# Response ID ANON-13KB-XEHJ-Z

Submitted to Airspace modernisation - consultation on a UK Airspace Design Service
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## About You

A  Are you responding in an official capacity on behalf of an organisation?

Yes

Organisation name:
Richmond Heathrow Campaign (RHC)

B  What is your name?

What is your name?:
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C  What is your email address?

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D  Are you answering as:

Local organisation such as a community action group, airport consultative committee or forum

E  Where do you live or where is your organisation based?

South East

F  Is there anything else that you would like us to know about you in connection with your response?

text box:

Richmond Heathrow Campaign (RHC) represents three amenity groups in the London Borough of Richmond upon Thames: The Richmond Society, The Friends of Richmond Green, and the Kew Society, which together have over 2000 members. RHC is a member of the Heathrow community forum - NACF. The authors of this response are Peter Willan and Robert Tudway.

G  Do you consent to us contacting you by email about progress with this consultation?

Yes

H  Do you consent to your response being published?

Yes, with personal identifying information (name, organisation, respondent category, location, additional information - please note your email address will NOT be published if you choose this option)

## Background to the Proposals

1  In general terms, do you agree that a single airspace design entity in the form of a UK Airspace Design Service (UKADS) provider, properly scoped, funded and implemented, would address the challenges identified and improve delivery confidence in airspace modernisation?

No

In general terms, do you agree that a single airspace design entity in the form of a UK Airspace Design Service (UKADS), properly scoped, funded and implemented, would address the challenges identified and improve delivery confidence in airspace modernisation?:

SUMMARY OF REASONS FOR DISAGREEING WITH THE PROPOSAL
1. CHALLENGES. The challenges are not identified in any detail or comprehensive way and the only one given any quantitative value in the UKADS Impact Assessment (IA) is carbon (CO2e) and RHC believes that the scope to reduce carbon in terminal airspace is significantly overstated as is evidenced by the IA and as explained below. Apart from carbon, environmental issues such as noise and air quality are largely ignored. It is said that airspace modernisation is needed to increase capacity to facilitate growth and to improve resilience and punctuality and reduce delays and safety is paramount. Also, it is said emerging technology such as PBN needs to be introduced, not least to save time, cost and involvement of air-traffic controllers . But these topics are hardly addressed at all and should be. The outcomes need to be evaluated and included in the UKADS IA.

2. PROCESS PROBLEM. We are told there is a process problem in that the airport operators, who are currently responsible as sponsors for the airspace changes for their airports, are not co-ordinating and co-operating with each other where there are system interactions and conflicts. Apparently the unresolved issues and optimisation of the system as a whole ("global" optimisation) is at risk notwithstanding the optimisation of the parts - the individual

airports. ACOG was originally given this task and attempted to do so with its Masterplans but it has failed. RHC raised its doubts on the role of ACOG at the start but we are very concerned at the current belated reaction and proposals for solving the inherent process deficiencies.

3. "GLOBAL" VERSUS AIRPORT OPTIMISATION. RHC believes that UKADS, by seeking to solve the process problem and focussing on the global optimisation with a top-down approach, will inevitably weaken the optimisation of the parts (airports' airspace) and it is not the way forward. We believe it would be far better to continue to optimise each airport's airspace and to identify the specific interactions between the several airports' optimised airspaces where the benefits from improved interactions can be balanced but with minimal loss to each airports' optimal airspace. Using an iterative loop this is neither a top-down nor bottom-up approach and could involve a Review body such as NATS to provide the global optimisation and manage the iterative process. Only in this way can global optimisation and optimisation of each airport's airspace be balanced and a rational outcome be efficiently and effectively achieved.

