

# Reduced Night Noise (RNN) Proposed Trial

## Industry Consultation Document

Date: 29 May 2019

### Purpose of this Document

Gatwick airport is considering a night-time trial of PBN routes to investigate the noise benefits that it can deliver.

The CAA's [CAP1616 document](#)<sup>1</sup> describes the process to be undertaken for permanent and temporary airspace changes and airspace trials. The Reduced Night Noise (RNN) proposed trial will follow this CAP1616 airspace trial process. It requires that the trial sponsor (Gatwick Airport Ltd) demonstrates to the CAA that it has consulted with aviation stakeholders to establish that the proposed trial is '**safe and operationally viable**'.

This document is aimed at aviation stakeholders impacted by the trial, particularly those airlines identified by Gatwick Airport as key participants in the trial, as well as air navigation service providers and airport representatives.

The Statement of Need and Trial Plan were developed and submitted to the CAA in Q3 and Q4 2018 respectively, and an Assessment Meeting was undertaken with the CAA in Q1 2019. Trial material can be found on the [CAA Portal](#).

This document provides an overview of the trial including: Trial Objectives and Principles; Parameters; Operations and Proposed routes. Aviation stakeholders are invited to review this document and provide feedback to Gatwick Airport on whether the trial is safe and operationally viable. A feedback form is given in Annex C, along with details of how to submit feedback. The scope of this consultation is focussed solely on the safety and operational viability of this proposed trial.

In addition, responses to a recent survey of Gatwick airlines, designed to capture airline operational and procedural requirements to support the planning and development of PBN routes, can be found in Annex A. Additional trial information and considerations are included in the minutes of the trial workshop on 3 May, distributed with this consultation document or available on request from the email address given in Annex C.

The formal consultation with airlines will begin at Gatwick Airport's Flight Operations Performance and Safety Committee (FLOPSC) meeting on 29<sup>th</sup> May and will close Friday 28<sup>th</sup> June at 23:59. The consultation period is only four weeks because; the consultation population is limited to relevant aviation stakeholders directly targetable through FLOPSC; the scope of the consultation is limited; and, there has been considerable pre-consultation engagement with industry stakeholders.

### Introduction

At the fifth meeting of Gatwick's Airport's Noise Management Board (NMB) in April 2017, members agreed that opportunities for night noise respite should be explored to reduce the number of people disturbed by night arrivals. An industry workshop was held in July 2017 to explore potential options, and subsequent extensive engagement with NMB members and industry stakeholders has resulted in this trial proposal.

### Trial Objectives and Principles

The primary objective of the trial is to assess the extent to which PBN technology can deliver noise benefits (for arriving aircraft) during the night period, by reducing the number of 'outliers' and consequently the number of people disturbed. In this capacity, the trial will examine the noise and flight efficiency benefits generated by the deployment of multiple systemised PBN arrival transitions that:

- Improve continuous decent operations (CDO) through the application of PBN.
- Reduce the average noise level per approach by keeping arrivals higher for longer.
- Reduce the number of people adversely impacted by aircraft approach noise.

---

<sup>1</sup> CAP1616 Airspace Design: Guidance on the regulatory process for changing airspace design including community engagement requirements, November 2018.

The trial will:

- ✓ Compare environmental performance in 'with PBN' and 'without PBN' scenarios by placing the new procedures in the existing airport night-time arrivals swathe.
- ✓ Identify and address the planning, implementation and operational challenges associated with PBN arrival transitions, and inform future planning.
- ✓ Gather data on PBN operational performance and noise impacts.
- ✓ Further develop the NMB's understanding of arrivals PBN.
- ✓ Evaluate new community engagement initiatives and processes.

The trial will not:

- ✗ Identify routes for use in future airspace design.
- ✗ Overfly people currently outside of the night-time arrivals swathe.
- ✗ Move the minimum night-time ILS joining point from 10NM.
- ✗ Optimise routes for capacity improvements or efficiency.
- ✗ Evaluate future mechanisms for higher-density sequencing, Fair and Equitable Distribution (FED), respite or other concepts.
- ✗ Introduce an airspace change without consultation.

