Appendix C: Component Identification

This appendix presents the evaluation tables for component identification (see Section 2.3 in 'Our approach to redesigning our airspace network' for context). These tables are provided to demonstrate the range of components considered and the nature of the evaluation. As it is the direct output of the assessment workshops it is highly technical in nature.

Component Identification and Evaluation

Table's C1 & C2 summarise the outputs of the component identification and evaluation process for arrival and departures respectively. These tables provide a summary description of each component, key issues raised in the identification workshops, and the results of evolution in terms of whether the component was retained or dismissed.

Table C1: Summary of Output for Arrival Components

Key	Type	Description	Component History	Comments	Pro	Con	Conclusion
A-1	Intermediate approach	1 arrival stream to each landing runway	Identified at initial brainstorm workshops	These will be independent RNAV transitions. ~39/ hour on each. May be theoretically possible if LAMP deployment could deliver and support; but realistically very difficult to achieve.	Minimal routes, possible CDAs, low track miles, low complexity	Throughput constraints (difficult to achieve), 1 letterbox not expected to deliver, not able to easily absorb delay, wake vortex constraints, strict RNP approach, very hands off (little flex), compass arrivals, only able to use speed (no vectoring), new tool support probably required	**Retained**
A-2	Intermediate approach	2 arrival streams to main landing runway, 1 to mixed-mode	Identified at initial brainstorm workshops	Expected to fulfil throughput however it complicates EGLL workload and LAMP still needs to prove delivery (although more options available).	Similar traffic streams, flexibility, not too complex, greater throughput than A-1	Not able to easily absorb delay, wake vortex constraints, strict RNP approach, little flexibility, dependent on precise traffic presentation, only able to use speed (no vectoring), new tool support probably required	**Retained**
A-3	Intermediate approach	2 arrival streams to each landing runway	Identified at initial brainstorm workshops	Throughput more assured vs. an increase in approach workload. Unknown tool solution and available capabilities. Not known whether controllers would monitor the tool or the aircraft.	Similar traffic streams, flexibility, not too complex, greater throughput than A-2	Traffic mix, merging numerous streams difficult, new tool support probably required	**Retained**
A-4	Intermediate approach	2+ arrival streams for each landing runway	Identified at initial brainstorm workshops	Not expected to need more than 2 streams per runway from a en-route network perspective but might be useful for efficiency/ throughput. Approach workload increase. Unknown tool solution and available capabilities. Not known whether controllers would monitor the tool or the aircraft.	Similar traffic streams, flexibility, greater throughput than A-3	Traffic mix, merging numerous streams more complex, new tool support probably required	**Retained**
A-5	Intermediate approach	Arrival traffic as extant (upwind, downwind and final) handled with tactical vectoring	Identified at initial brainstorm workshops	This is an unproven concept, however if achievable it could be a good repeatable solution with low approach workload. A purely tactical environment i.e. today's system with 3 runways. There would be no procedures in place to separate aircraft. Letterboxes could potentially be positioned where today's holds are. A similar idea is used on Western Radar and at EGKK.	Minimal routes, similar to today, minimal training overhead, more flexibility from vectoring	Geographical space, segmented approach would be a constraint, unsure whether this would deliver 39/ hour, less flexibility than today	**Retained**
A-6	Final Approach	RNP approaches to both runways	Identified at initial brainstorm workshops **Dismissed – RNP expected to be able to deliver throughput to missed mode runway cannot deliver required throughput to the main landing runway cannot deliver required throughput**	A highly sustained RNP operation to EGLL is an entirely new concept. This cannot conceivably deliver the demand to the landing runway. It is also an unproven concept. PBN on both routes; assumes separation between them. RNP could start at any point. Unknown what the maximum throughput would be. RNP 0.15 required for DLM, LDM 0.33.	Separation guaranteed once established, systemised route for aircraft onto final, should provide a greater throughput than current TEAM, repeatable solution	Not suitable for CAT III (unless RNP to XLS could be used), equipage, could not deliver the required throughput, heavily dependent on tool support, speed would be the only available technique	**Dismissed**