4. MULTIPLE DESIGN APPROACHES. It is said that the CAP1616 work done to date can be transferred to NATS or its associated organisation (UKADS). But each airport has approached their design in a different way, involving different objectives, decision criteria and different circumstances. It will be impossible for UKADS to continue the multiple approaches (say 12 in the London cluster). Any attempt to merge the approaches will inevitably have to unwind previous decisions up to Stage 3 and thereby jeopardise the serial design process and almost certainly thereby compromise the optimisation of each airport's airspace design, and this may lead to legal challenges from airports and communities. For example, UK Policy provides for airports to have their own noise objectives and not be subjected to a UK wide Policy. NATS says in its response to the consultation that all the 5 years of CAP1616 work to date will need to be scrapped and the process started afresh and in doing so it defers completion to the mid-2030s. This is unacceptable.

5. SINGLE DESIGN ORGANISATION SHORTCOMINGS. RHS does not believe UKADS (NATS in another form) is suited to optimising each airport's terminal airspace. Even were the airspace design expertise and experience embedded in each airport operator to be transferred to UKADS, there would be a substantial dislocation with key remaining associated parts of each airport's organisation, such as operations that are external to the CAP1616 process and importantly each airport's management structure and owners and their objectives. From what RHC has learned over the years as a long-standing external observer of and consultee regarding the operation and management of Heathrow, it is apparent that UKADS would create a substantial challenge to the operational, commercial and financial viability of individual airports in a competitive market, generally. The challenge is made greater by the proposal that airlines directly fund the airspace design, whereas hitherto the airports have funded the design and operations and then charged the airlines. This amounts to a significant transfer of influence from the airports to the airlines, especially as they have a major shareholding in NATS. We have understood over the years that NATS' focus is on safely designing and managing the flow of air traffic in the upper en-route airspace and providing resources for management of airport terminal airspace. As a generality and not a criticism, the environment and health and well being of communities has not been a prime responsibility of NATS.

6. NATS. We are concerned that as an organisation NATS through its associate, UKADS, will not structurally or culturally be able to shift its approach to balance operational and environmental airspace issues and to engage with communities. We have read NATS response to the consultation and this has only heightened our concerns and gives us no confidence on environmental matters or engagement with communities. Additionally, we question NATS delivery performance. Why seemingly is it taking NATS so long to propose a future for Heathrow's four arrival stacks - will the stacks be raised above 7,000 feet, will the stacks be moved or will they be abolished and replaced by direct arrival flight paths from upper airspace? Also, why is it taking so long for NATS to establish the points of exit from Terminal Airspace into en-route airspace. Heathrow has had to complete its Stage 2 Initial Options appraisal without these key factors being established, as far as we are aware. There may be good reason for the delays but on the current evidence available to us, we are not confident NATS will expeditiously manage its new role through UKADS.

7. HARMFUL COMMUNITY IMPACT. RHC's particular interests are those of the local community and the impact of noise and air pollution on people's health and well being. There are continuing difficulties experienced by communities in reducing the harmful outcomes from aviation and in establishing the polluter pays principle. The UKADS proposal distances local communities from the decision makers in UKADS. Currently communities engage mainly with their local airport but the proposals will require new communication/engagement channels directly between communities and UKADS and the triad (UKADS, airports and communities) is bound to be confusing and a substantial diminution of the role and influence of communities in the decision making process. It is true that currently communities generally are linked to one airport only and that some of the noise issues arise from multiple airport interactions and this does need remedying.

8. COMPARISON WITH OTHER COUNTRIES. RHC questions the CAA's assertion that the UK needs a single design unit because other countries have one. The UK is unique in having a very high proportion of international flights and the concentration of around 50% of UK traffic at one airport, Heathrow. 80% of the UK aviation CO2 is produced by just three airports (Heathrow 55%, Gatwick 15% and Manchester 10%) and aircraft noise from Heathrow alone effects by far the largest number of people compared to other airports in the UK and elsewhere.

