monetised
	- Training	X			
	- Economic impact from increased effective capacity			X	
	- Fuel burn				X

	- Other(s)	X			
2.1.4	General Aviation	Not Applicable	Qualitative	Quantified	Monetised
	- Access		X		
2.1.5	Military	Not Applicable	Qualitative	Quantified	Monetised
		X			
2.1.6	Wider Society, i.e., wider economic benefits, capacity resilience	Not Applicable	Qualitative	Quantified	Monetised
	- Noise impact on health and quality of life		X		
	- Air quality	X			
	- Greenhouse gas impact			X	X
2.1.7	Other (provide details)	Not Applicable	Qualitative	Quantified	Monetised
2.2	<b>Are there direct beneficial impacts on air traffic control / management systems? Provide details.</b>			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
2.3	<b>Where impacts have been monetised, what is the overall value (expressed in net present value (NPV)) of the project?</b> The NPV of ANSP costs is given in Appendix C as approximately £170k/year for 6 years, or around £1 million. The Sponsor refers to these as "Rough order of magnitude costs that have been obtained from a number of stakeholders".				
2.4	<b>Are the direct impacts on air traffic management analysed accurately and proportionately?</b>			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
	The direct impacts are analysed proportionately. The deployment impacts are quantified and monetised, while the operational costs are analysed qualitatively. There is no analysis of infrastructure costs, as the Sponsor deems these not applicable to this ACP.				

3. Changes in air traffic movements / 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		
3.1.8	<p><b>Comments:</b></p> <p>In assessing the impact on traffic from the airports, the Sponsor stated that it is difficult to quantify this with any degree of certainty.</p>			
3.2	<p>- 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 best available guidelines (e.g. the Green Book and TAG models?) in a proportionate and accurate manner? [B11 and E11]</p> <p>The sponsor yet to update the tCO2e input data in the TAG worksheets to reflect 55 activations. They were claiming 32 activations in Stage 3, which they updated to 55 in Stage 4, but failed to change the values in TAG. The CAA's economic assessment at the moment quotes values from TAG that are based on 32 activations. However, when the sponsor has updated its TAG values, it could be appropriate for the CAA's assessment to be updated.</p> <p>The traffic forecast for the quantitative Environmental Impact Assessment (NATS Analytics) (Appendix A) was developed using Eurocontrol's October 2021 STATFOR forecast and NATS forecast when STATFOR was not available, to estimate the annual impact to 2033 (10 years post deployment). Detail taken from Medium-term forecasts was presented to show the relative difference between the high/base/low scenario in terms of flight growth.</p> <p>- Has the sponsor explained the methodology adopted to reach its input and analysis results? [B11 and E11]</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"/>

	The maximum number of impacted flights per annum were estimated using Eurocontrol's October 2021 STATFOR forecast and NATS forecast when STATFOR was not available, to estimate the annual impact to 2033 (10 years post deployment). A traffic forecast for GA activities has not been provided. However, the Sponsor concludes that this ACP is unlikely to impact GA activities, and therefore, the CAA agrees that there is no requirement to develop this specific traffic forecast.																																									
<b>3.3</b>	<b>Has the sponsor developed an assessment of the following environmental aspects?</b>																																									
	<p>The Sponsor has presented a rationale and supporting evidence to conclude that there is no material change in traffic patterns of other airspace users below 7,000 ft. that are caused as a result of this ACP, which the CAA accepts. Therefore, despite being scaled as a Level M1 change, ground based environmental impacts below 7,000 ft. (noise, local air quality, tranquillity and biodiversity) have been scoped out of the environmental assessment.</p> <p>In terms of CO2 emissions, the Sponsor has presented a quantitative assessment of fuel burn and CO2 emissions using DfT's TAG, including annual totals and on a per flight basis which indicate a positive impact on CO2 emissions (i.e., savings) within the London/Scottish FIR boundaries. As this ACP is unlikely to impact GA activities, consequential impacts on CO2 emissions resulting from any such change in GA activities have been excluded from the CO2 assessment.</p>																																									
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<b>3.4</b>	<b>What is the monetised impact (i.e., Net Present Value (NPV)) of 3.3? (Provide comments)</b>																																									
	According to the TAG spreadsheet provided, the central case NPV of the environmental impact is £684k, with a higher band of £1.25m and a lower band of £417k. This is a reduction in fuel burned, meaning that the NPV is positive/favourable.																																									

<b>4. Economic Indicators of the ACP</b>	<b>Status</b>
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4.1	<p><b>What are the qualitative / strategic impacts described in the ACP?</b></p> <ul style="list-style-type: none"> <li>- Noise: This proposal has the base of the Danger Area at FL85, this has been designed in order to reduce any noise impact from participating military aircraft, the Sponsor would also like to emphasise that the majority of the Danger Area is positioned over the high seas area in order to reduce any possible noise impact. As exercise participants proceed towards the exercise area, they will normally be configured in such a way to be not below FL85, therefore minimising any noise impact. On secondary impacts, there were no quantitative responses indicating that there will be any change resulting from this proposal. It is possible that some routes will be affected, the distance between the proposed Danger Area and those airports affected is great enough that standard arrival and departure profiles can still be flown within existing controlled airspace structures. In accordance with the requirements laid down in CAP2091, the sponsor anticipates no or negligible change to the noise effects on the ground.</li> <li>- Capacity: Given the forecast reduction in track mileage it is anticipated that greater capacity within the network can be achieved.</li> <li>- Distance flown: trial data has suggested that there may be a benefit in terms of reduced track distance for aircraft that cross the UK. In addition proposed enhanced Airspace Management may increase the availability of routes along the East coast. Modelling using STATFOR and NATS forecasts indicate that in 2023, 6820 transit aircraft can take advantage of a shorter route</li> <li>- Operational costs: Once established through Deployment costs the Sponsor offers that there would be no longer term Operational Cost associated with the operation of the Danger Area.</li> </ul>	
4.2	<p><b>What is the overall monetised and non-monetised (quantified) impact of the proposed airspace change?</b></p> <p>Lower carbon emissions of £684k against around £1 million in ANSP costs mean a net impact of approximately £300k.</p>	
4.3	<p><b>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]</b></p> <p>Lower carbon emissions of £684k against around £1 million in ANSP costs mean a net impact of approximately £300k. There is no evidence that the Sponsor has used the BCR to support the choice of the preferred options as there is only one option proposed.</p>	
4.3.1	<p><b>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]</b></p> <p>N/A</p>	
4.4	<p><b>Have the sponsors provided reasonable justification for the proportionality of analysis above?</b></p>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

**5. Other aspects**

5.1	N/A
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**6. Summary of the Final Options Appraisal & Conclusions**

**6.1** Overall the analysis is proportionate given that only one option is considered besides the Do Nothing option which seems untenable. The Change Sponsor proposes that since the impact on other airspace users is assessed to be low and that there are benefits to the environment; further attempts to provide quantified or monetised analysis would be disproportionate and provide little if any additional clarity for Stakeholders. This seems a reasonable argument.

**Outstanding issues?**

Serial	Issue	Action required
1	TAG values not reflective of the number of activations	Update TAG values to reflect number of activations (55 not 32).
2		

CAA Final Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)	[REDACTED]	[REDACTED]	27/11/2023
Airspace Regulator (Environmental)	[REDACTED]	[REDACTED]	24/11/2023