### Trial Parameters

The following parameters are planned to be applied to the trial:

- Length of trial: 6 months in total, planned to start in early 2020.
- Timings: 01:30 – 05:00 (local time).
- Runway: Transitions will intercept the ILS on runway 26L & 08R / GNSS approach on 26R & 08L.
- Routes: Based on RNP-1 with RF legs.
- Participation: PBN routes to be flown by capable aircraft, with others being vectored as at present.
- Data capture: Noise monitors will capture the baseline and trial data environments.
- Suspension: Trial may be suspended for operational reasons (e.g. high levels of traffic, weather avoidance).

### Trial Operations

The following operational procedures and processes were discussed at the RNN Technical Workshop on 3<sup>rd</sup> May 2019. Airlines are invited to review the minutes of the workshop and the summary of key points raised (see Table 1 below), and to inform Gatwick of any concerns that may arise with regards to the **safe and operational viability** of the trial. The draft procedure designs can be found in Annex B.

Subject	Description
RF Leg capability	Some operators have aircraft capable of RF legs but do not have operational readiness 3-4 months is required for individual airlines to achieve the required status.
Procedure design	Transitions are connected from IAFs to the existing FAF, however there is a disconnect between the end of the STAR and the start of the transition.
Procedure design	The procedures designs will include not below 3000ft and 6000ft altitude restrictions.
Procedure design	The procedure designs will include maximum speeds only. ATC will instruct crews of any other speeds required for sequencing, safety and to minimise noise where possible.
Procedure operation	ATC must provide a clearance as early as possible to aid continuous descent management. An instruction will be developed identifying a minimum distance from touchdown by which the crew should receive clearance.

IFP Validation	The 16 procedures should be validated on a minimum of one Airbus and Boeing aircraft type with different FMS, in a range of met conditions.
AIS supplement	The AIS supplement will advise which transition crews should expect based on their STAR. A single chart showing the four transitions should be developed for each runway.
Trial participation	ATC will assume that all arriving aircraft are participating in the trial unless they are informed by the crew that they are unable to fly the procedure. In the event ATC cannot facilitate descent and/or direct routings, vectoring would resume.
Trial monitoring	Airlines will complete a trial feedback form for every flight participating in the trial. ATC will record any flight which does not participate in the trial.

*Table 1. Summary of the operational procedures and processes discussed at the RNN Technical Workshop (3<sup>rd</sup> May 2019).*

## Next steps

Industry stakeholders are invited to review the information detailed in this Consultation Document and to provide feedback to Gatwick Airport, in particular with concerns about the safety or operational viability of the trial. Please note that circulation of this document constitutes the beginning of Gatwick Airport's four week formal consultation with industry, as required by CAP1616. The scope of this consultation is focussed solely on the safety and operational viability of the proposed trial.

This consultation commences on 29<sup>th</sup> May for a period of four weeks. It closes on Friday 28<sup>th</sup> June. Please send your completed feedback form (Annex C) by email to [RNN-Trial-Feedback@askhelios.com](mailto:RNN-Trial-Feedback@askhelios.com) by 28<sup>th</sup> June.

Gatwick Airport will review the feedback received and publish a summary of our conclusions, and anything we have changed as a result, in a Consultation Summary Report.

## Annex A: Airline Survey

An Airline Survey was circulated to FLOPSC members on 18<sup>th</sup> April 2018 to capture airline operational and procedural requirements to support the planning and development of trial PBN routes, with the aim of reducing noise around the airport.

In total, we received 6 responses from the following organisations:

- EasyJet
- Virgin Atlantic Navigation Service
- TUI Airways
- Norwegian UK
- British Airways
- BALPA

The survey questions and responses are captured below.

**Question 1** *Is your aircraft fleet, that operates or will operate from Gatwick, currently equipped and approved by your State of Registry for RNAV-1 (or P-RNAV) operations in terminal airspace? If partial equipage or if there is planned future introduction of capability, please give details.*

Yes	No	Partial Equipage
100%	0%	0%

**Question 2** *Is your aircraft fleet, that operates or will operate from Gatwick, currently equipped and approved by your State of Registry for RNP-1 operations in terminal airspace? If partial equipage or if there is planned future introduction of capability, please give details.*

Yes	No	Partial Equipage
100%	0%	0%

**Question 3** *If RNP-1 capable, does your fleet have RF leg capability?*

Yes	No
67%	33%

### Feedback

Airline	Comment
Virgin Atlantic Navigation Service	Not all the Virgin Atlantic fleet currently operating at LGW has RF Leg capability. The B747-400 does not, but the A330 fleet does have this capability.
TUI Airways	Not at present for all aircraft types.

