

# Future Airspace Strategy Implementation (FASI)

## London Terminal Manoeuvring Area (LTMA)

### Airspace Change Proposal (ACP)

ACP-2020-043

ACP-2020-044

ACP-2020-045

### Stage 2 Develop and Assess Engagement Feedback Responses (Redacted)

To be read in conjunction with Master Document



This document is the raw, but redacted, record of the Stage 2 engagement carried out for the LTMA ACPs. It is an export of a Microsoft Forms document:

Pages 2 and 3 should be considered together as a continuous set of columns, with page 3 to the right of page 2.

Pages 4 and 5 are the next rows, organised in the same way.

|        |        |
|--------|--------|
| Page 2 | Page 3 |
| Page 4 | Page 5 |

Row IDs 1-6 were form set-up and test responses which have been removed, hence the first row is ID number 7.

| ID | Start time        | Completion time   | Email     | Did you attend a briefing? | Which organisation do you represent? | Option 1: Highly Systemised  | Option 2: Hybrid Systemised   | Option 3: Do Minimum  | Option 4: Direct Route Airspace   | Option 5: Free Route Airspace   | Do you consider there to be any alternative network options? | If yes, please describe   | Biggin Hill | Please leave your comments relating to Biggin Hill, here.  | Bournemouth | Please leave your comments relating to Bournemouth, here.  | Farnborough | Please leave your comments relating to Farnborough, here.   | Gatwick | Please leave your comments relating to Gatwick, here.   | Heathrow |     |    |
|----|-------------------|---|-----------|----------------------------|--------------------------------------|--|---|---|---|---|--|---|-------------|--|-------------|--|-------------|---|---------|---|----------|-----|----|
| 7  | 10/19/22 18:42:53 | 10/19/22 19:24:43   | anonymous | Yes                        | Thales Avionics - Flight Ops dept    | For the avionics Flight Management System (FMS), automation and fuel predictions, best option. More fuel used, this is the consequence   | ATCO intervention based on previous option is a good trade-off for greener operations   | There is room for improvement   | May be a solution combined with Option 2 or in low traffic density  | May be difficult to apply in London airspace  | No   |   | No          |  | No          |  | No          |   | No      |   | No       |     |    |
| 8  | 10/13/22 15:27:21 | 10/13/22 15:48:08   | anonymous | Yes                        | London Luton Airport Operations Ltd  | LIAOL like this option as it provides predictability for airlines flight planning and fuel usage. It also provides predictability for arrival and departure times at LLA for scheduling and those areas overflowed between 7,000-12,000ft where noise is still heard allows a predictable route. However, LLA recognises that there may not be enough space for all routes to be PBN and therefore could have environmental implications such as stepped approaches or departures which is not preferred.  | LIAOL like this option as it provides predictability for airlines flight planning and fuel usage. It also provides predictability for arrival and departure times at LLA for scheduling and those areas overflowed between 7,000-12,000ft where noise is still heard allows a predictable route. LLA prefers this option to Option 1 as it creates a balance of environmental performance and allows shorter routes should the airspace be clearer (such as the night time).  | LLA does not support doing the minimum as we currently have routes at very low levels for long periods due to inefficiencies in the upper network. This is not good for fuel burn, noise or carbon emissions.   | LLA does not support the direct route airspace for use in the London TMA, as there would likely be environmental impacts as this looks to take up a large amount of airspace for each route to have direct routes to the UK airspace boundary.  | LLA support this initiative but believes the London airspace would be too busy for this type of airspace structure which could cause unnecessary delays or holding on the ground.   | No   |   | No          |  | No          |  | No          |   | No      |   | No       | Yes |    |
| 9  | 10/17/22 13:57:03 | 17/10/2022 14:22:09<br>Includes email received 27.10.2022 | anonymous | Yes                        | London City Airport                  | I don't feel competent to say which design option is optimal.  | I don't feel competent to say which design option is optimal.   | I don't feel competent to say which design option is optimal.   | I don't feel competent to say which design option is optimal.   | I don't feel competent to say which design option is optimal.   | No   |   | Yes         | Deconfliction with LCY arrivals is important to ensure capacity isn't constrained  | No          |  | No          |   | No      |   | No       | Yes |    |
| 10 | 10/19/22 9:19:58  | 10/19/22 10:46:18   | anonymous | Yes                        | Gatwick Airport Limited              | Gatwick supports this option, since it is aligned with the AMS Outcomes, namely leveraging technological developments to improve efficiency and performance, allowing ATC resources to focus on management by exception, thus by extension, enhancing the overall system resilience to disruption. The option also aligns well with Gatwick's own FAS plans, namely our design principles of safety and deconfliction by design and use of enhanced navigation standards. Potential downside to this option is that it may become too rigid and therefore may limit capacity and resilience in certain situations (especially those that it was not designed to handle). | Gatwick supports this option and believes it may provide a good balance between highly efficient / highly systemised design and a more flexible arrangement allowing delivery of outcomes that would otherwise not be possible in the highly systemised design (environmental, access or disruption resilience). The option also aligns well with Gatwick's own FAS plans, addressing our design principles of safety and deconfliction by design and use of enhanced navigation standards. Also, the downside mentioned previously under Highly Systemised option would be addressed (at least partially). | Gatwick believes that pursuing this option would deliver limited benefit compared to the investment required and already committed. As NERL's own projections show, without a serious redesign of the national and LTMA airspace, we will hit the limit of capacity in this decade, therefore retaining the existing structure, without a major overhaul, would not resolve this problem. | Gatwick supports this option. We believe that together with the Hybrid Systemised and some forms of Free Route Airspace, this option fits best with the objectives of the AMS and with Gatwick's own design principles - safety and deconfliction by design. We note however a potential problem with this option in lacking sufficient airspace to provide all the DCTs required by airport operators as well as requisite free airspace for GA operators, without advanced PBN standards (which brings risks