Safety and Airsapce Regulaiton Group

UK Civil Aviation Authority

Policy and Guidance for the implementation of helicopter Point in Space operations in the UK

CAP 2520

Published by the Civil Aviation Authority, 2023

Civil Aviation Authority
Aviation House
Beehive Ring Road
Crawley
West Sussex
RH6 0YR

First published May 2023

Enquiries regarding the content of this publication should be addressed to: airspace.policy@caa.co.uk

The latest version of this document is available in electronic format at: www.caa.co.uk

Contents

Document Change Record

Edition Number	Edition Date	Reason for the change	Pages Affected
21 April 2023	0.1	Final Draft	All
05 May 2023	1	Agreed publication	All

Introduction

Background

The introduction of satellite navigation systems guided the aviation industry and regulators to work together to develop specific guidance material for the implementation of helicopter Point-In-Space operations. Under the 5-Lives project co-funded by the European Global Navigation Satellite System Agency (GSA)[1] within the Horizon 2020, helicopter operations were harmonised across Europe, and European guidance was first published by Eurocontrol in 2019. The UK CAA did not initially contribute to this project [2] in 2019 with the aim at developing guidance material adapted to the UK context. Unfortunately, the covid pandemic significantly impacted upon both the collaboration with the FLAG and the development of specific UK guidance. This situation was aggravated by the loss of access to the European Geostationary Navigation Overlay Service (EGNOS) in June 2021 that significantly impacts the options for designing Instrument Fight Procedures (IFP) adapted to helicopter operations. Indeed, the operational use of EGNOS is subject to the signature of an EGNOS Working Agreement (EWA) ensuring that a minimum level of safety can be demonstrated by all interested parties but also subject to the use of EGNOS Safety of Life[3].

Therefore, the UK CAA decided to develop guidance material adapted to the UK context to support the safe implementation of helicopter Point-in-Space (PinS) operations. This document aims at presenting all factors helicopter operators must consider when introducing Point-In-Space procedures.

[1] In 2021, the GSA has been transformed into the European Union Space Programme Agency (EUSPA)

[2] FLAG was consolidated as group to promote GNSS in rotorcraft emergency response across Europe.

[3] EGNOS user support website

Executive Summary

Airspace Modernisation Strategy and EGNOS

The revised Airspace Modernisation Strategy[4], recently published, provides the UK vision for the use of Global Navigation Satellite System for aviation. One strategic objective is to wherever possible satisfy the requirements of operators using Required Navigation Performance (RNP) approaches for operation in Class G airspace.

The UK Global Navigation Satellite Programme aims at implementing this type of approach at aerodromes with a non-instrument runway and/or without approach control and now extend to helicopter operations. This programme initially focused on supporting the access to RNP approaches using all line of minima (LNAV, LNAV/VNAV, LPV) for the General Aviation (GA). The UK CAA initially published guidance material in the Civil Aviation Publication (CAP) 1122[5] superseded by CAP 2304[6] for the introduction of such approaches. This approach is the UK equivalent of the European safety assessment guidelines for the implementation of EGNOS-based instrument approaches to non-instrument runways located at aerodromes serving General Aviation.

This new document complements the current guidance material for the use of GNSS for instrument approach procedures to aerodromes without approach control and/or with a non-instrument runway.

The loss of access to the European Geostationary Navigation Overlay Service (EGNOS), whilst limiting the scope of PinS in the UK with the publication of RNP approaches with LNAV only minima, is not a blocker for their deployment. It is expected that the situation will evolve with the development of multiple options including the potential development of a UK Satellite Based Augmentation System (SBAS).

[4] The Airspace Modernisation Strategy 2023 - 2040

[5] CAP 1122 was initially published in 2014 and was superseded the 14th of March 2022 by CAP 2304.

[6] Application for instrument approach procedures to aerodromes without approach control and/or with a non-instrument runway.

Definitions

The following definitions apply in the context of this document:

- ‘air traffic control service’ means a service provided for the purpose of:
  a) Preventing collision:
     i. Between aircraft; and
     ii. On the manoeuvring area between aircraft and obstructions; and
  b) Expediting and maintaining an orderly flow of air traffic (UK Reg (EU) No 923/2012 Article 2(30)).
- ‘air traffic service (ATS)’ means a generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service) (UK Reg (EU) No 923/2012 Article 2 (32)).
- ‘aerodrome’ means a defined area (including any buildings, installations, and equipment) on land or water or a fixed offshore or floating structure intended to be used either wholly or in part for the arrival, departure, and surface movement of aircraft (UK Reg (EU) No 923/2012).
- ‘Aeronautical Information Publication (AIP)’ means a publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.
- ‘approach control service’ means air traffic control service for arriving or departing controlled flights.
- ‘automatic dependent surveillance — broadcast (ADS-B)’ means a means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position, and additional data, as appropriate, in a broadcast mode via a data link.
- ‘Controlled airspace’ means an airspace an airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification (UK Reg (EU) No 923/2012 Article 2(58)).

  Note. Controlled airspace is a generic term which covers ATS airspace classes A, B, C, D and E (UK Reg (EU) No 923/2012 Article 2(58) GM1).