**Question 4** *Would a continuous descent procedure designed from 6000ft/20NM be expected to be a low noise arrival for your fleet? (Plus, a 1.5 NM level segment prior to the FAF to satisfy procedure design requirements).*

Yes	No
83%	17%

### Feedback

Airline	Comment
Virgin Atlantic Navigation Service	This would need to be checked for both the B747-400 and the A330 aircraft types. However, we believe this will be acceptable at least for the A330 fleet.
TUI Airways	Yes, dependant on any speed requirements.

British Airways	The level segment prior to the ILS will probably necessitate some application of power but should still be capable of relatively minimal drag...overall, this should still qualify as low noise.
-----------------	--

**Question 5** The end of the Gatwick STARs, TIMBA & WILLO, will not be connected to the start of the respective IAF of the PBN Transition. ATC will instruct crews to route direct to the appropriate IAF at a timely point when flying the STAR. An AIP SUP will be used to introduce the trial. It will detail the trial and trial procedures. Are there any implications for your operations, including flight planning, with this proposal?

Yes	No
50%	50%

### Feedback

Airline	Comment
Virgin Atlantic Navigation Service	Having the IAF for these procedures in a separate location to the end of the STAR would mean that the crew would be unable to efficiently set up for these arrivals prior to initial Top of Descent. Therefore, receipt of a revised clearance on to one of the procedures in the latter stages of the arrival would present significant head-down activity for the crew in re-programming the FMS at busy stage of the flight leading to undesirable higher crew workload. There may be mitigation for this if the specific arrival route at this time of day is guaranteed at the flight planning stage.
British Airways	I would value details of the trials so that our crew can receive communication before the details appear in the AIP supplement, in order that they can process the change. I would also want to pass the details past our Flight Planning Team to ensure the arrival distances/fuel burn are accurate in the flight planning system. My hunch is that they will be very similar and so shouldn't cause any issues.

**Question 6** Would your organisation be able to provide use of flight simulators to support the IFP validation activities?

Yes	No
50%	50%

### Feedback

Airline	Comment
Virgin Atlantic Navigation Service	In principle yes, but we have some significant limitations on access to our flight simulators, which may mean it would be difficult to plan.
TUI Airways	I am not in a position to offer simulator time to support this activity. However, I work closely with our training department, and would be happy to enter discussions about seeing where we can help dependant on other training requirements. It would also depend on the time of year as well as other factors. I am happy to discuss nearer the time.
British Airways	With the current training load we have at BA, it is unlikely. That said, if the trials would take place later in the year then it is likely that we would have capacity.
Norwegian UK	Simulators located at Gatwick, Manor Royal. We would be happy to help and use these simulators and nominated trainers to trial and feedback the RNAV approaches.

**Question 7** The Southern Runway, which is planned to be used for the trial, may be unavailable for part of the proposed trial period due to planned runway works. As such, further options may have to be considered to ensure that enough data can be collected to draw a reasonable conclusion. One option is the design of routes to the Northern Runway (in addition to the Southern Runway routes). Do you foresee any issues with this option should it be explored?

Yes	No
0%	100%

### Feedback

Airline	Comment
Virgin Atlantic Navigation Service	No more than current operational considerations dictate.
British Airways	The use of the RNAV approaches to the Northern Runway are usually flown with a level segment before the (current) IAF. As long as this is still available then I see no issue. I do not think that we would be able to fly an RNAV procedure that started from the proposed (new) IAFs as we would then have to fly RF legs on the final approach segment, which I do not believe we can do at this time.