and limitations of its own) and some form of systemisation, so a hybrid would most likely be called for. | Gatwick supports this option, but further design and development of concept is required. On one hand, the option fits well with Gatwick's own design principle of optimising the aircraft capabilities (in this case the navigation) and it does provide a very flexible option in terms of adaptability and resilience (e.g. weather avoidance). However, without further development and enhancements, we do not see how it would deliver on predictability, safety or deconfliction by design. Also, depending on altitude limitations of free route airspace, this option may deliver negative outcomes in terms of noise impacts to communities. | No   |   | Yes         | Biggin Hill arrival options to the south will interact with Gatwick's arrival and departure routes to the north and east   | Yes         | We are most concerned with designs to the east and north east. Providing these are designed so as to minimise interactions with Gatwick's arrival and westerly / south westerly departures, we do not anticipate other issues. | No          |   | Yes     | Detailed reviews and engagement re Gatwick's options was conducted in September and much of our feedback was captured there. We highlight again the potential for arrival options to the west and north of Gatwick, providing other aerodrome and TMA designs allow this. | Yes      |     |    |
| 11 | 10/21/22 8:33:56  | 10/21/22 9:07:57  | anonymous | Yes                        | RAF Northolt ACP                     | Whilst systemisation is supported as a general concept it needs to enable all airports to operate in an expeditious manner. A highly systemised approach may lack the flexibility required to enable the most efficient use of the airspace.   | A hybrid system should provide a level of certainty for approaches to an airport with the flexibility for more expeditious routing if available.  | Do minimum would allow airports to update their initial departures and arrivals however, further benefits would not be achieved.  | A challenge with the complex nature of airspace especially over the south of England.   | This would potentially benefit operators in terms of efficiencies in flight times and distances.  | No   |   | No          |  | No          |  | No          |   | No      |   | No       | Yes |    |
| 12 | 10/24/22 12:02:36 | 10/24/22 12:05:23   | anonymous | Yes                        | Loganair                             | Probably our preference  | Probably the reality!   | No  | Would need to see detailed designs  | No view as still learning about FRA in practical application at Loganair  | No   |   | No          |  | No          |  | No          |   | No      |   | No       | No  |    |
| 13 | 10/24/22 14:39:34 | 10/24/22 14:48:15   | anonymous | Yes                        | EGKB                                 | No Comment   | No Comment  | No Comment  | No Comment  | No Comment  | Yes  | All possible options should be explored. The current options are too indirect for specific comments to be made.   | Yes         | All route options still being considered.  | No          |  | Yes         | Looking for a low and medium level route  | Yes     | Full engagement required.   | Yes      |     |    |
| 14 | 10/24/22 20:31:10 | 10/24/22 20:41:12   | anonymous | Yes                        | Boeing                               | I am generally in favour of using PBN where possible. I appreciate that PBN can give predictability and allow separation and efficiency through design rather than relying on the human-in-the-loop to tactically achieve operational efficiency. Also opens the door for other PBN-based airspace structures and operations at the airport level by requiring aircraft performance at the sequencing level.   | Same general opinion as Option 1, I am generally in favour of PBN airspace where possible.  | Least favoured option, does not allow much room for future traffic growth and under-utilises capabilities of air fleets operating in UK airspace.   | Second least favoured option. Offers a fixed airspace without the operational benefits of PBN   | Could be implemented in specific areas. The most complex and congested the airspace I believe the harder it would be to implement. Could definitely be coupled with TBO for en route airspace for positive benefits.  | No   |   | No          |  | No          |  | No          |   | No      |   | No       | Yes |    |
| 15 | 10/25/22 10:53:07 | 10/25/22 11:09:09   | anonymous | No                         | ADPA                                 | Difficult to see how non jet aircraft / airliner type flights will be accommodated   | Difficult to see how non jet aircraft / airliner type flights will be accommodated  | Doing the minimum may not meet the Governments directions on environmental impact   | Difficult to see how non jet aircraft / airliner type flights will be accommodated  | FRA is unlikely happen below a certain level. GA jet traffic need to be accommodated but understand that speed can be an issue ie average cruise speeds which can impact capacity --- what are the plans to deal with slower non CAT traffic  | No   |   | No          |  | No          |  | No          |   | No      |   | No       | No  |    |
| 16 | 10/25/22 17:16:45 | 25/10/2022 17:30:45<br>Includes email received 27.10.2022 | anonymous | Yes                        | Airspace4All Services Ltd            | Would be ideal but practicalities and the need for resilience in degraded situations may make it impracticable or unsafe in such circumstances.  | Likely workable option  | Does not meet the requirement   | No opinion  | Yes where practicable within the crowded area under consideration   | No   |   | Yes         | We have a collective view on minor airports which we will send separately - with this feedback if the system allows otherwise by separate document   | Yes         | We have a collective view on minor airports which we will send separately - with this feedback if the system allows otherwise by separate document   | Yes         | We have a collective view on minor airports which we will send separately - with this feedback if the system allows otherwise by separate document  | No      |   | No       | No  |    |
| 17 | 10/26/22 9:15:14  | 10/26/22 9:29:51  | anonymous | Yes                        | Manston Airport                      | Ideal scenario to minimise ATC intervention but likely to require more airspace than is available in the UK/MTMA area, hence impractical. Suggest unlikely to achieve multiple DPs, especially DP2.  | Most practical (and likely) solution. Favoured solution, particularly at lower (but above 7,000 ft) altitudes, maybe some compromise on environmental DPs.  | Would probably suit Manston Airport due to the minimal changes required.  | Does not look practical or feasible due to the limited airspace available. Could be difficult to manage, especially at lower levels.  | Does not look practical or feasible due to the limited airspace available. Could be difficult to manage, especially at lower levels.  | No   |   | No          |  | No          |  | No          |   | No      |   | No       | No  |    |
