London Luton Airport Operations Ltd FASI-S Airspace Change Proposal Stage 2

Appendix B - Stakeholder Engagement Log, Material & Correspondence

Part Two



Luton FASI-S Comprehensive list of options





128

Purpose of this session



• We are following the Civil Aviation Authority's (CAA) Airspace Change Process, CAP1616

• We are at Stage 2 of our developing Airspace Change Proposal (ACP) for FASI-S

• This is the stage where we develop an initial comprehensive list of flight path options and then share these options with our stakeholders

 CAP1616 requires us to engage with stakeholders at this stage to "preliminarily tests" these (options) with the same stakeholders it engaged with in Stage 1 (when we developed the design principles)"



Purpose of this engagement

The purpose of this engagement is **not** to seek feedback on individual route options by examining the detailed specific geographical position of the options.

We do not yet have any detail on the potential impacts of each option, that comes later.

The purpose of this session is to explore and test our approach to developing the initial set of options and answer questions relating to our approach.

We engaged with community groups and local authorities in Feb 2020 prior to pausing the ACP and captured their feedback. We are now sharing the same initial options with airlines, general aviation bodies, other airports and NATS.

We will use all the feedback to refine and/or develop a new set of options. We will share those new options with you in Q4 2021.



Development of the FASI-S initial comprehensive list of options

	Design Principle
1	Must be safe
2	Must meet the 3 aims of the NPSe, Air Navigation Guida updates thereof.
3	Should not constrain the airport's capacity, providing th
4	Should enable continuous climb/descent to/from at lea
5	Should provide an equitable distribution of traffic where Use of multiple routes New route structures Options (mechanisms) for respite
6	Should avoid overflying the same communities with mu 7000ft
7	Should minimise tactical intervention by ATC below 700
8	Should minimise the impact on other airspace users thr Keeping CAS requirements to a minimum Simple airspace boundaries Allowing flexible use of airspace, where possible

ance 2017 and all appropriate Government aviation policies, and

ne environmental objectives/requirements have been met

ast 7000ft & facilitate continuous climb/descent above that

re possible, through eg;

ultiple routes, & take into account routes of other airports, below

DOft

rough;



Relationship with AD6

Progress on the AD6 ACP can be followed here.

The ACP was submitted to CAA on 25th June 2021. We are awaiting a CAA decision.



133

<u>LUTON FASI-S DESIGN AREAS</u> <u>– WESTERLIES</u>

The blue arrow indicates the position of the new Luton stack (ZAGZO) subject to CAA approval as part of the AD6 ACP.

The light blue shaded areas show where it is possible to position westerly arrival or departure routes (below 7000ft) as part of this FASI-S ACP.



LUTON FASI-S DESIGN AREAS – EASTERLIES

The blue arrow indicates the position of the new Luton stack (ZAGZO) subject to CAA approval as part of the AD6 ACP.

The light blue shaded areas show where it is possible to position easterly arrival or departure routes (below 7000ft) as part of this FASI-S ACP.



TODAY'S ROUTE STRUCTURE

136

Current published departure route structure and approximate usage (pre-covid)





Current typical arrival tracks (published route structure not used)





INITIAL OPTION DEVELOPMENT ALL FLIGHT PATHS ILLUSTRATIVE ONLY Route demand assumptions: OLY 10% **CPT 40% MATCH 50%**

CONCEPT.

ALL FLIGHT PATHS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY TO DEMONSTRATE THE

FLIGHT PATHS ARE ALL SUBJECT TO REFINEMENT THROUGHOUT THE AIRSPACE CHANGE PROCESS

Westerly operations All flight paths illustrative only

% represents the approximate percentage of overflight in that area from Westerly operations only

140



All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





Flight paths shown are for illustration purposes to represent the broad proposed positioning of the concept. All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





Flight paths shown are for illustration purposes to represent the broad proposed positioning of the concept. All flight paths may change throughout the airspace change design process.



respite



All flight paths may change throughout the airspace change design process.



W7 – MATCH SIDs north of BPK. Option for right turn departures during hours of darkness (when Gliding airspace available)



Flight paths shown are for illustration purposes to represent the broad proposed positioning of the concept. All flight paths may change throughout the airspace change design process.