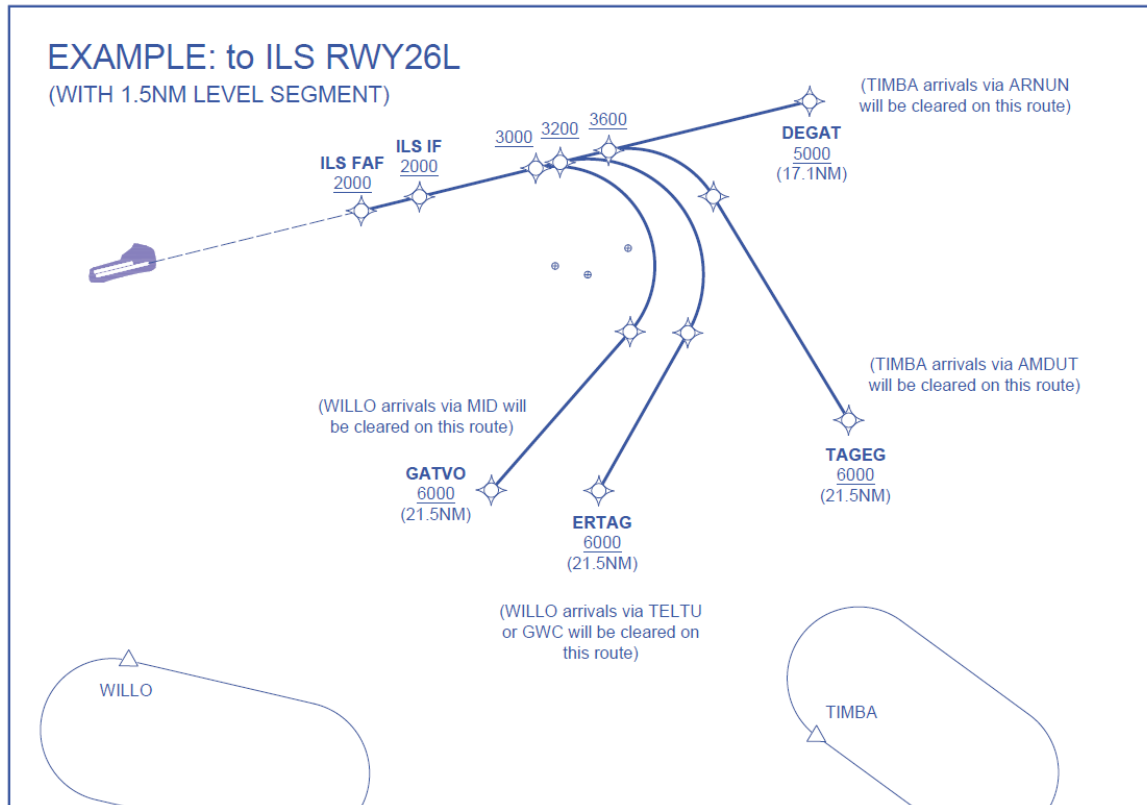
**Question 8** Please provide any additional comments or observations, particularly regarding the safety or operational viability of the trial.

### Feedback

Airline	Comment
Virgin Atlantic Navigation Service	It would be helpful or preferred if the procedures were designed with speed requirements to aid efficient descent planning.
BALPA	<ul style="list-style-type: none"> <li>The coordination of sectors in the lead up to this procedure is key. The earlier pilots can plan to use this transition to Final the better.</li> <li>The alternative is having aircraft flying along its route with noisy speed brake and or gear to contain the energy within the given track mileage.</li> <li>It's a great idea</li> </ul>

## Annex B: Draft Procedure Designs

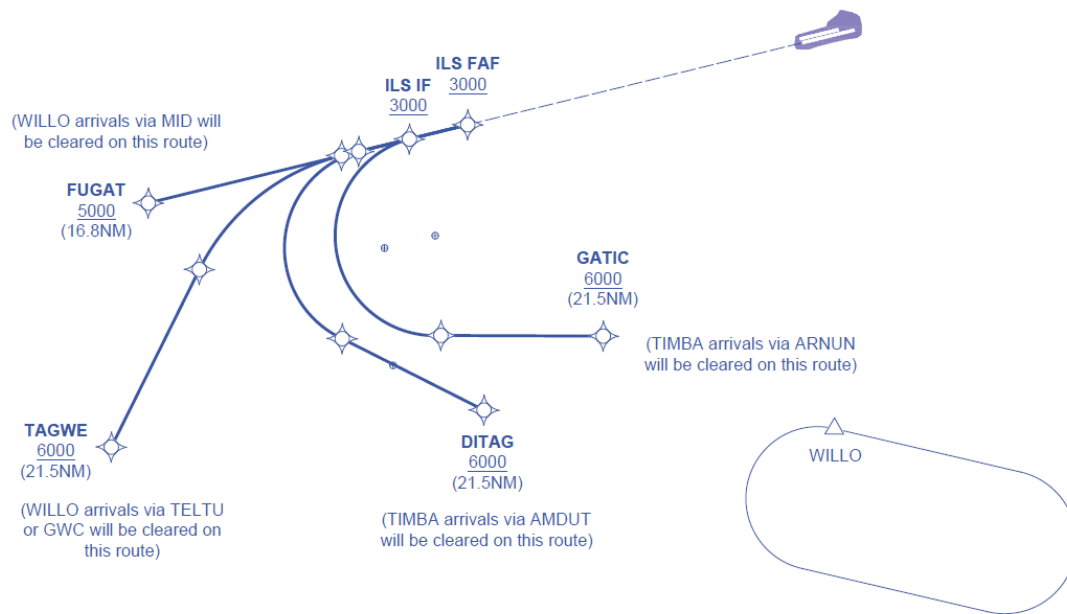
Below are draft charts for the proposed procedure designs. In total, 16 routes have been designed; 4 routes to each runway end (08R/26L, 08L/26R).



YOUR LONDON AIRPORT  
*Gatwick*

EXAMPLE: to ILS RWY08R

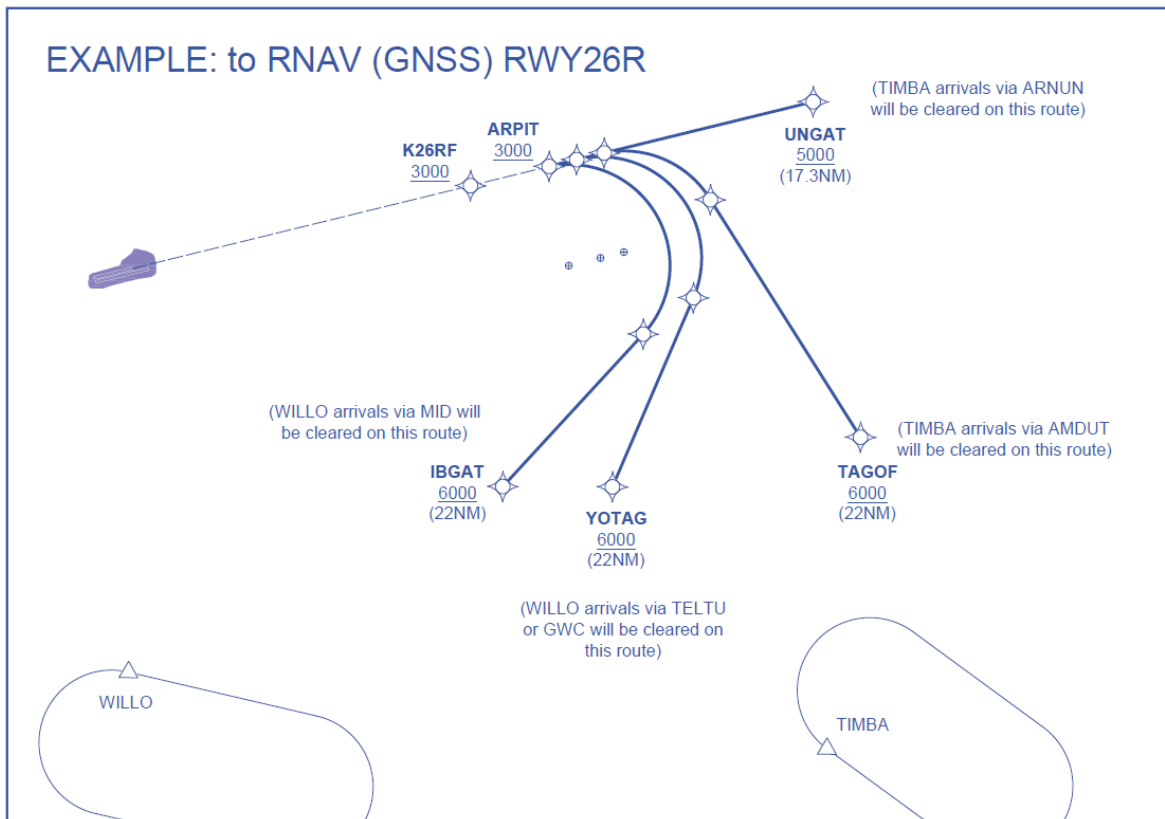
(WITH 1.5NM LEVEL SEGMENT)



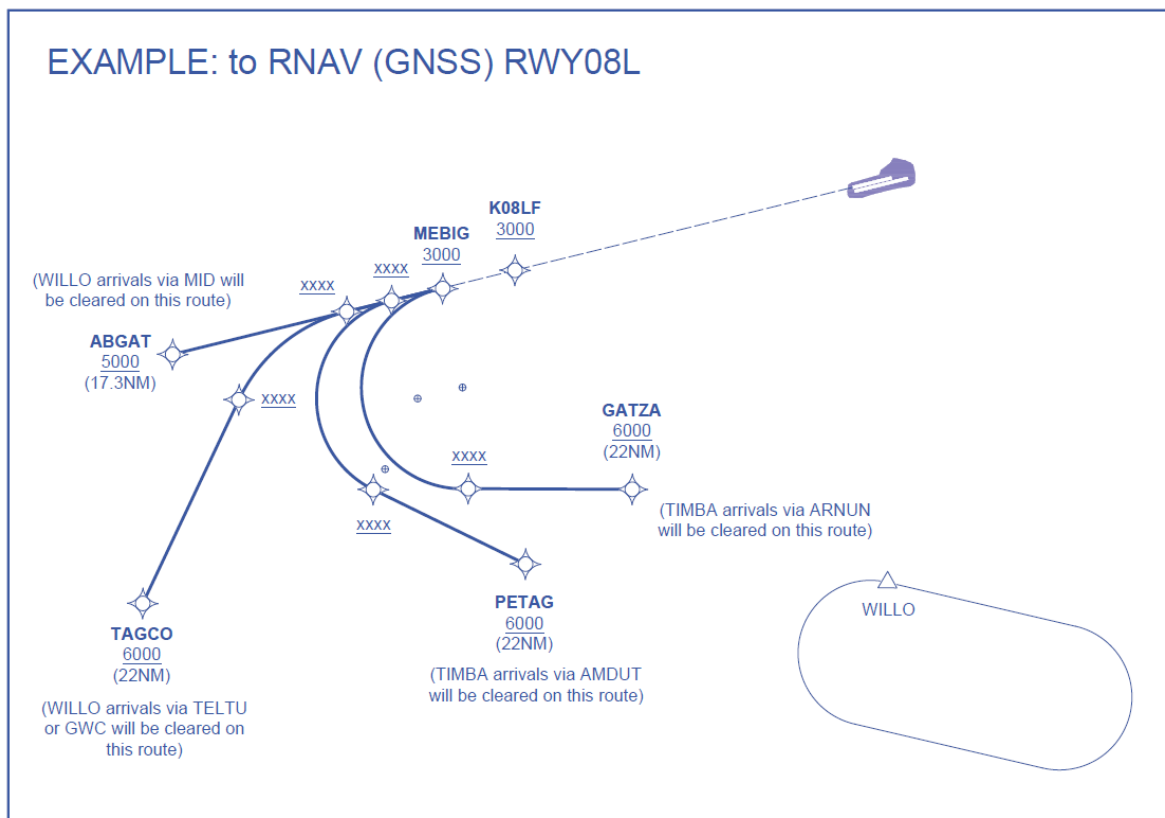


# YOUR LONDON AIRPORT *Gatwick*

## EXAMPLE: to RNAV (GNSS) RWY26R



## EXAMPLE: to RNAV (GNSS) RWY08L



## Annex C: Feedback

Please send your completed feedback form by email to [RNN-Trial-Feedback@askhelios.com](mailto:RNN-Trial-Feedback@askhelios.com) by 28th June 23:59.

1. **Name:**
2. **Company:**
3. **Position:**
4. **Is the Gatwick Airport RNN trial Safe? Please indicate A or B**
  - a. **Yes**
  - b. **No**
    - i. **If no, please give details.**
5. **Is the Gatwick Airport RNN trial Operationally Viable? Please indicate A or B**
  - a. **Yes**
  - b. **No**
    - i. **If no, please give details.**
6. **Do you have any additional comments?**
7. **Your information**

The information you provide to us will be submitted to the CAA, but will be anonymised in the Consultation Summary Report when it is published. If you would like to discuss anything about how to respond to the consultation or have any questions, please contact the email address above.