| 18 | 10/28/22 8:44:36  | 10/28/22 8:54:36  | anonymous | No                         | London Southend Airport              | Desirable perhaps when away from airport and in en-route structure. But lose flexibility when near airports.   | Preferred option as offers tactical options when near airports.   | No comment  | Easier for flight planning but may not work in practice.  | Desirable but difficult to implement  | No   |   | Yes         | Arrival structures from the East would potentially conflict with Southend Traffic as well as EGLC  | No          |  | No          |   | No      |   | No       | No  | No |
| 19 | 10/28/22 10:27:05 | 10/28/22 11:03:34   | anonymous | Yes                        | BGA (British Gliding Association)    | likely to be inefficient for airspace required? Less compatible with DP5 and 6. Extra airspace and/or restrictions would be disbenefit for BGA.  | most likely to be compatible with BGA requirements.   | unlikely to achieve DP5 (minimising volume of controlled airspace) so BGA would be disadvantaged.   | BGA would be concerned if this would require 'blanket' CAS - even if only at high level. Having access to airspace above 7000' in known good soaring locations is an important part of the BGA requirements. DP6  | BGA would be concerned if this would require 'blanket' CAS - even if only at high level. Having access to airspace above 7000' in known good soaring locations is an important part of the BGA requirements. DP6  | Yes  | Definition of DRA or FRA above a particular level (32,000ft) would alleviate some of the BGA's concerns. DP6  | Yes         | Biggin Hill (2019) - traffic demand is low (8600 per year is an overall average of 1 arrival per hour). Any network supporting structure should be proportionate to this level of traffic. | Yes         | Bournemouth - traffic demand is very low (6300 per year is an overall average of 0.7 arrivals per hour). Any network supporting structure should be proportionate to this level of traffic.                                    | Yes         | Farnborough has recently acquired significant lower airspace. This ACP should take the opportunity to present traffic into the airfield more efficiently in order to reduce the complex and inefficient network of lower airspace currently in place. Especially as demand is only an average of 2 arrivals per hour. The initial conclusions that the airfield would suit holds to the South and West with promising routes onto final approach are concerning if this is associated with imposition of new CAS with difficult access requirements for GA operators. The BGA sees this ACP as providing an opportunity to better integrate Farnborough traffic above 7000' allowing steeper arrivals and departures and release of some CAS below 7000'.                                       | Yes     | Gatwick - conclusions suggest that any new network solutions would not require additional CAS. An opportunity should also be taken to remove legacy CAS segments where possible.  | Yes      |     |    |
| 20 | 10/28/22 11:16:04 | 10/28/22 11:55:27   | anonymous | Yes                        | Farnborough Airport                  | Alignment with your DPs 0 and 8 Yes Others - probably as very generic at the moment Network Options Alignment with FAL aspirations - Provisionally yes as these are still conceptual and are not showing geographical limitations. Any Changes or other options - Not Yet as we have not yet entered Stage 2   | Alignment with your DPs 0 and 8 Yes Others - probably as very generic at the moment Network Options Alignment with FAL aspirations - Provisionally yes as these are still conceptual and are not showing geographical limitations. Any Changes or other options - Not Yet as we have not yet entered Stage 2  | Alignment with your DPs 0 and 8 Yes Others - probably as very generic at the moment Network Options Alignment with FAL aspirations - Provisionally yes as these are still conceptual and are not showing geographical limitations. Any Changes or other options - Not Yet as we have not yet entered Stage 2  | Alignment with your DPs 0 and 8 Yes Others - probably as very generic at the moment Network Options Alignment with FAL aspirations - Provisionally yes as these are still conceptual and are not showing geographical limitations. Any Changes or other options - Not Yet as we have not yet entered Stage 2  | Alignment with your DPs 0 and 8 Yes Others - probably as very generic at the moment Network Options Alignment with FAL aspirations - Provisionally yes as these are still conceptual and are not showing geographical limitations. Any Changes or other options - Not Yet as we have not yet entered Stage 2  | Yes  | Answered Yes - as I needed this comment box. As FAL are only just starting Stage 1 we cannot answer Yes or No at this stage - so our answer is Probably Not but we cannot be certain that some bespoke option may not be necessary. | No          |  | No          |  | Yes         | Alignment with DPs - answer as for the Network Options Alignment with FAL aspirations - As we have only just started Stage 1 it is impossible to be definitive about the information shown. However, we hope that through continued engagement and maintenance of an excellent working relationship, any options output from the FAL ACP Stage 2 work will be able to be considered for integration into the NERL ACP. At this point the conceptual yellow design envelope should not be considered a constraint but more as a sensible working hypothesis that can be altered should FAL options, and the associated network designs dictate. Changes to the options/New Options - Information is very generic and due to FAL being in Stage 1 the only answer possible is "Not at the moment" | No      |   | No       | No  |    |
| 21 | 10/28/22 10:53:56 | 10/28/22 12:19:02   | anonymous | Yes                        | MOD                                  | This option aligns with some DPs but potentially at the detriment of others. It depends what balance needs to be struck between capacity and environment.  | Appears to align with more DPs than option 1 and offers flexibility.  | Does not align well with several of the DPs.  | Aligns with some DPs but at detriment of others. Again, it depends how you want to balance capacity and environment. I would expect that a reduction in capacity is not acceptable.   | Aligns with some DPs but at detriment of others. Again, it depends how you want to balance capacity and environment. I would expect that a reduction in capacity is not acceptable.   | No   |   | No          |  | No          |  | No          |   | No      |   | No       |     |    |
| 22 | 10/28/22 12:58:50 | 10/28/22 13:03:11   | anonymous | No                         | Ethihad Airways                      | Nil  | Nil   | Nil   | Nil   | Preferred option  | No   |   | No          |  | No          |  | No          |   | No      |   | No       | No  |    |