50%

% represent frequency of use of each flight path when in a westerly configuration, which is approximately 70% of the time

DAYLIGHT Average 65%

departures across the year with a left turnout

DARKNESS Average

35% departures across the year with a right turn out

50%



Easterly operations ALL FLIGHT PATHS ILLUSTRATIVE ONLY

% represents the approximate percentage of overflight in that area from Easterly operations only

148



All flight paths may change throughout the airspace change design process.

% represent frequency of use of each flight path when in an easterly configuration, which is approximately 30% of the time

10% 50%



E2 – OLY departures extended to gain height to jump arrivals



All flight paths may change throughout the airspace change design process.



E2 – Arrival routes moved north to facilitate climb of OLY departures.

* 50% if more than one arrival route for respite

50%





All flight paths may change throughout the airspace change design process.

E4 – OLY departures extended to gain height to jump arrivals. CPT departure left turn out to avoid overflying 25 departure areas and **MATCH SID north of BPK**

All flight paths may change throughout the airspace change design process.

% represent frequency of use of each flight path when in an easterly configuration, which is approximately 30% of the time

E4 - Arrival routes moved north to facilitate climb of OLY & CPT departures.

* 50% if more than one arrival route for respite

Flight paths shown are for illustration purposes to represent the broad proposed positioning of the concept.

50%

E5 – OLY departures extended to gain height to jump arrivals. CPT departure left turn out to avoid overflying 25 CPT departure areas and all departures turn earlier than today to avoid 25 final approach

All flight paths may change throughout the airspace change design process.

% represent frequency of use of each flight path when in an easterly configuration, which is approximately 30% of the time

E5 – Arrival routes moved north to facilitate climb of OLY & CPT departures.

* 50% if more than one arrival route for respite

50%

height to jump arrivals. CPT overflying 25 departure areas and multiple SIDs for respite

All flight paths may change throughout the airspace change design process.

Easterly & Westerly system options ALL FLIGHT PATHS ILLUSTRATIVE ONLY

The following slides show approximate % of overflight per year in that area, based on 30/70 E/W split

	Westerly (RWY25)	Easterly (RWY 07)
MATCH	50 (35%)	50 (15%)
СРТ	40 (28%)	40 (12%)
OLY	10 (7%)	10 (3%)

155

All flight paths may change throughout the airspace change design process.

All flight paths may change throughout the airspace change design process.

All flight paths may change throughout the airspace change design process.

Flight paths shown are for illustration purposes to represent the broad proposed positioning of the concept. All flight paths may change throughout the airspace change design process.

Flight paths shown are for illustration purposes to represent the broad proposed positioning of the concept. All flight paths may change throughout the airspace change design process.

All flight paths may change throughout the airspace change design process.

All flight paths may change throughout the airspace change design process.



All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.









All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.

















All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.





All flight paths may change throughout the airspace change design process.























All flight paths illustrative only

Altitude markers assume continuous climb to 7,000ft only at an 8% climb gradient and continuous descent from at least 7,000ft on a 3° (5.24%) descent gradient.

For departures, this assumes the aircraft starts climb from the very end of the runway. However, aircraft start climb approximately 2/3 down the runway so the altitudes shown here can be considered pessimistic.

198
arrival and departure swathe (orange)



Flight paths shown are for illustration purposes to represent the broad proposed positioning of the concept. All flight paths may change throughout the airspace change design process.



with today's <u>Westerly</u> arrival and departure swathe (orange)



Flight paths shown are for illustration purposes to represent the broad proposed positioning of the concept. All flight paths may change throughout the airspace change design process.



<u>All</u> options (blue and yellow)



Flight paths shown are for illustration purposes to represent the broad proposed positioning of the concept. All flight paths may change throughout the airspace change design process.