- ‘helicopter’ means a heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power driven rotors on substantially vertical axes (UK Reg (EU) No 923/2012 Article 2(58)).
- ‘IFR flight’ means a flight conducted in accordance with the instrument flight rules (UK Reg (EU) No 923/2012 Article 2(58)).
- ‘IMC’ means the symbol used to designate instrument meteorological conditions (UK Reg (EU) No 923/2012 Article 2(58)).
- ‘Instrument Flight Procedure (IFP)’ is a generic term meaning a standard instrument arrival (STAR), an instrument approach procedure (IAP), or a standard instrument departure (SID) (CAP 785A Oversight of UK Approved Procedure Design Organisation and CAP 785B Implementation and Safeguarding of Instrument Flight Procedures (IFPs) in the UK) (UK Reg (EU) No 923/2012 Article 2(58)).
- ‘instrument approach operation’ means an approach and landing using instruments for navigation guidance based on an instrument approach procedure. There are two methods for executing instrument approach operations (UK Reg (EU) No 923/2012 Article 2(58)).

  (a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and

  (b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance.

- ‘instrument approach procedure (IAP)’ means a series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. Instrument approach procedures are classified as follows (UK Reg (EU) No 923/2012 Article 2(58)).

  (a) non-precision approach (NPA) procedure. An instrument approach procedure designed for 2D instrument approach operations Type A;

  (b) approach procedure with vertical guidance (APV). A performance-based navigation (PBN) instrument approach procedure designed for 3D instrument approach operations Type A;

  (c) precision approach (PA) procedure. An instrument approach procedure based on navigation systems (ILS, MLS, GLS and SBAS Cat I) designed for 3D instrument approach operations Type A or B;

- ‘instrument meteorological conditions (IMC)’ mean meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions (UK Reg (EU) No 923/2012 Article 2(58)).
- ‘landing area’ means that part of a movement area intended for the landing or take-off of aircraft (UK Reg (EU) No 923/2012 Article 2(58)).
- ‘radio mandatory zone (RMZ)’ means an airspace of defined dimensions wherein the carriage and operation of radio equipment is mandatory (UK Reg (EU) No 923/2012 Article 2(58)).
- ‘transpordeur mandatory zone (TMZ)’ means an airspace of defined dimension wherein the carriage an operation of pressure-altitude reporting transponders is mandatory (UK Reg (EU) 923/2012 Article 2 (136)) (UK Reg (EU) No 923/2012 Article 2(58)).
- ‘VFR’ means the symbol used to designate the visual flight rules (UK Reg (EU) No 923/2012 Article 2(58)).
- ‘visual meteorological conditions’ mean meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima (UK Reg (EU) No 923/2012 Article 2(58)).
- ‘VMC’ means the symbol used to designate visual meteorological conditions (UK Reg (EU) No 923/2012 Article 2(58)).

Chapter 1

Purpose and Scope

Purpose

1.1 Helicopter Point-In-Space operations require operators to undertake a set of activities to ensure a safe, coordinated, and transparent implementation of instrument flight procedures. Coordination between various stakeholders is often complex (e.g., helicopter operators, regulator, consultant, Instrument Flight Procedure Service providers) throughout the development process, and transparency is key to ensure that communities will fully support the implementation of such procedures. Therefore, operators will have to follow a specific process that is described in this document.

1.2 Furthermore, as these operations will be new to the UK, this document intends to provide information on the general concept of Point-In-Space procedures, guidance with respect to the applicable processes, clarification on the safety implications, ownership, and their responsibilities, and finally information for publication.

Scope

1.3 This guidance is applicable to helicopter operators wishing to apply for Point-In-Space procedures as well as airspace consultants and, UK Approved Procedure Design Organisations with the privilege to design helicopter Point-in-Space procedures.

1.4 Due to the specificity of Point-In-Space procedures, the complexity for their implementation, their safety implications and the UK context, the CAA has developed a specific implementation strategy. This strategy sets out the CAA vision for PinS and is fully aligned with the Airspace Modernisation Strategy. The first step is to only accept applications to licensed aerodromes with the exception for “Blue Light” services operating to/from unlicensed landing sites and FATO. After the analysis of the Post Implementation Review (PIR), stage 7 of the airspace change, and based on safety intelligence, the CAA will reconsider this decision. Initially, helicopter Point-in-Space procedures will be restricted to CAA approved helicopter operators only

Chapter 2

Concept of Operations

Generalities

2.1 PinS helicopter operations are based on the use of a Global Navigation Satellite System (GNSS) and are designed for, and limited to, helicopter operations. This concept introduces distinct phases of flight but also allows flights to be conducted under Instrument Flight Rules (IFR).

2.2 A major advantage of PinS is to introduce RNP approaches to any location (instrument or non-instrument Helicopter Landing Site, isolated location for example) and facilitate IFR helicopter operations. The PinS scenario (“proceed visually” versus “proceed VFR”) provides a significant level of flexibility to implement PinS in a dense obstacle environment and when the meteorological conditions are below the Visual Meteorological Conditions (VMC) minima. The differences between” proceed visually” and “proceed VFR” relate to the protection against the obstacle environment, the responsibilities associated with the phases of the flight and the rules of the air associated with each segment of such flights.

2.3 Approved Procedure IFP Designers have an essential role to play in the successful development of PinS and must be engaged by sponsors at the earliest opportunity. Whilst the IFP criteria are defined in ICAO Doc 8168 PANS-OPS Volume II “Construction of Visual and Instrument Flight Procedures” Part IV Helicopters, there may be occasions where the application of the ICAO criteria makes the proposal more complex. In such a case, it is recommended that early engagement with the CAA to discuss the proposal and/or to clarify the application of the design criteria and all applicable UK policies should take place.

2.4 This chapter describes the differences between PinS departures and arrivals and provides clarification on the concept of operations.