| Please leave your comments relating to Heathrow, here.   | London City | Please leave your comments relating to London City, here.  | Luton | Please leave your comments relating to Luton, here.  | Manston | Please leave your comments relating to Manston, here.   | Northolt | Please leave your comments relating to Northolt, here.   | Southampton | Please leave your comments relating to Southampton, here.  | Southend | Please leave your comments relating to Southend, here.  | Stansted | Please leave your comments relating to Stansted, here.   | Do you have any objection to DP2? | Please describe your objection.   | Is there any additional feedback you | Please give any additional feedback, here.   |
|--|-------------|--|-------|--|---------|---|----------|--|-------------|--|----------|---|----------|--|-----------------------------------|---|--------------------------------------|--|
|  | No          |  | No    |  | No      |   | No       |  | No          |  | No       |   | No       |  | No                                |   | Yes                                  | Trombone procedures allows to better allocate the fuel quantity needed for the arrival procedure, like the Point merge. Pilot energy management is also easier as the procedure and track miles to fly in descent are correlated which is not the case with Holds. In departure a low first level off like 6000ft to keep until far away from the airport is very much fuel consuming  |
| We support the widening of the Heathrow Arrival Design Envelope. It is important to LLA that the Heathrow holds are moved outside of the main LTMA to ensure greater flexibility for routes below 7,000ft. These holds should also be raised to higher altitudes. There is concern that the arrival envelope is close to Luton TMA and therefore could restrict climb from our departures or descent from our arrivals.  | Yes         | LLA supports the London City design area to the east of the UK and London. However has concern that the envelope does come close to LLA's current lower level design options nearby BPE and therefore could be an impact and a hold in this area could restrict the climb of Luton departures.   | Yes   | We support the design area for Luton.  | No      |   | Yes      | We support the widening of the Northolt Arrival Design Envelope. It is important to LLA that any Northolt holds are outside of the main LTMA to ensure greater flexibility for routes below 7,000ft. There is concern that the arrival envelope is close to Luton TMA and therefore could restrict climb from our departures or descent from our arrivals. | No          |  | No       |   | Yes      | We support the widening of the Stansted Arrival Design Envelope to the east. It is important to LLA that any Stansted holds are outside of the main LTMA to ensure greater flexibility for routes below 7,000ft. There is concern that the arrival envelope is close to Luton TMA and therefore could restrict climb from our departures or descent from our arrivals. We would support a change in Stansted's hold to the east, which would mean LLA could have a hold closer to the airfield to the north (potentially in LOWEL area). | No                                |   | No                                   |  |
| Altitude gain and deconfliction with LCY routes is desirable.  | Yes         | The NERL consultation material uses the phrase 'based on traffic throughput, this may need to be a shared facility' for London City's arrival structure for point merge, switch merge and trombone. A shared facility could limit capacity and if this is the case they we wouldn't be supportive of this approach. We also have a desire to achieve a shorter arrivals route particularly from the north through more direct routing. NERL design options should support this aspiration where possible to minimise carbon emissions. | No    |  | No      |   | No       |  | No          |  | No       |   | No       |  | No                                |   | No                                   |  |
| Heathrow's design envelope overlaps Southampton, Southend, London City and Gatwick airports (amongst others), whereas none of the other design envelopes overlap Heathrow - we believe this is a limitation which prematurely discounts many, otherwise potentially viable, design options. This point aside, Gatwick is specifically concerned with Heathrow's proposed arrival designs to the south, east and west as they will interact with our arrival and departure options. | No          |  | No    |  | No      |   | No       |  | Yes         | Similar to Bournemouth, Gatwick is specifically concerned with arrival structures to the north and east as they may interact with our arrival and departure options.   | No       |   | No       |  | Yes                               | No objection per se, except that the capacity/resilience factor should not be diluted by this reprioritisation, e.g. reducing fuel burn and emissions should not be done to the detriment of capacity and resilience, given that the purpose of the programme is to improve UK airspace capacity. | No                                   |  |
| Due to the proximity of Heathrow and RAF Northolt it is important that any arrival structures for Heathrow make consideration to the impacts on RAF Northolt operations.   | No          |  | No    |  | No      |   | Yes      | RAF Northolt is supportive of the approach this ACP is developing and will continue to work closely to ensure that Northolt's requirements are met. It will continue to cooperate to integrate interdependent airports arrival structures to ensure the best solution is continued.  | No          |  | No       |   | No       |  | No                                |   | No                                   |  |
| Full engagement required.  | Yes         | Full engagement required.  | No    |  | No      |   | No       |  | No          |  | Yes      | Full engagement required.   | No       |  | No                                |   | No                                   |  |