This table shows highest % of overflight for each concept in any one area, excluding immediate climb out and final approach

	E1	E2	E3	E4	E5	E6
W1	82%	82%	82%	70%	70%	70%
W2	82%	82%	82%	70%	70%	70%
W3	82%	82%	82%	70%	70%	70%
W4	50%	50%	47%	37%	50%	42.5%
W5	54.5%	54.5%	54.5%	54.5%	54.5%	54.5%
W6	47%	47%	47%	37%	37%	37%
W7	46%	46%	46%	51%	51%	51%



Typical profiles in relation to existing airspace

203

All westerly options with indicative



1,000ft altitude markers based on 8% climb gradient or 3° (5.24%) descent gradient. Arrival routes shown here are the PBN arrival options considered for AD6. Vertical arrival profiles may be improved over those shown here





1,000ft altitude markers based on 8% climb gradient or 3° (5.24%) descent gradient. Blue arrival routes are those considered for AD6 so their vertical arrival profiles may be improved over those shown here. However, these would not work with a left turn CPT departure, therefore a route closer to the red arrival would be required and assumes no more CAS required to the higher profile.



Luton's findings from initial options development:

206

In order to share the noise in the most equitable manner and avoiding overflying communities with multiple routes, where possible:

- RWY 07 CPT departures should turn left to provide respite from those under the 25 MATCH track
- currently follow this initial track. This will be challenging due to the proximity of the gliding sites
- RWY 07 MATCH departures should follow a different track to the latter part of the RWY 25 MATCH track
- \bullet right turn when available.
- \bullet approach to RWY 25

The RWY 25 departures should have at least a 2-way initial split as soon as possible because 70% of all departures

Offloading RWY 25 MATCH departures onto the existing RWY25 CPT/OLY path is not equitable. Use of a right turn for MATCH should only occur if it does not overfly those communities already under the RWY25 CPT track i.e immediate

RWY 07 departures should turn off the centerline earlier than today to provide respite from more people under final



Other findings:

- \bullet out.
- \bullet
- transitions or vectored swathes would need to be positioned further north.

We have received feedback from Community groups on the options. We will collate their feedback with yours to generate a new set up of options. We hope to share this with you in Q4 2021.

If the RWY 07 OLY and CPT departures were to only be replicated they need enhancement to provide more efficient departure separations. This is due to the CPT and OLY departure routes 'wrapping around' too close to the initial climb

The proximity of gliding sites makes options for the initial turn of Runway 25 departures especially challenging.

The designs of the arrival transitions (or vectored swathe) from ZAGZO to Runway 07 that were designed for AD6 are not compatible with a FASI-S design option that sees a left turn out for Runway 07 CPT departures; the Runway 07





Next steps

Classification: Public

209

We welcome your feedback from these slides. Please respond to <u>AirspaceModernisation@ltn.aero</u> by COP Monday 23 August 2021.

Once we have incorporated the feedback received, we will be arranging some more engagement to show the changes made and a new set of options. We expect this to be in October 2021. We will then perform a 'design principle evaluation'. This is where each option is evaluated against all the Design principles and sets out how each option has responded to the principles. We may discontinue options at this stage.

We will then perform an Initial Options Appraisal on all remaining options with all work published on the CAA airspace change portal. We expect this to be Q1 2022 subject to alignment with the 'FASI-S Masterplan' which may result in a delay to our Stage 2 gateway. We will update you as soon as we know more.

210

LUTON AIRPORT - FASI-S ACP - STAGE 2 - FEEDBACK DEADLINE REMINDER

Mon 16/08/2021 13:13	
Bcc:	
	1
	1
	_
	_
	1

Good Afternoon,

A reminder that the deadline for feedback on the Luton FASI-S ACP Stage 2 initial options is **COP Monday 23 August 2021**. Please send your feedback to airspacemodernisation@ltn.aero.

If you have any questions, please get in touch.

Kind Regards,

Luton FASI-S Stage 2 engagement - 22nd February 2022

Tue 21/12/2021 15:13

To:

Good afternoon,

I am emailing today regarding our FASI-S Airspace Change Proposal (ACP) at London Luton Airport. Earlier this year we restarted our ACP, and we would like to continue our engagement activities with all stakeholders.

Previously we shared with you our long list of options and requested your feedback on these. Since then, we have refined the designs to address your feedback. We have also performed a Design Principle Evaluation (DPE) on those options, as well as our Initial Options Appraisal (IOA).

We therefore would like to invite you to a session on **Tuesday 22nd February 2022** to share this work with you and ensure you are kept informed as a stakeholder, ahead of submitting the DPE and IOA to the CAA. We have organised two sessions, these are detailed below. The content of the sessions will be the same, so please attend whichever suits you best.