2.5 Structure of a PinS.

a) Departures are composed with two elements having distinct characteristics, mainly:

i. A visual segment designed to connect the landing location to the Initial Departure Fix (IDF). This segment can be flown “visually” or “VFR”;

ii. An instrument segment connecting the IDF to other structures (Low Level Routes, other existing routes) or without connection to any other routes.

b) Arrivals are also composed with two elements such as:

i. An instrument approach procedure designed with PBN specification.

ii. A visual segment to connect the missed approach point to the landing site.

The table 1 below summarises the differences and similarities between departure and arrival.

Structure for Departure	Structure For Arrival
A visual segment. This segment connects the landing site to the IDF and can be flown using “proceed visually” or “proceed VFR” operations.	An instrument segment. This segment connects the Initial Approach Fix (IAF) to the Missed Approach Point (MAPt) It is flown under IFR, in either IMC or VMC met conditions and is designed by an Approved Procedure IFP designer using design criteria for RNP approach (LNAV only minima)
An instrument segment. This segment is flown under IFR, designed by an Approved Procedure IFP Design organisation and designer in accordance with ICAO PANS-OPS current criteria and is a published Instrument Approach procedure designed by using the navigation specification RNP 1 or RNP 0.3	A visual segment. This segment connects the PinS IAP to the landing location and is flown using “proceed visually” or “proceed VFR”
The instrument segment connects to a point where minimum en-route altitude is reached, which may be connected to a low-level route system or other existing route system within an airspace structure or not.	At the MAPt, if the minimum visual references or conditions are not obtained, a missed approach is performed.

Table 1 - Structure of a PinS

2.6 “Proceed Visually” versus “Proceed VFR”

Whilst the landing location is connected to the Initial Departure Fix (IDF) for the departures, or the Missed Approach Point for the arrivals, there are some differences with both concepts. Indeed, they are related to the level of protection against obstacles and the flight rules against which the flight is conducted. Therefore, the benefits and disbenefits of both concepts are to be considered carefully when initiating an application.

Both concepts are sub-divided into distinct phases: a visual flight phase and an instrument flight phase, for which different rules apply.

Under “proceed visually,” the visual phase of the flight is operated under IFR (VMC are not required) while under “proceed VFR” the visual phase of the flight is necessarily operated under VFR and VMC conditions are required. These differences do not apply for the instrument flight phase for which the application of, and compliance with, the IFR requirements are the norm.

The location of the PinS (Controlled Airspace versus outside controlled airspace) is also to be considered carefully, particularly in the “proceed VFR” scenario; in controlled airspace, the transition between the VFR and the IFR phase of the flight will require an IFR clearance.

It is the CAA’s view that “proceed VFR” is most appropriate for aerodromes, heliports, or landing sites not compliant with the requirements defined in ICAO Annex 14, particularly appendix 2 “aeronautical ground light characteristics”.

As defined in the UK Standardised European Rules of the Air[7], pilots of helicopters are responsible for determining whether the meteorological conditions permit flight in according with VFR. The criteria for determining VMC are also described in CAP 494 “Manual of Air Traffic Service – Part 1”[8] and also in summarised in The Skyway Code[9]:

2.7 Differences and similarities.

As previously mentioned, a PinS structure is sub-divided into different segments which are associated with different rules of the air but also IFP design requirements. This section provides clarification of the minimum requirements to meet when considering a departure and/or an arrival.

[7] UK SERA

[8] Manual of Air Traffic Services – Part 1

[9] The Skyway Code

a) Departures.

i. “Proceed Visually” Departures are adapted for licenced aerodromes or landing sites compliant with the requirement of the CAP 168[10] and CAP 1732[11] and regulated by the UK CAA. These operations do not require the operator to obtain VMC minima for the visual phase of the flight.

Table 2 below portrays the conditions to meet based upon the phase of the flight, visual or using instruments.

“**Proceed Visually” Departure**		
Visual phase	**Flight Rules**	IFR. VMC conditions are not required
	IFP Procedure design implications	Two cases: Direct Visual segment Manoeuvring Visual Segment Protection against obstacles when applicable.
	Operating method	SPA.PBN.100 PBN Specific Approval required for RNP 0.3 for helicopter operation IFR Operating criteria and limitations apply
Instrument Flight phase	**Flight Rules**	IFR. VMC conditions are not required
	IFP Procedure design implications	RNP 1 or RNP 0.3 At the IDF a track change is permitted up to a maximum of 30 degrees Protection against obstacles
	Operating method	SPA.PBN.100 PBN Specific Approval required for RNP 0.3 for helicopter operation IFR Operating criteria and limitations

Table 2 - Proceed visual departure requirement

ii. “Proceed VFR” Departures are adapted for unlicenced aerodromes or landing sites where the standard does not comply with the requirement

[10] Licensing of aerodromes

[11] Aerodromes survey guidance

of the CAP 168[12] and CAP 1732[13] and regulated by the UK CAA. These operations are required to obtain VMC minima for the visual phase of the flight. For departures implemented within controlled airspace, an IFR clearance is required before integrating the instrument flight segment.

Table 3 below portrays the conditions to meet based upon the phase of the flight, visual or using instruments.

"Proceed VFR" Departure		
Visual phase	**Flight Rules**	VFR. VMC conditions are required
	IFP Procedure design implications	No Protection against obstacles
	Operating method	Standard VFR Operating criteria and limitations apply
Instrument Flight phase	**Flight Rules**	IFR. VMC conditions are not required
	IFP Procedure design implications	RNP 1 or RNP 0.3 At the IDF a track change is permitted up to a maximum of 30 degrees This segment is protected against obstacles.
	Operating method	SPA.PBN.100 PBN Specific Approval required for RNP 0.3 for helicopter operation IFR Operating criteria and limitations apply

Table 3 - Proceed VFR departure requirement

It is to be noted that in both departure scenarios described in tables 2 and 3, if a pilot cannot reach the IDF, the flight should be aborted and a return to the landing location initiated.