| A point merge or trombone airspace feeding into an RNP arrival structure could have multiple benefits. A CDO from the merge point to arrival could lead to lower fuel consumption and noise and RNP structured arrivals could lead to further efficiency increases.  | No          |  | No    |  | No      |   | No       |  | No          |  | No       |   | No       |  | No                                |   | No                                   |  |
|  | No          |  | No    |  | No      |   | No       |  | No          |  | No       |   | No       |  | No                                |   | Yes                                  | Whilst you have referenced GA you have not made any detailed statements about where you see the impact. For example, the following GA aerodromes are close to or inside the LTMA- Denham, Elstree, Fairlocks Blackbushe Stapleford, Redhill, White Waltham to name a few. If any of these seek GNSS approaches how will that impact your plans? How will you accommodate VFR flights within the LTMA?  |
|  | No          |  | No    |  | Yes     | We have a collective view on minor airports which we will send separately - with this feedback if the system allows otherwise by separate document  | Yes      | We have a collective view on minor airports which we will send separately - with this feedback if the system allows otherwise by separate document   | Yes         | We have a collective view on minor airports which we will send separately - with this feedback if the system allows otherwise by separate document   | Yes      | We have a collective view on minor airports which we will send separately - with this feedback if the system allows otherwise by separate document  | No       |  | No                                |   | Yes                                  | We will be writing to you separately on ACOG policy and the commercial impact of the airspace changes that would flow from this stage. The format of this response document is not suitable for their inclusion here   |
|  | No          |  | No    |  | Yes     | The arrival design envelope and arrival structure viability assessment currently fit with the aspirations for the airport. Agree that an inner hold would be the only arrival structure required due to the expected traffic volumes. | No       |  | No          |  | No       |   | No       |  | No                                |   | No                                   |  |
|  | Yes         | Currently allot of interaction between Southend and city arrivals. Potential that if a EGLC arrival structure is via the Southend overhead this could conflict with Southend departures and restrict climb.  | No    |  | No      |   | No       |  | No          |  | Yes      | With the aspirations of the airport to reach 10 million passengers, holding options above FL70 would need to be planned for. Current Southend holding options below FL70 are limited to 3 levels without co-ordination with TC. Therefore an option of do nothing would not be desirable. | No       |  | No                                |   | No                                   |  |
| Heathrow - conclusions suggest that any new network solutions would not require additional CAS. An opportunity should also be taken to remove legacy CAS segments where possible.  | Yes         | City - solutions appear to sensibly suggest the use of airspace over the sea would suit this airport.  | Yes   | Luton - conclusions suggest airspace solutions (above 7000') to the north. This airspace is rarely required for glider operations. | Yes     | Manston - solutions appear to sensibly suggest the use of airspace over the sea would suit this airport.  | Yes      | Northolt - with such dependency and compatibility with Heathrow and very low movement rates any network supporting structure should be commensurate with such demand/dependency.   | Yes         | Southampton - traffic demand is low (overall average of 2 arrivals per hour). Any network supporting structure should be proportionate to this level of traffic. In addition this ACP should take the opportunity to site any point merge system over the sea. | Yes      | Southend - traffic demand is low (overall average of 1.5 arrivals per hour). Any network supporting structure should be proportionate to this level of traffic. Solutions appear to sensibly suggest the use of airspace over the sea.  | Yes      | Stansted - conclusions suggest airspace solutions (above 7000') to the north. This airspace is rarely required for glider operations.  | No                                |   | Yes                                  | On slide 10 there is a map of 'constraints'. It (quite reasonably) lists, amongst others, recreational para operations airspace requirements at Hinton and Headcorn as potential constraints. A comparative study of recreational use of airspace at busy gliding sites - particularly Lasham, Cambridge Gliding Centre at Gransden Lodge and other sites that are very busy at particular times would suggest that these deserve similar status. Although this is more relevant for the ACPs for airspace below 7000' it may have implications for airspace above 7000' (e.g. for Farnborough). |
|  | No          |  | No    |  | No      |   | No       |  | No          |  | No       |   | No       |  | Yes                               | Answered Yes to get this comments box. It would be useful to understand your reasoning...and would this occur before the DPE?   | No                                   |  |
|  | No          |  | No    |  | No      |   | No       |  | No          |  | No       |   | No       |  | No                                |   | Yes                                  | It was good to see wider MOD activity considered (areas of complexity/DAs) in the design envelopes. Ensuring appropriate access for military aircraft/activity and minimising detrimental increases in CAS will continue to be priorities for MOD.   |
|  | No          |  | No    |  | No      |   | No       |  | No          |  | No       |   | No       |  | No                                |   | No                                   |  |