9. CAPACITY AND GROWTH. The elephant in the room is aviation growth. It should set the scene for airspace design. Clearly growth is intended by the industry and NATS but the UKADS proposal and CAP1616 process in RHC's view are fundamentally flawed by not establishing upfront growth targets and capacity needed. The consultation proposal makes a distinction between airport (runway and terminal capacities) and airspace capacity. The consultation seemingly suggests that the airport capacities needed for aviation passenger and ATM growth is a matter for the airports and that in effect the aim is to ensure there is sufficient airspace capacity to facilitate whatever growth the airports attain and to provide contingent airspace capacity to deal with peak daily demand and so maintain safety, resilience and punctuality and avoid delays.

10. GROWTH RATES. The 6th Carbon Budget (Dec 2020) targets of 0.7%pa (25% compound) constrained passenger growth if UK aviation is to achieve net zero by 2050. Yet at the same time industry estimated UK passenger growth at a much higher 1.6%pa (64% compound between 2018 and 2050), which is similar to that used in the current UKADS Impact Assessment (IA)(Para. 64). NATS has historically estimated even higher growth rates.

11. AIRSPACE MODERNISATION NEEDS TO BE BASED ON SUSTAINABLE GROWTH. It is increasingly likely the aviation net zero targets will be missed in terms of constrained demand growth, efficiencies, sustainable aviation fuels and out-of-sector carbon capture and sinks. To put this into perspective, the 6th Carbon Budget estimated UK unabated CO2 as 51 MT per annum in 2050 and it set annual reduction targets by 2050 of 12MT for demand, 8MT for efficiencies, 8MT for SAFs and 23MT for residual offsets. Over the last five years it has become obvious that all these targets based on growth limited to 0.7% pa are at high risk of failing and every year's delay accentuates the failure. RHC's view is that the industry and CAA's approx 1.6% annual UK

passenger growth is hopelessly unrealistic. There needs to be an estimate of the airspace capacity needed (1) for existing and legally planned airport capacity growth but within the UK Carbon Budget growth constraint and (2) the contingent airspace needed (e.g.10%) to provide safety, resilience, punctuality and reduced delays at peak daily demand and the combined estimate needs a reality check with the rapidly developing climate change crisis. We would expect sensitivity analysis around a central target. Airspace modernisation has already failed remarkably on the most fundamental of assumptions - UK aviation growth and in turn the need for airspace growth, if any. The Government needs to establish the aviation growth targets and their allocation to regions of the UK taking account of targets for overall UK economic growth and its regional allocation.

12. REGIONAL ALLOCATION OF AVIATION GROWTH. RHC examined extensively and liaised with the Government and the Airports Commission on the latter's proposals on the approach to aviation growth. Here is not the place to comment in detail but the case of Heathrow expansion illustrates how the design of airspace could be so hopelessly inappropriate unless proper attention is paid to aviation growth and its allocation. The Airports National Policy Statement 2018 was based on Heathrow's Northwest runway expansion adding 43 million passengers per year (mppa) by 2050 but only 26 mppa to the UK total number of passengers. It was estimated that the 43 mppa would be sourced by a reduction in growth of 17 mppa at other UK airports. If design of airspace capacity were not to recognise this, then the capacity at airports other than Heathrow would be substantially over-estimated and the significant error would feed into design issues and airport airspace interdependence.