[12] Licensing of aerodromes

[13] Aerodromes survey guidance

b) Arrivals.

i. "Proceed Visually" Arrivals are adapted for licenced aerodromes or landing sites compliant with the requirement of the CAP 168[14] and CAP 1732[15] and regulated by the UK CAA. These operations do not require the operator to obtain VMC minima for the visual phase of the flight.

Table 4 below portrays the conditions to meet based upon the phase of the flight, visual or using instruments.

"Proceed Visually" Arrival		
Instrument Flight phase	**Flight Rules**	IFR. VMC conditions are not required
	IFP Procedure design implications	RNP APCH Protection against obstacles
	Operating method	SPA.PBN.100 PBN Specific Approval required for RNP 0.3 for helicopter operation IFR Operating criteria and limitations apply
Visual phase	**Flight Rules**	IFR. VMC conditions are not required
	IFP Procedure design implications	Protection against obstacles Rely on a visual flight procedure.
	Operating method	SPA.PBN.100 PBN Specific Approval required for RNP 0.3 for helicopter operation IFR Operating criteria and limitations apply

Table 4 - Proceed Visually arrival requirements

ii. As per the guidance provided for departure, "Proceed VFR" is the only option available for an unlicenced landing site. Therefore, operators must ensure that VMC conditions are obtained before leaving the IFR segment of the flight.

[14] Licensing of aerodromes

[15] Aerodromes survey guidance

Table 5 below portrays the conditions to meet based upon the phase of the flight, visual or using instruments.

"Proceed VFR" Arrival		
Instrument Flight phase	**Flight Rules**	IFR. VMC conditions are not required
	IFP Procedure design implications	RNP APCH Protection against obstacles
	Operating method	Standard VFR Operating criteria and limitations apply
Visual phase	**Flight Rules**	VFR. VMC conditions are required
	IFP Procedure design implications	No Protection against obstacles
	Operating method	Standard VFR Operating criteria and limitations apply

Table 5 - Proceed VFR Arrival requirements

Chapter 3

Airspace Change Process Implications

Airspace change requirements

3.1 The process to implement airspace structures including instrument flight procedures is known as the Airspace Change Process CAP1616. This process, introduced and published in 2018, is reviewed at the time of writing and the outcome of the review is currently unknown, giving uncertainty on the nature of the changes, particularly on the levels themselves and all associated requirements.

3.2 To support the UK GNSS programme, a new scaled process was introduced in 2021 to facilitate GNSS applications to non-instrument runways and/or approach control without calling into question the CAA duties and functions. Subsequently, applicants for the introduction of helicopters Point-in-Space procedures must contact the CAA to identify the appropriate process applicable to them. The CAA understands the low predictivity this review presents but remains available for the provision of adequate guidance.

3.3 From a pure Instrument Flight Procedure perspective, the IFP regulatory framework applies. It encompasses the design development, the validation, and the regulatory assessment pre-implementation. All these activities are complex and can significantly impact the overall project timeline and cost. Therefore, sponsors are encouraged to map out all these activities with the aim at presenting them at the CAP1616 assessment meeting for discussion. This exercise includes the identification of the risks associated with the development up to and including the publication of the charts in the UK AIP and, the potential specific issues arising from the flyability assessment of the procedures using a helicopter. CAP 785B “Implementation and safeguarding of IFPs in the UK” Chapter 2, states that the IFP design shall, as a pre-requisite, be validated using a helicopter. This activity will require a significant level of coordination between all parties involved and, a robust planning should be considered to identify the most appropriate AIRAC for the publication. Engagement with the CAA (Airspace Regulation/IFP and/or the facilitation team) at the earliest stage of the process is highly recommended to enable many opportunities for clarifications.

3.4 Sponsors are also encouraged to engage NATS AIS (via aissupervisor@nats.co.uk) ahead of any submission to open a dialogue with AIS and discuss their Airspace Change Request (ACR) at the earliest opportunity. The submission of an ACR is subject to the ACP approval.

Chapter 4

Considerations

Safety risks

4.1 Sponsors seeking to implement PinS helicopter operations will need to present an acceptable safety case to the CAA that fully demonstrates how the safety risks have been adequately and efficiently assessed and mitigated.

4.2 It is recognised that the loss of access to EGNOS Safety of Life service has a significant impact on the list of options available. For example, RNP IAPs cannot be implemented with Localiser Performance with Vertical Guidance (LPV) minima. Only RNP IAP with Lateral Navigation (LNAV) minima will be considered with an Obstacle Clearance Height (OCH) not less than 500'. This situation will be reconsidered when an SBAS capability becomes available in the UK.

4.3 The identification of safety risks is influenced by numerous factors and depends on whether the helicopter landing site is:

a) licensed

b) Unlicensed (only available for blue light operations),

c) an instrument runway or non-instrument runway or a FATO,

d) a heliport with a Final Approach and Take-off (FATO) surface or not

e) at location with full ATC service or not and

f) whether in controlled or uncontrolled airspace.

4.4 Sponsors, initially seen as mainly the helicopter operators, must demonstrate how they will mitigate the safety risks minimising, limiting, or eliminating the likelihood of Controlled Flight into Terrain (CFIT) or Mid-Air Collision (MAC). They will also be required to complete a set of activities before a decision is made by the CAA.