| ID | Start time        | Completion time   | Email               | Did you attend a briefing? | Which organisation do you represent?   | Option 1: Highly Systemised  | Option 2: Hybrid Systemised  | Option 3: Do Minimum   | Option 4: Direct Route Airspace  | Option 5: Free Route Airspace  | Do you consider there to be any alternative network options? | If yes, please describe | Biggin Hill | Please leave your comments relating to Biggin Hill, here.  | Bournemouth | Please leave your comments relating to Bournemouth, here.  | Farnborough | Please leave your comments relating to Farnborough, here.  | Gatwick | Please leave your comments relating to Gatwick, here.  | Heathrow |  |     |
|----|-------------------|-------------------|---------------------|----------------------------|--|--|--|--|--|--|--|-------------------------|-------------|--|-------------|--|-------------|--|---------|--|----------|--|-----|
| 23 | 10/28/22 13:01:08 | 10/28/22 13:17:20 | anonymous           | Yes                        | Lufthansa Systems FlightNav (Lido FMS) | From an FMS coding perspective, all options are fine. However, even though most aircraft are capable, some avionics still have limited databases. Increasing the number of departure/arrival procedures, additional routes and waypoints at multiple airports might lead to some databases not being able to have the same coverage as before (in terms of the number of included airports). This option might increase the number of SID/STARs/routes and waypoints.                                    | From an FMS coding perspective, all options are fine. However, even though most aircraft are capable, some avionics still have limited databases. Increasing the number of departure/arrival procedures, additional routes and waypoints at multiple airports might lead to some databases not being able to have the same coverage as before (in terms of the number of included airports). This option might increase the number of SID/STARs/routes and waypoints.                                    | From an FMS coding perspective, all options are fine. This option more or less is the status quo, therefore it most likely has only a minimal increase in SID/STAR/routes or waypoints, so no issues with database sizes are expected.   | From an FMS coding perspective, all options are fine. It most likely has only a minimal increase in SID/STAR/routes or waypoints, so no issues with database sizes are expected.   | From an FMS coding perspective, all options are fine. It most likely has only a minimal increase in SID/STAR/routes or waypoints, so no issues with database sizes are expected.   | No   |                         | No          |  | No          |  | No          |  | No      |  | No       |  |     |
| 24 | 10/29/22 9:49:29  | 10/29/22 10:07:50 | anonymous           | No                         | easyjet                                | This system is reliable and predictable. As the human intervention is minimized, the safety performance from a HFACS point of view, has increased significantly.   | This system can be a good option provided that we minimum non systemised routes. Trombone and point merge system may be a part of this system.   | The existing route needs to be revised, using this option, the expected gains are too low.   | The concept is good. The efficiency of this system decreases when the traffic increases. Studies need to prove what the capacity is of this concept.   | Concept is good, but the practical implementation for AC operators is challenging.   | No   |                         | No          |  | No          |  | No          |  | No      |  | No       |  |     |
| 25 | 10/31/22 17:53:06 | 10/31/22 18:52:49 | anonymous           | No                         | Delta AirLines                         | Work well under design considerations, but often lacks the flexibility to manage efficiency. Controllers often have the best picture and can work the optimum solutions. Generally not supported by our operation for NATS airspace. Option 2 preferred over 1   | Adds some flexibility and solves several problems with community engagement. It is easier to explain changes and flight paths to shareholders, while retaining improved performance. Supported by our operation as the controller can interact and create efficiencies as they see fit.  | Easiest Politically but requires constant reiterations. It may also mean not leveraging investments in technology which could improve the overall system. We would support a different path of the right amount of change, evaluate and reiterate. Least desirable option.   | Direct route is a good balance of using a system of procedures where it matters to separation in congested airspace and noise mitigation, while offering the efficiency of direct routing between. Supported by our operation.   | Most efficient but often requires a trade-off of controller workload. Hardest for public to understand flight paths and noise burden. Would prefer a balance of systemization to manage controller and pilot workload, while optimizing flight paths were able. Option 4 is preferred over Option 5, except in the high-altitude structure, here we would want FRA.  | No   |                         | No          |  | No          |  | No          |  | No      |  | Yes      |  |     |
| 26 | 11/1/22 16:40:54  | 11/1/22 17:01:35  | anonymous           | No                         | British Airways                        | Great for lack of ATC interaction/intervention but can be less efficient in terms of taking advantage of reduced track miles when traffic demands are low.   | A good balance to counter my comments in Q4.   | Airspace has not been upgraded since the 1960s. This is a once in a lifetime opportunity to modernize it for our modern fleets. This option falls short of doing this.   | Good option  | Good option  | No   |                         | Yes         | Considering the number of movements at Biggin Hill, this must be deprioritized to facilitate LHR and LGW efficiencies. | Yes         | Considering the number of movements at Bournemouth, this must be deprioritized to facilitate LHR and LGW efficiencies.   | Yes         | Considering the number of movements at Farnborough, this must be deprioritized to facilitate LHR and LGW efficiencies.   | Yes     | The only viable option is to enhance and modernize the Arrival structures to the South to ensure there is no conflict with the LTMA traffic. | Yes      |  |     |