A-7	Final Approach	RNP approach to mixed-mode runway	A new component from the MDL-MLD west workshop.	A highly sustained RNP operation to EGLL is an entirely new concept - merits further investigation. Broken out from A-6; which is highly unlikely to deliver the required throughput. Dependent on the delivery requirements from the tower. Unknown what the maximum throughput would be. Places a demand on the fleet mix and mixed-mode spacing/ inbounds.	More relaxed gaps than if using RNP approaches to both runways (24/ hour), systemised route for aircraft onto final, repeatable solution	Not suitable for CAT III (unless RNP to XLS could be used), heavily dependent on tool support, speed would be the only available technique (mixed-mode runway)	**Retained**
A-8	Intermediate approach	1 spiral/ helix shaped arrival route to each landing runway	Identified at initial brainstorm workshops **Dismissed - cannot deliver required throughput**	This is an entirely new concept - technically very difficult, and would have a high risk that it is found to be unfeasible once technical and safety work undertaken. Furthermore, the controller opinion is that it would not optimise spacing and therefore would not deliver the required throughput.	CDAs may be possible, delay mechanism, gives sequence control for approach, arrivals could be vectored off early, might keep arrivals higher for longer	Technically very difficult, safety work required, separation issues, increased track distance, contingency holding may be more suitable, equipage issues, little flexibility, limited options for vectoring, speed concerns/ track keeping, space intensive, huge workload, no foreseeable benefits, would not optimise spacing, lack of respite, very dependent on demand and fleet mix, requires significant tool support	**Dismissed**
A-9	Intermediate approach	1 spiral/ helix shaped arrival route to the mixed-mode runway	A new component from the MDL-MLD west workshop - broken out from A-8 **Dismissed - cannot deliver required throughput**	This is an entirely new concept - technically very difficult, and would have a high risk that it is found to be unfeasible once technical and safety work undertaken. Furthermore, the controller opinion is that it would not optimise spacing and therefore would not deliver the required throughput.	CDAs may be possible, delay mechanism, gives sequence control for approach, arrivals could be vectored off early, might keep arrivals higher for longer	Technically very difficult, safety work required, separation issues, increased track distance, contingency holding may be more suitable, equipage issues, little flexibility, limited options for vectoring, speed concerns/ track keeping, space intensive, huge workload, no foreseeable benefits, would not optimise spacing, lack of respite, very dependent on demand and fleet mix, requires significant tool support	**Dismissed**
A-10	Concept	1 arrival stream from 1 letterbox	Identified at initial brainstorm workshops **Dismissed - captured in A-1/ A-2**	Covered by A-1/ A-2.	Simple traffic mix	Inefficiencies, constrained by terminals	**Covered by another component**
A-11	Concept	2 or more arrival streams to the same runway from a given letterbox	Identified at initial brainstorm workshops	Unproven concept - very dependent on the overall solution. Tracks would diverge before converging back to the same runway. Dependent on LAMP deployment delivering throughput to gateways. Toolset requirements unknown.	Supports respite	Traffic mix, dependent on mechanism to split traffic, no perceived operational benefits to split traffic which has already been streamed/ merged, heavily dependent on tool support, increased approached workload, complexities for LAMP	**Retained**
A-12	Concept	Arrivals from a single direction to land on either landing runway (no lateral confliction)	A new component from the MDL-MLD east workshop.	Similar to a stack swap. This would be a transition (RNAV) which supports northern arrivals landing on a southern runway (and vice versa).	Supports terminal arrivals and runway balancing, could be useful if used for traffic balancing	Tool support likely required, could be compromised if used purely for terminal arrivals	**Retained**
A-13	Concept	Multiple airborne crossovers	A new component from the MDL-MLD east workshop.	Very similar to A-12 but with cross-overs built in. Unsure whether separation at the crossover point would be built into the design - this could greatly affect workload.	Supports terminal arrivals and runway balancing	Could be compromised if used purely for terminal arrivals, tools required, large amount of geographical space may be required, could increase workload	**Retained**
A-14	Sequencing	Trombone approach - assumes single entry onto trombone	Identified at initial brainstorm workshops	Similar to RNP approach but with increased track length to allow speed to be tweaked/ delay absorption. CDA to level flight, descent in turn then level until glide slope. This could be similar to today's operation. Original LAMP design included a similar trombone design for EGLL. Requires a level of refinement and predictability from LAMP.	Lateral delay absorption, used widely, easy to shortcut, suited for 2.5/ 3NM final approach spacing, more flexible than a single transition (A-1), a longer track gives more time/ space to tweak the speed	Limited respite options, CDAs may be difficult due to shortcutting and unknown downwind length, additional track miles, exacerbate fuel uplift issues, not as environmentally efficient as point-merge, dependent on traffic presentation and tool support, lack of flexibility (speed only technique)	**Retained**

Key	Type	Description	Component History	Comments	Pro	Con	Conclusion
A-15	Sequencing	Trombone approach - assumes single entry onto trombone, with shortcuts available (within an RMA)	Identified at initial brainstorm workshops **Dismissed - captured in A-14.**	Additional flexibility from RMA; aircraft can be vectored onto final approach early.	Flexible handling and fine-tuning, simple for ATC and pilots as it replicates vectoring, lateral delay absorption, used widely, easy to shortcut, suited for 2.5/ 3NM final approach spacing, more flexible than a single transition (A-1), a longer track gives more time/ space to tweak the speed	Limited respite options, CDAs may be difficult due to shortcutting and unknown downwind length, additional track miles, exacerbate fuel uplift issues, not as environmentally efficient as point-merge	**Covered by another component**
A-16	Sequencing	Trombone approach - assumes multiple entries onto trombone	Identified at initial brainstorm workshops	RNP tracks to turn onto final approach as directed by ATC. Trombone is the full approach. CDA to level flight, descent in turn then level until glide slope. This could be similar to today's operation. Multiple ways to enter trombone. Original LAMP design included a similar design for EGLL. Requires a level of refinement and predictability from LAMP.	Lateral delay absorption, used widely, easy to shortcut, suited for 2.5/ 3NM final approach spacing, more flexible than a single transition (A-1), a longer track gives more time/ space to tweak the speed, multiple entries	Complexity around metering points, limited respite options, CDAs may be difficult due to shortcutting and unknown downwind length, additional track miles, exacerbate fuel uplift issues, not as environmentally efficient as point-merge, possibly increased RT, lack of flexibility (speed only technique), increased workload from merging	**Retained**
A-17	Sequencing	Trombone approach (PBN track) - assumes multiple entries onto trombone, with shortcuts available (within an RMA)	A new component from the MDL-MLD west workshop.	Additional flexibility from RMA; aircraft can be vectored onto final approach early.	Flexible handling and fine-tuning, simple for ATC and pilots as it replicates vectoring, lateral delay absorption, used widely, easy to shortcut, suited for 2.5/ 3NM final approach spacing, more flexible than a single transition (A-1), a longer track gives more time/ space to tweak the speed, multiple entries	Complexity around metering points, limited respite options, CDAs may be difficult due to shortcutting and unknown downwind length, additional track miles, exacerbate fuel uplift issues, not as environmentally efficient as point-merge, possibly increased RT, increased workload from merging	**Retained**
A-18	Sequencing	Double trombone/ "bow-tie" approach (PBN track) which aircraft can be vectored off	Identified at initial brainstorm workshops **Dismissed - captured in A-14 - A-17**	The letterboxes could be close to EGLL and possibly symmetrical in order to serve both E/W operations with the same design.	Flexible handling and fine-tuning, lateral delay absorption, simple for ATC and pilots as it replicates vectoring, used widely, easy to shortcut, suited for 2.5/ 3NM final approach spacing, more flexible than a single transition (A-1), a longer track gives more time/ space to tweak the speed, possible multiple entries	Complexity around metering points, limited respite options, CDAs may be difficult due to shortcutting and unknown downwind length, additional track miles, exacerbate fuel uplift issues, not as environmentally efficient as point-merge	**Covered by another component**
A-19	Sequencing	1 point-merge for each landing runway	Identified at initial brainstorm workshops	PBN tracks to arc, track from arc to common/ merge point then PBN tracks to final approach. Assume 2 letterboxes for each point-merge. The design of the INT transition has to support appropriate separation without affecting final spacing. Final approach options are open. The point-merge would end ~15 miles out. An accepted concept which has not been proven from a complex and dense operation (EGLL).	Flexible handling and fine-tuning, lateral delay absorption, consistent design across configurations, minimal vectoring, proven concept (ATC/ pilots), simple ATC training, CDAs possible, flexible arc positions, can work for approach or TMA, design flexibility	Geographical space, compass arrivals, additional track miles, relies on accurate streaming, fuel carriage calculation issues, not necessarily suited for 2.5/ 3NM spacing, doesn't fully eliminate holding need, ATCO skill degradation, likely require an enhanced toolset, inclusion of CATB/ special flights	**Retained**
A-20	Sequencing	1 point-merge for each landing runway which can send aircraft to both runways	Identified at initial brainstorm workshops	Initially the same as A-19. Staffing not a constraint. An accepted concept which has not been proven from a complex and dense operation (EGLL).	Flexible handling and fine-tuning, lateral delay absorption, lateral delay absorption, consistent design across configurations, minimal vectoring, proven concept (ATC/ pilots), simple ATC training, flexible arc positions, can work for approach or TMA, design flexibility, supports terminal arrivals, supports runway balancing and/or terminal arrivals, similar to stack swaps (using gaps)	Geographical space, operationally complex deliveries, additional track miles, CDAs difficult, increased workload, relies on accurate streaming, fuel carriage calculation issues, not necessarily suited for 2.5/ 3NM spacing, doesn't fully eliminate holding need, ATCO skill degradation, very complex if merging occurs after the merge point,, inclusion of CATB/ special flights, may require safety/ HF/ conformance monitoring work, enhanced tool support required for traffic integration	**Retained**
A-21	Sequencing	1 (>90°) point-merge for each landing runway	Identified at initial brainstorm workshops **Dismissed - captured in A-19/ A-20**	The size is not a constraint of the point-merge.	Flexible handling and fine-tuning, lateral delay absorption, consistent design across configurations, minimal vectoring, proven concept (ATC/ pilots), simple ATC training, CDAs possible, flexible arc positions, can work for approach or TMA, design flexibility	Geographical space, compass arrivals, additional track miles, relies on accurate streaming, fuel carriage calculation issues, not necessarily suited for 2.5/ 3NM spacing, doesn't fully eliminate holding need, ATCO skill degradation, likely require an enhanced toolset, inclusion of CATB/ special flights	**Covered by another component**
A-22	Sequencing	1 point-merge far out from EGLL (~FL90) used to absorb en-route delay	Identified at initial brainstorm workshops **Dismissed - covered by A-19/ A-20**	The location is not a constraint of the point-merge. Unclear who would work aircraft at this level. If it's a long point-merge, it would have one long transition.	Flexible handling and fine-tuning, lateral delay absorption, consistent design across configurations, minimal vectoring, proven concept (ATC/ pilots), simple ATC training, CDAs possible, flexible arc positions, can work for approach or TMA, design flexibility	Geographical space, compass arrivals, additional track miles, relies on accurate streaming, fuel carriage calculation issues, not necessarily suited for 2.5/ 3NM spacing, doesn't fully eliminate holding need, ATCO skill degradation, likely require an enhanced toolset, inclusion of CATB/ special flights	**Covered by other component**
A-23	Sequencing	2 point-merges far out from EGLL (~FL90) used to absorb en-route delay	Identified at initial brainstorm workshops **Dismissed - covered by A-19/ A-20**	The location is not a constraint of the point-merge. Unclear who would work aircraft at this level. If it's a long point-merge, it would have one long transition.	Flexible handling and fine-tuning, lateral delay absorption, consistent design across configurations, minimal vectoring, proven concept (ATC/ pilots), simple ATC training, CDAs possible, flexible arc positions, can work for approach or TMA, design flexibility	Geographical space, compass arrivals, additional track miles, relies on accurate streaming, fuel carriage calculation issues, not necessarily suited for 2.5/ 3NM spacing, doesn't fully eliminate holding need, ATCO skill degradation, likely require an enhanced toolset, inclusion of CATB/ special flights	**Covered by other component**
A-24	Sequencing	2 or more point-merges far out from EGLL (~FL90) used to absorb en-route delay	Identified at initial brainstorm workshops **Dismissed - covered by A-19/ A-20**	The location is not a constraint of the point-merge. Unclear who would work aircraft at this level. If it's a long point-merge, it would have one long transition.	Flexible handling and fine-tuning, lateral delay absorption, consistent design across configurations, minimal vectoring, proven concept (ATC/ pilots), simple ATC training, CDAs possible, flexible arc positions, can work for approach or TMA, design flexibility	Geographical space, compass arrivals, additional track miles, relies on accurate streaming, fuel carriage calculation issues, not necessarily suited for 2.5/ 3NM spacing, doesn't fully eliminate holding need, ATCO skill degradation, likely require an enhanced toolset, inclusion of CATB/ special flights	**Covered by other component**
A-25	Sequencing	1 RMA for all arrival streams	Identified at initial brainstorm workshops	No route structure; purely a tactical operation using height, vectoring and speed. Requires consistent controller intervention. Dispersion patterns as per current vectoring procedures. Scalability is dependent on the number of arrival streams in order to space them. Controllers will naturally try to systemise (an un-systemised environment).	Used in any mode to sequence, letterboxes could remain the same regardless of mode, can be used for CAT III, may allow CDAs, direct approaches possible, supports terminal arrivals	May result in long patterns of traffic, integration point on final approach might be too late, lack of systemisation, separating EGWU traffic may be difficult, would likely create high workload from being a highly reactive and un-systemised environment, large amount of tactical intervention	**Retained**
A-26	Sequencing	2 RMAs (1 per runway) - from X arrival streams	Identified at initial brainstorm workshops	Similar to A-5. Segregated RMAs e.g. one for north/ south (similar to EGKK). Approach workload could be eased through the positioning of RMAs/ arrival streams.	Increased capacity, more landing options, staggered traffic would help with separation, reduce conflicts, flexible handling, minimal routes, can be used for CAT III, may allow CDAs, direct approaches possible, supports 2 FIN positions, geographical flexibility	Some arrivals might have extra track mileage, separating EGWU traffic may be difficult, lack of systemisation, compass arrivals	**Retained**
A-27	Sequencing	A "super-hold" over EGLL to assist with approaches	Identified at initial brainstorm workshops	Completely new delay management concept - merged holds, clockwise/ anti-clockwise at different levels. There was a commitment made to not include holding. Technically feasible sub-component. May require RNAV transitions off the hold - unknown element of this component.	Arrivals held close to EGLL, could help with bad weather/ special flights, potential for noise dispersal, less space required for protection area than 4 holds, fit more aircraft on the same level	Geographical space, might not help absorb delay, very complex, conflict with departures (though these could be worked under), safety implications, equipage, tight speed control across different aircraft types, optimal arrival sequences may be difficult for controllers, unlikely to meet noise requirements, no major perceived benefits in lower airspace, would require a huge amount of investigation/ development	**Retained**
A-28	Final Approach	Tactical vector to XLS/ RNP to XLS	Identified at initial brainstorm workshops	**Viable but unproven concept for EGLL (used internationally but with dedicated monitoring controllers and non-transgression zones).** Assumption that RNP to XLS would be on the mixed-mode runway and vectors used for the main landing runway. There would be 1,000ft vertical separation between the 2 streams. Separated until both streams are established on the ILS (high-side/ low-side not needed). Similar to IPA today (without the XLS). Dependent on RNP capability/ equipage. Not currently used in the UK - cases elsewhere e.g. Atlanta. Maximum throughput unknown - vectors likely needed to maximise.	Can be used for CAT I/III, flexibility for the FIN controller when ensuring vertical separation and against the RNP, limit catch-ups	Might affect throughput due to lateral dependency, noise impacts, high fuel burn, does not assure separation, move tactical joining point further out, dependent on available RNP capability	**Retained**

Key	Type	Description	Component History	Comments	Pro	Con	Conclusion
A-29	Final Approach	Tactical vector to XLS/ RNP-AR approach to threshold	Identified at initial brainstorm workshops	Assumption that RNP-AR would be on the mixed-mode runway and vectors used for the main landing runway. Very dependent on the runway mode (RNP solution). There is an evolving body of evidence within the UK (e.g. IPA) but it is not fully proven.	Flexibility for the FIN controller when ensuring vertical separation and against the RNP, limit catch-ups, RNP-AR provides very tight lateral containment and assurance, flexibility in the approach design	Not all aircraft equipped to fly RNP-AR (only CAT I), high-side/ low-side or staggered approach would have to be used	**Retained**
A-30	Final Approach	RNP-AR approach to threshold/ RNP to XLS	Identified at initial brainstorm workshops	Assumption that RNP-AR would be on the mixed-mode runway and RNP to XLS on the landing runway. Dependent on RNP capability. Dependent on the throughput outcome of component A-28.	RNP route separation (prior to turn onto final), RNP-AR provides very tight lateral containment and assurance	Not all aircraft equipped to fly RNP-AR - CAT I only, high-side/ low-side or staggered approach would have to be used, crew training required for RNP-AR, unlikely to deliver required throughput	**Retained**
A-31	Final Approach	Tactical vector to XLS - for both runways	Identified at initial brainstorm workshops	Assuming high-side/ low-side. Assuming 39/hour for both runways.	Can be used for CAT I/III, flexibility for the FIN controller when ensuring vertical separation, maximum throughput due to vectors rather than systemisation, assures separation, new toolset not required	Might affect throughput due to lateral dependency, noise impacts, high fuel burn	**Retained**
A-32	Final Approach	RNP to XLS - for both runways	Identified at initial brainstorm workshops	Dependent on the outcome of A-26	Higher decision height; more accurate than just RNP, suitable for CAT III	Not all aircraft equipped to fly RNP-AR (only CAT I)	**Retained**
A-33	Final Approach	RNP-AR approach to threshold - for both runways	Identified at initial brainstorm workshops	**This is an unproven concept.** RNP 0.15 required for DLM, LDM 0.33. CAT I operations only. This would not require high-side/ low-side. A different procedure may be required for A380s.	Not limited to straight approaches, guaranteed separation, RNP-AR provides very tight lateral containment and assurance	Not available for CAT III, not all aircraft equipped to fly RNP-AR, could not use this today, crew training required, very little speed band-width on RNP-AR	**Retained**
A-34	Concept	Slightly steeper approach to 1 runway (<3.5°)	Identified at initial brainstorm workshops	Max landing angle is 3.5° for CAT I and 3.15° for CAT III for the final approach segment. This is unlikely to make much of a difference.	Potential noise/ environmental benefits	Dependent on EGLL having a higher specification of ILS, crews may not want to fly steep approaches, not all aircraft equipped to fly RNP-AR, vortex issues, impact on runway occupancy times	**Retained**
A-35	Concept	Steeper approach to 1 runway (>3.5°)	A new component from the MDL-MLD west workshop. **Dismissed - approaches this steep will not be possible**	Greater than 3.5°. Not permissible by PANS-OPS in the final approach segment unless for obstacle clearance purposes. Previous work complete: ICAO DOC 8186 (PANS-Ops criteria) for CAT i/ii/iii approach criteria and EGLL Expansion work package N2 Pt1 & 2 reports. 3.2° trials had no great impact.	Potential noise/ environmental benefits	Dependent on EGLL having a higher specification of ILS, crews may not want to fly steep approaches, not all aircraft equipped to fly RNP-AR, vortex issues, impact on runway occupancy times	**Dismissed**
A-36	Concept	Slightly steeper approaches to both runways	Identified at initial brainstorm workshops	Max landing angle is 3.5° for CAT I and 3.15 for CAT III for the final approach segment. This is unlikely to make much of a difference.	Potential noise/ environmental benefits	Dependent on EGLL having a higher spec of ILS, crews may not want to fly steep approaches, equipage, might both start descending at the same time, may increase workload (1-2 FIN controllers) particularly if approach angles are regularly changed.	**Retained**
A-37	Concept	Segmented approach	A new component from the MDL-MLD west workshop.	**Undeveloped/ immature concept for EGLL.** Requires predictability to work. HF input/ recommendations if concept is rotated over different runways. Vortex implications are unknown.			**Retained**
A-38	Concept	High-side/ low-side arrivals	Identified at initial brainstorm workshops	High-side/ low-side function would be known by the relevant FIN controllers. Position of high/ low side could be chosen on grounds such as respite or EGWU operations.	Avoids a staggered approach, independently separated on final approach	Geographical space, won't easily absorb delay, likely interaction with EGWU	**Retained**
A-39	Concept	Staggered arrivals using diagonal spacing/ separation between 2 arrival streams	Identified at initial brainstorm workshops	New concept - in a sustained environment. Suggested that the stagger would be around 1.5 - 2 miles. Similar to TEAM operation but tighter.	Assures separation of arrivals within 10NM, ability to use speed to close gaps, might create a bit of space compared to current TEAM with a different fleet mix e.g. more Mediums	Little flexibility outside of 10NM, potential catch-ups, must both be established on XLS, creates runway dependencies, 1 mile diagonal spacing likely not possible, not fully SOIR compliant	**Retained**
A-40	Concept	Offset centreline	Identified at initial brainstorm workshops **Dismissed - captured in A-6, A-32 & A-33**	Combination of RNP/ RNP-AR approach. Different from an offset XLS. This component is a realisation of an RNP/ RNP-AR approach component - it is assumed that these can be constructed into an offset approach/ route.	Flexible handling and fine-tuning, offset would help separation, increased accuracy, might enable curved approaches, allows further establishment, could be used for respite, removes the need for high-side/ low-side and lateral dependency (once established)	CDAs may be difficult, equipage issues (must be RNP/ RNP-AR specification if classed as a turn)	**Covered by other component**
A-41	Concept	Terminal arrivals	Identified at initial brainstorm workshops **Dismissed - captured in A-12, A-13, A-18 & A-25**	This is a principle rather than a component.	Removes ground complications	May increase air-borne complications	**Covered by other component**
A-42	Concept	Arrivals entering other arrival routes	Identified at initial brainstorm workshops **Dismissed - captured in A-12 & A-13**	Captured in A-12, A-13 - airborne crossovers.	Supports terminal arrivals	Operational complexity	**Covered by other component**
A-43	Concept	Same letterboxes used for different configurations/ operations	A new component from the MDL-MLD east workshop. **Dismissed - captured in A-11 & A-12**	Could transpose letterboxes across different configurations, same location.	Limits workload, consistent delivery of aircraft		**Covered by other component**
A-44	Concept	Components which are laterally identical but separated vertically	A new component from the MDL-MLD east workshop.	Examples include PBN routes and point-merges Heavily hard-coded for vertical separation. Procedures would be identical laterally until splitting off to different runways. Final approach options unknown.	Fewer people overflown	Heavily reliant on a prescriptive descent profile for separation, aircraft heavily constrained, environmentally poor, safety concerns (e.g. label overlaps on display), no perceived benefits	**Retained**
A-45	Route	A single lateral arrival route with letterboxes on different levels	A new component from the MDL-MLD east workshop. **Dismissed - letterboxes will all be at the same FL e.g. FL70**		Supports different performing aircraft, saves on space		**Dismissed**