4.5 For simplification, this CAP does not provide any specific approach for the development of safety risks and their mitigations. Therefore, sponsors should consider using the guidance provided in CAP 2304[16] or the generic Eurocontrol

[16] CAP 2304 "Applications for instrument approach procedures to aerodromes without Approach Control and/or with a non-instrument runway – additional policy, guidance, and Acceptable Means of Compliance".

Safety Case for Helicopter Point-In-Space operations in controlled and uncontrolled airspace in support of their application[17].

4.6 The safety arguments are based upon the extant UK standards risk-based approach for the approval of IAPs to UK aerodromes without approach control and/or with a non-instrument runway, namely:

a) CFIT: Risk of Controlled Flight into Terrain.

b) REXC: Risk of Runway excursion.

c) RCOLL: Risk of Runway collision.

d) MAC: Risk of mid-air collision.

e) LOC: Risk of a loss of control.

f) INTRO: Risk of an accident during the introduction to service of the new IAP.

g) THRULIFE: Risk of an accident during the through-life operation of the IAP.

4.7 These risks must be deemed as acceptably low to facilitate the decision-making process. Additionally, accurate, timely and complete meteorological information is necessary to support safe and efficient operations and as described later in this Chapter, the risks associated with the acquisition of such information must be identified and mitigated.

Heliports

4.8 The licensing of heliport/helicopter landing sites is dependent upon the type of helicopter operation and the legislation that they are operating under (Air Navigation Order (ANO) or the Basic Regulations). Therefore, the conditions for the publication of the procedures in the UK AIP, the provision of meteorological information to operators, the level of Rescue and Fire Fighting Service, the level of Air Traffic Service provision and the management of the obstacle environment in compliance with CAP 168 and CAP 1732 will differ depending on the licensing status of the landing site. This is to be carefully considered by sponsors for its impact on their application and for the development of robust evidence and safety mitigations.

[17] Eurocontrol Helicopter point in space operations in controlled and uncontrolled airspace

4.9 Licensed

a) The circumstances under which aerodromes must be licenced can be found in the Air Navigation Order (ANO) 2016 Part 8 “Aerodromes and Lighting” Chapter 1 “aerodromes, aeronautical lights and dangerous lights”[18].

b) Helicopter operators flying under the conditions of the ANO 2016 Article 208 (3) (4) must use a licensed landing site except for those operating under the ANO 2016 Article 208 (6).

c) The process for implementing PinS procedures to a licensed landing site does not differ from any proposal for the implementation of IFPs through an airspace change process.

d) Both concepts “Proceed Visually” and “Proceed VFR” are considered by the UK CAA to be viable options for licensed landing sites.

e) If submitting an application to operate PinS procedures to an offshore helicopter landing site, sponsors should consider the differences between offshore operations compared to operations over land when developing their safety case. Sponsors should also note that compliance with CAP 437 “Standards for offshore helicopter landing areas”[19] is an additional pre-requisite.

f) Because the concept of PinS requires pilots to obtain adequate visual conditions whatever type of departure or arrival is proposed, sponsors must demonstrate that a suitable quality of meteorological information will be made available by providing evidence of compliance with CAP 746 “Requirements for meteorological observations at aerodromes”[20]. Additional means of compliance, if proposed, will be reviewed by the CAA on a case-by-case basis.

4.10 Unlicensed

a) Some operators are exempt from compliance with the ANO 2016 Article 208, for example operators flying under and in accordance with the terms of a police air operator’s certificate (ANO 2016 Article 208 (6)) and, it does not apply to Commercial Air Transport (CAT), or operators such as those providing Helicopter Emergency Medical Service (HEMS). However, sponsors applying for the introduction of PinS for these operations must demonstrate how they will develop and present to the CAA additional and acceptable levels of safety and mitigations for the lifespan of the procedures

[18] The Air Navigation Order 2016 (legislation.gov.uk)

[19] Standards for offshore helicopter landing areas

[20] CAP746

such as demonstrating how they make accurate, timely and complete meteorological information available, such as proposals for the use of compliant automatic weather reporting stations with remote access, supported by detailed arrangements for the calibration and maintenance of sensors and equipment. Real time webcam images accessible remotely could provide useful supplementary information. See “Meteorological Information” section below for further details.

b) PinS to unlicensed landing sites will be strictly limited to the concept of “proceed VFR” for both departure and arrival. This restriction ensures that operations can be conducted safely and protected against obstacles for the visual segment of the PinS through being flown under VFR. The concept of “proceed visually” will not be considered as it is deemed that this concept does not offer an appropriate level of safety for operations to unlicensed landing sites.

Airspace and Air Traffic Services (ATS)

4.11 When considering PinS applications, the type of airspace structure and the classification of this airspace within which the procedures will be implemented will influence the type of service provided.

Controlled airspace

4.12 The rules of the class of airspace in which the PinS procedures will be contained shall apply. PinS applications are suitable for consideration in Class D airspace; however, use of Airspace Classes C and E is unlikely as the base levels of these airspaces are higher than the levels used for PinS.

4.13 Sponsors and/or operators should refer to the UK SERA for the identification of the minimum services provided in the class of airspace they intend to implement PinS. A description of the ATS and separation minima are also available in the Manual of Air Traffic Service – Part 1[21].

Outside controlled airspace

4.14 Outside controlled airspace (Class G), pilots are responsible for ensuring the flight remains in compliance with:

a) UK Reg (Eu) No 923/2012 amended by Reg (EU) 2016/1185 Standardised European Rules of the Air (SERA)[22].