| 27 | 11/1/22 9:41:44   | 11/2/22 10:21:35  | anonymous           | Yes                        | Cyrrus/ Bournemouth Airport            | Lack of flexibility - too much restriction. Negative impact on the environment.  | preference for this option - happy medium with structure routes but still affording the potential for dynamic solutions. Meet in the middle option for capacity and environment.   | negates the reason for change  | Great for CO2 and the environment, would likely contribute towards reduced capacity so not a great option  | FRA could be beneficial at high level over large sections of airspace- however we don't feel that the lower-level airspace would benefit from this option.   | No   |                         | No          |  | Yes         | We agree with the design envelope displayed and look forward to working more closely with NERL and Southampton in the future.  | No          |  | No      |  | No       |  |     |
| 28 | 11/2/22 16:58:52  | 11/2/22 17:10:52  | anonymous           | Yes                        | MAG Stansted Airport                   | Whilst offering a high degree of predictability, is this system able to offer the flexibility required to cope with changing traffic levels throughout the day/year? From a DP perspective applying PBN route separation to all routes may require larger volumes of CAS (DP5). Appears to align to DP9 but would be sceptical about the ability to deliver any environmental efficiency benefits DP2,3,4.   | Would seem to offer greater flexibility than option 1 whilst still being aligned to DP8 and partially to DP9. Probably the preferred STN option because of the ability to create capacity within the LTMA and reduce delays.   | Not an acceptable option for STN. Would not deliver against the STN "must have" designs principles including the alignment to the AMS to deliver both efficiency and environmental benefits. Does not align to NERL DP 2,3 or 8  | Provides a flexible system and although it doesn't exactly align to DP9 (systemisation) which may impact capacity within the LTMA. This would appear to deliver better on the environmental DPs (2,3,4) than previous options. From an airport perspective we would want to understand the difference in terms of capacity (minutes of delay?) between hybrid systemisation and this direct route option.  | Similar view to Option 4. Delivers on fuel burn and environment for airlines, but if there is an impact on network capacity (DP8) then this would not present a good option or STN. Again we would want to understand the difference in capacity performance of these options.   | No   |                         | No          |  | No          |  | No          |  | No      |  | No       |  | No  |
| 29 | 11/3/22 15:12:40  | 11/3/22 15:19:06  | anonymous           | Yes                        | Heathrow Airport Limited               | The high-level conceptual nature of the Network options is understandable at this stage of the process. There are elements in all the concepts that could be applied to the Design Principles and HAL has no reason to believe that as these concepts are developed, they would not align to the Design Principles. This alignment will become clearer in the Design Principle Evaluation where each concept will be evaluated against each Design Principle and we look forward to seeing this outcome. | The high-level conceptual nature of the Network options is understandable at this stage of the process. There are elements in all the concepts that could be applied to the Design Principles and HAL has no reason to believe that as these concepts are developed, they would not align to the Design Principles. This alignment will become clearer in the Design Principle Evaluation where each concept will be evaluated against each Design Principle and we look forward to seeing this outcome. | The high-level conceptual nature of the Network options is understandable at this stage of the process. There are elements in all the concepts that could be applied to the Design Principles and HAL has no reason to believe that as these concepts are developed, they would not align to the Design Principles. This alignment will become clearer in the Design Principle Evaluation where each concept will be evaluated against each Design Principle and we look forward to seeing this outcome. | The high-level conceptual nature of the Network options is understandable at this stage of the process. There are elements in all the concepts that could be applied to the Design Principles and HAL has no reason to believe that as these concepts are developed, they would not align to the Design Principles. This alignment will become clearer in the Design Principle Evaluation where each concept will be evaluated against each Design Principle and we look forward to seeing this outcome. | The high-level conceptual nature of the Network options is understandable at this stage of the process. There are elements in all the concepts that could be applied to the Design Principles and HAL has no reason to believe that as these concepts are developed, they would not align to the Design Principles. This alignment will become clearer in the Design Principle Evaluation where each concept will be evaluated against each Design Principle and we look forward to seeing this outcome. | No   |                         | No          |  | No          |  | No          |  | No      |  | No       |  | Yes |
| 30 | N/A               | N/A               | Received 28.10.2022 |                            | United Airlines                        |  |  |  |  |  |  |                         |             |  |             |  |             |  |         |  |          |  |     |
| 31 | 11/8/22 10:11:38  | 11/8/22 10:17:17  | anonymous           | Yes                        | Ryanair gRoup                          | INTUITIVELY pbn SOLUTION IS BEST USE OF AIRSPACE VOLUME WHICH SHOULD OPTIMISE CAPACITY. First pref   | 2nd pref   | NO   | 4th pref   | 3rd pref   | No   |                         | No          |  | Yes         | Accepted. Capacity is most important consideration   | No          |  | Yes     | Capacity is most important, so whatever drives max capacity  | No       |  |     |
| 32 | 11/8/22 14:18:04  | 11/8/22 14:22:35  | anonymous           | Yes                        | AGS Southampton                        | No issues with this option so long as there is sufficient flexibility to handle all circumstances.   | No issues with this option   | No issues with this option   | No issues with this option   | No issues with this option   | No   |                         | No          |  | Yes         | We have responded to the feedback request by Bournemouth on their Design Principles and have made comments to them regarding the aspiration for Bournemouth to have autonomy with regard to avoiding Solent APC working their traffic. | Yes         | Farnborough traffic will likely interact with Southampton traffic and therefore we will require ongoing coordination of ACP design activities - especially as Farnborough have declared the intention of carrying out a new ACP as an integral part of the AMS plan. Southampton's aspiration will be to remove the requirement for Solent APC to work Farnborough traffic, ideally with Farnborough traffic avoiding Solent airspace. | No      |  | No       |  |     |