13. OVER-ESTIMATED CARBON BENEFITS FROM UKADS. The failure of over-optimistic growth assumption flows through into the IA assessment for UKADS. The IA Baseline 'excess' $CO_2$ emissions of 943,000 tonnes (Table 7), in 2039 for example, is substantially over-estimated compared to the case of necessarily carbon constrained growth. It follows that the UKADS impact on this excess is also overstated. For example, the comparison between Do Nothing and Option 1 for the UKADS is estimated (IA Table 11) to produce a reduction of $CO_2$ for the London Cluster in 2039 of just 20,000 tonnes per annum, but the actual saving from Option 1 UKADs is likely to be materially less in the carbon constrained world. This conclusion on over-estimates is supported by examination of Heathrow's Initial Options appraisal in CAP1616 Stage 2. Based on Heathrow's 480,000 ATM limit and the track mileage and $CO_2$/fuel figures developed for Heathrow's flightpath initial options, airspace modernisation is unlikely to reduce $CO_2$ emissions from Heathrow flights (do nothing case) by more than 100,000 tonnes a year (perhaps double this for the UK). The UKADS impact is likely to be just a small fraction of this and does not bear comparison with the 51 MT carbon problem UK aviation faces. The UKADS proposal IA relies almost entirely on carbon savings but this does not stack up to scrutiny as explained above, partly because of the unsustainable growth forecasts but also the relatively small changes in track mileage, fuel and carbon achieved by airspace modernisation. We are not suggesting carbon is unimportant in the wider sense. It would have helped if the departure and arrival carbon footprints for each airport from ground to 4000 feet, then to 7000 feet and then to en-route height had been the starting point for the IA appraisal. At a very rough guess we believe the current aggregate footprint for Heathrow is around 2 MT pa of $CO_2e$. Flight path lateral design and the airspace change process is only one factor determining this figure - others include traffic volumes, size of aircraft and operating procedures which are outside the airspace change process, as discussed in our response to Question 21.

14. ABSENT ESTIMATES. It is not clear what airspace capacity is planned and how this relates to airport capacities and what proportion is for growth and what proportion is for improving safety, resilience, punctuality and reducing delays. There are no quantitative estimates of the benefits to these practical outcomes. There is no base case for Airspace Modernisation that we are aware of and it is not clear to what extent airspace modernisation is to improve existing deficiencies or provide for growth. Our understanding is that Heathrow, for example, has a good record for safety, resilience, punctuality and delays.

15. CAPACITY ALLOCATION. A particularly important issue arises with UKADS and capacities. It would surely be wholly unacceptable to the airports for UKADS to decide airspace capacity allocation and no provision has been made by the UKADS proposal for this critical decision process.

17. NOISE. RHC believes Airspace Modernisation creates a real risk that the noise impact on communities will be worse than that from the legacy airspace, not least from the effect of change. Furthermore, the IA carbon benefit appears not to recognise that at Heathrow at least, noise reduction is prioritised up to 4,000ft and carbon and noise are required to be balanced between 4,000ft and 7,000ft, which is likely to limit still further the small benefits from carbon reductions. Added to this is the high risk in our view that the centralised top down approach of UKADS will not reduce noise impacts effecting local communities.

18. SAFETY, RESILIENCE, PUNCTUALITY AND REDUCED DELAYS. These are all reasonable aims. But little evidence has been produced to demonstrate these are a challenge and how and to what extent airspace modernisation will result in improvement. Safety is paramount but little evidence has been produced to demonstrate the need for improvement. We say this in the context of the current experience and constrained growth referred to above. Heathrow, for example, is noted for scoring well on these parameters. There are flightpath conflicts between the London cluster airports and congestion but our recommendation is that the identified conflicts be dealt with individually by the airports without the need for wholesale redesign of the TMA and the substantial process change to the UKADS. We have emphasised the issue of growth and the UKADS consultation does distinguish between airspace and airport capacities. We appreciate airspace capacity need not be justified solely on grounds of matching airport runway and terminal capacities and does have a role to play in supporting resilience and punctuality. But it is not clear what airspace capacity is being targeted and for what purpose - growth and/or resilience.

RHC'S ALTERNATIVE PROPOSAL
19. The Government needs to establish UK aviation growth targets within the climate change requirements of the 6th Carbon Budget and it should allocate the growth across the UK and its regions within the Government's framework for economic growth. Airport airspace capacities should be based on these aviation growth forecasts (passengers and ATM) and airspace design should based on the required capacities for growth and with contingency of say 10% for peak daily demand to provide resilience, punctuality, safety and minimal delays. The outcomes for these benefits should be estimated along with the environmental outcomes including those for $CO_2e$, noise and air quality. A comprehensive Airspace Modernisation Regulatory Impact Assessment should be prepared. Individual airports should continue to optimise their airspace design within the capacity aims and remain as CAP 1616 sponsors and responsible for consultation with communities. A Review body should be introduced to optimise the "global" airspace design with the leverage to resolve conflicts between airports and with the aim of achieving global optimisation balanced with minimal loss to each airport's optimal airspace. The Review Body should manage the iterative loop between global and airport optimisation. ACOG is the wrong vehicle and we suggest NATS or a version of UKADS be given this responsibility. It need have only a relatively small team of experts. Given the uncertainties with the airspace modernisation that have arisen we recommend a Peer Review of the process.

