



CAA CAP 1616 Options Appraisal Assessment (Phase II Full)

Title of Airspace Change Proposal:	Spapceport-1 Permanent		
Change Sponsor:	Qinetiq Ltd		
ACP Project Ref Number:	ACP-2021-012		
Case study commencement date:	10/11/2023	Case study report as at:	15/03/2024

Account Manager: [Redacted]	[Grey]	Airspace Regulator (Engagement & Consultation): [Redacted]	[Yellow]	IFP: [Redacted]	[Orange]	OGC: [Redacted]	[Dark Blue]
Airspace Regulator (Technical): [Redacted]	[Green]	Airspace Regulator (Environmental): [Redacted]	[Purple]	Airspace Regulator (Economist): [Redacted]	[Light Blue]	ATM (Inspector ATS Ops): [Redacted]	[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	<p>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]</p> <p>Yes, the Sponsor has produced a Full Options Appraisal for Stage 3. The changes since the initial options appraisal are set out in Sections 3 and 4. The sponsor sets out the progress from a shortlist to a single option in Sections 2.1 and 2.2 and in the Executive Summary.</p>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.2	<p>Does each shortlist option include the impacts in comparison to the 'do nothing / do minimum' option, in particular:</p> <ul style="list-style-type: none"> -all reasonable costs and benefits quantified -all other costs and benefits described qualitatively -reasons why costs and benefits have not been quantified <p>Yes, the Sponsor has produced such an evaluation for all three of the shortlisted Options (3, 4 and 5). In the previous version it had only produced such an evaluation for its preferred option, Option 3.</p>	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
1.1.3	<p>Where options have been discounted, does the change sponsor clearly set out why?</p> <p>The sponsor clearly sets out why Options 0, 1 and 2 were discounted in Section 2.1. Paragraphs 2.2.5-2.2.14 discuss why Option 3 is preferred and Options 4 and 5 are less appropriate.</p>	<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)</i>				
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	X
	- Other(s)	X	X		
2.1.4	General Aviation	Not applicable	Qualitative	Quantified	Monetised
	- Access			X	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 and impact on health and quality of life			X	X
	- Air quality		X		
	- Greenhouse gas emissions			X	X
	- Capacity/resilience			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.			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
	N/A				
2.3	Where impacts have been monetised, what is the overall value (expressed in net present value (NPV)) of the project? The sponsor states (3.10) that it is “not possible to conduct a full cost benefit analysis other than what has already been exposed in the Socio-Economic Impact Assessment 2023/24-2025/26 produced by MKA Economics dated November 2022”.				
2.4	Has the sponsor provided an accurate and proportionate assessment of the proposed airspace change impacts?			<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

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						
3.1.7	Comments: As with other aspects of the FOA, the Sponsor has addressed these in a relatively limited way, given the limited impact of this ACP.						
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] <p>In Paragraph 3.11.2, the Sponsor states that it is extremely difficult to predict at this juncture the demand for the Spaceport over the next 10 years. It is anticipated that the first two to three years will see fewer annual launches (maybe 6 during the first year and 8 in the second year) with a gradual build-up to 10 thereafter. The market remains too immature to forecast the requirement beyond this early period although there is an expectation that there will be approximately 10 sub-orbital launches per year, based on the limit imposed in the SP-1 planning application. This seems a convincing argument, given the extremely early state of the market and the unproven level of demand.</p> <p>The sponsor states that an annual growth rate of 2% up to 2027 and then 1% thereafter up to 2034 based on Eurocontrol STATFOR has been considered.</p> <ul style="list-style-type: none"> Has the sponsor explained the methodology adopted to reach its input and analysis results? [B11 and E11] 			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	The sponsor has presented the environmental assessment for direct impacts by sourcing information from their EIA and SEI reports. All other input data sources, methodologies and assumptions used for the indirect environmental have been clearly described.				
3.3	Has the sponsor developed an assessment of the following environmental aspects?				
	<p>Direct impacts: The EIA report and its appendices include details on the sonic boom assessment which is confirmed to have impacts less than 1 psf over land and LAm_{ax} contours which are overlaid on population centres, EU protected sites and NSAs. A structural damage assessment with LZ_{max} contours has also been presented, identifying the affected structures. The emissions estimated from the forecast 10 launches are stated to be 14 tCO_{2e} per year using worst-case propellants. The sponsor also includes an indicative worst-case AQ assessment to show concentration and dispersion of main pollutants after the launch. The sponsor states that spaceport users will be encouraged to use cleaner fuels and minimise environmental impacts. In terms of the long term exposure to repeated noise events, the sponsor refers to the EIA documents where cumulative and in-combination effects have been assessed.</p> <p>Indirect impacts: The sponsor has scoped out the requirement for noise modelling on the basis of low concentration of air traffic in the vicinity of SP-1 that is supported by evidence presented at Stage 2. Air quality, tranquillity and biodiversity have also been scoped out similarly. The impact on transatlantic traffic in terms of CO₂ emissions due to rerouting around the activated airspace structure is estimated to be 525 tCO_{2e} per year.</p>				
		Not applicable	Qualitative	Quantified	Monetised
3.3.1	Noise			X	
3.3.2	Operational diagrams		X		
3.3.3	Overflight		X		
3.3.4	CO ₂ 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)				
	N/A				<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? The main impact of the preferred option is allowing space launches to take place, which is not possible under the current arrangements. This could increase employment and improve the economy in the area. The ACP quotes an MKV Economics study which estimates an increase of £2.73 million in GVA.	
4.2	What is the overall monetised and non-monetised (quantified) impact of the proposed airspace change? The monetised economic impact overall is an estimated increase of £6.45 million in turnover and £2.73 million in GVA.	
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 Sponsor has not conducted its own NPV analysis, citing the difficulty in obtaining robust traffic forecasts.	
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] Yes, the justifications relate to operational and safety matters, in addition to the assertion that the preferred option is likely to be the lowest cost (paragraph 3.2.1)	
4.4	Has the sponsor provided reasonable justification for the proportionality of analysis above? The sponsor states that the Eurocontrol data implies that there would be little or no difference in traffic under the three options, hence it would be disproportionate to compare the three shortlisted options.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. Other aspects		
5.1	N/A	
6. Summary of the Full Options Appraisal & Conclusions		
6.1	The FOA does not undertake any detailed analysis, and very little quantification or monetisation of the impacts of the proposed change. Partly this is because it has been impossible to obtain robust traffic forecasts, partly because the Sponsor's own number of launches is so speculative, and partly because the fact that the three shortlisted options are so similar would render this disproportionate. What analysis there is backs up the idea that the impact of the proposed change would be relatively small.	
Post gateway requirements and/or recommendations		

6.2	N/A		
Decisions Pending – Post Gateway Actions Required			
Issue(s)	Corrective Action(s) for Sponsor	Gateway Recommendation Reference(s)	CAP 1616 Reference(s)
n/a			
n/a			
n/a			
Sponsor Action(s) Taken		Requirement(s) Resolved?	
		<input type="checkbox"/> Resolved <input type="checkbox"/> Not Resolved	

CAA Full Options Appraisal Completed by	Name	Signature	Date
Airspace Regulator (Economist)	██████████	██████████	14/03/2024
Airspace Regulator (Environmental)	██████████████████	██████████████████	14/03/2024