| Please leave your comments relating to Heathrow, here.   | London City | Please leave your comments relating to London City, here.  | Luton | Please leave your comments relating to Luton, here.  | Manston | Please leave your comments relating to Manston, here.  | Northolt | Please leave your comments relating to Northolt, here.  | Southampton | Please leave your comments relating to Southampton, here.  | Southend | Please leave your comments relating to Southend, here.  | Stansted | Please leave your comments relating to Stansted, here.   | Do you have any objection to DP2 | Please describe your objection. | Is there any additional feedback you | Please give any additional feedback, here.   |    |  |    |  |
|--|-------------|--|-------|--|---------|--|----------|---|-------------|--|----------|---|----------|--|----------------------------------|---------------------------------|--------------------------------------|--|----|--|----|--|
|  | No          |  | No    |  | No      |  | No       |   | No          |  | No       |   | No       |  | No                               |                                 | No                                   |  |    |  |    |  |
|  | No          |  | No    |  | No      |  | No       |   | No          |  | No       |   | No       |  | No                               |                                 | Yes                                  | These options are at conceptual level. Only when we can simulate these models and assess it more in depth more, the stakeholders can make a better decision.   |    |  |    |  |
| Maximum pressure on the runways is our priority. Flight path efficiency is desired. Using the ability of the controller to align traffic with the minimum spacing may come in the form of Switch merge or trombone. A single trombone offers the most opportunity to reduce track miles, while the Switch Merge may offer the ability to manage workload most efficiently and contain noise to higher flight levels. Holding is the least desired option.  | No          |  | No    |  | No      |  | No       |   | No          |  | No       |   | No       |  | No                               |                                 | No                                   |  |    |  |    |  |
| Arrival structures to the North should be enhanced and prioritized over EGSS/EGGW. Arrival structures to the East should be enhanced and prioritized over EGLC. Arrival structures to the South should be enhanced and prioritized over EGSK/EGM/EGH and EGLF. Arrival structures to the west should be enhanced and Arrival structures overhead considered.   | Yes         | Considering the number of movements at London City, this must be deprioritized to facilitate LHR and LGW efficiencies. | Yes   | Considering the number of movements at Luton, this must be deprioritized to facilitate LHR and LGW efficiencies. | Yes     | Considering the number of movements at Manston, this must be deprioritized to facilitate LHR and LGW efficiencies. | Yes      | Considering the number of movements at Northolt, this must be deprioritized to facilitate LHR and LGW efficiencies, although mindful that this needs military priority at certain times   | Yes         | Considering the number of movements at Southampton, this must be deprioritized to facilitate LHR and LGW efficiencies.   | Yes      | Considering the number of movements at Southend, this must be deprioritized to facilitate LHR and LGW efficiencies. | Yes      | Considering the number of movements at Stansted, this must be deprioritized to facilitate LHR and LGW efficiencies.  | No                               |                                 | No                                   |  |    |  |    |  |
|  | No          |  | No    |  | No      |  | No       |   | No          |  | No       |   | No       |  | No                               |                                 | No                                   |  |    |  |    |  |
|  | No          |  | No    |  | No      |  | No       |   | No          |  | No       |   | Yes      | General<br>•More bilateral discussion is needed to more accurately align the NERL concepts with the STN arrivals requirements that we discussed in the ADWR. Specifically, whichever option is chosen by NERL, STN need the ability to create noise respite from the location of the hold/holds. Whilst this is a requirement for the transitions below 7000ft, the location and type of hold that NERL design will be key in facilitating this respite concept.<br><br>Location | No                               |                                 | No                                   |  |    |  |    |  |
| The proposed Heathrow Airport arrival structures are in accordance with our expectation with the exception of the following comments:<br><br>oThe Arrival Structure viability assessment does not seem to be aligned to the output from the collaborative workshops that took place earlier in 2022. The elements that HAL would request further detail/rationale for are as follows;<br>oPoint Merge & Switch Merge options which both have a positive assessment in location and throughput which except for a facility in the OH we believe have long been assessed as 'airspace hungry' and unlikely to deliver the required throughput.<br>oOptimised inner holds in the Overhead (assuming this is referring to 4 holds as today). HAL is unsure how a concept of 4 optimised holds in the overhead would be a viable option and would like to better understand this.<br>oIf the Point/Switch merge options are viable across the full compass, why is the Trombone option assessed differently?<br><br>A re-evaluation of the Heathrow Arrival Structure viability assessment or further clarity provided via the Design Principle Evaluation to answer the above questions. | No          |  | No    |  | No      |  | Yes      | RAF Northolt arrival structures. All options seem to suggest that any arrival facility will continue to be shared with HAL traffic. Without any data to support the assumption that this will meet respective objectives and design principles, it is requested that a 'standalone' or 'shared with another TMA airfield' options are also considered as the concepts move to design. Alternatively, clarification added to the viability comments in the RAF Northolt section of the material. Request clarification of the intention of the RAF Northolt shared arrival structure via the Design Principle Evaluation with evidence that Heathrow, community, and Northolt requirements would still be met or exceeded by any joint structures. | No          |  | No       |   | No       |  | No                               |                                 | Yes                                  | HAL is grateful for the opportunity to engage with NERL on the Stage 2 element of this ACP. Collaborative sessions have taken place before this engagement and have proved extremely valuable in getting to this point. The comments provided to the main engagement questions are aimed to be constructive and to enable further collaboration as both ACP sponsors continue to progress their respective ACPs. The conundrum that NERL faces in pulling together the constituent parts of the LTMA AMS programme and then deploying into complex airspace are recognised and thus result in the conceptual proposals at this stage. We look forward to continuing to work with NERL to deliver the aims of the AMS.  |    |  |    |  |
|  |             |  |       |  |         |  |          |   |             |  |          |   |          |  |                                  |                                 | Yes                                  | Primarily we are concentrating, as ever, on Safety, Cost Reduction in all area including overflight charges and flight efficiency, and delay reduction. "Motherhood and Apple Pie", as they say in America.<br><br>One of my concerns, especially since the advent of drones and space operations, is that the airlines still appear to assume the lion's share, if not all, of the costs required to cover these changes to airspace design and in other activities too. Otherwise it is we airlines who cover these costs, with little no financial support from these other users to cover their share.<br><br>Meanwhile, I want to say how much we at United Airlines appreciate the depth of the task you face in perfecting airspace design, and in the inclusion and provision of the results of the development process. |    |  |    |  |
|  | No          |  | Yes   | Capacity is most important, so whatever drives max capacity  | No      |  | No       |   | No          |  | No       |   | Yes      | Capacity is most important, so whatever drives max capacity  | No                               |                                 | Yes                                  | Capacity is most important, so whatever drives max capacity  |    |  |    |  |
|  | No          |  | No    |  | No      |  | No       |   | Yes         | Relating to slide 21 - "Concepts of operations - sequencing and merging" and slides 62-65 - Southampton Airport Arrivals.<br><br>In relation to the feasibility of point merge operations outlined in the table on slide 65, we are not convinced that Southampton point merge and/or shared point merge with Bournemouth is a satisfactory approach model for Southampton operations and therefore do not support those options which include point merge unless it can be demonstrated to not increase CO2 emissions and/or impede CDO for our arrivals or impede CDO for our departures without additional miles.<br><br>In the lack of any evidence supplied by NERL, we are not convinced of sufficient airspace for a Point Merge for Southampton arrivals, especially considering Farnborough, Heathrow and Gatwick interactions.<br><br>We note that in slide 30, in the table of viability for Bournemouth, the table states -<br><br>Point merge - There is sufficient airspace to suitably place a switch merge. Based on traffic throughput, this may need to be a shared facility.<br><br>There is insufficient airspace to suitably place a switch merge.<br><br>We think that this is a typo and that for point merge, that it should say 'point merge' rather than 'switch merge'. | No       |   | No       |  | No                               |                                 | No                                   |  | No |  | No |  |