

CAA CAP 1616 Options Appraisal Assessment (Phase II Full)

Title of Airspace Change Proposal:	Enabling RPAS Ops from RAF Fairford – HALE		
Change Sponsor:	Ministry of Defence		
ACP Project Ref Number:	ACP-2021-078		
Case study commencement date:	15/09/2023	Case study report as at:	11/10/2023

Account Manager: [REDACTED]	[GREY]	Airspace Regulator (Engagement & Consultation): [REDACTED]	[YELLOW]	IFP: [REDACTED]	[ORANGE]	OGC: [REDACTED]	[NAVY BLUE]
Airspace Regulator (Technical): [REDACTED]	[GREEN]	Airspace Regulator (Environmental): [REDACTED]	[PURPLE]	Airspace Regulator (Economist): [REDACTED]	[LIGHT BLUE]	ATM (Inspector ATS Ops):	[RED]

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

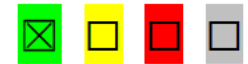
The broad principle of economic impact analysis is **proportionality**; is the level of analysis involved proportionate to the likely impact from that ACP. There are three broad levels of economic analysis; qualitative discussion, quantified through metrics, and monetised in £ terms. The more significant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

1. Background – Identifying the impact of the shortlist of options (including Do Nothing (DN) / Do Minimum (DM))		Status
1.1	Are the outcomes of DN/DM and DS scenarios clearly outlined in the proposal?	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.1	Has the change sponsor produced an Options Appraisal (Phase II - Full) which sets out how Initial appraisal is developed into a more detailed quantitative assessment, moving from qualitatively defined shortlist options to the selected preferred option? [E23]	Yes, the sponsor has provided a 29 page Full Options Appraisal that sets out their preferred option, which has been refined after consultation, performs against the baseline. This includes a quantitative analysis of carbon emissions, with the associated TAG workbook provided.
1.1.2	Does each shortlist option include the impacts in comparison to the 'do nothing / do minimum' option, in particular: -all reasonable costs and benefits quantified -all other costs and benefits described qualitatively -reasons why costs and benefits have not been quantified	The sponsor has quantified the impact on carbon emissions from their preferred option, with a Net Present Value of -£2.6m. As this airspace change is expected to have no to minimal impacts below 7,000ft, it was not necessary to quantify other environmental impacts such as noise and air quality. The calculations for this NPV figure have been set out in a TAG Greenhouse Gases workbook provided by the sponsor, with the relevant outputs in Annex B of the FOA. All other costs and benefits have been set out in a table in Section 4 in the FOA document.
1.1.3	Where options have been discounted, does the change sponsor clearly set out why?	No options have been discounted, as only one option was progressed to the Full Options Appraisal.

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	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)	

2.1.2	Airport/ANSPs	Not applicable	Qualitative	Quantified	Monetised
	- Infrastructure		X		
	- Operation		X		
	- Deployment		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
2.1.6	Wider Society, i.e., wider economic benefits, capacity resilience	Not applicable	Qualitative	Quantified	Monetised
			X		
2.1.7	Other (provide details)	Not applicable	Qualitative	Quantified	Monetised
		X			
2.2	Are there direct beneficial impacts on air traffic control / management systems? Provide details.   The sponsor has described an increase in workload for Raf Brize Norton and Swanwick Military ATC. The proposed airspace change will also require some training for air traffic controllers.			   	

2.3	<p>Where impacts have been monetised, what is the overall value (expressed in net present value (NPV)) of the project? The sponsor has monetised only the impact of carbon emissions from their preferred option. The Net Present Value of these impacts has been given as -£2.6m.</p>
2.4	<p>Has the sponsor provided an accurate and proportionate assessment of the proposed airspace change impacts?</p> <p>The sponsor's quantified analysis of the impact of carbon emissions, alongside a qualitative appraisal of other benefits is proportionate and in line with the CAP1616 requirements at this stage. However, there is an issue with the quantified analysis provided by the sponsor, where carbon emissions have been appraised by the sponsor over a period of 11 years, which is one more than the 10-year period expected by CAP1616. This has potentially resulted in a slightly more significantly negative NPV than would have been obtained had a 10-year appraisal period been used.</p> <p>The sponsor has also provided inadequate explanation for its 80%/20% split of non-traded/traded emissions. Only emissions from flights arriving or departing the EU have been included as traded emissions, which is not in line with TAG guidance, which recommends all flights within the UK Emissions Trading Scheme should be counted as traded. This includes domestic flights, flight between the UK and EEA countries and flights between the UK and Gibraltar, and therefore contributes to a higher share of emissions than the 20% listed by the sponsor.</p> <p>Update (9/10/23): The sponsor has submitted a revised TAG workbook and FOA with a 10-year appraisal period and a clarification over the treatment of traded and non-traded carbon. This has resolved the above issues.</p>




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	
3.1.2	Number of air passengers / cargo	X			
3.1.2	Type of aircraft movements (i.e., fleet mix)	X			
3.1.3	Distance travelled		X		
3.1.4	Operational complexities for users of airspace		X		


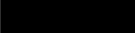


3.1.5	Flight time savings / Delays	X			
3.1.6	Other impacts	X			
3.1.7	Comments:				
3.2	<ul style="list-style-type: none"> Has the sponsor used the most up-to-date, credible and clearly referenced source of data to develop the 10 years traffic forecast and considered the available guidelines (i.e., the Green Book and TAG models) in a proportionate and accurate manner? [B11 and E11] The sponsor has provided an air traffic forecast up to 2034 using the NATS March 2023 Base Case Forecast, assuming a 0.7% growth rate from 2029 onwards. Has the sponsor explained the methodology adopted to reach its input and analysis results? [B11 and E11] Yes, the sponsor has set out their methodology in Annex A of the IOA, entitled 'Environmental Impact Assessment'. This summarises the assumptions and input data used in the sponsor's quantitative analysis. 				<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3.3	Has the sponsor developed an assessment of the following environmental aspects?				
		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	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) The Net Present Value of the environmental impact is -£2.6m, based on the impact of CO2 emissions.				<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

4. Economic Indicators of the ACP		
4.1	What are the qualitative / strategic impacts described in the ACP?	
4.2	What is the overall monetised and non-monetised (quantified) impact of the proposed airspace change? The Net Present Value of the environmental impact is -£2.6m, based on the impact of CO2 emissions. This is an increase of CO2 of 27,524 tCO2e.	
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] The Net Present Value of the environmental impact is -£2.6m. This information has not been used to progress or discount options since there is only a single option proposed.	
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 – There is only one option proposed by the sponsor.	
4.4	Has the sponsor provided reasonable justification for the proportionality of analysis above? The sponsor has sufficiently justified why it has conducted a quantified analysis of the carbon impact and not other environmental impacts, in line with altitude based priorities. This is proportionate and in line with CAP1616 requirements	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

5. Other aspects	
5.1	

6. Summary of the Full Options Appraisal & Conclusions	
6.1	The sponsor has produced a reasonable overview of qualitative and quantitative impacts of their proposed option against the baseline. All qualitative impacts have been assessed correctly and in line with CAP1616 requirements. There are a couple of outstanding issues with the quantitative analysis which still need addressing however. These are the use of a 11 year appraisal period instead of the expected 10 year period, and the inadequate justification of a 20/80 between traded and non-traded emissions, which do not appear to take TAG guidance into account. These issues have been subsequently resolved by the sponsor.
Post gateway requirements and/or recommendations	

6.2 				
Decisions Pending – Post Gateway Actions Required				
Issue(s)	Corrective Action(s) for Sponsor	Gateway Recommendation Reference(s)	CAP 1616 Reference(s)	
11-year appraisal period used instead of 10	Adjust Tag GHG workbook to reflect impacts of the airspace change between 2024-2033 (10 years from the start of the scheme)	Q15	E38	
Unclear justification for treatment of traded and non-traded emissions	Adjust workbook calculations to account for TAG A3 guidance on handling of traded and non-traded emissions in line with the UK ETS (or provide sufficient further justification for current approach).	Q15	E7 and Table E2	
Sponsor Action(s) Taken		Requirement(s) Resolved?		
The sponsor has submitted a revised TAG workbook and FOA with a 10-year appraisal period and a clarification over the treatment of traded and non-traded carbon. This has resolved the above issues.		Not Resolved <input type="checkbox"/> Resolved <input checked="" type="checkbox"/>		

CAA Full Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)			9/10/23
Airspace Regulator (Environmental)			11/10/23