[21] CAP 493 “Manual of Air Traffic Services – Part 1”
[22] Standardised European Rules of the Air

b) The Aviation Safety (amendment) Regulation 2021[23]

c) The UK Rules of Air Regulations 2015[24] supported by permission and general exemptions

4.15 Special attention must be paid where applications include the situation where the IFP design proposes an Initial Approach Fix (IAF) located at an altitude close to the base level of controlled airspace (CTA Class D). In that case, a minimum of 500ft is the standard between the altitude at the IAF and the base level of the controlled airspace. Deviation from this standard can be proposed if supported by robust safety arguments and developed in both the safety case and the IFP design rationale but the CAA does not guarantee it will accept the proposal.

Landing sites without approach control service

4.16 Referring to CAP 2304, safety arrangements will need to be developed and documented to include all relevant details, in particular to ensure that the IAP and any associated holding pattern will only be made available and used by one aircraft at any one time. As an example, sponsors can develop a slot allocation concept and demonstrate how this concept will be applied by operators.

Deconfliction of procedures

4.17 When PinS are implemented at aerodromes without approach control, consideration should be made to the use of technologies such as TCAS II, ADS-B and to the implementation of a Radio Mandatory Zone and/or a Transponder Mandatory Zone. It is emphasised by the Airspace Modernisation Strategy[25] which aims at simplifying the airspace structure and integrating new entrants (e.g., drones) rather than segregating and, at providing an equitable use of airspace when controlled airspace is not required.

4.18 When considering additional mitigations, sponsors must ensure that theses mitigations are:

a) Documented in the application.

b) Known and understood by all airspace users.

c) Published in the appropriate publications and reviewed regularly.

[23] The Aviation Safety Amendment) Regulations 2021.
[24] The UK Rules of Air Regulations 2015
[25] The Airspace Modernisation Strategy 2023 - 2040

Meteorological information at the aerodrome or landing site

4.19 The provision of accurate meteorological information to a pilot intending to fly an instrument approach assists the pilot in considering whether to commence the approach and, subsequently, to anticipate whether a missed approach may be likely/possible.

4.20 Use of GNSS technology to develop an IAP may facilitate continued operations in adverse weather conditions such as reduced visibility and low cloud-base. Therefore, at all aerodromes with an approved IAP using GNSS, compliant meteorological information must be made available (CAP 2304, Chapter 2, Policy) to ensure that meteorological information used for weather-related decision making in connection with the IAP is of an appropriate quality. As such, applicant's safety assessments must consider how they will achieve a suitable level of quality assurance of the information provided.

4.21 An aerodrome with an Air Navigation Service Provider (ANSP) with certification that includes Meteorological service provision provides assurance of the quality of information provided. At an aerodrome or landing site where there is no certificated MET ANSP then as part of the approval process, the sponsor of the PinS IAP application must provide evidence that the meteorological information made available at the landing site complies with CAP 746[26] to provide assurance that, meteorological observations provided will be of the accuracy, timeless and completeness necessary to support safe and efficient air navigation. (Meteorological observations that are not produced by certificated MET ANSPs shall be regarded as unofficial for air navigation purposes (CAP746, Chapter 1, Paragraphs 1.14 and 3.24 refer).

Note: Consideration of the siting of meteorological equipment will be required for elevated helicopter landing sites (heliports/helidecks) and sponsors should refer to CAP 437 (Standards for offshore helicopter landing areas) for guidance in these cases.

4.22 At unlicensed aerodromes and landing sites, consideration must also be given to the promulgation of meteorological information including the methods for pilots to receive information for pre-flight planning, whilst en-route, and at the landing site.

4.23 Sponsors of PinS IAPs that are unable to demonstrate compliance with CAP 746 may propose alternative means of compliance and these will be reviewed by the CAA on a case-by-case basis. When proposing alternative means of compliance sponsors must ensure that as a minimum, their safety arguments provide evidence that:

[26] Requirements for meteorological observations at aerodromes

a) Primary and contingency MET Equipment for wind, pressure and temperature measuring systems meet the specifications detailed in CAP746, Chapter 1, Paragraph 1.7.

b) The systems are installed, maintained, and calibrated in accordance with the manufacturer's instructions.

c) Staff providing meteorological information are adequately trained and their ongoing competence is maintained.

4.24 Sponsors wishing to implement PinS approaches should, if necessary, engage with the CAA Facilitation Team at the earliest opportunity to discuss and obtain guidance with respect to the provision of meteorological information (MET Guidance material/checklists are available to support Sponsors when completing PinS applications).

Helicopter Pilot Pre-Flight Weather Briefing

4.25 In addition to the meteorological information provided at the aerodrome or HLS, Helicopter pilots should ensure that they acquire all available forecast, and actual, weather information applicable to the intended flight to gain the best understanding of the weather conditions that are most likely to be encountered thereby supporting weather-related threat and error decision-making in relation to local area meteorology and recognition of meteorological conditions that might be associated with specific sites.

4.26 The Met Office is the main source of forecasted aviation weather information in the UK and the products and services that they provide are regulated by the CAA which provides assurance that the information meets the required quality levels. Other information may be used in conjunction with regulated products but where applicable pilots must take into account that the information, they are using falls outside the scope of regulatory oversight.