## Scope and priorities

2  What are your views on our proposal that the end-state UKADS scope encompasses all ACPs in UK airspace?

Disagree

Please explain your answer including the additional considerations, where relevant.:

Given our response to question 1 in disagreeing with UKADS, we believe UKADS is even less suited to all ACPs in UK airspace.

3  What are your views on our proposal that the short-term UKADS scope should be the London TMA region?

Disagree

Please explain your answer including the additional considerations, where relevant.:

The London TMA is the most difficult to design and as is explained in our response to Question 1 we seek a solution to the process challenges but in our view UKADS is not the right solution and we have made an alternative proposal - please see paragraph 19 in Question 1.

4  What are your views on our proposals for the UKADS scope in the medium term?

Disagree

Please explain your answer including the additional considerations, where relevant.:

As explained in our response to Question 1 we seek a solution to the process challenges in the medium term but in our view UKADS is not the right solution and we have made an alternative proposal - please see Paragraph 19 in Question 1.

## A phased approach to delivering the UKADS

5  Do you have any views on our proposed two-phase approach?

Major modifications needed

Please give reasons for your answer.:

RHC does not agree UKADS should be introduced as is explained in our response to Question 1 but we have made a proposal in paragraph 19 for a major modification. It should be read in conjunction with the other comments made in our response to Question 1.

6  Do you have any views on the models that have been considered?

Major modifications needed

Please give reasons for your answer.:

RHC does not agree UKADS should be introduced as is explained in our response to Question 1 but we have made a proposal in paragraph 19 for a major modification. It should be read in conjunction with the other comments made in our response to Question 1.

## Our proposed initial operating model (UKADS1 within NERL)

7  Do you have any views on our proposal that NERL takes on the initial task of providing airspace design services through UKADS1?

Disagree

Please explain your answer, including if relevant any additional considerations. :

RHC does not believe NERL can realistically meet the challenge. Please see our response to Question 1 and in particular paragraphs 5 and 6 but read in conjunction with the other paragraphs in Question 1.

8  Do you consider that in progressing a particular cluster of the masterplan, UKADS1 should take over ACOG's current coordination or masterplanning role for that cluster?

Disagree

Please explain your answer, including if relevant any additional considerations. :

RHC does not believe ACOG can realistically meet the challenges. See our response to Question 1 and in particular paragraph 2 but read in conjunction with the other paragraphs in Question 1.

9  Do you agree that organisations should be able to continue sponsoring ACPs that are in scope of UKADS1 if UKADS1 is not able to prioritise them?

Agree

Please give a reason for your answer, and indicate whether such organisations should be required to consult UKADS1 or have the option of using some UKADS1 services.:

Airport sponsoring airspace optimisation should continue as explained in our response to Question 1.

## Remit for the initial operating model (UKADS1 within NERL)

10  Do you agree with the proposals for UKADS1's remit?

Major modifications needed

Please give reasons for your answer, in particular whether anything should be excluded in, or is missing from, the proposed remit.:

RHC does not agree UKADS should be introduced as is explained in our response to Question 1 but we have made a proposal in paragraph 19 for a major modification. It should be read in conjunction with the other comments made in our response to Question 1.

11  Do you agree with the approach we propose for consultation and engagement on ACPs, including who pays for these activities?

Major modifications needed

Please give reasons for your answer, including any views on the other options suggested.:

RHC notes the CAA's proposal that UKADs 1 and each airport or other organisation would agree who has responsibility for which consultation tasks. However, UKADS 1 would be ultimately accountable [CAA emphasis] for the consultation and engagement stage in its role as sponsor of all ACPs'; but UKADs would not have the resource to run the consultation [para 6.16 of consultation - Scenario A]. Giving UKADs such resource would add to costs inevitably falling upon airlines and involve possibly insurmountable recruitment difficulties.

2. The airports (or other partner to the ACP) will neither be the accountable party nor the decision maker but will necessarily have substantial consultation processes assigned to it; both because, as is accepted in the consultation, the UKADs will not have the capacity to undertake such functions itself, nor the detailed local technical knowledge to address issues involved.

3. Consultees will find that their important community interests will materially or substantially be in the hands of parties (airports or others) which are neither the decision makers nor accountable for the decisions taken; and at the same time such communities will be denied useful access in respect of the full consultation process to the party (UKADs) that has those functions.

4. In respect of individual consultations, these weaknesses can go to the root of fairness and due process. For example, the Government Cabinet Office guidance on consultation principles [July 2012/updated March 2018] states amongst other requirements that- a) consultations should be informative - what confidence has an interested community that the consultation will be informative if all or material parts of it rely on information originating from an entity (UKADs) not directly participating in that part of the consultation and therefore not directly answerable for the information needed or produced? b) a consultation should facilitate scrutiny- how can a party other than the decision maker and accountable party effectively facilitate scrutiny of information in the hands of the decision maker by interested communities, so as to impart confidence to consultees? c) consultation is only part of the process of engagement - who will continuously engage if UKADs has not (by its own acknowledgement) the resources to do so ? These do not arise under the alternative proposals set out in paragraph 19 above.

## Transition arrangements for the initial operating model (UKADS1 within NERL)

12  What are your views on our transition proposals?

Major modifications needed

Please give reasons for your answer.:

RHC does not agree UKADS should be introduced as is explained in our response to Question 1 but we have made a proposal in paragraph 19 for a major modification. It should be read in conjunction with the other comments made in our response to Question 1.

13  What are your views on our proposal that, where appropriate, UKADS1 should merge the existing ACPs into a single ACP for the cluster or deployment?

Another approach

Please give reasons for your answer.:

RHC does not believe merging existing ACPs can realistically meet the challenges. See our response to Question 1 and in particular paragraph 2 but read in conjunction with the other paragraphs in Question 1.

14  What are your views on our proposal that the CAA approves each transition plan?

Disagree

Please give reasons for your answer.:

RHC does not believe transition of existing ACPs can realistically meet the challenges. See our response to Question 1 and in particular paragraph 2 but read in conjunction with the other paragraphs in Question 1.

15  What changes would you propose to amend and/or supplement CAP 1616 in order to accommodate the UKADS?

What changes would you propose to amend and/or supplement CAP 1616 in order to accommodate the UKADS?:

RHC does not believe the UKADS can realistically meet the challenges. See our response to Question 1. Our alternative proposal outlined in paragraph 19 continues with the airport sponsors and so we do not believe changes to CAP1616 are needed other than to deal with conflict resolution and an updated Needs Analysis taking into account aviation growth and related airspace capacities and evaluation of the outcomes discussed in RHC's alternative proposal.

## Governance for the initial operating model (UKADS1 within NERL)

16  What are your views on our proposals for UKADS1 governance?

Major modifications needed

Please give reasons for your answer, including whether the proposed arrangements would be sufficiently proportionate, transparent and robust, and how you see this working in practice.:

RHC does not agree UKADS should be introduced as is explained in our response to Question 1 but we have made a proposal in paragraph 19 for a major modification. It should be read in conjunction with the other comments made in our response to Question 1.

17  Would these proposals give sufficient reassurance that potential conflicts of interest arising from NERL providing airspace design services through UKADS1 are mitigated?

No

Please give reasons for your answer, including any comments or suggestions about the proposed Advisory Board.:

RHC does not agree UKADS should be introduced as is explained in our response to Question 1 where we consider conflicts of interest and in our response to Question 11.

