

CAA CAP 1616 Options Appraisal Assessment (Phase II Full)

Title of Airspace Change Proposal:	Keevil BVLOS (Permanent)		
Change Sponsor:	MOD		
ACP Project Ref Number:	ACP-2021-006		
Case study commencement date:	20/04/2022	Case study report as at:	31/05/2022

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

<p>Instructions</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;"> Resolved - GREEN Not Resolved – AMBER Not Compliant – RED Not Applicable - GREY </p>
<p>Guidance</p> <p>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.</p>

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 submitted the Full Options Appraisal which sets out a developed analysis of the Initial Options Appraisal mainly for the environmental impacts. Due to the proportionality, the sponsor provided a more detailed qualitative analysis for this stage and supported the qualitative analysis with data collected using the BGA Ladder and Automatic Dependent Surveillance – Broadcast (ADS-B)/FLARM traces which is used as evidence to indicate the impact of any additional airspace over Keevil will have a negligible additional impact on overflight.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
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	Yes, the Full Options Appraisal not only includes the proposed two design options but also the analysis for the current situation which is the do nothing option. The Full Options Appraisal is still qualitative but it provides robust explanation and data evidences to prove why it is not possible for the sponsor to develop a quantified or monetised analysis. Basically, the impact from the change is considered to be minimal.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.3	Where options have been discounted, does the change sponsor clearly set out why?	The sponsor has only discounted the do nothing option because it doesn't allow BVLOS operations at Keevil. However, it will be used as a comparator in the Full Options Appraisal and the full impact analysis for the do nothing is also available along with the proposed option analysis.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.4	Has the change sponsor indicated their preferred option in the Options Appraisal (Phase II - Full)? [E23]	Yes, the sponsor has indicated in the Full Options Appraisal that Option 2 remains as the preferred option because it will have a minor impact on the majority of air users and guarantees regulatory compliance for BVLOS operations.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

1.1.5	Does the Full Options Appraisal (Phase II - Full) 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 III - Final)? Does the plan for evidence gathering cover all reasonable impacts of the change?	As the sponsor manages to provide sufficient explanation in regard to proportionality of the impact, the CAA agreed with the sponsor's conclusion that the options appraisal process can be scaled down for this airspace change and no further quantified or monetised analysis is required.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
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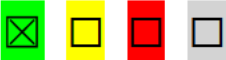
2. Direct impact on air traffic control		Status			
2.1	Are there direct cost impacts on air traffic control / management systems? If so, please provide below details of the factors considered and the level in which this has been analysed.	<input checked="" type="checkbox"/> <input type="checkbox"/> <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)</i>				
		Not applicable	Qualitative	Quantified	Monetised
2.1.2	Infrastructure changes	X			
2.1.3	Deployment	X			
2.1.4	Training	X			
2.1.5	Day-to-day operational costs / workload / risks	X			
2.1.6	Other (provide details)	X			
2.1.7	Comments: The Full Options Appraisal indicates that there isn't any direct cost for airports or ANSPs associated with the proposed options.				
2.2	Are there direct beneficial impacts on air traffic control / management systems? If so, please provide details and how they have been addressed:	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
2.2.1 <i>Examples of benefits considered</i>		Not applicable	Qualitative	Quantified	Monetised
2.2.2	Reduced work-load	X			
2.2.3	Reduced complexity / risk	X			

2.2.4	Other (provide details)	X			
2.2.5	Comments: The Full Options Appraisal indicates that there isn't any direct beneficial impacts for airports or ANSPs associated with the proposed options.				
2.3	Where monetised, what is the net monetised impact on air traffic control (in net present value) over the project period? Not applicable.				
2.4	Are the direct impacts on air traffic management analysed accurately and proportionately? Not applicable.				<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

3. Changes in air traffic movements / projections					Status
3.1	What is the impact of the ACP on the following and has it been addressed in the ACP 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	N/A	N/A
3.1.2	Type of aircraft movement		X	N/A	N/A
3.1.3	Distance travelled		X	N/A	N/A
3.1.4	Area flown over / affected		X	N/A	N/A
3.1.5	Other impacts		X	X	X
3.1.6	Comments: The Full Options Appraisal states that there may be some reduction in traffic at North of Keevil and a resultant increase to the current use of the Keevil airspace by those pilots who are currently avoiding the overhead due to the VFR chart or glider activity. It also states for Option 2, pilots may choose to cross through the overhead as the proposed DA (Danger Area) enables a crossing service. As a result, route length, fuel consumption and aircraft congestion would slightly be reduced at North of Keevil. The Stage 3 Environmental Impact Assessment also indicates that any additional airspace around Keevil may require an additional 0.7Nm worth of fuel per aircraft type. It is also mentioned that pilots will incur a cost for additional training should pilots not currently qualified to operate an airband radio choose to apply for a Flight Radio Telephony Operators License (FRTOL) in order to benefit from any crossing services. The Sponsor estimated the cost to gain a FRTOL approximately £250 and purchase of the airband radio as £200 in case pilots will choose to use any associated crossing services.				

3.2	<p>Has the forecasting of traffic done reasonably using best available guidance (e.g. DfT WebTAG, the Green Book, Academic sources...etc?)</p> <p>The Sponsor does not predict an increase in traffic numbers and in order to support their prediction ADS-B data has been used which shows that most traffic at Keevil is transiting and a result fluctuates. So, the Sponsor concluded that the data provides behavioural trends which suggests that any increase in traffic will result in additional aircraft proportionally following similar tracks to those currently used.</p>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
3.3	<p>What is the impact of the above changes (3.1) on the following factors?</p>				
	Not applicable	Qualitative	Quantified	Monetised	
3.3.1	Noise		X		
3.3.2	Fuel Burn		X		
3.3.3	CO2 Emissions				
3.3.4	Operational complexities for users of airspace	X			
3.3.5	Number of air passengers / cargo	X			
3.3.6	Flight time savings / Delays		X		
3.3.7	Air Quality		X		
3.3.8	Tranquillity		X		
3.4	<p>Are the traffic forecast and the associate impact analysed proportionately and accurately according to available guidelines (e.g. WebTAG or the Green Book?)</p> <p>The Sponsor has not provided any traffic forecast due to the reason explained in Question 3.2. The impact analysis is concluded to be proportionate taking into account the limited impact of the airspace change on air users when compared with the current situation. The Sponsor determined in the Full Options Appraisal that WebTAG could not provide any quantifiable data due to the varying amount, altitude and type of aircraft transiting the area daily.</p>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
3.5	<p>What is the total monetised impact of 3.3? (Provide comments)</p> <p>N/A</p>				

4. Benefits of ACP				Status	
4.1	Does the ACP impact refer to the following groups and how they are impacted by the ACP?				
		Not applicable	Qualitative	Quantified	Monetised
4.1.1	Air Passengers	X			
4.1.2	Air Cargo Users	X			
4.1.3	General aviation users		X	N/A	N/A
4.1.4	Airlines	X			
4.1.5	Airports	X			
4.1.6	Local communities		X		
4.1.7	Wider Public / Economy		X		
4.1.8	<p>Comments: According to the Full Options Appraisal, any additional airspace around Keevil might require an additional 0.7Nm worth of fuel per aircraft type. However, the Sponsor anticipated any future airspace activation around Keevil would not result in either an increase of CO2 emissions nor greenhouse gas emissions. For the pilots who are not qualified to use an airband radio, there would be a cost for additional training.</p> <p>With the proposed options, the Sponsor stated transiting pilots who normally route around Keevil might choose to cross through the overhead using a crossing service, slightly reducing their route length, fuel consumption and aircraft congestion north of Keevil.</p>				
4.2	How are the above groups impacted by the ACP, especially (but not exclusively) looking at the following factors below:				
4.2.1	Improved journey time for customers of air travel	N/A			
4.2.2	Increase choice of frequency and destinations from airport	N/A			
4.2.3	Reduced price due to additional competition because of new capacity	N/A			
4.2.4	Wider economic benefits	N/A			
4.2.5	Other impacts	N/A			

4.2.6	Comments: N/A	
4.3	What is the overall monetised impacts associated with 4.1 and 4.2 the above? N/A	
4.4	What are the non-monetised but quantified impacts of the above? (Insert details of description)	
4.5	What are the qualitative / strategic impacts described above? In order to comply with current MAA regulation, segregated airspace is required to facilitate BVLOS operation of military RPAS between Keevil and EG D123; the principal operating airspace already utilised for military BVLOS activity. According to the Full Options Appraisal outcome, the Sponsor concluded that Option 2 is the best option guarantees regulatory compliance for BVLOS operations stating that it will have a minor impact on the majority of air users.	
4.6	What is the overall monetised benefits-costs ratio (BCR) of the policy? Is it more than 1? N/A	
4.7	<p>Have the sponsors provided reasonable justification for the proportionality of analysis above? Yes, the sponsor provided the robust rationale to justify why the options appraisal has been scaled down and why it was not possible for them to quantify and monetise the impacts at the second phase of options. In terms of noise, it is stated that powered aircraft passing through the area would not exceed 30 per day and therefore unlikely to result in adverse impacts (i.e. those above exceed the LOAEL). Besides, the Sponsor underlined that due to an undetermined number and type of aircraft transiting through the Class G airspace, no data was able to be collected to accurately determine noise impact or GHG emissions to set a base standard. The Sponsor used ADS-B data in order to estimate the change in the traffic and their conclusion is that very few, if any commercial traffic would be impacted.</p>	
4.8	If the BCR is less than 1, are the quantitative and qualitative strategic impacts proportional to the costs of the ACP? N/A	

5. Other aspects	
5.1	-

6. Summary of Assessment of Economic Impacts & Conclusions

6.1 The FOA conducted for the proposed options for enabling BVLOS RPAS operations from Keevil Airfield was in line with the outlined requirements of CAP1616 Appendix E. The Sponsor adopted a proportionate approach and scaled down the process for the FOA to evaluate the developed qualitative discussion of the reasonable impacts. It is stated that due to the lack of quantifiable information available for noise and traffic figures along with the aircraft type, it wasn't possible for the Sponsor to come up with a reasonable cost benefit analysis for this stage. The Sponsor only provided monetisation of the costs in terms of the additional requirements to purchase a FRTOL and or a radio. As also outlined on the questions above, basically the Sponsor stated that powered aircraft passing through the area would not exceed 30 per day and therefore unlikely to result in adverse impacts (i.e. those above exceed the LOAEL). Besides, the Sponsor underlined that due to an undetermined number and type of aircraft transiting through the Class G airspace, no data was able to be collected to accurately determine noise impact or GHG emissions to set a base standard. The Sponsor used ADS-B data in order to estimate the change in the traffic and their conclusion is that very few, if any commercial traffic would be impacted. Therefore, it is concluded by the CAA that the FOA was conducted in a proportionate manner.

Outstanding issues?

Serial	Issue	Action required
1		
2		

CAA Full Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)	[REDACTED]	[REDACTED]	31/05/2022