Operators

4.27 Operators wishing to conduct PinS operations must have CAA specific approval for all Performance-based Navigation (PBN) operations. Therefore, when applying for a PinS:

a) Operators should refer to UK Reg (EU) 965/2012 Air operations provision. Annex V Part-SPA, Sub-part B as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018.

b) Operators should be approved for PinS approaches and/or departures in line with PBN RNP 0.3 helicopter operation (SPA.PBN.100 specific approval should be gained before the start of an Airspace Change Process). To obtain a PBN specific approval the sponsor shall ensure that the operator provide evidence that meets the requirements of SPA.PBN.105.

Chapter 5

Ownership and responsibilities

5.1 Once implemented and notified in the UK Aeronautical Information Publication (AIP), instrument flight procedures are subject to periodic review and continual safeguarding. The identification of the ownership of PinS is an essential and critical step to ensure that it is clear which entity is responsible for ensuring that published PinS are reviewed at intervals no greater than every 5 years and continually safeguarded against the obstacle environment (permanent and/or temporary obstacles).

Ownership and responsibilities

5.2 Certificated and licensed aerodromes

The roles and responsibilities of IFP Sponsors at certificated and licensed aerodromes are described in CAP 785B, Chapter 1. This Chapter explains that the sponsorship of an IFP depends on the type of procedures, also influenced by the starting point of the procedure, and clarifies the differences in responsibilities between IFP sponsors - the Aerodrome Operator, the En-Route Air Navigation Service Provider (NATS En-Route Ltd – NERL), and Approved Procedure Design Organisations (APDOs).

5.3 Unlicensed aerodromes/heliports, and Helicopter landing sites not based at an aerodrome (only available to “Blue Light” services).

Where a PinS IAP is established at an unlicensed aerodrome or at a helicopter landing site which is not based at an aerodrome, the PinS roles and responsibilities will be owned by the following parties:

a) Unlicensed aerodromes/landing sites

At an unlicensed aerodrome/landing sites the ownership of the PinS IAP, and associated roles and responsibilities, will sit with the aerodrome/landing site operator who must ensure compliance with the applicable requirements contained in CAP 785B.

b) Helicopter landing sites not based at an aerodrome

For PinS that will be implemented to unlicenced landing sites such as a hospital where the site owner has no, or limited, knowledge and expertise of aviation regulations, the ownership of the procedures will sit with the lead helicopter operator using the landing site. Therefore, in such cases, the roles and responsibilities that are normally applicable to the aerodrome operator will be applicable to the lead helicopter operator who must ensure compliance with the applicable requirements contained in CAP 785B.

Note: The UK requirement for obstacle safeguarding stems from CAP 738 (Safeguarding of Aerodromes) and, where an unlicensed aerodrome or helicopter operator is the PinS sponsor, they may find the information in CAP 738 of assistance (with particular reference to Chapter 8, Heliports and Chapter 9, Hospital Helicopter Landing Sites).

5.4 CAA Approved Procedure Design Organisations and Designers.

PinS sponsor must contract a CAA Approved Procedure Design Organisation and Designer in compliance with the UK IFP regulations[27] for all the IFP design activities including IFP Design, periodic reviews, and safeguarding.

Management and maintenance of a PinS IAP

5.5 The roles and responsibilities related to the management and maintenance of a PinS are those described in CAP 785B.

Responsibilities related to Aeronautical Data Quality

5.6 When publishing information regarding an approved PinS the sponsor of the IAP will be responsible for compliance with the applicable aeronautical data quality (ADQ) legislation and guidance.

a) Certificated and licensed aerodromes.

UK Regulation (EU) No 139/2014 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 includes provisions related to ADQ which apply to aerodromes in scope of the Regulation.

b) Unlicensed aerodromes and Unlicensed helicopter landing sites not based at an aerodrome.

Sponsors of PinS IAP to aerodromes that are not in scope of UK Reg (EU) No 139/2014, or to unlicensed helicopter landing sites that are not based at an aerodrome, must meet the requirements for ADQ as laid down in Article 3(5) of UK Regulation (EU) 2017/373 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018.

5.7 For convenience, the ADQ provisions applicable under UK Reg (EU) 2017/373, Article 3(5) to parties originating, processing, or transmitting aeronautical data or aeronautical information are summarised in CAP1054, Chapter 2, Paragraph 2.19.

[27] CAP 785A “Oversight of UK Approved Procedure Design Organisation” and CAP 785B “Implementation of IFPs in the UK”.

5.8 PinS sponsors must additionally ensure that aeronautical data and aeronautical information are originated, processed, and transmitted by adequately trained, competent and authorised personnel.

Note: To assist all parties involved in the data chain, understanding of, and compliance with the requirements pertaining to origination and processing of aeronautical data and aeronautical information published in Aeronautical Information Products, the CAA has published CAP1054 Aeronautical Data Quality.

5.9 In addition to the points above, the PinS IAP coding table provided by Database (DAT) providers are restricted to the helicopter operator approved and sponsoring the PinS. Dissemination of the coding tables to other operators than those already approved by the CAA during the implementation process of the PinS is not authorised without approval; this restriction adds a level of safety ensuring that only certified operators and competent pilots use the procedures.

Note: If helicopter operators ***without*** a CAA approval for a PinS IAP receive PinS IAP details from their DAT Provider the CAA would expect the operators to report this to the DAT Provider in accordance with the provisions for the management of aeronautical databases as contained in UK Reg (EU) No 965/2012. Regulation 965/2012 requires operators to report erroneous data to their DAT Provider if it might be expected to constitute a hazard to flight. So, if an operator received details of a non-approved IAP this would not be applicable to the operator and should be deemed erroneous data which should be removed by the DAT provider as soon as it has been reported.