## Funding UKADS and other airspace change

18  What are your views on our proposed new Airspace Design Charge to meet the efficient costs of NERL in providing an airspace design service through UKADS1 and to create a UK Airspace Design Support Fund for other eligible UK airport ACPs?

Use another method

Please give reasons for your answer, including, if relevant, what other method you propose, such as our alternative hybrid option.:

RHC does not agree UKADS should be introduced as is explained in our response to Question 1. Our alternative proposal in paragraph 19 would need funding for the NATS contribution to the process and this could be provided by the airports depending on the number and nature of the conflicts requiring resolution.

19  Which elements of expenditure on an ACP do you think should be eligible under the UK Airspace Design Support Fund?

Which elements of expenditure on an ACP do you think should be eligible under the UK Airspace Design Support Fund?:

RHC does not agree UKADS should be introduced as is explained in our response to Question 1. Our alternative proposal in paragraph 19 would need funding for the NATS contribution to the process and this could be provided by the airports depending on the number and nature of the conflicts requiring resolution.

## Our ambition and expectations for the proposed end-state operating model (UKADS2)

20  Do you have any views on our proposed concept for UKADS2?

Major modifications needed

Please give reasons for your answer.:

RHC does not agree UKADS1 or 2 should be introduced as is explained in our response to Question 1. Please see our proposal (paragraph 19) for an alternative solution.

## General

21  Do you have any other comments about the proposals in this consultation document or about the accompanying Regulatory Impact Assessment? Is there anything we have missed?

Do you have any other comments about the proposals in this consultation document or about the accompanying Regulatory Impact Assessment? Is there anything we have missed?:

RHC has considered the Regulatory Impact Assessment carefully and the views expressed in this response take into account that assessment. RHC's alternative proposal set out in our paragraph 19 will address the challenges referred to in the CAA's consultation and the Regulatory Impact Assessment itself more efficiently and effectively and avoid the substantial disadvantages of the CAA's current UKADs proposals.

2. RHC is concerned that perceived deficiencies of the airspace change process will not be addressed by UKADS. This does not necessarily require revision of CAP1616 because some of the causes of the deficiencies are within other regulatory domains and the integration of CAP1616 with these other domains. Recognition of the deficiencies in our view does highlight the necessity of airports' involvement in the combined processes and the risk of devolving a large part of the airspace change process to another organisation such as UKADS. It will risk compounding the integration difficulties.
a. In particular the traffic volumes and aircraft sizes using each flight path are outwith the airspace change process. Airlines can change these and do so for commercial and other reasons. This point links to our comments on capacity in Question 1. How can flightpath conflicts, congestion, etc., involving multiple airports be addressed properly if traffic volumes and aircraft sizes are not factored into the decisions? We include aircraft size because the issues of vortices and noise impact depend critically on size (weight) of aircraft. The traffic volumes also affect respite design.

b. Rates of climb and hence height of departing aircraft seem to be the poor cousin of lateral flightpath design and as far as we are aware are not determined by the airspace change process. They are critical to fuel use and hence $CO_2e$ and noise and RHC believes are a major opportunity for improvement.

c. Operating procedures on arrivals such as extending undercarriage and flaps are seemingly not part of the airspace design process but are key to safe operations and noise and design of curved flightpaths and joining points for final approaches.

d. The introduction of PBN and impact on vectoring (air traffic control) is being treated within the "Do Minimum" scenarios by the sponsors and therefore outwith the airspace design options. But the application of PBN and vectoring to flightpath design is highly significant and yet it is not transparent. This issue is especially relevant to flightpath conflicts since they are more likely to require traffic control intervention. This demonstrates the importance of NATS involvement in the airspace change process and one of the reasons our proposal includes them in the process we recommend but with a different remit to that proposed by UKADS.

3. RHC would be pleased to discuss with the CAA, Heathrow and others our response and would welcome the opportunity to contribute to formulating a way forward for the airspace change process.