Morning session (9am-12pm), this will be an in-person session at Putteridge Bury, Hitchin Rd, Luton LU2 8LE

Afternoon session (1:30pm-4:30pm), this will be a virtual session held on MS Teams.

In order to let us know which session vou prefer, please fill in our form here: We will then send you a calendar invite based on the session you have chosen. **This form will close on 31st January 2022.**

If you would like any further information or have any questions, please email us at <u>airspacemodernisation@ltn.aero</u>. As a reminder, you can also view our progress on the CAA's Airspace Modernisation Portal <u>here</u>.

We look forward to seeing you in February.

Kind regards,





Airspace and Noise Performance Manager London Luton Airport Percival House, Percival Way, Luton, LU2 9NU w london-luton.co.uk

Name	Representing	Email address
	Wizz Air	
	Ryanair	
	Ryanair	
	Ryanair	
	Blueair	
	Blueair	
	Blueair	
	Stansted	
	NetJets	
	NetJets	
	Gama Aviation	
	TUI	
	London Executive	
	Aviation	
	Aviation	

Air Charter	r Scotland
Air Charter	r Scotland
Air Charter	r Scotland
Heathrow	
Heathrow	
Heathrow -	- NATS
Heathrow	
London Cit	ty
London Cit	ty
London Cit	ty - NATS
London Cit	ty - NATS
London Cit	ty
London Cit	ty
London So	buthend
Airport	
Flair Jet	
Signature A	Aviation
Signature A	Aviation
Signature A	Aviation
Harrods Av	viation
Harrods Av	viation
Vista Jet	
Vista Jet	
Vista Jet	
West Atlan	ntic
El Al Airline	es es
DHL	
DHL	
DHL	
DHL	
MNG Airlin	nes
MNG Airlin	nes
RAF North	nolt / MOD
RAF North	nolt / MOD

RAF Northolt / MOD	
RAF Northolt / MOD	
London Gliding Club	
Airsapce 4 All	
Airsapce 4 All	
Airsapce 4 All	
NERL	
NERL	
NERL	
Airport Operators	
Association (AOA)	
Airfield Operators	
Group (AUG)	
Pilots Association	
(AOPA)	
 Airspace Change	
 Organising Group	
(ACOG)	
Association of	
Aircraft Systems LIK	
(ARPAS-UK)	
Aviation Environment	
 Federation (AEF)	
 British Airways (BA)	
 BAe Systems	
 British Airline Pilots	
 Association (BALPA)	
British Airline Pliots	
British Balloon and	
Airship Club	
British Business and	
General Aviation	
Association (BBGA)	
Association (BGA)	

British I	lelicopter		
Associa	tion (BHA)		
British	lang Gliding		
and Par	agliding		
Associa	tion (BHPA)		
British	licrolight		
Aircraft	Association		
(BMAA)	/ General		
Aviation	Safety		
	(GASCO)		
British			
Associa	tion (BIVIFA)		
British S	Skydiving		
Drone	lajor		
Genera	Aviation		
Alliance	(GAA)		
Guild of	Air Traffic		
Control	Officers		
(GATC	D)		
Honour	able Company		
of Air P	lots (HCAP)		
Helicop	er Club of		
Great B	ritain (HCGB)		
Heavy /	Airlines		
Iprosurv			
Isle of M	lan CAA		
Light Ai	craft		
Associa	tion (LAA)		
Low Fa	e Airlines	_	
Military	Aviation		
Authorit	y (MAA)		
Ministry	of Defence -		
Defence	Airspace and		
Air Traf			
Manage	ment (MoD		
)		
NATS			
NATS			
Navy C	ommand HQ		

PPL/IR (Europ	be)
PPL/IR (Europ	pe)
UK Airprox Bo	bard
(UKAB)	
UK Flight Safe	ety
Committee (U	KFSC)
	Air
Force Europe	(3rd Air
Force-Directo	
ACCO	
ACUG Combridge M	araball
Craillieid Allp	
Club Gransde	n Lodge
East Anglian I	Rocketry
Society (EAR	S)
GoSkyDive (p	otential
new base at L	ittle
Staughton)	
Meteorologica	I Office
Cardington	
Meteorologica	I Office
EISTREE Aeroo	
Andrewsneid	
Fowlmere Aer	rodrome
Peterborougn	
Lyveden Glidi	

Little Shefford	
RAF Halton	
Shuttleworth	
Aerodrome	
Graveley	
Graveley	
Henlow	
Henlow	
Gorhambury Airfield	
Sywell Aerodrome	
Sywell Aerodrome	
Duxford	
North Weald Flying	
 School	
 North Weald Flying	
 School	
North Weald Flying	
School	
 BALPA	
Aylesbury Vale District Council	
Aylesbury Vale	
District Council	
Aylesbury Vale	
 District Council	
Aylesbury Vale	
District Council -	
 Unicer	
Association of Town	
and Parish Council	
Bickerdike Allen &	
Partners	
Buckinghamshire &	
 MK Association of	
Local Councils	
Buckinghamshire	
County Council	

		Buckinghamshire	
		County Council -	
		Officer	
		Buckinghamshire	
		County Council -	
		Officer	
		Central Bedfordshire	
		Council	
		Central Bedfordshire	
_		Council	
		Central Bedfordshire	
		Council	
		Chamber of	
		Commerce	
		Dacorum Borough	
		Council	
		Dacorum Borough	
		Council	
		Dacorum Borough	
_		Council	
		easyJet	
any let Reco I	Dilot	easyJet	
easyJel base i		easyJet	
		easyJet	
		HarpendenSky	
		Hertfordshire	
		Association of Town &	
		Parish Councils	
		Hertfordshire County	
_		Council	
	(vice chair of	Hertfordshire County	
LLACC)		Council	
		Hertfordshire County	
_		Council - Officer	
	(Oho :	Independent LLACC	
	(Chairman)		
		Kings vvalden Parish	
		Council	

Kir	gs Walden Parish	
Co	uncil	
LA	DACAN	
LA	DACAN	
	A Branch TGWU	
Lut	on Borough	
Со	uncil	
Lut	on Borough	
Со	uncil	
Lut	on Borough	
Со	uncil Planning	
No	rth Hertfordshire	
Dis	trict Council -	
Off	icer	
No	rth Hertfordshire	
Dis	trict Council	
PA	IN (People Against	
Inti	usive Noise)	
St .	Albans City &	
Dis	trict Council	
St	Albans City and	
Dis	trict Council -	
Off	icer	
St	Albans District	
Co	uncil	
St	Albans Quieter	
Sk	es (STAQS)	
Ste	evenage - Officer	
Ste	evenage Borough	
Co	uncil	
Sto	p Luton Airport	
Ex	pansion	
We	elwyn Hatfield	
Со	uncil - Head of	
	inning	
Ea	st Herts District	
	uncii - Planning	
Ch	literns	
Co	nservation Board	220

Luton Rising (Airport Owner) - York Aviation	
Luton Rising (Airport Owner) - York Aviation	
Luton Rising (Airport Owner)	
NATS Luton	
NATS Luton	

Workshop 1 (in-person) – Tuesday 22 February 2022 0900-1200

Name	Representing
	London Gliding Club
	NATS
	Dacorum Borough Council
	NATS
	London Gliding Club
	London Luton Airport Consultative Committee Chair
	Hertfordshire County Council
	London Gliding Club
	Buckinghamshire Council
	St Albans Quieter Skies

Workshop 2 (online) – Tuesday 22 February 2022 1330-160

Name	Representing
	Cambridge Airport
	RAF Northolt
	NATS (working for Luton Airport)
	Ryanair
	Easyjet
	Bikerdike Allen
	Heathrow Airport
	Stansted Airport
	Shuttleworth
	Stevenage Borough Council
	Breachwood Green Parish Council
	DAATM
	East Herts Council
	ATC NATS Luton
	Luton Rising
	North Herts District Council
	Gravely Airfield
	Stansted Airport
	NATS
	Southend Airport
	St Albans Quieter Skies
	Biggin Hill Airport
	Buckinghamshire & MK Association of Local Councils
	British Microlight Aircraft Association
	RAF Northolt ACP
	London City Airport
	Dacorum Borough Council
	Heathrow Airport
	British Helicopter Association
	Cambridge Airport
	Biggin Hill Airport