Chapter 6

Publication in the UK AIP

6.1 Promulgation of information regarding an approved PinS IAP.

An approved PinS IAP will be limited to use by the approved operator only and therefore it is necessary to reduce the risk that a PinS approach is not used by other operators or airspace users. However, to reduce the risk of mid-air collisions with non-participating aircraft, the presence of a PinS IAP will be promulgated by the applicable aeronautical information products to assist non-participating pilots in avoiding the vicinity of a PinS IAP, or taking appropriate mitigating actions, if operating in these areas (see CAP2304, Chapter 4, Baseline Safety Arguments). All published information regarding a PinS IAP will be endorsed with the restriction that it is for use by CAA approved operators only.

6.2 Applicable Aeronautical Information Products.

a) VFR Charts.

Safety mitigation is provided for certain existing IAPs by marking the Aerodrome and instrument approach paths (feathered arrows) on VFR charts to assist pilots of non-participating aircraft in avoiding these areas, thereby reducing the risk of mid-air collisions with non-participating traffic. The CAA deems that depicting PinS IAP on VFR charts using feathered arrows or other appropriate symbology is the most important and practical means of making non-participating airspace users aware of the possibility that a PinS approach may be being flown.

Note: The safety benefit of this measure would need to be argued in the context of the parallel need to reduce the associated risk of map clutter. A threshold value may need to be established, centred around anticipated numbers of movements, which would trigger the creation of appropriate symbology (*see CAP2304, Chapter 5, MAC 4.1*).

b) UK Aeronautical Information Publication (AIP).

Information regarding PinS IAPs to Licensed/Certificated Aerodromes and Heliports will be published in the UK AIP, Part 3 Section AD 2 (Aerodromes) or AD 3 (Heliports) as applicable. Currently, information regarding unlicensed aerodromes/heliports is not published in AIP Sections AD2/AD3 but for situational awareness for airspace users, helicopter Point-In-Space operations to unlicensed aerodromes/helicopter landing sites, and in light of the increase in drones activities, the UK CAA will publish Pins IAPs to unlicensed aerodromes/landing sites in the UK AIP section

AD2/AD3 as applicable, and clearly highlighting the unlicensed status of the sites. If safety risks are raised because of the publication of this information, the UK CAA Performance based Regulation Principle will apply for the safety mitigations of those identified risks.

Note: All aerodromes/heliports published in the UK AIP are required to have an ICAO location indicator (LI) allocated to the name of the aerodrome/heliport. Helicopter operators applying for approval of a PinS IAP to an unlicensed aerodrome/helicopter landing site without an ICAO LI must therefore ensure that an ICAO LI is established as part of the PinS implementation strategy. Applications for the assignment of new ICAO LIs must be made to CAA Airspace Regulation, email: airspaceregulation@caa.co.uk. Further details can be found in Aeronautical Information Circular Y 051/2020

6.3 Processing PinS IAP coding table and associated chart(s) by certificated DAT services providers.

As indicated in paragraph 6.2, coding tables and associated chart(s) for a PinS IAP to any aerodrome or helicopter landing site – licensed or unlicensed, will be published in the UK AIP and the tables/charts will be endorsed for use by the CAA approved helicopter operator only. When processing PinS IAP coding tables and associated chart(s) originating in the UK AIP for use in aeronautical databases on certified aircraft application/equipment (UK Regulation (EU) No 965/2012, Management of aeronautical databases, refers), DAT Providers (certificated in accordance with UK Regulation (EU) 2017/373) should ensure that the coding tables and associated chart(s) are only distributed to the helicopter operator that is approved by the CAA to use the specific PinS IAP. This policy is intended to reduce the risk of the IAP being used by a non-participating operator or airspace user.

APPENDIX A

Abbreviations

Abbreviations	
ACR	Airspace Change Request
ADQ	Aeronautical Data Quality
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information Regulation and Control
AIS	Aeronautical Information Service
ANSP	Air Navigation Service Provider
APDO	Approved Procedure Design Procedure
APD	Approved Procedure Designer
ANSP	Air Navigation Service Provider
CAP	Civil Aviation Publication
CFIT	Controlled Flight Into Terrain
CONOPS	Concept of Operation
DAT	Database
EGNOS	European Geostationary Navigation Overlay System
EUSPA	European Union Space Programme Agency
EWA	EGNOS Working Agreement
FATO	Final Approach and Take-off Area
FLAG	Five Lives Advisory Group
GNSS	Global Navigation Satellite System
GSA	European GNSS Agency
HEMS	Helicopter Emergency Medical Service
IAP	Instrument Approach Procedure
ICAO	International Civil Aviation Organisation
IDF	Initial Departure Fix
IFP	Instrument Flight Procedure
IFR	Instrument Flight Rules
INTRO	Introduction
IMC	Instrument Meteorological Conditions
LNAV	Lateral Navigation
LNAV/VNAV	Lateral Navigation/Vertical Navigation

Abbreviations	
LOC	Loss of Control
LPV	Localiser Performance with Vertical Guidance
MAC	Mid Air Collision
MAPt	Missed Approach Point
MET	Meteorology
NATS	National Air Traffic Service
NERL	NATS En-Route Ltd
PANS	Procedures for Air Navigation Services
PIR	Post Implementation Review
PBN	Performance Based Navigation
PinS	Point-In-Space
REXC:	Runway EXCcursion
RCOLL	Runway COLlision
RNP	Required Navigation Performance
SBAS	Satellite Based Augmentation System
SERA	Standardised European Rules of Air
SPA	Subpart
THRULIFE	Through-life
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions